



 AGENDA

I. CALL MEETING TO ORDER	6:30 - 6:35 p.m.	
Becky Tymchuk		
II. BEA/OSEA COMMENTS	6:35 - 6:45 p.m.	
III. PUBLIC COMMENTS	6:45 - 7:00 p.m.	2
IV. REPORTS	7:00 - 7:45 p.m.	
A. Superintendent Comments		5
Don Grotting		
B. Financial Update		7
Mike Schofield		
C. COVID-19 District Update		16
Josh Gamez & Carl Mead		
D. Distance Learning		21
Ginny Hansmann & Steve Langford		
V. ACTION ITEMS	7:45 - 7:50 p.m.	
A. Consent Agenda		
Becky Tymchuk		
a. Personnel		
b. Approval of School Board Meeting Minutes		28
c. Grant Report		42
d. Public Contracts		43
e. Science Curriculum Adoption - Phase II		51
f. Hope Chinese Borrowing Approval		151
VI. BOARD COMMUNICATION	7:50 - 8:00 p.m.	
Board Members		
VII. ADJOURNMENT	8:00 p.m.	
VIII. INFORMATION ITEM		152
IX. EXECUTIVE SESSION - ORS 192.660(3).	8:00 - 8:15 p.m.	
Negotiation Updates		

District Goal: WE Empower all students to achieve post-high school success.

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PUBLIC COMMENTS

Due to Covid-19 state-wide restrictions and in keeping with the efforts of social distancing the meeting of the Beaverton School District School Board for April 27, 2020 will be conducted online.

Public Comments were accepted by online form submission from 12:00 p.m. on Thursday, April 23, 2020 through 12:00 p.m. on Monday, April 27, 2020. Comments received are below.

1. Jennifer Hoffman

Staff/Parent/Community Member

- I am a district staff member and a parent of 3 BSD students. Is there an update as to the future of the Middle School Boundary decisions? Will/Did the committee members read all the comments that were submitted just before the meetings were postponed? Thank you!

2. Rebbecca Horner

Parent/Community Member

- Kindergarten curriculum during Covid19 say three visual learning academic packet. Why did the school district push for or virtual learning, when it will not helping children to learn, fine motor skills, such as learning how to write, letters, numbers, shapes and figuring out math problems. Also receiving the kindergarten packet for phase 3 learning in the mail, was extremely disappointing because it did not have any worksheets for the child to do, nor any activities to expand their reading, learning how to write their names, or any such activities. The teachers should have been in school, making a packet of activities for each child according to their learning abilities. I understand that this pandemic, has caused issues for why are the teachers not creating these package for their students knowing that, before the pandemic happened, the students are already having issues in certain areas such as learning how to write their names beginning reading phonics etc.

3. Beth Kiester

Parent/Community Member

- This homeschooling is too much. It's overwhelming for parents and children. I have 3 kids and coordinating their zoom meetings getting them to do assignments that are so plentiful is an extreme chore. I'm a nurse and my job is especially hard right now and this homeschooling is pushing my stress over the edge. It's too much and needs to decrease

4. Joe Nowinski

Parent/Community Member

- We sincerely appreciate the effort on implementing distance learning but have concerns that 90 minutes of instruction via Zoom four days per week isn't enough. How about increasing this to 2.5 hours per day 5 days per week and extending distance learning through the summer?

5. Michelle Voegels

Parent/Community Member

- School closure and how it is affecting our students and their parent's mental health.

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6. Randy Lauer

Parent/Community Member

- Question: What plans, if any, are in place for honoring the graduating class of 2020? I apologize if this question has been asked and answered but as a father to a senior at Sunset High School, it is my belief that allowing the community to honor these students who have completed their scholastic careers, will become an important part of the healing process from this pandemic. They have worked so hard for a long time and deserve the recognition! Thank you for your time.

7. Jennifer Brinkerhoff

Parent/Community Member

- Middle School Boundary Adjustment

8. Ritochit Chakraborty

Parent/Community Member

- Middle School Boundary Adjustment - Based on the 03/12 MS boundary adjustment meeting and proposed working maps, two things stand out. First up, Stoller cannot sustain a long-term SUMMA program without portables which have been ruled out already due to security concerns. So, any argument for SUMMA in Stoller is untenable within the next 2-3 years. Secondly, moving East Oak Hills to Stoller which already hosts Sunset-bound Jacob Wismer kids (while moving the entire SUMMA program to Timberland) will lead to the most balanced map and facilitate one comprehensive SUMMA curriculum in Timberland. School re-zoning should prioritize academic continuity over community affinity. If the latter were the prime concern, Findley should stay in Stoller since Cedar Mill is not the community they are part of. So, moving East Oak Hills to Stoller should be seriously considered for a long-term sustainable solution that does not warrant revisit every few years. Thanks for all the hard word and stay safe!

9. Nadia Hasan

Parent/Community Member

- I want to take a moment and recognize the hard work of the school district as we move to a different kind of school. There are many challenges and obstacles in doing this work but we are finding ways to adjust and accommodate but there is still work to be done. I urge you to consider ways that you are supporting our students in this difficult time. I worry for kids whose families are essential workers, spending their days at home unsupervised. I think of my former high school students taking care of their younger siblings worried about their own high school work. I consider the impact of all this screen time my kids are getting and wonder what controls we can put on the devices to ensure students are accessing appropriate content. I hope you will take into consideration our families struggling with food and home insecurity and encourage you to find ways to engage with them through personal connection and books. I also understand there's a Community Resource Fund where money is being raised. I want to understand how you are determining which families are getting support and how you are engaging the community in accessing these funds. I've been contacted to help provide funds and support to families who are not comfortable going to their teachers/school admin, who can we direct them to? How do we make this information public for these families?

10. Alivia Sil & Dwaipayan Sil

Parent/Community Member

- Middle School Boundary Change
 1. Stoller cannot sustain a long-term SUMMA program without portables this has already been discussed. Safety is districts highest priority. Therefore, we need to make sure that it is addressed optimally in the final decision.
 2. Any argument for SUMMA in Stoller is untenable within the next 2-3 years. Secondly, moving East Oak Hills to Stoller which already hosts Sunset-bound Jacob Wismer kids (while moving the entire SUMMA program to Timberland) will lead to the most balanced map and facilitate one

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comprehensive SUMMA curriculum in Timberland which would be again optimal for both long term and short term.

3. We should align our priorities appropriately. School rezoning should prioritize academic continuity over community affinity. If the latter were of prime concern, Findley should stay in Stoller since Cedar Mill is not the community they are part of. So, moving East Oak Hills to Stoller should be seriously considered for a long-term sustainable solution that does not warrant revisit every few years. My sincere thanks for all the hard work and effort to all the BSD staff, members and volunteers. This is a very unusual time that we all are going through and hope everyone will come out strong from this global crisis. COVID is giving real life learning lessons for both adult and kids and BSD is playing a big positive role towards helping with it.

11. Jodi Monroy

Parent/Community Member

- As an engaged and involved parent and community member I want to thank you for supporting a no harm grading policy and encourage you to resist pressure to consider otherwise. Through my work as a grad mentor for BSD as well as a community member connected to underserved populations, I am aware of so many of our families who are being immediately impacted economically by COVID 19. This includes not only loss of jobs and food insecurity but also housing instability as many of our immigrant families do not understand how to advocate for their rights under the City of Beaverton's rent moratorium. I have been in contact with a number of families who are under considerable stress relating to fear of eviction and are under pressure from property managers to pay their rent at all costs. I am concerned when I read in the board book packet that "four families were identified as severe need" We are not nearly reaching everyone, especially those in most need. The distance learning update indicates that "parents and families need to provide structure and support to assist in the learning process". That is not possible for many families right now and many of us don't even see the tip of iceberg because we are not connected to these communities. Please emphasize these stories in district messaging relating to no-harm grading AND consider ways in which the district can more deeply support and authentically engage with these struggling populations.

12. Divya Rao

Parent/Community Member

Middle school boundary change I am a Findley parent and I sincerely request the board to ensure that all Findley Summa students receive the same level of academic rigor that other North Bethany schools will have irrespective of whether they go to Stoller or Timberland. The COVID situation has put an immense strain on the economy and in order to provide a comprehensive, cost effective, academically strong North Summa program it makes sense to have all North Bethany Summa students in one location. This will avoid dilution of the program for all Summa students who should be treated equally as the entry to the program is based on the same high standard for all students who get in, irrespective of Summa location. BSD has to provide transparency on how resources will be allocated at Timberland especially experienced teachers as Findley students deserve fairness if they have to be uprooted from the Stoller Bethany neighborhood and become part of Cedar Mill neighborhood to fill the new Timberland school. Please do not treat real students like mere numbers in boundary change process. Thank you for all the hard work you are all putting into this process in these unprecedented times.

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Superintendent Report

COVID-19 (Coronavirus)

We continue to work with the Oregon Health Authority health experts and Department of Education Superintendent of Public Instruction for guidance to protect our schools and community. This guidance recognizes that the instruction in schools is vital to student well-being. In addition, they maintain that schools provide many students their only ready access to health care and food. Our district continues to develop remote distance learning opportunities for all students while adhering to health and safety mandates.

Middle School Schedules and Common Experience

While we are delaying the implementation of changing Middle School schedules and programming until the beginning of the 2021 - 2022 school year, we are still committed to completing the process by October 1, 2020 for implementation in the fall of 2021.

Middle School Boundary Process

Our Middle School Boundary process, being facilitated by Steven Sparks, has been suspended due to COVID 19 in order to ensure community input will not be hampered. We will continue our process in August. If we cannot continue our normal process, we will reevaluate how to engage our community as the process will need to continue in order to meet some required timelines to open our new middle school.

Implementation of the Student Success Act

Although funding for the Student Success Act is uncertain, the Department of Education is continuing to engage school districts to complete the application and implementation process. Our application was submitted and received by ODE and we are awaiting final approval. It must be noted that in light of COVID 19, funding for implementation of school district Student Success plans will not proceed as expected until our economy stabilizes, and the Corporate Activity Tax is able to realize expected revenues. We have suspended the hiring of most SIA positions and resources at this time.

Distance Learning

Our distance learning plan is being implemented, adhering to guidance from the Department of Education and the Governor's office. All students are being served to include our Special Education and Emerging Language Learner students. Many parts of Beaverton's plan are being used and mirrored by ODE and other districts in the State. I cannot say enough about the expertise, dedication, and work ethic of the Teaching & Learning team responsible for designing and implementing this plan in the incredible short time required.

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2020-2021 School Budget

It is difficult to understand that less than 90 days ago, we were so optimistic about making a significant investment to the 2020-2021 school budget. Times have changed. The outlook for Oregon's economy due to COVID 19 is bleak. The Estimated State General Fund deficit is being predicted to be anywhere from 1-3 billion dollars. To put this in perspective, we are estimating a 25 million dollar reduction in revenue for every 1 billion dollars. Needless to say, reductions of this magnitude, will result in staffing, programming, and resource eliminations. School Districts across our State are preparing for significant reductions. While our State has better reserves than in the past, it will not be enough to mitigate deficits in all public sectors dependent on State General Fund revenues. A key indicator to the magnitude of our district and state shortfall will be delivered in the May 20, 2020 State Economic Forecast. To prepare for this unavoidable revenue shortfall, we have suspended SIA hiring, froze central office and school budgets, unless an emergency exists, and we are planning department and school budget reductions to reduce the impact to class size increases as much as possible.

Graduation and Secondary Credit Attainment

Guidance has been provided by the Department of Education to prepare for the graduating class of 2020 and for current students in grades 9-11. Classes will be graded as a pass/incomplete depending on the status of a student on March 13, 2020. In addition, additional opportunities will be provided to all students to get to a pass status before the end of the school year. We are working with all our students to give them every opportunity to graduate or complete and recover credits if needed. The district has been directed by the department to do "no harm" to students in light of COVID 19.

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Beaverton School District
Year-To-Date Activity and Forecast
General Fund
For the Period Ended March 31, 2020
(\$ in millions)

	Budget		Activity			
	Adopted Budget	Final Budget	YTD Actuals	Current Encumb.	Actuals & Encumb.	Year-End Forecast
REVENUES:						
Beginning Fund Balance	\$ 16.9	\$ 16.9	\$ 16.9	\$ -	\$ 16.9	\$ 16.9
State School Fund:						
State School Fund	276.0	276.0	229.1	-	229.1	280.2
Property Taxes	143.0	143.0	139.5	-	139.5	143.7
Common School Fund	3.9	3.9	2.0	-	2.0	3.9
County School Fund	0.6	0.6	0.7	-	0.7	0.8
Local Option Levy	35.0	35.0	33.2	-	33.2	34.2
Investment Earnings	1.8	1.8	-	-	-	1.7
NWRESA Appointment	11.4	11.4	9.1	-	9.1	11.3
Transfers In	18.4	18.4	18.4	-	18.4	18.4
Other	8.6	8.6	4.0	-	4.0	9.4
Total	\$ 515.6	\$ 515.6	\$ 452.9	\$ -	\$ 452.9	\$ 520.5
EXPENDITURES:						
Salaries	\$ 267.9	\$ 267.9	\$ 180.3	\$ -	\$ 180.3	\$ 269.3
Benefits	172.7	172.7	112.3	-	112.3	171.3
Purchased services	28.0	28.0	17.1	8.7	25.8	26.5
Supplies & materials	14.6	14.6	7.6	2.5	10.1	13.8
Capital outlay	0.7	0.7	0.5	0.3	0.8	1.0
Other	2.4	2.4	1.4	0.1	1.5	2.4
Transfers out	4.3	4.3	4.3	-	4.3	4.3
Contingency	25.0	25.0				25.0
Total	\$ 515.6	\$ 515.6	\$ 323.5	\$ 11.6	\$ 335.1	\$ 513.6
Projected Surplus / (Deficit) Balance						\$ 6.9
Projected Ending Fund Balance						\$ 31.9
Projected ending fund balance percentage of actual (forecast) revenue at 6/30/2020 *						6.1%

*Projected ending fund balance breakdown:	Projected EFB	
General Operating Fund	\$ 31.6	6.0%
Local Option Levy Fund	0.3	0.1%

	Budget		Activity			
	Adopted Budget	Final Budget	YTD Actuals	Current Encumb.	Actuals & Encumb.	Year-End Forecast
APPROPRIATIONS:						
Instruction	\$ 305.1	\$ 305.1	\$ 200.2	\$ 3.1	\$ 203.3	\$ 310.2
Support Services	179.4	179.4	117.8	8.4	126.2	172.7
Enterprise & Community Svc	0.3	0.3	-	-	-	-
Facilities Acquisition & Const	0.1	0.1	-	-	-	-
Other Uses	5.7	5.7	5.5	0.1	5.6	5.7
Contingencies	25.0	25.0				25.0
Total	\$ 515.6	\$ 515.6	\$ 323.5	\$ 11.6	\$ 335.1	\$ 513.6

Beaverton School District
Summary of Revenue, Expenditures and Encumbrances
All Funds Except General Fund
For the Period Ended March 31, 2020

Funds	Final Budget	YTD Revenue	YTD Expenditures	Encumb.	YTD Expenditures & Encumb.	Expenditure Budget Variance		Fund Balance
	<i>(Incl Beg Fund Bal)</i>	<i>(Incl Beg Fund Bal)</i>	<i>(Incl transfers out)</i>			\$	%	
Student Body Fund	\$ 10,700,000	\$ 9,636,907	\$ 388,979	\$ 123,201	\$ 512,180	\$ (10,187,820)	4.79%	\$ 9,124,727
Special Purpose Fund	9,160,000	3,793,704	2,721,921	364,310	3,086,231	(6,073,769)	33.69%	707,473
Categorical	4,025,000	2,900,912	1,227,170	286,668	1,513,838	(2,511,162)	37.61%	1,387,074
Grant Fund	57,497,749	8,539,110	16,131,911	4,577,317	20,709,228	(36,788,521)	36.02%	(12,170,118)
Equipment Replacement Fund	4,048,000	3,687,071	1,291,244	1,510,559	2,801,803	(1,246,197)	69.21%	885,268
Sustainability Fund	22,236,279	22,236,279	18,413,036	-	18,413,036	(3,823,243)	82.81%	3,823,243
Nutrition Services Fund	18,766,435	11,554,064	9,162,687	1,900,165	11,062,852	(7,703,583)	58.95%	491,212
Debt Service Fund	85,461,801	78,591,100	18,069,992	-	18,069,992	(67,391,809)	21.14%	60,521,108
Capital Projects Fund	244,134,000	215,331,352	52,784,674	59,759,140	112,543,814	(131,590,186)	46.10%	102,787,538
Insurance Reserve Fund	6,825,667	6,534,669	3,451,258	898,049	4,349,307	(2,476,360)	63.72%	2,185,362
Workers' Compensation Fund	3,828,815	3,529,207	1,956,009	65,349	2,021,358	(1,807,457)	52.79%	1,507,849
Scholarship Fund	450,000	433,082	21,750	11,750	33,500	(416,500)	7.44%	399,582
Total	\$ 467,133,746	\$ 366,767,457	\$ 125,620,631	\$ 69,496,508	\$ 195,117,139	\$ (272,016,607)		\$ 171,650,318



BEAVERTON SCHOOL DISTRICT CLASSROOM TEACHER ALLOCATION 2019-20
As of 3/31/20

School	Budgeted Enrollment	9/30/19 Enrollment	Enrollment Change	Budget		Actual		Increase
				Without Levy APU	With Levy APU	Without Levy APU	With Levy APU	
Aloha Huber (K-8)	907	893	(14)	35.3	40.3	34.3	39.3	
Barnes	624	590	(34)	23.3	27.3	24.3	28.3	
Beaver Acres	707	737	30	27.5	32.5	27.3	32.3	
Bethany	531	528	(3)	20.5	24.5	19.5	23.5	
Bonny Slope	665	655	(10)	26.5	31.5	25.3	30.3	
Cedar Mill	421	428	7	15.5	20.5	15.3	20.3	
Chehalem	469	480	11	18.5	22.5	18.3	22.3	
Cooper Mountain	454	486	32	18.5	21.5	17.5	20.5	
Elmonica	582	550	(32)	21.5	25.5	21.2	25.2	
Errol Hassell	436	426	(10)	15.5	20.5	15.3	20.3	
Findley	643	636	(7)	25.5	29.5	24.3	28.3	
Fir Grove	362	387	25	13.5	17.5	14.2	18.2	
Greenway	320	325	5	12.3	15.3	12.2	15.2	
Hazeldale	437	485	48	17.5	21.5	17.3	21.3	
Hiteon	625	651	26	24.5	28.5	24.3	28.3	
Jacob Wismer	714	727	13	27.5	32.5	28.2	33.2	
Kinnaman	589	617	28	24.5	29.5	24.7	29.7	
McKay	273	294	21	12.3	16.3	11.2	15.2	
McKinley	616	654	38	24.5	28.5	25.2	29.2	
Montclair	290	319	29	10.5	14.5	11.2	15.2	
Nancy Ryles	646	630	(16)	23.5	26.5	23.3	26.3	
Oak Hills	554	576	22	22.5	27.5	22.2	27.2	
Raleigh Hills (K-8)	526	532	6	20.5	25.5	20.3	25.3	
Raleigh Park	343	340	(3)	13.5	17.5	12.3	16.3	
Ridgewood	371	432	61	14.5	18.5	15.2	19.2	
Rock Creek	564	516	(48)	20.5	24.5	20.2	24.2	
Sato	660	672	12	25.5	29.5	25.9	29.9	
Scholls Heights	548	594	46	22.5	27.5	22.4	27.4	
Sexton Mountain	527	543	16	22.5	26.5	22.3	26.3	
Springville (K-8)	866	884	18	33.5	38.5	35.0	40.0	
Terra Linda	354	371	17	14.5	18.5	14.1	18.1	
Vose	640	708	68	25.3	30.3	25.1	30.1	
West TV	327	347	20	12.5	15.5	13.2	16.2	
William Walker	421	518	97	18.3	22.3	18.2	22.2	
Elementary School Total	18,012	18,531	519	704.6	848.6	700.1	844.1	144.0



BEAVERTON SCHOOL DISTRICT CLASSROOM TEACHER ALLOCATION 2019-20
As of 3/31/20

School	Budgeted Enrollment	9/30/19 Enrollment	Enrollment Change	Budget		Actual		Increase
				Without Levy APU	With Levy APU	Without Levy APU	With Levy APU	
Cedar Park	943	941	(2)	29.6	36.6	30.6	37.2	
Conestoga	967	975	8	30.3	37.3	30.9	37.4	
Five Oaks	968	1,010	42	33.9	40.9	34.9	41.4	
Highland Park	813	777	(36)	25.8	31.8	26.3	31.8	
Meadow Park	805	834	29	30.0	36.0	30.5	36.0	
Mountain View	889	853	(36)	30.5	37.5	30.6	37.1	
Stoller	1,559	1,560	1	49.6	59.6	50.7	60.2	
Whitford	695	706	11	26.5	32.5	27.0	32.5	
Middle School Total	7,639	7,656	17	256.2	312.2	261.4	313.6	52.23
Aloha	1,700	1,751	51	64.7	75.7	62.0	72.0	
Beaverton	1,491	1,469	(22)	59.5	69.5	60.1	69.2	
Mountainside	1,766	1,787	21	58.7	70.5	59.2	70.0	
Southridge	1,391	1,380	(11)	51.3	60.3	51.5	59.6	
Sunset	1,936	1,971	35	65.5	77.5	67.0	77.6	
Westview	2,301	2,382	81	77.9	91.9	79.2	91.7	
High School Total	10,585	10,740	155	377.6	445.4	379.0	440.2	61.20
Arts & Communication Magnet Academy (ACMA)	720	706	(14)	25.8	31.8	26.1	31.6	
Community School	146	128	(18)	10.4	11.6	10.2	11.4	
Health & Science High School	726	706	(20)	25.5	30.5	25.9	30.4	
International School of Beaverton	860	847	(13)	31.8	38.8	32.1	38.7	
School of Science & Technology	176	175	(1)	5.4	7.4	5.2	7.2	
Options Schools Total	2,628	2,562	(66)	98.9	120.1	99.5	119.3	19.79
Address Extreme Class Size K-12	-	-	-	5.0	5.0	-	11.8	
District Total	38,864	39,489	625	1,442.3	1,731.3	1,439.9	1,728.9	289.0

	Adopted Budget	Current Projection	Year-to-Date Actual
Beginning Fund Balance 7/1/19	\$ -	\$ 93,354	\$ 93,354
Projected Revenue:	35,000,000	34,000,000	33,219,959
Projected Expense:	35,000,000	33,989,646	23,186,209
Projected Fund Balance 6/30/20:	\$ -	\$ 103,708	\$ 10,127,104

Beaverton School District
Portfolio Management
Portfolio Summary
March 31, 2020

Investments	Par Value	Market Value	Book Value	% of Portfolio	Days to Maturity	YTM
Corporate Notes	52,000,000.00	52,271,380.00	52,013,080.55	14.80	360	2.302
Commercial Paper Disc. -At Cost	45,000,000.00	44,892,200.00	44,632,463.89	12.70	56	1.651
Federal Agency Coupon Securities	58,000,000.00	58,552,180.00	58,470,000.00	16.63	140	1.904
Federal Agency Disc. -At Cost	93,314,000.00	93,278,445.73	92,738,330.86	26.38	67	1.437
Treasury Coupon Securities	45,000,000.00	45,278,100.00	45,138,930.00	12.84	106	1.589
Treasury Discounts -At Cost	20,662,000.00	20,649,997.42	19,813,058.53	5.64	239	2.257
LGIP	38,686,612.50	38,686,612.50	38,686,612.50	11.01	1	2.080
	352,662,612.50	353,608,915.65	351,492,476.33	100.00%	129	1.807

Total Earnings	March 31	Month Ending	Fiscal Year To Date
Current Year		630,013.75	5,585,711.85
Average Daily Balance		377,266,768.71	325,637,970.53
Effective Rate of Return		1.97%	2.28%

This report of the investment portfolio is in accordance with Board Policy DFA - Investment of Funds.

Beaverton School District, Prepared By Business Office

Beaverton School District Selected Funds
Investments by Sector and Group
Index: Investment Policy
Limitation based on Par Value
March 31, 2020

CUSIP	Investment #	Issuer	Maturity Date	Par Value	Book Value	Market Value	Allocation Target %	Actual %
Federal Agency								
Federal Home Loan Bank								
313383HU8	11022	Federal Home Loan Bank	06/12/2020	18,000,000.00	18,125,820.00	18,049,680.00		5.10
313371U79	11106	Federal Home Loan Bank	12/11/2020	10,000,000.00	10,093,000.00	10,193,500.00		2.83
313384WT2	11133	Federal Home Loan Bank	05/12/2020	20,000,000.00	19,873,720.00	19,998,400.00		5.67
313384VS5	11144	Federal Home Loan Bank	04/17/2020	11,500,000.00	11,454,942.36	11,499,655.00		3.26
313384VF3	11146	Federal Home Loan Bank	04/06/2020	5,000,000.00	4,984,335.42	4,999,950.00		1.41
313384ZE2	11147	Federal Home Loan Bank	07/10/2020	8,000,000.00	7,948,660.00	7,998,000.00		2.26
313384A33	11151	Federal Home Loan Bank	07/31/2020	2,210,000.00	2,194,230.42	2,209,337.00		0.62
313384WZ8	11152	Federal Home Loan Bank	05/18/2020	9,000,000.00	8,965,290.00	8,999,190.00		2.55
313384WW5	11153	Federal Home Loan Bank	05/15/2020	1,345,000.00	1,343,916.53	1,344,878.95		0.38
313384F20	11154	Federal Home Loan Bank	09/08/2020	11,759,000.00	11,729,445.71	11,752,179.78		3.33
			Subtotal	96,814,000.00	96,713,360.44	97,044,770.73	35.00	27.45
Federal Home Loan Mortgage Cor								
3134GBQZ8	11004	Federal Home Loan Mtg Corp	05/22/2020	20,000,000.00	20,000,000.00	20,034,600.00		5.67
313396XD0	11141	Federal Home Loan Mtg Corp	05/22/2020	3,000,000.00	2,980,044.17	2,999,700.00		0.85
			Subtotal	23,000,000.00	22,980,044.17	23,034,300.00	35.00	6.52
Federal National Mortgage Assn								
313588VR3	11148	Federal National Mtg Assn	04/16/2020	6,500,000.00	6,482,596.25	6,499,805.00		1.84
			Subtotal	6,500,000.00	6,482,596.25	6,499,805.00	35.00	1.84
Resolution Trust Funding Co								
76116FAD9	11120	Resolution Funding Corp	07/15/2020	5,000,000.00	4,927,050.00	4,992,450.00		1.41
76116FAD9	11121	Resolution Funding Corp	07/15/2020	10,000,000.00	9,854,100.00	9,984,900.00		2.83
			Subtotal	15,000,000.00	14,781,150.00	14,977,350.00	35.00	4.25
Tennessee Valley Authority								
880591EL2	11105	Tenn Valley Auth	02/15/2021	10,000,000.00	10,251,180.00	10,274,400.00		2.83
			Subtotal	10,000,000.00	10,251,180.00	10,274,400.00	35.00	2.84
			Total	151,314,000.00	151,208,330.86	151,830,625.73	100.00	42.91
Corporate Indebtedness								
Australia & NZ Banking Grp NY								
05253JAQ4	11127	Aust & NZ Banking Grp NY	11/23/2021	5,000,000.00	5,076,400.80	5,014,350.00		1.41
			Subtotal	5,000,000.00	5,076,400.80	5,014,350.00	5.00	1.42

**Beaverton School District Selected Funds
Investments by Sector and Group
Limitation based on Par Value**

CUSIP	Investment #	Issuer	Maturity Date	Par Value	Book Value	Market Value	Allocation Target %	Actual %
Corporate Indebtedness								
Bank of Montreal								
06367T4W7	11122	Bank of Montreal	04/13/2021	5,000,000.00	5,094,868.00	5,050,050.00		1.41
			Subtotal	5,000,000.00	5,094,868.00	5,050,050.00	5.00	1.42
Bank of Nova Scotia								
06416CAB4	11007	Bank of Nova Scotia	04/14/2020	5,000,000.00	5,006,950.00	4,998,400.00		1.41
064159LG9	11123	Bank of Nova Scotia	04/20/2021	5,000,000.00	5,097,953.90	5,052,650.00		1.41
			Subtotal	10,000,000.00	10,104,903.90	10,051,050.00	5.00	2.84
Bank of America								
06051GFN4	11129	Bank of America	04/21/2020	2,000,000.00	2,004,100.00	1,999,680.00		0.56
			Subtotal	2,000,000.00	2,004,100.00	1,999,680.00	5.00	0.57
Cisco Corp								
17275RAX0	11057	Cisco Corp	06/15/2020	5,000,000.00	4,973,250.00	5,008,950.00		1.41
			Subtotal	5,000,000.00	4,973,250.00	5,008,950.00	5.00	1.42
Credit Agricole CIB NY								
22533TDP8	11138	Creidt Agricole CIB NY	04/23/2020	10,000,000.00	9,943,050.00	9,992,600.00		2.83
			Subtotal	10,000,000.00	9,943,050.00	9,992,600.00	5.00	2.84
Credit Suisse USA								
2254EAFB4	11134	Credit Suisse USA	06/11/2020	15,000,000.00	14,879,525.00	14,953,200.00		4.25
			Subtotal	15,000,000.00	14,879,525.00	14,953,200.00	5.00	4.25
Lloyds Bank PLC								
53943RFF1	11128	Lloyds Bank PLC	06/15/2020	10,000,000.00	9,881,000.00	9,967,100.00		2.83
			Subtotal	10,000,000.00	9,881,000.00	9,967,100.00	5.00	2.84
Natixis NY								
63873JEK2	11137	Natixis NY	05/19/2020	10,000,000.00	9,928,888.89	9,979,300.00		2.83
			Subtotal	10,000,000.00	9,928,888.89	9,979,300.00	5.00	2.84
Toronto Dominion Bank								
89114QBL1	11104	Toronto Dominion Bank	07/13/2021	5,000,000.00	4,864,400.00	5,023,200.00		1.41
89114QBL1	11126	Toronto Dominion Bank	07/13/2021	5,000,000.00	5,004,207.85	5,023,200.00		1.41
			Subtotal	10,000,000.00	9,868,607.85	10,046,400.00	5.00	2.84
US Bank								
90331HNX7	11089	US Bank	11/16/2021	5,000,000.00	5,034,650.00	5,103,800.00		1.41
			Subtotal	5,000,000.00	5,034,650.00	5,103,800.00	5.00	1.42
Wells Fargo								
94974BGR5	11118	Wells Fargo Co	12/07/2020	5,000,000.00	5,028,050.00	5,011,950.00		1.41
			Subtotal	5,000,000.00	5,028,050.00	5,011,950.00	5.00	1.42

**Beaverton School District Selected Funds
Investments by Sector and Group
Limitation based on Par Value**

CUSIP	Investment #	Issuer	Maturity Date	Par Value	Book Value	Market Value	Allocation Target %	Actual %
Corporate Indebtedness								
Westpac Banking Corp								
961214DA8	11090	Westpac Banking Corp	08/19/2021	5,000,000.00	4,828,250.00	4,985,150.00		1.41
				Subtotal	5,000,000.00	4,828,250.00	5.00	1.42
				Total	97,000,000.00	96,645,544.44	35.00	27.51
OR Treas Local Govt Inv Pool								
Local Government Inv Pool								
LGIP 4010	FUND 000	LGIP		38,670,141.70	38,670,141.70	38,670,141.70		10.96
LGIP 5173	FUND 300	LGIP		6,174.54	6,174.54	6,174.54		0.00
LGIP 4966	FUND 416	LGIP		7,279.57	7,279.57	7,279.57		0.00
LGIP 4972	FUND 417	LGIP		3,016.69	3,016.69	3,016.69		0.00
				Subtotal	38,686,612.50	38,686,612.50	100.00	10.97
				Total	38,686,612.50	38,686,612.50	100.00	10.97
US Treasuries								
US Treasuries								
912828WY2	11103	U.S. Treasury	07/31/2021	5,000,000.00	4,963,730.00	5,137,900.00		1.41
912828ND8	11132	U.S. Treasury	05/15/2020	20,000,000.00	20,167,200.00	20,082,400.00		5.67
912828XU9	11135	U.S. Treasury	06/15/2020	20,000,000.00	20,008,000.00	20,057,800.00		5.67
912796TV1	11149	U.S. Treasury	05/14/2020	4,500,000.00	4,482,766.88	4,499,595.00		1.27
912796TV1	11150	U.S. Treasury	05/14/2020	1,372,000.00	1,366,745.81	1,371,876.52		0.38
912833LA6	11060	U.S. Treasury Strips	08/15/2020	4,200,000.00	3,964,968.00	4,196,892.00		1.19
912820M87	11096	U.S. Treasury Strips	04/30/2021	10,590,000.00	9,998,577.84	10,581,633.90		3.00
				Subtotal	65,662,000.00	64,951,988.53	100.00	18.62
				Total	65,662,000.00	64,951,988.53	100.00	18.62
				Grand Total	352,662,612.50	351,492,476.33	353,608,915.65	

Beaverton School District Selected Funds
Summary by Issuer
March 31, 2020
Grouped by Fund

Issuer	Number of Investments	Par Value	Market Value	% of Portfolio	Average YTM 365	Average Days to Maturity
Fund: Pooled Cash Fund						
Subtotal	12	147,170,141.70	147,102,966.70	41.61	1.736	41
Fund: Debt Service Fund						
Subtotal	6	45,723,174.54	45,803,430.01	12.96	1.489	43
Fund: 2017 Non-Taxable Bond Issue Fu						
Subtotal	17	119,556,279.57	120,300,235.25	34.02	2.093	222
Fund: 2017 Taxable Bond Issue Fund						
Subtotal	7	40,213,016.69	40,402,283.69	11.43	1.662	267
Total and Average	42	352,662,612.50	353,608,915.65	100.00	1.816	129



WE EXPECT EXCELLENCE



WE INNOVATE



WE EMBRACE EQUITY



WE COLLABORATE

COVID-19 DISTRICT UPDATE

POLICY ISSUE/SITUATION:

Many areas of the world, including the United States, are experiencing an expanding outbreak of respiratory illness caused by a novel (new) coronavirus, COVID-19.

On March 11, 2020 the World Health Organization characterized COVID-19 as a pandemic. To slow the spread of the virus, on March 17, 2020, Governor Brown ordered all public schools in Oregon to remain closed through April 28, 2020.

As schools, students, families, and communities plan for and experience closures, Beaverton School District is committed to providing ongoing guidance and resources as we sort through this unprecedented situation together.

BACKGROUND INFORMATION:

On March 12, 2020, Governor Brown issued Executive Order No. 20-05, prohibiting gatherings of 250 or more people statewide. She also announced a statewide closure of Oregon K- 12 schools from March 16, 2020, through March 31, 2020.

On March 13, 2020, the President of the United States declared the COVID-19 outbreak a national emergency.

On March 17, 2020, Governor Brown issued Executive Order 20-8, extending closure for all public schools from March 16, 2020, through April 28, 2020. The order also stated during the closure period all public schools shall continue to receive allocations from the State School Fund, as if they had been actually in session during the closure period. In order to receive allocations from the State School Fund during the closure period, public schools shall:

- (a) Continue delivering supplemental education and learning supports to students to the extent practical through independent study and other appropriate options.
- (b) Provide school meals in non-congregate settings through the Summer Food Service Program and Seamless Summer Option.
- (c) Provide for supplemental services and emergency management services, including but not limited to, the provision of childcare for first responders, emergency workers, health care professionals, and other individuals, consistent with any guidance and requirements provided by the Oregon Department of Education.
- (d) Develop plans for the operation of essential, non-educational services, including food services, to students and families.

District Goal: WE empower all students to achieve post-high school success.

The District prohibits discrimination and harassment based on any basis protected by law, including but not limited to, an individual's actual or perceived race, color, religion, sex, sexual orientation, gender identity, gender expression, national or ethnic origin, marital status, age, mental or physical disability, pregnancy, familial status, economic status, veteran status, or because of a perceived or actual association with any other persons within these protected classes.

- (e) Continue to regularly pay all employees of public schools. A public school subject to this Executive Order may require school employees to report to work to assist with the provision of supplemental services and emergency management activities.

On April 8, 2020, Governor Brown announced that school closures and the suspension of in-person instructional activities at higher education institutions would be extended through the end of the current academic term and school year. She also stated that school and learning would continue by using remote learning.

MEAL SERVICES:

The Nutrition Services (NS) Department continues to provide free breakfast and lunch for all students and children ages one (1) and up to 18 years of age. The meals are served Monday through Friday at 20 school sites and delivered to stops along 20 bus routes. As of April 17, 2020, NS has served 83,746 meals.

During the period of March 16-20, 2020, NS served 13,297 meals at 15 school sites.

On March 30, 2020, NS expanded service to 17 school sites and during the period of March 30 - April 10, 2020 they served 42,518 meals.

On Tuesday, March 31, 2020, NS, Transportation Department (over 60 drivers), and over 170 district volunteers started delivering grab & go meals to 38 designated bus stop locations on 19 routes.

Four families were identified as severe need and as of April 13, 2020, the district is providing food delivery to their residences. NS provides these families with five-days' worth of meals to each child in the household. The district worked with ODE to develop a process to serve these families who may lack transportation or otherwise homebound.

On April 20, 2020, NS also started serving hot entrees at all school sites and Transportation employees were trained and assigned to perform the meals delivery service (i.e. no volunteers needed). Coverage was improved by adding approximately 12 new stops, repositioning some lightly attended stops, and adding 1 route, with a total of 20 routes.

As of today, NS has expanded to 20 school sites with the addition of Nancy Ryles Elementary School (ES), Springville K-8, and Westview High School (HS). All school sites were approved by the Oregon Department of Education (ODE). The additional sites gave more coverage on the north and south ends of the district.

Grab and Go school sites include:

- Aloha Huber Park K-8
- Barnes ES
- Beaver Acres ES
- Beaverton HS
- Chehalem ES
- Elmonica ES
- Fir Grove ES
- Greenway ES
- Hazeldale ES

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- Kinnaman ES
- McKinley ES
- Nancy Ryles ES
- Raleigh Hills K-8
- Springville K-8
- Southridge HS
- Sunset HS
- Vose ES
- Westview HS
- Whitford Middle School (MS)
- William Walker ES

DAYCARE PROGRAMS:

BSD, in partnership with the Oregon Department of Education (ODE), and the Early Learning Division is assisting families who are working on the front lines access childcare. First responders, emergency workers, and health care professionals were directed to find more information on the [Emergency Child Care page](#) or contact the private daycare providers Champions Daycare/KinderCare or ClubK. Daycare service started at Cooper Mountain ES, Terra Linda ES, and Vose ES on March 16, 2020. As of today, the private providers continue daycare operations at Cooper Mountain ES and Terra Linda ES.

ELEMENTARY CHROMBOOK DISTRIBUTION:

The IT Department completed Round 2 of Chromebook distribution, with over 3,000 Chromebooks provided for elementary students. Distributions happened at every elementary school between April 9 – 14, 2020. In addition to IT staff, elementary principals, school staff, and a number of volunteers throughout the district helped prepare and distribute devices. During the Round 1 distribution from April 1 – 3, 2020, the IT Department distributed over 4,900 Chromebooks to elementary students.

STUDENT POSSESSIONS FROM SCHOOL LOCKERS AND CLASSROOMS:

Guidance was provided to all schools on April 20, 2020 on how to collect student possessions and perform classroom pack up. The guidance focused on ensuring safety for everyone involved and gave flexibility to the school principal to when to perform these events. Highlights include:

- All events are under the direction of the school principal or assistant principal.
- Events can be led by a licensed or classified staff. Custodians will provide supplies and augment all event as needed by the school principal.
- Guidance on how to remove student items from lockers, desks, etc. Items will be packed in clear plastic bags and label with the student's name.
- The use of gloves and CDC recommended use of cloth masks.
- Principals will brief staff of the plan prior to performing any tasks and to help set expectations and ensure everyone involved is comfortable with the tasks.
- How to perform curbside pickup and not to impact meal service at the 20 school sites.
- Provided 'no later than' date for all events.
- Students will have the ability to drop off library books, classroom books, and equipment (spring sports equipment). Schools will store these items in a designated area for a minimum of 24 hours. Equipment will be cleaned by following the manufacturer's instructions for cleaning and disinfecting.
- Classroom pack up will be completed no later than the last grading day of school June 15, 2020.

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BUILDING ACCESS:

The district continues to maintain strict access to all of our facilities. Building access is currently granted to all Administrators, Principals, APs, principal secretaries, registrars, and bookkeepers. Students and families are not allowed in our buildings for any reason. Principals can allow staff into their buildings to help support Chromebook distribution, staff collection of student items from lockers, or other events as needed.

OPERATIONS AND SUPPORT SERVICES: OTHER DEPARTMENT UPDATES:

Public Safety

- Campus Supervisors are patrolling the district in order to deter trespassing and vandalism. Public Safety is communicating frequently with the Washington County Sheriff and Beaverton Police.

Transportation

- The department is providing transportation for three students who have been attending the Parry Center, a mental health treatment center located in Portland. The students were previously transported by cab.
- Transportation mechanics have resumed work and observing social distancing requirements. The mechanics are working Monday through Thursday, 5:30 a.m. - 2:00 p.m. and are performing required bus safety inspections and ongoing repairs.

Maintenance & Custodial

- Custodians are operating on a modified schedule in all facilities. Their focus of effort is monitoring critical mechanical systems and supporting the meal service programs, daycare programs, and educational support mission for the district.
 - Food service cleanup: 1:00 - 3:00 p.m. at 20 school sites for Grab and Go meals.
 - Daycare cleanup: 5:30-7:30 p.m. at Terra Linda and Cooper Mountain.
 - Central Office: cleaning twice a week; other Ancillary Support facilities: cleaning once a week.
 - Middle/Option/High Schools: 8:00 - 10:00 a.m. daily; security and critical system checks.
 - Elementary Schools: 8:00 - 10:00 a.m. Mondays and Fridays; security and critical system checks.
 - Security and critical system checks: check security and fire panels for trouble signals while coding in; check boilers and fill out the logs; walk the exterior of the building and check for vandalism, pests, and collect trash; check interiors for issues including pests, leaks, collect and remove trash, as well as flush toilets and urinals to make sure seals do not dry out; submit work orders as needed and follow up with Maintenance Dept.
- Educational mission support. Teaching staff are allowed opportunities to access their buildings to collect teaching materials and personal items.
- Mail. With staff out of the buildings, Maintenance is collecting most of the district's UPS or FedEx deliveries at the main Maintenance office. School mail and USPS mail continues on revised schedule.
- Maintenance trades continue to work on work orders and are ready to respond to emergencies.

Facilities Development

- Ongoing projects (Five Oaks MS, ACMA, security upgrades) have experienced a minor drop in efficiency. In order to maintain the social distancing requirements it is necessary to have fewer workers onsite.

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- We are working with schools to start summer projects and have received favorable bid results from recent solicitations. Here is a list of the summer projects.
 - AHS Roof/Seismic
 - Whitford HVAC/Roof
 - Beaver Acres Seismic/Roof/Pipe/Windows
 - Highland Park HVAC
 - Barnes HVAC/Roof
 - Raleigh Park HVAC/Electrical
 - Terra Linda Repipe/Restroom
 - Security Upgrades - Phase 4, Fences
 - BHS Scoreboards
 - Westview HS CTE
 - Sunset Stadium Site Improvements
 - Elmonica Dishwasher Replacement
 - Auditoriums 2020
 - Interior Lock Replacement - Part 2
 - Raleigh Hills Freezer Replacement
 - Security Upgrades - Phase 4, Access Control
 - District Wide Fire Alarm Separation

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DISTANCE LEARNING UPDATE

BACKGROUND INFORMATION

On April 8, 2020, Governor Brown extended Oregon's physical closures for K-12 and post-secondary education systems through the end of the current academic term and school year. Governor Brown directed school districts to complete the final weeks of the regular academic year by continuing distance learning and support to students.

Prior to the announcement, the Teaching and Learning Department created Phase 1 and 2 of a Remote Learning Plan. After the closure extension, the Teaching and Learning Department created Phase 3 of the Remote Learning Plan, which began April 13, 2020.

The IT Department has adjusted systems and processes to support the Remote Learning and Distance Learning Plans and continued business operations of the Beaverton School District.

DISTANCE LEARNING PLAN

Per directive by the Oregon Department of Education (ODE), [Distance Learning for All](#), or Phase 3 of our Remote Learning Plan, is to be implemented on April 13 and will run through June 12.

ODE defines distance or remote learning as:

*Instruction in which the student and instructor are in different locations. Students engaging in distance learning have access to appropriate educational materials and receive ongoing interaction with their licensed and/or registered teacher(s). It is important to note that distance learning includes multimedia communication and blended learning strategies, **not just digital/online learning**. Learning may or may not be separated in time (asynchronous vs. synchronous). School districts will enter into distance learning along a continuum based on their capacity.*

Our Phase 3 of Remote Learning follows the above definition. Some teachers will connect with students through Canvas or SeeSaw (digital platforms) and some will provide activities that do not require technology. Parents will see more digital or online learning in higher grade levels and as students are more able to complete work independently. A student's Remote Learning day consists of three things: Teacher-Led Learning, Learning and Supplemental Activities, and Nutrition and Wellness. Teachers will be collecting evidence on student progress on learning standards, providing progress reports and grades, and providing credit-earning opportunities - all with the goal of progressing students to the next grade level and graduation.

Teacher-Led Learning is structured, grade-level learning directed and supported by a teacher. Teacher-Led Learning at early grades may involve a teacher connecting with a class over a recorded video to read a story to students, followed by asking the students to complete an activity related to the story. The teacher would follow up by providing feedback to students on their work or performance. In the upper grades, Teacher-Led Learning may involve a teacher posting an assignment with directions on Canvas for students to complete independently. The teacher in this case would also provide feedback and, if appropriate, a grade for the assignment.

Note: Remote learning is not just online instruction. It provides for blended learning strategies and access to appropriate educational materials through multiple modes of communication. As schools transition to remote learning, successful approaches will be centered on care, community and continuity of learning.

BSD created two webinars to aid in the design of classes within a digital setting.

- Elementary
- Secondary

Learning and Supplemental Activities may be connected to Teacher-Led Learning and is led by the student or family. Supplemental activities will vary by grade level but could include such things as independent reading, journaling or creative writing, educational software and television programs, independent research, or board games.

Nutrition and Wellness are included into the day as it works best for family schedule and student needs. Physical activities such as walking, riding bikes, or playing individual sports help maintain physical well-being and allow students to better focus on learning activities. Families should build in frequent nutrition and physical breaks throughout a remote learning day.

Remote Learning Instructional Day

Following the guidance of ODE, our recommended maximum daily guidelines for **Teacher-Led Learning** are as follows:

- Grades PK-1: 45 minutes
- Grades 2-3: 60 minutes
- Grades 4-5: 90 minutes
- Grades 6-12: 30 minutes per teacher (3 hours in a day)

In addition to Teacher-Led Learning, ODE has provided guidelines for **Learning and Supplemental Activities**.

- Grades K-1: 1-2 Hours Recommended
- Grades 2-3: 2 Hours Recommended
- Grades 4-5: 3 Hours Recommended
- Grades 6-12: 1-2 Hours Recommended

In addition to Teacher-Led Learning, Learning and Supplemental activities, ODE also provided guidelines for **Meeting Nutrition and Wellness** needs.

- Grades K-1: 2 hours Recommended
- Grades 2-3: 2 hours Recommended
- Grades 4-5: 2 hours Recommended
- Grades 6-12: 2 hours Recommended

What does this mean for a child?

For example, a kindergarten student would not receive more than 2 hours and 45 minutes of teacher led instruction and supplemental learning. This includes teacher instruction (recorded and live) + teacher directed assignments + small group/one on one instruction + independent reading + Dreambox + PE and Music + Counseling and Social Emotional Learning lessons + Special education and English language learner supports. These combined should be the maximum amount of time for a student to be in 'school' each day.

It is also recommended that the two additional hours of **Meeting Nutrition and Wellness** would be for meal time, outdoor and indoor play as directed by the family.

Parents and families will play a key part in student learning with remote learning. The student's home is now their classroom and parents and families need to provide structure and support to assist in the learning process. The amount of structure and support will vary depending on the age, grade level, and unique learning needs of each student, but all students will need structure and support from their families. Teachers and school administrators are committed to partnering with families to support this new way of educating our children and will be reaching out to you in this next phase of remote learning. The District is also committed to providing services for students who qualify for Special Education, English Language, and Talented and Gifted services. More details are provided below or will be coming from your child's school.

Remote Learning Plan Phase 3 Goals

WE Expect Excellence

- Staff and students prioritize time together to focus on the most important or relevant learning.
- Staff will continue to monitor, report and record each student's progress towards learning goals and standards, encouraging critical problem solving, collaboration, communication and creativity.

WE Innovate

- Schools will provide multiple, flexible opportunities, for all our students to continue on their learning pathway toward graduation.
- Staff and students will learn and apply new tools for remote teaching and learning and will continually adjust to find creative ways, digital and non-digital, to engage in learning.

WE Embrace Equity

- Staff will prioritize student belonging, care, connection, well-being and mental and social-emotional health.
- Staff will center equity in all outreach and communication efforts with parents and caregivers and will find ways to provide tools and materials to students.

WE Collaborate

- Every student will connect regularly with their teacher(s).
- Staff, families, and caregivers will work as a team, anchored in partnership. Together, teachers and families will co-facilitate learning, design consistent routines, and establish the learning environment.

IT DISTANCE LEARNING SUPPORT

The IT Department implemented a number of systems adjustments and improvements to support Phase 3 of the Remote Learning Plan. Following are some of the most critical improvements made during the last three weeks to support the Remote Learning Plan and continued operation of the Beaverton School District in a remote work environment.

Support of Remote and Distance Learning

Chromebook Distribution for Elementary Students

The 2014 Bond provided devices for all students. The devices purchased from bond funds have been critical during the move to distance learning. In grades 6-12, students have been able to check out a Chromebook and take the device home for the past 3 years. In grades K-5, devices were used only in the classroom.

Working closely with Teaching and Learning, IT staff and volunteer BSD staff distributed over 9,500 Chromebooks to elementary students and their families. Devices in Round 1 were distributed between April 1-3 and Round 2 between April 9-14.

For students still needing a device, teachers are collecting the information and recording it in a form. IT staff review the request and arrange a pick-up time for the family.

Student Help Desk

In a remote learning and working environment, we needed to find a new solution to help students with technology issues. IT staff designed and programmed a student help desk solution and launched it on Wednesday, April 1.

Students or families needing technology support can call or email between 8:30 am - 3:30 pm daily to receive support. From April 1 through April 15, the help desk had 1,846 tickets opened over email and resolved 744 for users. In addition to email, the student help desk team handled 1,175 calls over the phone.

This new help desk solution is specifically for students and families with the existing help desk still open for staff. As expected, there have been many calls to the student help desk with the

distribution of elementary Chromebooks. The expectation is that calls will plateau and decrease as students and families become familiar with the devices and applications used.

Our existing help desk for staff has also been very busy with the move to distance learning and remote work. During the first two weeks of April, our staff help desk had 550 phone calls and 672 tickets created through our web help desk system. On each closed ticket, staff are asked to rate the approachability, resolution speed, and communication of IT staff. During the past two months of transition to remote work and learning, IT staff collectively have received a 94% rating of Excellent in all areas.

Reporting Changes

IT staff created reports for schools to inform student progress under changing grading and graduation requirements. These reports identify students needing additional support to graduate and provide teachers and school administrators information on student progress.

Securing Zoom

The move to distance learning and remote work required online meeting capability. Teaching and Learning TOSA's provided professional development to teachers on the Zoom platform the week after Spring Break, with teachers and staff beginning to use the application on April 1. From April 1 through April 15, there were 14,195 zoom meetings held in the District, averaging over 1,000 meetings daily.

Like many education institutions using Zoom, we began to experience security issues. Most notably, "Zoom-bombing," where attackers would enter zoom meeting rooms and disrupt the meeting.

IT staff acted quickly to employ new security features introduced by the vendor and worked with Teaching and Learning to share out changes and security improvements.

Zoom signed the Oregon Student Data Privacy Agreement with Beaverton on April 11, 2020. In addition to Beaverton, any Oregon District is served by the agreement, saving other districts in Oregon from needing to work with Zoom on a separate agreement.

Below are the improvements made to protect students and staff as they work and learn in virtual meeting spaces:

- Meeting Passwords are now required
- Waiting Rooms are now required
- Zoom integration with Canvas (students are authenticated through Canvas)
- Encouraging staff to "Lock" meetings once they have started

We are exploring adding all student accounts into the Zoom domain. If successful, we can then enforce "only authenticated users" into Zoom meetings, which would break the ability for attackers to enter a Zoom meeting.

Business Operations Improvements

Mitel Connect - Softphone

One of the first challenges when moving to a remote work and learning environment was how to support staff needing access to their work phones. In the space of a couple of days, IT staff installed a softphone on all district laptops. The softphone provides the ability to make and receive phone calls and check voicemail from a district laptop. We have 4,690 staff now transitioned to the soft-phone.

Security Improvement - Virtual Private Networking

Many applications staff use daily were already available externally. They are secured in a manner that allows use outside of district locations. Some applications, due to sensitive data, were only accessible from inside the district network.

For years, a small number of staff have used a Virtual Private Network (VPN) to securely connect to applications not available externally. With the move to remote work and learning, IT staff had to rapidly expand use of the VPN to all staff users. IT staff installed the VPN client on all district laptops and provided training on how to access. At this time, all staff can now securely access applications needed for work through the VPN.

Challenges

The IT Department has risen to quickly address the move to remote learning and work. There are challenges outstanding though, that require time, attention, and resources to resolve.

- **Student Connectivity:** While the Beaverton School District is able to provide devices for students to learn remotely, there are a number of students lacking a way to connect to the internet. We are fortunate to have the Sprint 1Million grant providing some hotspots for high school students and the Kajeet Closing the Homework Gap grant providing some connectivity for middle school students. However, at both levels needs far exceed our ability to address connectivity requests. At the elementary level, we have submitted a purchase order for hotspots to distribute, but hotspot inventory is low and we are awaiting delivery. As with middle and high school levels, we will not have enough hotspots to address needs. We are exploring alternate solutions such as outfitting school buses or district vehicles with routers and parking them in highly affected areas to provide connectivity.
- **Student Device Repair:** Prior to the closure, students would visit the school library to exchange non-functioning devices. IT would then have them repaired and made available for exchange. In a remote learning environment, new solutions to exchange devices must be developed. We are exploring multiple paths to ensure convenient, safe, and efficient device exchange.
 - **School Tech Hours:** Schools will be publishing dates and times for device exchange. Students and families will visit the school to exchange a non-functioning device.
 - **Smart Lockers:** For times outside of the school tech hours, or to ensure a safe exchange, IT has purchased smart lockers. These lockers will be located

throughout the city. Students needing a replacement device would be given a code to unlock a locker and exchange the device. Staff would then retrieve the defective device and repair.

**Board Members Present via Zoom Meeting**

Becky Tymchuk, Chair
Eric Simpson, Vice Chair
Anne Bryan
Susan Greenberg
Donna Tyner
LeeAnn Larsen
Tom Colett

Staff Present:

Don Grotting	Superintendent
Ginny Hansmann	Deputy Superintendent of Teaching and Learning
Carl Mead	Deputy Superintendent of Operations
Sue Robertson	Chief Human Resource Officer
Maureen Wheeler	Public Communications Officer
Mike Schofield	Associate Superintendent for Business Services
David Williams	Executive Administrator for Strategic Relations/Initiatives
Toshiko Maurizio	Administrator for Multilingual Programs
Steve Langford	Chief Information Officer
Pat McCreery	Administrator for Equity and Inclusion
Camellia Osterink	District Legal Counsel
Craig Beaver	Administrator for Transportation
Josh Gamez	Chief Facilities Officer

Zoom Meeting: <https://beavertonk12.zoom.us/j/477782808>
<https://www.youtube.com/channel/UCGCsl4R0vYcEcVMkLBI-cqQ>

CALL MEETING TO ORDER & BOARD PROCEDURES – Becky Tymchuk
School Board Chair Becky Tymchuk called the meeting to order at 9:00 a.m.

Superintendent Update

Supt. Grotting greeted everyone. He acknowledged how everyone has stepped up to the plate during this pandemic, handing out devices, providing instruction, feeding students and the operation part of it. The State of Oregon has been mirroring some of the State plans off of Beaverton's lead. He continues to stay in constant contact with District leaders and County and City officials. The Community Involvement Department has made a tremendous effort to stay in touch with our community.

District Goal: WE Empower all students to achieve post-high school success.

"The District prohibits discrimination and harassment based on any basis protected by law, including but not limited to, an individual's actual or perceived race, color, religion, sex, sexual orientation, gender identity, gender expression, national or ethnic origin, marital status, age, mental or physical disability, pregnancy, familial status, economic status, veteran status, or because of a perceived or actual association with any other persons within these protected classes."

COVID-19 UPDATE - Josh Gamez, Carl Mead & Ginny Hansmann

On March 12, 2020, Governor Brown issued Executive Order No. 20-05, prohibiting gatherings of 250 or more people statewide. She also announced a statewide closure of Oregon K-12 schools from March 16 – 31, 2020.

On March 17, 2020, Governor Brown issued Executive Order 20-08, extending closure for all public schools from March 16 – April 28, 2020. The order also stated during the closure period all public schools shall continue to receive allocations from the State School Fund, as if they had been actually in session during the closure period. In order to receive allocations from the State School Fund during the closure period, public schools shall:

- a. Continue delivering supplemental education and learning supports to students to the extent practical through independent study and other appropriate options.
- b. Provide school meals in non-congregate settings through the Summer Food Service Program and Seamless Summer Option.
- c. Provide for supplemental services and emergency management services, including but not limited to, the provision of childcare for first responders, emergency workers, health care professionals, and other individuals, consistent with any guidance and requirements provided by the Oregon Department of Education.
- d. Develop plans for the operation of essential, non-educational services, including food services, to students and families.
- e. Continue to regularly pay all employees of public schools. A public school subject to this Executive Order may require school employees to report to work to assist with the provision of supplemental services and emergency management activities

Pandemic Team – Carl Mead

Deputy Supt. Carl Mead shared early procedures with the Board regarding the Pandemic Team. They began meeting on March 2, 2020 with 25 colleagues representing all departments across the district. They met daily to address questions coming forward from staff and community. Communication is generated on a daily basis to administration, staff and community.

Meal Service – Carl Mead

Meal service was started prior to Spring Break. We had 15 sites where meals were available for pick up. The district is continuing to improve. We are looking at district areas that do not have Summer meal sites. We have 60 drivers who are delivering meals and additional staff that are doing meal pick up at sites. There are some food shortages in certain areas of the state, but Beaverton is not experiencing any at this time.

The district is also working with faith partners for additional food boxes as a supplement to our “Grab and Go”. 60 staff members are helping with the distributions.

Day Care Programs – Josh Gamez

We have two facilities, Cooper Mountain and Terra Linda, providing day care for frontline responders and district families. The numbers are low but we are sending out information to the community that these services are available. Custodial crews are coming in for clean-up. We have about one-third of our custodians currently working. They are doing check up’s on our facilities as well as clean up. We are looking for energy savings in every way possible. We have lowered our temperatures and we have less garbage. We have

donated supplies to the VA Portland Medical Center, Providence St. Vincent and TVF&R. We have donated exam gloves, N95 masks, hand sanitizer, face masks and safety goggles from school science labs.

Elementary Chromebook Distribution – Carl Mead

Chromebook distribution has been taking place. Round one of distribution took place last week to 4,900 students. Round two of distribution will be happening shortly with approximately 5,000 additional computers being distributed to students at that time.

Online Resources and Distance Learning - Ginny Hansmann

Phase 1 was launched on March 16, 2020. This phase was intended to limit learning loss during the first 10 days of closure, excluding Spring Break week.

Phase 2 was launched as soon as the governor published her guidelines to facilitate learning opportunities, provide feedback to students on work submitted and connecting with students. Teachers are currently in this phase.

We are currently preparing for Phase 3 which is for a long-term closure (remainder of the school year). This phase could be launched on Monday, April 13th as soon as the Governor comes out with her guidelines. This will require some shifts and distance learning for all. Tasks must be aligned with curriculum and accommodations made for Special Ed students.

Our teachers are excited to be able to connect with students again. We are doing constant feedback with our teachers to be sure they are comfortable with all phases of this implementation.

Questions/Comments:

- How are we tracking family participation? What layers are in place to reach out? *Our teachers are being asked to reach out to our families to make sure that no family is left behind. Teachers can also reach out to other staff and Student Success Coaches, etc.*
- How are special needs students being handled? *Danielle Hudson and her team are working on those accommodations. It is a huge lift. They are following instructions from the state that we are following the guidelines. Staff will receive training and instruction. The guidelines outline very specific instructions on distance learning.*
- Can you provide some insight on how you will handle graduations? *We should know more about credits tomorrow from the state level. Our I/T department is identifying students and where they are in terms of credits/graduation.*
- How is Beaverton contributing to the conversations around graduation, school closures, access, etc.? *Supt. Grotting responded that he is on the phone daily with the Governor's Office and ODE. They are looking at the larger districts for information and feedback and Beaverton is a definite leader in this. It's not just the seniors losing content for this year but our 9 – 11 students are affected as well. Our primary concern right now is our seniors.*
- What is our goal with Distance Learning for all? What are we looking to achieve this year? *The first thing is engagement and building that relationship and letting students know that we are here for them as they go forward. We are looking at how we cover critical standards and how we support our most vulnerable students. This summer will be a time to look at our scope and sequence for the start of next year. We do not want a learning loss and want them to be prepared for school in the fall. We are also focusing on social emotional learning. Our I/T Department has a Help Desk that is accommodating staff, parents and students.*

- Is there some sort of forum for questions that parents have? *We are developing a feedback loop with our teachers. There will be a place on our webpage where parents can post questions and receive answers.*
- Are we providing hot spots to students without internet service? *Like most districts across the nation, we are not able to acquire additional hotspots as our vendors are out of stock. We have orders in but no estimated time of delivery.*
- Is there a potential of extending the school year? *Right now, due to extenuating circumstances, we don't see that movement taking place.*
- How do we know that we are meeting the needs of students regarding meals? *It's a world of unknowns but we are seeing daily increases. Charity Ralls and her team are tracking those numbers.*

BUDGET UPDATE – Mike Schofield

2019 – 2021 Budget - We are currently projecting General Fund ending fund balance of \$31.9M based on March updates. This estimate includes additional revenue and a reduction in expenditures. Spending and hiring restrictions have been implemented.

2020 – 2021 Budget – The budget document is nearly complete and was built on the most recent State School Fund estimate. It includes the new Staffing Allocation Model (SAM) and the Student Investment Account (SIA) \$32.7M. The budget must be adopted by June 30, 2020. Most likely, due to the current COVID-19 situation, the budget that will be adopted will not be implemented in the fall of 2020 due the timing of information needed to make decisions.

COVID-19 Impact – This is an unprecedented time. Our proposed budget will be negatively impacted. There are a record number of unemployment claims but the State of Oregon is in a better financial position than in the last recession. The district has spending and hiring restrictions in place and are analyzing cost containment measures in all departments for the remainder of the year.

Next Steps – The district is internally identifying and prioritizing potential reductions. They are clearly communicating the financial dilemma and the uncertainty with all bargaining groups and constituents.

Questions/Comments:

- Has there been a conversation about the state income tax being delayed? *The State is in a better place now than in previous recessions. In addition, we have heard that the state has the ability to do some short term borrowing.*
- Have we been in contact with the Budget Committee and will the three meetings be Zoom meetings? *We wanted to get through this meeting to determine the upcoming meetings. We will most likely use this similar format. Comments will be taken in writing. They will reach out to the Budget Committee regarding training with Zoom/on-line meetings.*
- Going into next year how are we going to be communicating the impact of the current situation and the uncertainty? *As we kick off the budget process on April 20, 2020 the Budget Committee will be informed. Once we know the initial impact after the May forecast we will have more of an idea of what that means to Beaverton.*
- How are you planning to communicate the Student Success Act in the budget? *We will move forward as planned and will adjust according to actual funding as we hear back from the State.*
- Do you know how the tax collection will affect funding for next year? *We don't know anything more at this time.*
- How are we handling the hiring freeze with the SIA funds? *At this point it is a case by case hiring process. We are not moving forward on the programming piece.*

- Before the SIA we had a deficit of \$13M for next year. What will the deficit be for next year? *The current budget being shared will be balanced and the deficit will have been met. It is too early to assess what might happen.*

There are a lot of uncertainties. The impact on the economy could be very severe in the beginning and it depends on how quick we get out of it. Districts are pushing on the state to give them some sort of indication of what we will be facing.

ACTION ITEMS

A. COVID Emergency Contracting Resolution #20-0406 – Becky Tymchuk

OAR 137-49-0620 and ORS 279C(1)(f) and ORS 279B.080 permits the Beaverton School District Board of Directors to exempt specific contracts or class of contracts from the competitive bidding requirements of ORS 279. Per ORS 279C.010(1)(f), 279B.080 and 279C.335 this Board of Directors acting as the Local Contract Review Board can exempt the contracts anticipated to be required for the District to effectively mitigate the emergency caused by COVID-19. The District personnel, to the greatest extent practicable, will engage in competitive bidding processes in an effort to obtain the most effective cost in dealing with the emergency at hand.

Resolution #20-0406 declares that an emergency exists and thereby requests that the District's Board authorize the District's administration to waive competitive bidding procedures within the parameters established in Resolution #20-0406.

There were no questions.

Anne Bryan made the motion that the School Board accept the Superintendent's Declaration of an Emergency and acting as the Local Contract Review Board approve the exemption from the competitive bidding requirements of the contracts anticipated to be required in responding to the Emergency. Donna Tyner seconded and the motion passed unanimously by a roll call vote of 6 to 0 by Becky Tymchuk, Eric Simpson, Anne Bryan, Susan Greenberg, Donna Tyner and Tom Colett. LeeAnn Larsen was unable to vote due to technical difficulties.

B. Consent Agenda – Becky Tymchuk

1. Public Contracts

BE IT RESOLVED that the School Board authorizes the Superintendent or a designee to obligate the District for the public contract items as submitted at this meeting.

2. Transportation Supplemental Plans for 2020 - 2021

BE IT RESOLVED that the School Board approved the Transportation Supplemental Plans for 2020 – 2021 School Year.

Anne Bryan made the motion to adopt the Consent Agenda. Donna Tyner seconded and the motion passed unanimously by a roll call vote of 6 to 0 by Becky Tymchuk, Eric Simpson, Anne Bryan, Susan Greenberg, Donna Tyner and Tom Colett. LeeAnn Larsen was unable to vote due to technical difficulties.

ADJOURNMENT

Becky Tymchuk adjourned the meeting at 10:35 a.m.

Submitted by

Mary Hawkins

Mary Hawkins

Becky Tymchuk

Becky Tymchuk, School Board Chair

**Board Members Present:**

Becky Tymchuk, Chair
Eric Simpson, Vice Chair
Anne Bryan
Susan Greenberg
Donna Tyner
LeeAnn Larsen
Tom Colett (by phone)

Staff Present:

Don Grotting	Superintendent
Ginny Hansmann	Deputy Superintendent of Teaching and Learning
Carl Mead	Deputy Superintendent of Operations
Sue Robertson	Chief Human Resource Officer
Maureen Wheeler	Public Communications Officer
Mike Schofield	Associate Superintendent for Business Services
David Williams	Executive Administrator for Strategic Relations/Initiatives
Toshiko Maurizio	Administrator for Multilingual Programs
Josh Gamez	Chief Facilities Officer
Danielle Hudson	Administrator for Student Services
Steve Langford	Chief Information Officer
Pat McCreery	Administrator for Equity and Inclusion
Craig Beaver	Administrator for Transportation
Patrick Meigs	Executive Administrator for Elementary Schools
Steven Sparks	Executive Administrator for Long Range Planning
Camellia Osterink	District Legal Counsel
Shannon Anderson	Cedar Park Middle School Principal
Zan Hess	Conestoga Middle School Principal
Jon Bridges	Administrator for Accountability
Brian Sica	Administrator for Curriculum, Instruction & Assessment
Kayla Bell	Administrator for Curriculum, Instruction & Assessment
Jon Franco	Executive Administrator for High Schools and Option Programs
Nicole Will	Executive Administrator for Elementary Schools
John Peplinski	Administrator for Curriculum, Instruction & Assessment
Ken Struckmeier	Executive Administrator for Middle Schools
Charity Ralls	Administrator for Nutrition Services

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Visitors: 145

Media: 1

CALL MEETING TO ORDER & BOARD PROCEDURES – Becky Tymchuk

School Board Chair Becky Tymchuk called the meeting to order at 6:30 p.m. Chair Tymchuk asked for changes to the agenda, there were none.

Pledge to the Flag

Greg, Jeff, Brian Keller and Sharon Dudley led the meeting with the Pledge of Allegiance.

RECOGNITIONS

The Board recognized the following:

- The Keller brothers, Greg, Jeff and Brian and sister Sharon Dudley for paying \$4,200 of the unpaid meal balance for Barnes Elementary School.

BEA OSEA COMMENTS

- Sara Schmitt (BEA) thanked the supporters of the SIA. One of the most successful acts was the meeting of investment groups as to why low, socio-economic and minority students are not doing as well. Lowering class size and a well-rounded education is wanted by all. She was impressed with the meetings of voices not normally heard.
- Dianna Hess (OSEA) spoke about the bargaining process and is excited about all the work being done to support students and the additional jobs that this will bring to classified staff.

PUBLIC COMMENTS

- Eleissa Buddress – parent, spoke about keeping Raleigh Hills a K-8 school.
- Colette Cassinelli – staff, spoke about reinstatement of the LITT position, budget transparency and investing in programs already in place.
- Sandeep Kumar, Jamie Williams, Mary Miller, and Ric Chakraborty – parents, spoke about the middle school boundary process.
- Nadia Hasan spoke about equity messaging to staff, equity in hiring and hopes that the conversations will not stop with the implementation of the SIA.
- Todd Scheele – parent, spoke about the common middle school schedule.
- Exia Williams - student and Betsy Thornewood – staff, spoke about equity in hiring.
- Campbell Stewart and Dena Schreiner – staff, spoke about school social work.
- Marco Peralta Montoya – student, is concerned about a new integrated ELD program in secondary schools.
- Laya (*no last name provided*) – student, spoke about teachers vs. student (the Black experience).

REPORTS

A. Superintendent Comments – Don Grotting

- **COVID-19** – The District continues to work with the Oregon Health Authority and the Supt. of Public Instruction for the Department of Education, for guidance to protect our schools and community. OHA experts are recommending schools, colleges and universities consider all alternatives before closing if a COVID-19 case is detected among students or staff. Our website is updated daily and/or whenever new information is provided to us.
- **Middle School Schedules and Common Experience** – The implementation of changing middle school schedules and programming has been delayed until the fall of 2021. This will allow additional time to engage stakeholders, prepare and change the budget to support the new

schedule and engage stakeholders, prepare and change the budget to support the new schedule and programming and consolidate the transfer process for populating the new middle school and meeting the requirements of new scheduling and programming at the same time.

- **Middle School Boundary Process** – The middle school boundary process continues to move forward. Meetings have been well attended by community members and our Advisory Committee is fully engaged.
- **Student Investment Act** – Supt. Grotting thanked OSEA, BEA and all external stakeholders who have weighed in to make changes. All of the ideas that came forward were great ideas and he supports the plan fully. The entire process will need to be done again next year and then every four years. Those are regulations by the Department of Education.

B. School Presentations

Cedar Park Middle School – Shannon Anderson

Parent and teacher support is why they have grown so much. Parents are feeling well informed and an active partner in their child's education. Principal Anderson has worked very hard to accomplish this.

Principal Anderson is concerned about the number of class days missed by students due to suspensions and expulsions. Last year Cedar Park had an unusually high number of expulsions due to a few drug incidents that involved several students at the same time. Restorative practices are very successful but with a loss of a counselor this year they have less time to engage. She is also concerned about the number of students reporting that at least one adult cares about them is only 69% and staff reporting that they contribute to school decision making is also down.

Questions/Comments:

- Some groups of students do not have any data, why not? *There is no data available for subgroups under a count of 20.*

Conestoga Middle School – Zan Hess

Conestoga is turning 25 this year. They are a school-wide AVID school. They focus on systems that are equitable, collaborative and balanced. They have spent a lot of time working with equity at their school and are in the process of establishing a Student Equity Council.

Bullying issues have gone down but vaping issues have gone up. Principal Hess is also concerned about the number of students missing school.

Questions/Comments:

- Appreciate that you don't have the answers to everything but you continue to search and ask questions.
- Vaping is a community issue that requires a deeper conversation.
- What would you say is the biggest change in your 15 years at Conestoga? *Student resilience is the biggest thing. Kids are being asked for so much more and we need to support and engage the student.*

C. Financial Update – Mike Schofield

Mike reported to the School Board that the projected ending fund balance is \$26.6M.

Adjustments in the year-end forecast included the following:

- The State School Fund was adjusted to \$279.7M based on updated ODE estimates for 2019-2020.
- The NWRESD appointment was reduced by \$0.4M due to current projections of revenue and utilization rate of services.
- Salary and benefits were reduced by \$1.6M based on projections of the current year.
- Non-salary expenditures were reduced by a net of \$1.3M based on projections of the current year.

Questions/Comments:

- Do you think this is sustainable? *We are getting things dialed in. We have an eye on sustainability and are working on a long-range financial plan.*

D. Middle School Boundaries Adjustment Project Update – Steven Sparks

Since the last update to the Board at its December 16, 2019 meeting the Advisory Committee has met an additional six times with the next regular meeting for the committee scheduled for March 12, 2020. The Advisory Committee has only met in public and there have been no confidential meetings. The committee has considered a wide range of boundary ideas that have been presented in 24 maps over the course of its meetings.

The March 12, 2020 meeting will be the time at which the committee will reach its preliminary conclusion on a recommendation to the Superintendent. Once the committee has reached its preliminary conclusion staff will prepare a draft report summarizing the committee's recommendation. On April 2, 2020 the committee will reconvene for a final meeting to reach a final vote on a recommendation to the Superintendent. The Board will review the middle school boundary adjustment at its June 15, 2020 regular meeting.

Questions/Comments:

- Zone 2 has been impacted by this process. Board member Bryan has met with several large groups of parents and other district staff. Committee members are very engaged. Groups are interested in what the process will look like. There has been some confusion around the objectives but they were written very clearly.
- There are concerns about comments not being posted in real time. *We only have one person receiving the data and posting. They are working as fast as they can. At this time comments through last Friday have been posted.*
- Do you feel that this committee is transparent and without agenda? *Yes, this is one of the best committees that Steve has worked with. They are very thoughtful. The committee is doing the best that they can with what is provided to them. There have been no closed door meetings or secret reports. Everything is posted on the website.*

E. Student Success Act HB3427 – Maureen Wheeler, Ginny Hansmann & David Williams

Background & Intent - 50% of the SSA is the equity focused student investment account (SIA). \$472.7M statewide for school year 2020-2021 to fund expanded learning time, health/safety, well rounded curriculum and more adults/lower class size.

The four categories for the student investment account include: reducing class size, well-rounded education, instructional time and health and safety.

Community engagement and needs assessment requirements must include teachers, support staff, students, and parents from historically underserved communities. Engagement and assessment must also address: 1) reducing academic disparities for historically underserved students, 2) meeting students' mental or behavioral needs, 3) Providing equitable access to academic courses with specific emphasis on historically underserved students, and 4) allowing teachers and staff time to collaborate and review data on students and develop strategies to ensure that at-risk students stay on track to graduate, and possible partnerships with other organizations.

The SIA timeline began in September of 2019 with the application submitted in March/April of 2020.

Community input, data analysis, and an equity lens/tools were used to inform planning and decision making.

Community engagement included empathy interviews, focus groups, four large community-based groups and 4,000 survey responses. Our Multilingual Department held nine focus groups and three engagements. The teachers' association contributed 1,000 responses from their survey. Themes that emerged were reducing class size, student health and well-being and providing a well-rounded education.

They had deeper conversations with the community looking for deficiencies of the first draft plan. Those conversations were held with the Beaverton Black Parent Union, Beaverton Families for Equity, MLD communities and one community forum. Through those conversations themes emerged: equity focused instructional investment, student success teams for mental and behavioral supports for students and equity-based system improvements.

Questions/Concerns:

- Math seems to be missing. How does the SIA complement our current budgetary process? How will it help students improve? *We have funds set aside for next year for math with TOSA's and coaches.*
- The feedback from schools is that intervention teachers are needed. These are an important aspect so they are being added back. The district has a long history of adding and then removing intervention teachers. What is motivating that? *A lot of feedback that we received from schools and teachers is that we need intervention teachers. We know from the feedback that they are an integral part.*
- What's the difference between intervention teachers and resource teachers? *Resource room teachers provide direct support to students with disabilities. Intervention teachers provide specialized direction to students who are on an IEP.*
- Will this shorten the time it takes to evaluate a student? *Yes, with the additions it will hopefully shorten the time.*
- Having a problem with 10 years for racial training for teachers. *Fast forwarding a quick approach would not be the best. A longer sustained approach would benefit the district and promote more buy in. We do have other equity training that is taking place and will continue to take place.*
- Board member Larson had the opportunity to sit on the planning team. She feels that the district made a great, robust effort with the community. There were some very rich dialogues with the community. Good work, good listening and good learning! It is great to be finally adding to our budget.

- Supt. Grotting – all of the districts around Oregon are addressing the social and emotional learning and we all will be competing with that workforce. This could be an opportunity if we don't get those tier one strategies that we can move forward to work with our community folks.
- Proud of all the work and the multiple meetings that took place.

PUBLIC HEARING ON THE STUDENT INVESTMENT ACT

The public hearing was opened for comments. 18 individuals commented on the SIA proposal. Comments were mostly favorable but some staff reported disappointment about the continued large classes at the high school level, the lack of support for our homeless population, and that the .5 intervention specialist at smaller elementary schools barely scratches the surface. Some community members voiced concerns about the hiring and retention of minority staff.

DISCUSSION ITEMS

A. Transportation Supplemental Plans for 2020 – 2021 – Craig Beaver

Proposed supplemental plans for 2020 - 2021 were presented which include two middle schools and seven elementary schools. Staff has met with building administrators, mailed correspondence to student homes, and held community meetings for the proposed changes.

There were no questions or comments.

B. Adoption of Science Curriculum – Phase II – Brian Sica and Caitlyn Everett

Phase II work of the Science Project Team includes recommendations for K-8 Learning Targets, K-8 Instructional Resources and a K-8 Professional Development plan.

Questions/Concerns:

- How will you approach trying to change the culture of Science? *Success to a new adoption is based on the PD that accompanies it. Initial PD will be done by unit and by grade level. They will have exactly what they need to teach one unit at a time. There is embedded PD within the program as well.*
- We are failing our students of color, it feels like we are putting a lot on our elementary teachers with new adoptions. First there was math, then the sex-ed curriculum and now Science.
- Middle school science, how do we put another puzzle piece together when we are still trying to figure out the middle school schedule? *This is an adoption that we have to make. Regardless of the schedule we are hoping that this will allow our teachers to teach to standard requirements.*

ACTION ITEMS

A. Student Investment Act Approval – Maureen Wheeler, Ginny Hansmann & David Williams

Board members thanked the committee for their hard work.

Board members recognized that the plan is not perfect and acknowledge the progress towards the issues the Board has been focusing on for a long time. This is an important first step after 30 years of education not being funded properly.

LeeAnn made the motion to adopt the Student Investment Act. Donna Tyner seconded and the motion passed unanimously by a vote of 7 to 0 by Becky Tymchuk, Eric Simpson, Anne Bryan, Susan Greenberg (by phone), Donna Tyner, Tom Colett (by phone) and LeeAnn Larsen.

B. Consent Agenda – Becky Tymchuk

1. Personnel

BE IT RESOLVED that the employee(s) who are recommended herein for administrator and teacher elections, leaves of absence, and resignations/terminations are accepted by the School Board as submitted at this meeting.

2. Approval of School Board Meeting Minutes

BE IT RESOLVED that the minutes for January 21, 2020 and February 3, 2020 are hereby approved.

3. Grant Report

BE IT RESOLVED that the Grant report be and hereby is approved as submitted.

4. Public Contracts

BE IT RESOLVED that the School Board authorizes the Superintendent or a designee to obligate the District for the public contract items as submitted at this meeting.

5. Inter-District Transfer Process

BE IT RESOLVED that the School Board approved the Inter-District Transfer proposal for the 2020 – 2021 school year.

6. Brand Name Approvals for Facilities Projects

BE IT RESOLVED that the Beaverton School District Board of Directors approves an exemption to ORS 279C.345 and authorizes use of brand names in public improvement contract specifications for the items submitted at this meeting.

7. Hope Chinese Charter Amendment

BE IT RESOLVED that the School Board approved the amendment proposed by Hope Chinese to the Charter.

8. Northwest Regional ESD Service Plan Approval

BE IT RESOLVED that Beaverton School District Board of Directors approved the Northwest Regional Education Service District Local Service Plan for the 2020 – 2021 school year.

LeeAnn made the motion to adopt the Consent Agenda. Donna Tyner seconded and the motion passed unanimously by a vote of 7 to 0 by Becky Tymchuk, Eric Simpson, Anne Bryan, Susan Greenberg (by phone), Donna Tyner, Tom Colett (by phone) and LeeAnn Larsen.

BOARD COMMUNICATION – Board Members

A. Individual School Board Member Comments

- Becky Tymchuk – thanked the staff for staying so late.

ADJOURNMENT

Becky Tymchuk adjourned the meeting at 10:12 p.m.

INFORMATION ITEMS

- I Policy AR Updates
- School Board Finance & Investment Strategies Committee Meeting Notes
- School Board Policy Committee Meeting Notes

Submitted by

Mary Hawkins

Mary Hawkins

Becky Tymchuk

Becky Tymchuk, School Board Chair



GRANT REPORT

Grant Proposal	Funding Agency	Amount Requested	Submission Date	Decision Date	Action Required
Preschool Promise	Oregon Early Learning Division	\$271,711	4 May 2020	1 Jun 2020	Permission to apply
Preschool Promise funding supports the development and implementation of high-quality, publicly-funded preschool program that serves children ages three and four in families living at or below 200% of the Federal Poverty Level, children in foster care and children from other historically underserved populations.					
Community Health Improvement Plan (CHIP) Grant	Washington County Dept. of Health & Human Services	\$49,625	28 Feb 2020	1 Jun 2020	Permission to apply
Washington County CHIP grants fund projects that increase organizational capacity for trauma informed and equity practices and address community health improvement priorities. The proposed project is for culturally-sensitive outdoor learning opportunities for Mountain View Middle School students and caregivers in partnership with Coyle Outside LLC.					

Grant Proposal In Review	Funding Agency	Amount Requested	Submission Date	Decision Date
Title IC (Summer School)– Education of Migratory Children	Oregon Dept. of Education	\$82,000 (est.)	1 May 2020	25 May 2020

Grant Proposal Final Status	Funding Agency	Amount Requested	Amount Funded
Secondary Career Pathway Funding	Oregon Dept. of Education	\$271,711	\$271,711

RECOMMENDATION:

It is recommended that the proposals be approved.

District Goal: WE empower all students to achieve post-high school success.

The District prohibits discrimination and harassment based on any basis protected by law including but not limited to, an individual's actual or perceived race, color, religion, sex, sexual orientation, gender identity, gender expression, national or ethnic origin, marital status, age, mental or physical disability, pregnancy, familial status, economic status, veteran status, or because of a perceived or actual association with any other persons within these protected classes.



**PUBLIC CONTRACTS – BOARD AUTHORIZATION OF
SUPERINTENDENT TO OBLIGATE THE DISTRICT**

POLICY ISSUE/SITUATION

School Board action is required to authorize the Superintendent or a designee to obligate the District for the attached public contract items.

BACKGROUND INFORMATION

On May 15, 2017, the Board adopted current policy language regarding Authority to Obligate the District (Board Policy DJ), which updates the School District's Public Contracting Rules in accordance with State Recommended Model Rules. Appropriate bidding procedures and Public Contracting Rules have been complied with before recommending the attached contract for Board approval. The following authorization of contract, subject to available budget appropriations, is a routine Board action that appears under the consent grouping of the Board agenda.

RECOMMENDATION

BE IT RESOLVED that the School Board authorize the Superintendent or a designee to obligate the District for the public contract items listed in Attachment A.

PUBLIC CONTRACTS
 BOARD AUTHORIZATION OF SUPERINTENDENT TO
 OBLIGATE THE DISTRICT
 SUBMITTED FOR SCHOOL BOARD APPROVAL

Contract Name	Recommended By	Contract Selection Process	Contractor/Vendor	Contract Amount	Contract Timeline		Recommendation
					Start	End	
Cedar Park Backflow Preventer Replacement	Nathan Potter	ITB 19-0048	Trench Line Excavation, Inc.	\$149,000.00	4/2020	9/2020	Authorization to Award Contract
Security Upgrades, Phase 1, Group 4 Schools Aloha HS, Beaverton HS, Southridge HS, Sunset HS and Westview HS	Aaron Boyle	Design-Build, Request for Proposal (RFP) 17-0040	Kirby Nagelhout Construction	\$403,722.00	3/2020	9/2020	Authorization to Amend Contract
Meadow Park MS Pavement Improvements	Nathan Potter	ITB 19-0050	Baker Rock	\$148,191.00	6/2020	8/2020	Authorization to Award Contract
Maintenance Office Building Roof Repair	Nathan Potter	Cooperative Contract Omnia Partners PW 1925	Garland/DBS, Inc.	\$301,630.00	5/28/2020	6/3/2020	Authorization to Award Contract
Sunset High School Stadium Site Improvements	Aaron Boyle	ITB 19-0046	Todd Hess Building Co	\$596,093.00	4/2020	9/2020	Authorization to Award Contract
Westview High School CTE	Aaron Boyle	ITB 19-0042	Paradigm Construction LLC	\$423,000.00	5/2020	9/2020	Authorization to Award Contract



PROJECT NAME: Cedar Park Backflow Preventer Replacement Project

PROJECTTIMELINE: 7/2020–8/2020

PROJECT BUDGET: \$173,000.00

PROJECT SCOPE: Replace backflows to fire lines and building water and separate waterlines.

CONTRACT NAME: Cedar Park Backflow Preventer Replacement

RECOMMENDED BY: Nathan Potter

SOLICITATION METHOD: ITB 19-0048

CONTRACTTIMELINE: 4/2020–9/2020

CONTRACT AMOUNT: \$149,000.00

CONTRACT SCOPE: Remove existing backflows and vaults. Replace backflows and separate the waterlines to the fire lines and domestic water. Add new vaults, sump pumps and electrical to the pumps.

RECOMMENDATION: Authorization to award contract to Trench Line Excavation, Inc

FUNDING SOURCE: Maintenance



PROJECT NAME: District-Wide Security Upgrades

PROJECT TIMELINE: 9/2014 – 7/2022

PROJECT BUDGET: \$14,982,307.00

PROJECT SCOPE: Complete security retrofits in existing buildings by installing improvements such as: security cameras, remote door unlatching, keyless entry, visitor routing control, etc., as determined by a site-by-site analysis of needs compared to the security standard.

CONTRACT NAME: Security Upgrades, Phase 1, Group 4 Schools
Aloha HS, Beaverton HS, Southridge HS, Sunset HS and Westview HS

RECOMMENDED BY: Aaron Boyle

SOLICITATION METHOD: Design-Build, Request for Proposal (RFP) 17-0040

CONTRACT TIMELINE: 03/2020 – 09/2020

CONTRACT AMOUNT: \$403,722.00

CONTRACT SCOPE: Complete security retrofits in existing buildings by installing improvements such as: remote door unlatching, keyless entry, visitor routing control, etc., as determined by a site-by-site analysis of needs compared to the security standard.

RECOMMENDATION: Notification of contract change for inclusion of a sixth Design-Build Guaranteed Maximum Price (GMP) Amendment issued to Kirby Nagelhout Construction.*

FUNDING SOURCE: 2014 Bond; Modernization, Regulatory Compliance; District-Wide Security Upgrades

* Note: Initial Design-Build Contract approved by Board, February 6, 2018 for \$440,000.00.
First Design-Build GMP Amendment approved by Board, March 22, 2018 for \$428,891.00.
Second Design-Build GMP Amendment approved by Board, April 30, 2018 for \$1,925,967.00.
Third Design-Build GMP Amendment approved by Board, June 18, 2018 for \$1,079,506.00.
Fourth Design-Build GMP Amendment approved by Board, October 8, 2018 for \$1,336,078.00.
Fifth Design-Build GMP Amendment approved by Board, April 15, 2019 for \$2,127,437.00.



PROJECT NAME: Meadow Park MS Pavement Improvements

PROJECTTIMELINE: 7/2020–8/2020

PROJECT BUDGET: \$400,000.00

PROJECT SCOPE: Parking lot repaving

CONTRACT NAME: Meadow Park MS Pavement Improvements

RECOMMENDED BY: Nathan Potter

SOLICITATION METHOD: ITB 19-0050

CONTRACTTIMELINE: 6/2020–8/2020

CONTRACT AMOUNT: \$148,191.00

CONTRACT SCOPE: Grind, inlay asphalt, replace curbing, and pavement stripping and marking per engineered plans.

RECOMMENDATION: Authorization to Award Contract to Baker Rock

FUNDING SOURCE: 2014 Bond, District-Wide Facility Repairs



PROJECT NAME: Maintenance Office Building Roof Repair

PROJECTTIMELINE: 5/2020–8/2020

PROJECT BUDGET: \$800,000.00

PROJECT SCOPE: Repair existing roof

CONTRACT NAME: Maintenance Office Building Roof Repair

RECOMMENDED BY: Nathan Potter

SOLICITATION METHOD: Cooperative Contract Omnia Partners PW 1925

CONTRACTTIMELINE: 5/28/2020–6/3/2020

CONTRACT AMOUNT: \$301,630.00

CONTRACT SCOPE: Clean & inspect existing roof, remove existing gutters, install flute filler, install new roofing, install fall protection anchors, install new gutters and downspouts, install walk pads around rooftop mechanical units.

RECOMMENDATION: Authorization to Award Contract to Garland/DBS, Inc.

FUNDING SOURCE: 2014 Bond, District-Wide Facility Repairs



PROJECT NAME: Sunset High School Stadium Site Improvements

PROJECTTIMELINE: 1/2019–12/2020

PROJECT BUDGET: \$948,574.00

PROJECT SCOPE: Replace existing cyclone fence on the north perimeter with decorative fence and improve the existing driveway, pedestrian access and the footprint at the baseball backstop seating area including new landscaping and irrigation. Replace the exterior stairs on the scoreboard and infill the window. Add drinking fountain.

CONTRACT NAME: Sunset High School Stadium Site Improvements General Contractor Services

RECOMMENDED BY: Aaron Boyle

SOLICITATION METHOD: Invitation to Bid (ITB) 19-0046

CONTRACTTIMELINE: 4/2020–9/2020

CONTRACT AMOUNT: \$596,093.00

CONTRACT SCOPE: General Contractor services to complete stadium site improvements.

RECOMMENDATION: Authorization to Award Contract to Todd Hess Building Co

FUNDING SOURCE: Donor



PROJECT NAME: Westview High School Career Technical Education (CTE)

PROJECTTIMELINE: 8/2019–9/2020

PROJECT BUDGET: \$600,000.00

PROJECT SCOPE: Wood/Metals Shop Remodel & Equipment Purchase

CONTRACT NAME: Westview High School CTE General Contractor Services

RECOMMENDED BY: Aaron Boyle

SOLICITATION METHOD: Invitation to Bid (ITB) 19-0042

CONTRACTTIMELINE: 5/2020–9/2020

CONTRACT AMOUNT: \$423,000.00

CONTRACT SCOPE: Wood/Metals Shop Remodel & Equipment Purchase

RECOMMENDATION: Authorization to award contract to Paradigm Construction LLC

FUNDING SOURCE: Measure 98, Career Technical Education



SCIENCE CURRICULUM ADOPTION - PHASE 2

The Phase 2 Science Curriculum report from the Science Project Team includes the K-8 Learning Targets, K-8 Instructional Resources, and K-8 Professional Development plans. It also includes K-12 Special Education Learning Targets and Instruction Resources recommendations.

BACKGROUND INFORMATION:

At the April 16, 2018 School Board meeting the Superintendent was charged with forming a Science Project Team to conduct a curriculum review and make adoption recommendations to the Board in accordance with the District's Quality Curriculum Cycle.

At the May 20, 2019 School Board meeting the Science Project Team Phase I report was approved for adoption that included the Science Position Paper, Best Practices in Science, Learning Targets (9-12), the Science Professional Development Plan (9-12) and instructional resources for Physics, Chemistry and Biology.

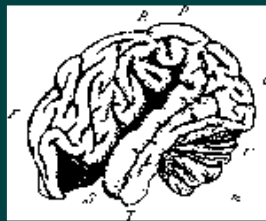
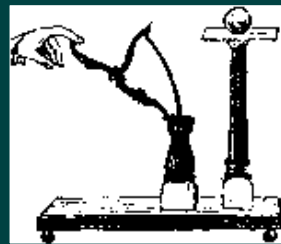
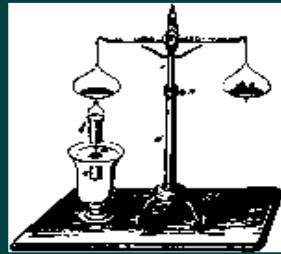
At the March 9, 2020 School Board meeting the Science Project Team Phase 2 report was presented for a first reading.

RECOMMENDATION:

It is recommended that the School Aboard adopt the Phase 2 Science Curriculum report from the Science Project Team including the K-8 Learning Targets, K-8 Instructional Resources, K-8 Professional Development plans and K-12 Special Education Learning Targets and Instruction Resources recommendations.

Science Project Team Report

Phase 2
2020



**SCIENCE PROJECT TEAM
PHASE 2 REPORT 2020
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- B – IQWST Publisher Background
- C – Description and Evaluation of K-8 Current Science Program
- D – Elementary Time Research Summary
- E – Elementary Pilot Data Summary
- F – Middle School Pilot Data Summary

March, 2020

In April of 2018, the Beaverton School District Board charged the Science Project Team with the task of evaluating and making specific programmatic recommendations for the District. The science curriculum review, as outlined in Board policy and administrative regulation for the Quality Curriculum Cycle, includes learning targets, instructional practices, assessment, instructional resources and professional development.

Within the review process, the Science Project Team studied science education in the context of today's world. The focus on and demand for higher levels of science education is evident in the Next Generation Science Standards (NGSS) as well as within the skill set deemed essential for college and career readiness and success. The Beaverton School District's goal is to prepare students to engage in the world as critical thinkers and culturally competent citizens; this requires that all students receive a strong Science education.

As a result, the Science Project Team defined a comprehensive set of Phase 1 recommendations:

- Science Instruction Position Paper
- Best Practices in Science
- Physics / Chemistry / Biology Learning Targets
- High School Professional Development Plan
- Instructional Resources Recommendation

The School Board approved the Phase I report at the May 2019 meeting.

Phase 2 work of the Science Project Team includes recommendations for K-8 Learning Targets, K-8 Instructional Resources, and a K-8 Professional Development plan.

Teaching & Learning

Ginny Hansmann, Deputy Superintendent of Teaching & Learning
Brian Sica, Administrator for K-12 Curriculum, Instruction & Assessment
Kayla Bell, Administrator for K-12 Curriculum, Instruction & Assessment
Caitlin Everett, Science Curriculum Specialist
Dawn Guildner, Science Curriculum Specialist



District Goal

WE empower all students to achieve post-high school success.

Science Learning Targets – Kindergarten 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Asking Questions - With guidance, asks questions based on observations to find more information about the natural and human-made world.

AST 1.2: Developing and Using Models - With guidance, identifies, uses, and develops models that represent concrete events. Distinguishes between a model and the actual phenomenon.

AST 1.3: Planning and Conducting Investigations - With guidance, collects and shares data from an investigation with peers.

AST 1.4: Analyzing and Interpreting Data - With guidance, collects and shares data from an investigation with peers and compares predictions to what occurred.

AST 1.5: Mathematical and Computational Thinking - With guidance, uses counting and numbers to identify and describe patterns in the natural world. Uses and compares quantitative data.

AST 1.6: Constructing Explanations - With guidance, uses information from observations to identify and describe patterns in the natural world.

AST 1.7: Engaging in Argument from Evidence- With guidance, listens actively to others' explanations and arguments and asks questions for clarification.

AST 1.8: Obtaining, Evaluating, and Communicating Information - With guidance, reads grade-appropriate texts and uses media to obtain scientific and technical information. Communicates information.

ALT 2: Engineering: Shares ideas about a simple defined problem, plans a possible solution, builds it with suggested materials, and considers whether the design met criteria.

AST 2.1 - Asks questions and makes observations about a situation people want to change to identify a simple problem that can be solved through the development of a new or improved object or tool.(ETS1-1)

AST 2.2 - Develops a simple drawing, or physical model to solve a given problem. (ETS1-2) AST 2.3 - Compares the strengths and weaknesses of the design of two objects that solve the same problem. (ETS1-3)

AST 2.3 - Compares the strengths and weaknesses of the design of two objects that solve the same problem. (ETS1-3)

ALT3: Life Science: Uses observations to describe patterns of what plants and animals (including humans) need to survive.

AST 3.1 - Uses observations to describe patterns of what plants and animals (including humans) need to survive. (K-LS1-1)

ALT4: Earth Science: Describes variations in weather and other environmental conditions to explain where, how, and why plants and animals live in and change places.

AST 4.1 - Uses and shares observations of local weather conditions to describe patterns over time. (K-ESS2-1)

AST 4.2 - Constructs an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. (K-ESS2-2)

AST 4.3 - Uses a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. (K-ESS3-1)

AST 4.4 - Asks questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. (K-ESS3-2)

AST 4.5 - Communicates solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. (K-ESS3-3)

ALT5: Physical Science: Investigates physical science concepts, including pushes and pulls and the effects of sunlight on Earth's surface.

AST 5.1 - Plans and conducts an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. (K-PS2-1)

AST 5.2 - Analyzes data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. (K-PS2-2)

AST 5.3 - Makes observations to determine the effect of sunlight on Earth's surface. (K-PS3-1)

AST 5.4 - Uses tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface. (K-PS3-2)

Science Learning Targets – 1st Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Asking Questions - With guidance, asks questions based on observations to find more information about the natural and human-made world.

AST 1.2: Developing and Using Models - With guidance, identifies, uses, and develops models that represent concrete events. Distinguishes between a model and the actual phenomenon.

AST 1.3: Planning and Conducting Investigations - With guidance, collects and shares data from an investigation with peers.

AST 1.4: Analyzing and Interpreting Data - With guidance, collects and shares data from an investigation with peers and compares predictions to what occurred.

AST 1.5: Mathematical and Computational Thinking - With guidance, uses counting and numbers to identify and describe patterns in the natural world. Uses and compares quantitative data.

AST 1.6: Constructing Explanations - With guidance, uses information from observations to identify and describe patterns in the natural world.

AST 1.7: Engaging in Argument from Evidence- With guidance, listens actively to others' explanations and arguments and asks questions for clarification.

AST 1.8: Obtaining, Evaluating, and Communicating Information - With guidance, reads grade-appropriate texts and uses media to obtain scientific and technical information. Communicates information.

ALT 2: Engineering: Shares ideas about a simple defined problem, plans a possible solution, builds it with suggested materials, and considers whether the design met criteria.

AST 2.1 - Asks questions and makes observations about a situation people want to change to identify a simple problem that can be solved through the development of a new or improved object or tool.(ETS1-1)

AST 2.2 - Develops a simple drawing, or physical model to solve a given problem. (ETS1-2)

AST 2.3 - Compares the strengths and weaknesses of the design of two objects that solve the same problem. (ETS1-3)

ALT3: Life Science: Observes and gives evidence of how plants and animals use their external parts, inherited traits and behaviors to help them survive, grow and meet their needs.

AST 3.1 - Uses materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs (1-LS1-1)

AST 3.2 - Reads texts and uses media to determine patterns in behavior of parents and offspring that help offspring survive. (1-LS1-2)

AST 3.3 - Makes observations to construct an evidence - based account that young plants and animals are like, but not exactly like, their parents. (1-LS3-1)

ALT4: Earth Science: Collects and analyzes data to describe and predict patterns in the movements of objects in the sky.

AST 4.1 - Uses observations of the sun, moon, and stars to describe patterns that can be predicted. (1-ESS1-1)

AST 4.2 - Makes observations at different times of year to relate the amount of daylight to the time of year. (1-ESS1-2)

ALT5: Physical Science: Investigates and explains how light and sound travel, the connection between sound and vibrating materials, and the relationship between the presence of light and the ability to see objects.

AST 5.1 - Plans and conducts investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. (1-PS4-1)

AST 5.2 - Uses tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. (1-PS4-4)

AST 5.3 - Plans and conducts investigations to determine the effect of placing objects made with different materials in the path of a beam of light. (1-PS4-3)

AST 5.4 - Makes observations to construct an evidence - based account that objects in darkness can be seen only when illuminated. (1-PS4-2)

Science Learning Targets – 2nd Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information..

AST 1.1: Asking Questions - Asks and/or identifies questions that can be answered by an investigation.

AST 1.2: Developing and Using Models - Identifies, uses, and develops models that represent patterns, scale, and/or relationships of concrete events. Compares between a model, the actual phenomenon, and other models.

AST 1.3: Planning and Carrying Out Investigations - Plans and conducts an investigation to produce data that can be used as evidence to answer a question.

AST 1.4: Analyzing and Interpreting Data - Collects and shares data from an investigation with peers and compares predictions to what occurred.

AST 1.5: Mathematical and Computational Thinking - Uses numbers to identify and describe patterns in the natural world. Decides when to use qualitative versus quantitative data and creates graphs appropriately.

AST 1.6: Constructing Explanations - Constructs a claim and supports it with evidence to explain a phenomenon and share it with peers.

AST 1.7: Engaging in Argument From Evidence - Identifies arguments that are supported by evidence, listens actively to others' explanations and arguments and ask questions for clarification, and distinguishes between opinion and evidence.

AST 1.8: Obtaining, Evaluating and Communicating Information - Reads and comprehends grade-appropriate texts and media to acquire scientific information. Uses text features to obtain and explain information. Critiques and communicates information with others in varied oral and written forms.

ALT 2: Engineering: Defines a simple problem that can be solved through the development of a new or improved object or tool then designs and builds the object or tool and evaluates how it worked to solve the problem.

AST 2.1 - Asks questions, makes observations, and gathers information about a situation people want to change to define a simple problem with criteria that can be solved through the development of a new or improved object or tool.(K-2 ETS1-1)

AST 2.2 - Develops a detailed drawing or physical model to show how the form of an object helps it function as needed to solve a given problem that could meet the criteria. (K-2 ETS1-2)

AST 2.3 - Analyzes the strengths and weaknesses based on data from tests of two objects designed to solve the same problem and suggest improvements. (K-2 ETS1-3)

ALT3: Life Science: Compare and investigate the diversity of life as well as how plants grow and reproduce.

AST 3.1 - Plans and conducts an investigation to determine if plants need sunlight and water to grow. (LS2-1)

AST 3.2 - Develops a simple model that mimics the function of an animal in dispersing seeds or pollinating plants (LS2-2.)

AST 3.3 - Makes observations of plants and animals to compare the diversity of life in different habitats. (2-LS4-1)

ALT4: Earth Science: Use information and models to show how and where the shapes of land and water can change on earth.

AST 4.1 - Obtains information to identify where water is found on Earth and that it can be solid or liquid.(2-ESS2-3)

AST 4.2 - Compares multiple solutions designed to slow or prevent wind or water from changing the shape of the land.(2-ESS2-1)

AST 4.3 - Develops a model to represent the shapes and kinds of land and bodies of water in an area.(2-ESS2)

AST 4.4 - Uses information from several sources to provide evidence that Earth events can occur quickly or slowly.(2-ESS1-1)

ALT5: Physical Science: Uses investigations and evidence to describe material changes and their purposes, as determined by their properties..

AST 5.1 - Plans and conducts an investigation to describe and classify different kinds of materials by their observable properties.(2-PS1-1)

AST 5.2 - Analyzes data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.(2-PS1-2)

AST 5.3 - Makes observations to construct an evidence - based account of how an object made of a small set of pieces can be disassembled and made into a new object.(2-PS1-3)

AST 5.4 - Constructs an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot. (2-PS1-4)

Science Learning Targets – 3rd Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Asking Questions - Develops questions and hypothesis/prediction based on scientific principles and observations, with support. Asks questions based on scientific thinking that can be answered by an investigation.

AST 1.2: Developing and Using Models - Develops and uses models and with collaboration revises models, based on evidence that shows the relationships among variables. Begins to identify limitations of models.

AST 1.3: Planning and Carrying Out Investigations - Designs and conducts investigations to gather data. Makes decisions about experimental variables, controls and investigational methods (e.g. number of trials, fair tests). Identifies possible outcomes of investigation.

AST 1.4: Analyzing and Interpreting Data - Presents data in various formats (bar graphs, pictographs and/or pie charts). With support analyzes and/or compares individual or group data to support explanations about phenomena using logical reasoning, mathematics, and/or computation.

AST 1.5: Mathematical and Computational Thinking - Organizes simple data sets to reveal patterns that suggest relationships. Describes, measures, estimates, and/or graphs quantities (e.g., area, volume, weight, time) to address scientific questions.

AST 1.6: Constructing Explanations - Constructs a claim and supports it with evidence to explain a phenomenon and communicate results.

AST 1.7: Engaging in Argument from Evidence - Engages in argumentation. The student discourse may include evidence, reasoning that links the evidence to their claim and critique of competing arguments during which students build on and question each other's ideas with modeling from the teacher.

AST 1.8: Obtaining, Evaluating and Communicating Information - Reads and begins to compare information to explain phenomenon in multiple sources. Communicates information orally.

ALT 2: Engineering: Defines a problem and proposes solution(s), from which a prototype is built, tested, and evaluated against criteria and constraints.

AST 2.1 - Defines a simple design problem reflecting a need or a want that includes criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1)

AST 2.2 - Generates and compares possible solutions to a problem based on how well each is likely to meet the criteria and/or constraints of the problem. (3-5-ETS1-2)

AST 2.3 - Plans and carries out fair tests to identify aspects of a model or prototype that can be improved.(3-5-ETS1-3)

ALT3: Life Science: Explains with evidence how life cycles, inherited traits and the environment can affect organisms' development.

AST 3.1 - Develops models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction and death. (3-LS1-1)

AST 3.2 - Constructs an argument that some animals form groups that help members survive. 3.4 - Uses evidence to support the explanation that traits can be influenced by the environment. (3-LS3-2-1)

AST 3.3 - Analyzes and interprets data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. (3-LS3-1)

AST 3.4 - Uses evidence to support the explanation that traits can be influenced by the environment. (3-LS3-2)

AST 3.5 - Analyzes and interprets data from fossils to provide evidence of the organisms and the environments in which they lived long ago. (3-LS4-1)

AST 3.6 Uses evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)

AST 3.7 Constructs an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

AST 3.8 Makes a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. (3-LS4-4)

ALT4: Earth Science: Organizes and uses data to describe typical weather conditions expected during a particular season.

AST 4.1- Represents data in tables and graphical displays to describe typical weather conditions expected during a particular season. (3-ESS2-1)

AST 4.2 - Makes a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. (3-ESS3-1)

AST 4.3 - Obtains and combines information to describe climates in different regions of the world. (3-ESS2-2)

ALT5: Physical Science - Motion and Stability: Explains with evidence how different types of forces affect the motion of an object.

AST 5.1-Plans and conducts an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. (3-PS2-1)

AST 5.2- Makes observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. (3-PS2-2)

AST 5.3- Asks questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. (3-PS2-3)

AST 5.4- Defines (identifies and describes) a simple design problem that can be solved by applying scientific ideas about magnets. (3-PS2-4)

Science Learning Targets – 4th Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Asking Questions - Develops a question and hypothesis/prediction based on scientific principles and observations, with support.

AST 1.2: Developing and Using Models - Develops, uses, and revises models to describe a scientific principle using a simple analogy (e.g., a heron's beak is like a spear), example or symbols.

AST 1.3: Planning and Conducting Investigations - Evaluates investigation design to include appropriate methods (e.g. number of trials, fair tests) and/or tools for collecting data. Makes predictions about what would happen if a variable changes. Effectively conducts investigation to test outcomes.

AST 1.4: Analyzing and Interpreting Data - Represents data in various formats to show the relationship between the outcome and the results collected. Analyzes and/or compares individual or group data to provide evidence for explanations. With support, connects explanations about phenomena using logical reasoning, mathematics, and/or computation.

AST 1.5: Mathematical and Computational Thinking - Uses graphs and/or charts incorporating mathematical skills and concepts to compare outcomes.

AST 1.6: Constructing Explanations - Uses multiple sources of evidence, including analyzed data, to explain a phenomenon and communicate results. Connects claim and evidence with reasoning.

AST 1.7: Engaging in Argument from Evidence - Engages in argumentation using data to evaluate claims about cause and effect. Discourse includes evidence, reasoning that links the evidence to their claim and critique of competing arguments during which students build on and question each other's ideas.

AST 1.8: Obtaining, Evaluating, and Communicating Information - Reads and evaluates multiple sources to obtain scientific information to explain phenomenon. Compares and combines information from multiple sources. Communicates information orally and/or in written formats.

ALT 2: Engineering: Defines a problem and proposes solution(s), from which a prototype is built, tested, and evaluated against criteria and constraints.

AST 2.1 - Defines a simple design problem reflecting a need or a want that includes multiple specified criteria for success and constraints on materials, time, or cost. (3-5 - ETS1-1)

AST 2.2 - Generates and compares multiple possible solutions to a problem based on how well each is likely to meet the criteria and/or constraints of the problem. (3-5 - ETS1-2)

AST 2.3 - Plans and carries out fair tests in which variables are controlled to identify aspects of a model or prototype that can be improved based on possible failure points.(3-5 - ETS1-3)

ALT3: Life Science: Structure, Function and Information Processing: Uses models and evidence to argue that plants and animals have structures that support survival, growth, behavior, and reproduction.

AST 3.1- Constructs an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (4-LS1-1)

AST 3.2 - Uses a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (4-LS1-2)

ALT4: Earth Science: Processes that Shape the Earth: Uses evidence of weathering and erosion to explain changes to Earth's landscape over time and to develop a solution that reduces the impacts of one of those changes.

AST 4.1-Identifies evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. (4-ESS1-1)

AST 4.2- Makes observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. (4-ESS2-1)

AST 4.3- Analyzes and interprets data from maps to describe patterns of Earth's features. (4-ESS2-2)

AST 4.4- Obtains and combines information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (4-ESS3-1)

AST 4.5- Generates and compares multiple solutions to reduce the impacts of natural Earth processes on humans. (4-ESS3-2)

ALT5: Physical Science: Energy, Waves and their Applications: Uses models, explanations, and scientific designs to demonstrate that energy can be transferred from place to place by sound, light, heat and electrical currents, or collisions.

AST 5.1 Uses evidence to construct an explanation relating the speed of an object to the energy of that object (4-PS3-1)

AST.5.2 Makes observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.(4-PS3-2)

AST 5.3- Asks questions and predict outcomes about the changes in energy that occur when objects collide. (4-PS3-3)

AST 5.4 Applies scientific ideas to design, test, and refine a device that converts energy from one form to another. (4-PS3-4)

AST 5.5 Develops a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. (4-PS4-1)

AST.5.6 Develops a model to describe that light reflecting from objects and entering the eye allows objects to be seen. (4-PS4-2)

AST 5.7 Generates and compares multiple solutions that use patterns to transfer information. (4-PS4-3)

Science Learning Targets – 5th Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Asking Questions Develops a question and hypothesis/prediction based on scientific principles or patterns, phenomena and observations.

AST 1.2: Developing and using models - Develops, uses, and revises models to describe and/or predict phenomena or show relationships in systems. Uses models to test cause and effect relationships or interactions concerning the functioning of a natural or designed system.

AST 1.3: Planning and Carrying Out Investigations - Makes observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon. Predicts outcomes of investigation changes based on scientific background.

AST 1.4: Analyzing and Interpreting Data - Represents data to reveal patterns and connections within results. Analyzes and/or compares individual or group data to provide evidence to support explanations about phenomena using logical reasoning, mathematics, and/or computation reasoning, mathematics, and/or computation.

AST 1.5: Mathematical and Computational Thinking - Determines the appropriate measurements, estimates, and/or graphs (e.g., area, volume, weight, time) to address scientific questions. Creates graphs and/or charts using mathematical skills and concepts to compare outcomes..

AST 1.6: Constructing Explanations - Constructs explanations that focus on explaining how or why a phenomenon occurs and uses appropriate evidence to support their explanations. Connects claim and evidence with reasoning using science ideas.

AST 1.7: Engaging in Argument from Evidence - Engages in, compares, refines, and critiques arguments based on an evaluation of the evidence presented. Distinguishes among facts, theories and opinions. Constructs, builds on, and/or supports an argument with evidence, data, and/or a model.

AST 1.8: Obtaining, Evaluating and Communicating Information - Reads and evaluates multiple sources to obtain scientific information to explain phenomenon. Compares and combines information from multiple sources considering the strengths of the information and sources and communicates the information.

ALT 2: Engineering: Defines a problem and proposes at least two solutions that are built, tested, and compared against criteria and constraints.

AST 2.1 - Defines a simple design problem reflecting a need or a want that includes multiple specified criteria for success and constraints on materials, time, and/or cost. (3-5 - ETS1-1)

AST 2.2 - Generates and compares multiple possible solutions to a problem based on how well each is likely to meet the criteria and/or constraints of the problem. (3-5 - ETS1-2)

AST 2.3 - Plans and carries out fair tests in which variables are controlled and failure points are considered, prior to and after testing, to identify aspects of a model or prototype that can be improved.(3-5 - ETS1-3)

ALT3: Life Science: Matter and Energy Transfer in Organisms: Develops and uses models to describe how matter and energy are transferred between plants, animals and decomposers and how all energy for life is derived from the sun.

AST 3.1 Support an argument that plants get the materials they need for growth chiefly from air and water (5-LS1-1).

AST 3.2 Uses models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. (5-PS3-1)

AST 3.3 Develops a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-LS2-1)

ALT4: Earth Science - Sun and Stars: Creates and uses graphs to Identify patterns on the effect of light from the sun on the earth. Supports an argument that relates the relative brightness of stars to their distance from earth.

AST 4.1 - Supports an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth. (ESS1-1)

AST 4.2 - Represents data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. (5-ESS1-2)

AST 4.3 - Supports an argument that the gravitational force exerted by Earth on objects is directed down. (5-PS2-1)

ALT5: Earth Science - Earth Systems: Models how earth's systems interact and communicate how communities use science ideas to protect Earth's resources and environment.

AST 5.1 - Develops a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. (5-ESS2-1)

AST 5.2 - Describes and graphs the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.(5-ESS2-2)

AST 5.2 - Obtains and combines information about ways individual communities use science ideas to protect the Earth's resources and environment. (5-ESS3-1.)

ALT6: Physical Science- Matter: Observes and measures properties of matter, develops a model that describes how matter is made of particles too small to be seen, then constructs an explanation that explains why matter is conserved even when it changes.

AST 6.1 - Develops a model to describe that matter is made of particles too small to be seen. (5-PS1-1)

AST 6.2 - Measures and graphs quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. (5-PS1-2)

AST 6.3 - Conducts an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4)

AST 6.4 - Makes observations and measurements to identify materials based on their properties. (5-PS1-3)

AST 6.5 - Support an argument that the gravitational force exerted by Earth on objects is directed down. (5-PS2-1)

Science Learning Targets – 6th Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1 - Science Practices: Uses the practices of science inquiry to design, investigate, model, and explain phenomena using appropriate tools, techniques, and variables.

AST 1.1 - Asks Questions - Asks testable questions that arise from observations of phenomena, models, or unexpected results.

AST 1.2 - Develops and Uses Models - Develops, uses, evaluates, and revises models to describe, test, and predict phenomena.

AST 1.3 - Designs Investigations - Plans and carries out investigations that identify and appropriately measure variables to provide data as evidence to support explanations or solutions.

AST 1.4 - Analyzes and Interprets Data - Analyzes and interprets data, using graphical displays, to provide evidence for phenomena

AST 1.5 - Mathematical and Computational Thinking - Uses mathematical and computational thinking to identify patterns and trends in data sets in order to evaluate and support scientific conclusions.

AST 1.6 - Constructs Explanations - Constructs explanations based on valid and reliable evidence and applies scientific ideas and principles to explain the phenomena.

AST 1.7 - Engages in Argument from Evidence - Engages with evidence to construct or critique a convincing argument that supports or refutes a claim and uses argumentation to listen to, compare, and evaluate competing ideas supported by scientific reasoning.

ALT2 - Engineering Design: Designs, constructs, tests and evaluates a solution to a defined problem using appropriate tools and materials.

AST 2.1 - Defines the Problem - Defines the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. (MS-ETS1-1)

AST 2.2 - Evaluates Competing Solutions - Evaluates competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. (MS-ETS1-2)

AST 2.3 - Analyzes Design Solutions - Analyzes data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. (MS-ETS1-3)

AST 2.4 - Develops and Iterates Solutions - Develops a model or prototype to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. (MS-ETS1-4)

ALT3 - Disciplinary Core Ideas: Uses the disciplinary core ideas of science to explain phenomena and design solutions

AST 3.1 - Molecules to Organisms - Demonstrates knowledge that cells have a definite structure and function that contribute to an organism's growth, development and behavior. (MS-LS1)

AST 3.2 - Heredity: Inheritance and Variation of Traits - Demonstrates knowledge that cells pass traits from one generation to the next. (MS-LS3)

AST 3.3 - Earth's Systems - Demonstrates knowledge of the causes of weather patterns and regional climates. (MS-ESS2)

AST 3.4 - Earth and Human Activity - Demonstrates knowledge of how human activities affect global environmental change. (MS-ESS3)

AST 3.5 – Energy - Demonstrates knowledge of heat, temperature, and thermal energy. (MS-PS3)

ALT4 - Science and Society: Constructs an explanation of how science and engineering influence our understandings, decisions, and changes to societies over time.

AST 4.1 - Interdependence of Science and Technology - Synthesizes how science and engineering have supported the development of scientific theories, technology, and changes to society.

AST 4.2 - Scientific Ethics - Evaluates the short and long term effects of applying scientific understanding to address issues in the natural world and society.

AST 4.3 - Personal Impacts - Articulates the impacts of personal, traditional, and community knowledge and practices on the natural world and society.

ALT5 - Literacy in Science: Obtains, reads, evaluates, and communicates scientific information.

AST 5.1 - Obtains Information - Obtains information from multiple credible sources.

AST 5.2 - Reads Informational Text - Reads informational text critically to determine the central ideas or conclusions, collect evidence, and/or obtain scientific information.

AST 5.3 - Evaluates Sources - Evaluates the evidence, bias, and usefulness of multiple information sources (scientific, technical, text-based, and media / visual).

AST 5.4 - Communicates Ideas - Communicates and synthesizes scientific and/or technical information or ideas in multiple formats effectively (including orally, graphically, textually, and mathematically).

Science Learning Targets – 7th Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1 - Science Practices: Uses the practices of science inquiry to design, investigate, model, and explain phenomena using appropriate tools, techniques, and variables.

AST 1.1 Asks Questions - Asks testable questions that arise from observations of phenomena, models, or unexpected results.

AST 1.2 Develops and Uses Models - Develops, uses, evaluates, and revises models to describe, test, and predict phenomena.

AST 1.3 - Designs Investigations - Plans and carries out investigations that identify and appropriately measure variables to provide data as evidence to support explanations or solutions.

AST 1.4 - Analyzes and Interprets Data - Analyzes and interprets data, using graphical displays, to provide evidence for phenomena

AST 1.5 - Mathematical and Computational Thinking - Uses mathematical and computational thinking to identify patterns and trends in data sets in order to evaluate and support scientific conclusions.

AST 1.6 - Constructs Explanations - Constructs explanations based on valid and reliable evidence and applies scientific ideas and principles to explain the phenomena..

AST 1.7 - Engages in Argument from Evidence - Engages with evidence to construct or critique a convincing argument that supports or refutes a claim and uses argumentation to listen to, compare, and evaluate competing ideas supported by scientific reasoning..

ALT2 - Engineering Design: Designs, constructs, tests and evaluates a solution to a defined problem using appropriate tools and materials.

AST 2.1 - Defines the Problem - Defines the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. (MS-ETS1-1)

AST 2.2 - Evaluates Competing Solutions - Evaluates competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. (MS-ETS1-2)

AST 2.3 - Analyzes Design Solutions - Analyzes data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. (MS-ETS1-3)3

AST 2.4 - Develops and Iterates Solutions - Develops a model or prototype to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. (MS-ETS1-4)

ALT3 - Disciplinary Core Ideas: Uses the disciplinary core ideas of science to explain phenomena and design solutions

AST 3.1 - Molecules to Organisms - Demonstrates knowledge of the organization of matter in living and nonliving systems and how energy and molecules flow through those systems.(MS-LS-1; MS-LS-2)

AST 3.2 - Ecosystems: Interactions, Energy, and Dynamics - Demonstrates knowledge of the relationships and dynamics within ecosystems; including between humans and the environment. (MS-LS2)

AST 3.3 - Earth's Systems - Demonstrates knowledge of how Earth's surface changes over time due to water and Earth's processes driven by the cycling of energy in the Earth. (MS-ESS2)

AST 3.4 - Earth and Human Activity - Demonstrates knowledge of the role of geological processes and human activities on the unequal distribution of natural resources and natural hazards.(MS-ESS3)

AST 3.5 - Matter and Its Interactions - Demonstrates knowledge of the structure and properties of matter, the reactions that occur between chemicals, and thermal energy. (MS-PS1)

ALT4 - Science and Society: Constructs an explanation of how science and engineering influence our understandings, decisions, and changes to societies over time.

AST 4.1 - Interdependence of Science and Technology - Synthesizes how science and engineering have supported the development of scientific theories, technology, and changes to society.

AST 4.2 - Scientific Ethics - Evaluates the short and long term effects of applying scientific understanding to address issues in the natural world and society.

AST 4.3 - Personal Impacts - Articulates the impacts of personal, traditional, and community knowledge and practices on the natural world and society.

ALT5 - Literacy in Science: Obtains, reads, evaluates, and communicates scientific information.

AST 5.1 - Obtains Information - Obtains information from multiple credible sources.

AST 5.2 - Reads Informational Text - Reads informational text critically to determine the central ideas or conclusions, collect evidence, and/or obtain scientific information.

AST 5.3 - Evaluates Sources - Evaluates the evidence, bias, and usefulness of multiple information sources (scientific, technical, text-based, and media / visual).

AST 5.4 - Communicates Ideas - Communicates and synthesizes scientific and/or technical information or ideas in multiple formats effectively (including orally, graphically, textually, and mathematically).

Science Learning Targets – 8th Grade 2020

All classroom instruction and assessments are aligned to BSD Learning Targets

ALT - Academic Learning Target **AST** - Academic Supporting Target

ALT1 - Science Practices: Uses the practices of science inquiry to design, investigate, model, and explain phenomena using appropriate tools, techniques, and variables.

T 1.1 Asks Questions - Asks testable questions that arise from observations of phenomena, models, or unexpected results.

AST 1.2 Develops and Uses Models - Asks testable questions that arise from observations of phenomena, models, or unexpected results.

AST 1.3 - Designs Investigations - Plans and carries out investigations that identify and appropriately measure variables to provide data as evidence to support explanations or solutions.

AST 1.4 - Analyzes and Interprets Data - Analyzes and interprets data, using graphical displays, to provide evidence for phenomena.

AST 1.5 - Mathematical and Computational Thinking - Uses mathematical and computational thinking to identify patterns and trends in data sets in order to evaluate and support scientific conclusions.

AST 1.6 - Constructs Explanations - Constructs explanations based on valid and reliable evidence and applies scientific ideas and principles to explain the phenomena.

AST 1.7 - Engages in Argument from Evidence - Engages with evidence to construct or critique a convincing argument that supports or refutes a claim and uses argumentation to listen to, compare, and evaluate competing ideas supported by scientific reasoning.

ALT2 - Engineering Design: Designs, constructs, tests and evaluates a solution to a defined problem using appropriate tools and materials.

AST 2.1 - Defines the Problem - Defines the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. (MS-ETS1-1)

AST 2.2 - Evaluates Competing Solutions - Evaluates competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. (MS-ETS1-2)

AST 2.3 - Analyzes Design Solutions - Analyzes data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. (MS-ETS1-3)

AST 2.4 - Develops a model or prototype to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. (MS-ETS1-4)

ALT3 - Disciplinary Core Ideas: Uses the disciplinary core ideas of science to explain phenomena and design solutions

AST 3.1 - Heredity: Inheritance and Variation of Traits - Demonstrates knowledge that traits are variable and are the result of genes made of DNA that encodes proteins. (MS-LS3)

AST 3.2 - Biological Evolution: Unity and Diversity - Demonstrates knowledge that organisms evolve via natural selection and that multiple lines of evidence support the theory of evolution.

(MS-LS4)

AST 3.3 - Earth's Place in the Universe - Demonstrates knowledge of systems at varying spatial scales (planet, solar system, galaxy, universe) to explain observable phenomena in space, the role of gravity, and Earth's history. (MS-ESS1)

AST 3.4 - Earth and Human Activity - Demonstrates knowledge of the impact increasing human populations have on Earth. (MS-ESS3)

AST 3.5 - Motion and Stability: Forces and Interactions - Demonstrates knowledge of Newton's laws, including how a variety of forces and the interactions between those forces impact objects. (MS-PS2)

AST 3.6 – Energy - Demonstrates knowledge of the types of energy and explains the relationship between energy and forces. (MS-PS3)

AST 3.7 - Waves and their Applications in Technologies for Information Transfer - Demonstrates knowledge of mathematical representations and models that describe the energy of a wave, the way waves interact with materials, and how waves transmit information. (MS-PS4)

ALT4 - Science and Society: Constructs an explanation of how science and engineering influence our understandings, decisions, and changes to societies over time.

AST 4.1 - Interdependence of Science and Technology - Synthesizes how science and engineering have supported the development of scientific theories, technology, and changes to society.

AST 4.2 - Scientific Ethics - Evaluates the short and long term effects of applying scientific understanding to address issues in the natural world and society.

AST 4.3 - Personal Impacts - Articulates the impacts of personal, traditional, and community knowledge and practices on the natural world and society.

ALT5 - Literacy in Science: Obtains, reads, evaluates, and communicates scientific information.

AST 5.1 - Obtains Information - Obtains information from multiple credible sources.

AST 5.2 - Reads Informational Text - Reads informational text critically to determine the central ideas or conclusions, collect evidence, and/or obtain scientific information.

AST 5.3 - Evaluates Sources - Evaluates the evidence, bias, and usefulness of multiple information sources (scientific, technical, text-based, and media / visual).

AST 5.4 - Communicates Ideas - Communicates and synthesizes scientific and/or technical information or ideas in multiple formats effectively (including orally, graphically, textually, and mathematically).

Science Learning Targets - Elementary Primary Specialized Classrooms (ALC, SRC, SLC), and ISCs K-12

ALC – Academic Learning Center
SRC – Structured Routines Center
SLC – Structured Learning Center
ISC – Independent Skills Center

With verbal, visual, or physical prompting...

ALT 1: Demonstrates problem solving skills.

- AST 1.1 Tackles a Challenge
- AST 1.2 Thinks creatively
- AST 1.3 Uses multiple approaches to solving a problem

ALT2: Demonstrates focused attention to pursue curiosity.

- AST 2.1 Exhibits curiosity and imagination
- AST 2.2 Asks questions about the natural and designed worlds
- AST 2.3 Engages in novel activities to explore questions.

ALT3: Demonstrates communication skills

- AST 3.1 Answers “wh” questions
- AST 3.2 Responds to peer interaction
- AST 3.3 Communicates ideas

ALT4: Notices relationships in patterns and organizes items based on observed details

- AST 4.1 Communicates cause and effect relationships
- AST 4.2 Sorts objects using various criteria
- AST 4.3 Creates and notices patterns

Intermediate Elementary ALC, SRC, and SLC Science Learning Targets

ALC – Academic Learning Center

SRC – Structured Routines Center

SLC – Structured Learning Center

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1: Ask Question about nature or human-made world with verbal, visual, or physical guidance.

AST 1.2: Developing and Using Models - With visual, verbal, or physical guidance, identifies, uses, and develops models that represent concrete events. Distinguishes between a model, the actual phenomenon, and other models.

AST 1.2 A: Developing and Using Models - With visual, verbal, or physical guidance, identifies, uses, and develops models that represent concrete events. Compares between a model, the actual phenomenon, and other models.

AST 1.3: Planning and Conducting Investigations - With visual, verbal, or physical guidance, collect and share data from an investigation with peers.

AST 1.3 A: Planning and Conducting Investigations - With visual, verbal, or physical guidance, plans and conducts an investigation in collaboration with peers.

AST 1.4: Analyzing and Interpreting Data - With visual, verbal, or physical guidance collects and shares data from an investigation with peers and compares predictions to what occurred.

AST 1.4 A: Analyzing and Interpreting Data - With visual, verbal, or physical guidance, collects and shares data from an investigation with peers and compares predictions to what occurred.

AST 1.5: Mathematical and Computational Thinking - With visual, verbal or physical guidance, uses counting and numbers to identify and describe patterns in the natural world. Uses and compares quantitative and qualitative data.

AST 1.6: Constructing Explanations - With visual, verbal or physical guidance, uses information from observations to identify and describe patterns in the natural world.

AST 1.6 A: Constructing Explanations - With visual, verbal or physical guidance, uses information from observations to construct an evidence-based explanation for natural phenomena.

AST 1.7: Engaging in Argument from Evidence- With guidance, listens actively to others' explanations and arguments and asks questions for clarification AND distinguish between opinion and evidence.

AST 1.8: Obtains, Evaluates, and Communicates Information - With visual, verbal or physical guidance, reads grade-appropriate texts and uses media to obtain scientific and technical information.

Communicates AND clarify information.

ALT 2: Engineering: Shares ideas about a simple defined problem, plans a possible solution, builds it with suggested materials, and considers whether the design met criteria.

AST 2.1 With visual, verbal or physical guidance ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. (K-2- ETS1-1)

AST 2.2 - Develop a simple drawing, or physical model to solve a given problem with verbal, visual or physical guidance. (ETS1-2)

AST 2.2 A Develop a drawing, or physical model to show how the form of an object helps it function as needed to solve a given problem with visual, verbal or physical guidance. (K-2- ETS1-2)

AST 2.3 - Compare the strengths and weaknesses of the design of two objects that solve the same problem. (ETS1-3)

AST 2.3 A Compare the strengths and weaknesses based on evidence from tests of two objects designed to solve the same problem with verbal, visual or physical guidance. (K-2- ETS1-3)

ALT 3: Life Science: Explains earth science concepts including weather, human impacts on the environment, and patterns of the sun, moon, and earth.

AST 3.1 - Uses observations to describe patterns of what plants and animals (including humans) need to survive with visual, verbal or physical guidance. (K-LS1-1)

AST 3.2 - Uses materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs with visual, verbal or physical guidance. (1-LS1-1)

AST 3.3 - Reads texts and use media to determine patterns in behavior of parents and offspring that help offspring survive with visual, verbal or physical guidance. (1-LS1-2)

AST 3.4 - Makes observations to construct an evidence - based account that young plants and animals are like, but not exactly like, their parents with visual, verbal or physical guidance. (1-LS3-1)

ALT4: Earth Science: Explains earth science concepts including weather, human impacts on the environment, and patterns of the sun, moon, and earth.

AST 4.1 - Uses and shares observations of local weather conditions to describe patterns over time with visual, verbal or physical guidance. (K-ESS2-1)

AST 4.2 - Constructs an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs with visual, verbal or physical guidance. (K-ESS2-2)

AST 4.3 - Uses a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live with visual verbal or physical guidance. (K-ESS3-1)

AST 4.4 - With visual, verbal or physical guidance will ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. (K-ESS3-2)

AST 4.5 - With verbal, visual or physical guidance, communicates solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. (K-ESS3-3)

AST 4.6 - With visual, verbal or physical guidance uses observations of the sun, moon, and stars to describe patterns that can be predicted. (1-ESS1-1)

AST 4.7 - With visual, verbal or physical guidance makes observations at different times of year to relate the amount of daylight to the time of year. (1-ESS1-2)

AST 4.7A - With visual, verbal, or physical guidance identifies patterns of motions of objects in the sky and provide evidence. (1ESS1-3)

ALT5: Physical Science: Investigates physical science concepts, including pushes and pulls and how light and sound work.

AST 5.1 - With physical, visual, or verbal guidance, plans and conducts an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. (K-PS2-1)

AST 5.2 - With physical, visual, or verbal guidance, analyzes data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. (K-PS2-2)

AST 5.3 - With visual, verbal or physical guidance, makes observations to determine the effect of sunlight on Earth's surface. (K-PS33-1)

AST 5.4 - With visual, verbal, or physical guidance, uses tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface. (K-PS3-2)

AST 5.5 - With verbal, visual or physical guidance, plans and conducts investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. (1-PS4-1)

AST 5.6 - With verbal, visual or physical guidance, uses tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. (1-PS4-4)

AST 5.7 - With verbal, visual or physical guidances, plans and conducts investigations to determine the effect of placing objects made with different materials in the path of a beam of light. (1-PS4-3) AST 5.5 - With visual, verbal or physical guidance, makes observations to construct an evidence - based account that objects in darkness can be seen only when illuminated. (1-PS4-2)

Middle School ALC, SRC, SLC and ACE Science Learning Targets

ALC – Academic Learning Center

SRC – Structured Routines Center

SLC – Structured Learning Center

ACE – Academic and Communication Enhancements

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information, with guidance.

AST 1.1: Asking Questions - Asks and/or identifies questions that can be answered by an investigation.

AST 1.2: Developing and Using Models - Identifies, uses, and develops models that represent patterns, scale, and/or relationships of concrete events. Compares between a model, the actual phenomenon, and other models.

AST 1.3: Planning and Carrying Out Investigations - Plans and conducts an investigation to produce data that can be used as evidence to answer a question.

AST 1.4 - Presents data in various formats (bar graphs, pictographs and/or pie charts). With support, analyzes and/or compares individual or group data to support explanations about phenomena using logical reasoning, mathematics, and/or computation.

AST 1.5: Mathematical Thinking - Uses numbers to identify and describe patterns in the natural world. Describes, measures, estimates, and/or graphs quantities (e.g., area, volume, weight, time) to address scientific questions.

AST 1.6: Constructing Hypothesis - Creates a hypothesis and supports it with evidence to explain what they observed and share it with peers.

AST 1.7: Analyzing the Evidence - Identifies arguments that are supported by evidence, listens actively to others' explanations and arguments and ask questions for clarification, and makes comparisons between opinion and evidence.

AST 1.8: Obtaining, Evaluating and Communicating Information - Reads, comprehends and compares modified texts and media to acquire scientific information.

ALT 2: Engineering: Shares ideas about a simple defined problem, plans a possible solution, builds it with suggested materials, and compares/contrasts objects designed to solve the same problem, with guidance.

AST 2.1 - Ask questions, make observations, and gather information about a situation people want to change to define a simple problem with criteria that can be solved through the development of a new or improved object or tool.(K-2 ETS1-1)

AST 2.2 - Uses a variety of visual supports to construct a model of an object. (K-2 ETS1-2)

AST 2.3 - Compares and contrasts two objects designed to solve the same problem and suggest improvements. (K-2 ETS1-3)

AST 2.4 - Defines a simple design problem reflecting a need or a want that includes criteria for success and constraints on materials, time, or cost.

AST 2.5 - Generates and compares possible solutions to a problem based on how well each is likely to meet the criteria and/or constraints of the problem.

AST 2.6 - Plans and carries out fair tests to identify aspects of a model or prototype that can be improved.

ALT 3: Life Science: Uses observations to describe what plants need to survive and grow and uses models to explore life cycles and heredity.

AST 3.1 - Plans and conducts an investigation to determine if plants need sunlight and water to grow. (LS2-1)

AST 3.2 - Develops a simple model that mimics the function of an animal in dispersing seeds or pollinating plants (LS2-2.)

AST 3.3 - Makes observations of plants and animals to compare the diversity of life in different habitats. (2-LS4-1)

AST 3.4 - Develops models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction and death. (3-LS1-1)

AST 3.5 - Provides evidence that some animals form groups that help members survive. (3-LS2-1)

- AST 3.6 - Analyzes data to provides evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. (3-LS3-1)
- AST 3.7 - Uses evidence to support the explanation that traits can be influenced by the environment. (3-LS3-2)
- AST 3.8 - Analyzes data from fossils to provide evidence of the organisms and the environments in which they lived long ago. (3-LS4-1)
- AST 3.9 - Uses evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)
- AST 3.10 - Constructs an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. (3-LS4-3)
- AST 3.11 - Makes a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. (3-LS4-4)

ALT4: Earth Science: Explains earth science concepts including weather, climate, water, and wind, and their impacts on the environment, landscapes, and people.

- AST 4.1 - Obtains information to identify where water is found on Earth and that it can be solid or liquid.(2-ESS2-3)
- AST 4.2 - Compares multiple solutions designed to slow or prevent wind or water from changing the shape of the land. (2-ESS2-1)
- AST 4.3 - Develops a model to represent the shapes and kinds of land and bodies of water in an area.(2-ESS2-2)
- AST 4.4 - Uses information from several sources to provide evidence that Earth events can occur quickly or slowly.(2-ESS1-1)
- AST 4.5 - Represents data in tables and graphical displays to describe typical weather conditions expected during a particular season. (3-ESS2-1)
- AST 4.6 - Obtains and combines information to describe climates in different regions of the world. (3-ESS2-2)
- AST 4.7 - Makes a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

ALT5: Physical Science: Investigates physical science concepts related to matter and energy.

- AST 5.1 - Plans and conducts an investigation to describe and classify different kinds of materials by their observable properties.(2-PS1-1)
- AST 5.2 - Analyzes data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.(2-PS1-2)
- AST 5.3 - Makes observations to construct an evidence - based account of how an object made of a small set of pieces can be disassembled and made into a new object.(2-PS 1-3)
- AST 5.4 - Constructs an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.(2-PS1-4)
- AST 5.5 - Plans and conducts an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. (3-PS2-1)
- AST 5.6 - Makes observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. (3-PS2-2)
- AST 5.7 - Asks questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. (3-PS2-3)
- AST 5.8 - Defines a simple design problem that can be solved by applying scientific ideas about magnets. (3-PS2-4)

High School ALC, SRC, SLC Science Learning Targets

ALC – Academic Learning Center

SRC – Structured Routines Center

SLC – Structured Learning Center

ALT1: Scientific Practices: Explains scientific phenomena using the practices of science through investigation, modeling, argumentation, and use of information.

AST 1.1 - Develops questions and hypothesis/prediction based on scientific principles and observations, with support. Asks questions based on scientific thinking that can be answered by an investigation.

AST 1.2 - Develops and uses models and with collaboration revises models, based on evidence that shows the relationships among variables. Begins to identify limitations of models.

AST 1.3 Designs and conducts investigations to gather data. Makes decisions about experimental variables, controls and investigational methods (e.g. number of trials, fair tests). Identifies possible outcomes of investigation.

AST 1.4 - Presents data in various formats (bar graphs, pictographs and/or pie charts). With support analyzes and/or compares individual or group data to support explanations about phenomena using logical reasoning, mathematics, and/or computation.

AST 1.5 - Organizes simple data sets to reveal patterns that suggest relationships. Describes, measures, estimates, and/or graphs quantities (e.g., area, volume, weight, time) to address scientific questions.

AST 1.6 - Constructs a claim and supports it with evidence to explain a phenomenon and communicate results.

AST 1.7 - Engages in argumentation. The student discourse may include evidence, reasoning that links the evidence to their claim and critique of competing arguments during which students build on and question each other's ideas with modeling from the teacher.

AST 1.8 - Reads and compares information to explain phenomenon in multiple sources. Communicates information orally.

ALT 2: Engineering Design: Defines a problem and proposes solution(s), from which a prototype is built, tested, and evaluated against criteria and constraints.

AST 2.1 - Defines a simple design problem reflecting a need or a want that includes criteria for success and constraints on materials, time, or cost. (3-5 - ETS1-1)

AST 2.2 - Generates and compares possible solutions to a problem based on how well each is likely to meet the criteria and/or constraints of the problem. (3-5 - ETS1-2)

AST 2.3 - Plans and carries out fair tests to identify aspects of a model or prototype that can be improved.(3-5 - ETS1-3)

ALT3: Life Science: Structure, Function and Information Processing: Uses models and evidence to argue that plants and animals have different functions in an ecosystem, which support their survival, growth, and reproduction.

AST 3.1- Constructs an argument that plants and animals, including humans with organs and organ systems, have internal and external structures that function to support survival, growth, behavior, and reproduction. (4-LS1-1)

AST 3.2- Uses a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (4-LS1-2)

AST 3.3 Supports an argument that plants get the materials they need for growth chiefly from air and water (5-LS1-1).)

AST 3.4 Uses models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. (5-PS3-1)

AST 3.5 Develops a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-LS2-1)

AST 3.6 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (MS-LS1-3)

ALT4: Earth Science: Processes that Shape the Earth: Explains earth science concepts including erosion, interactions between earth's systems, and water.

AST 4.1- Makes observations and/or measurements to provide evidence of the effects of erosion by water, ice, wind, or vegetation. (4 - ESS2-1)

AST 4.2- Analyzes and interpret data from maps to describe patterns of Earth's features. (4-ESS2-2)

AST 4.3- Obtains and combines information to describe that energy and fuels are derived from natural resources and their uses affect the environment. (4-ESS3-1)

AST 4.4- Generates and compares multiple solutions to reduce the impacts of natural Earth processes on humans. (4-ESS3-2)

AST 4.5 - Develops a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. (5-ESS2-1)

AST 4.6 - Describes and graphs the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.(5-ESS2-2)

AST 4.7 - Obtains and combines information about ways individual communities use science ideas to protect the Earth's resources and environment. (5-ESS3-1.)

ALT5: Physical Science: Matter and Energy: Describes physical science concepts including matter and its properties and energy.

AST 5.1 Uses evidence to construct an explanation relating the speed of an object to the energy of that object (4-PS3-1)

AST 5.2 Makes observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.(4-PS3-2)

AST 5.3- Asks questions and predict outcomes about the changes in energy that occur when objects collide. (4-PS3-3)

AST 5.4 - Provides evidence that substances sometimes change when heating, cooling, or mixing with other substances, and sometimes they do not. (related to 5-PS1-2)

AST 5.5 - Conducts an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4)

AST 5.6 - Makes observations and measurements to identify materials based on their properties. (5-PS1-3)

Phase 2 Science Instructional Resource Adoption Recommendation

Elementary, Middle School, HS Supplemental and K-12 Special Education

Pre-K and Kindergarten:

- **Pre-K and K Science Instructional Model:** The design of the Pre-K and Kindergarten instructional models will revolve around on lines of inquiry and a student-led emergent curriculum. In this culturally and developmentally responsive instructional style, teachers observe and note the questions and ideas students develop during intentional science-focused, play-based experiences. Using knowledge of the NGSS standards, teachers will guide students through inquiry cycles to further both their science knowledge and investigation and problem-solving skills. For example, one of the Kindergarten NGSS standards is, “Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.” For students to form a deep understanding of forces, and to conduct investigations to discover their patterns, students should have opportunities to explore those skills and ideas throughout the year. To meet this standard, teachers will be provided with materials related to pushes and pulls, such as blocks, toy cars, and construction sets. Teachers will focus on developing lines of inquiry alongside their students, based on the questions students develop through play. These experiences will be founded in the NGSS practices, crosscutting concepts, and disciplinary core ideas, but will be student-directed and play-based. Lines of questioning and strategies will connect to science and engineering practices (e.g. asking questions and designing investigations), core ideas (e.g. pushes and pulls), and crosscutting concepts (e.g. cause and effect).
- **Pre-K Habits of Mind** is our PreK Framework for observing children and designing learning opportunities in BSD. This framework will be utilized in the design of our Pre-K and K Science program. The habits of mind most connected to science are:
 - Thinking strategically, creatively and reflectively to follow an interest and tackle a challenge
 - Focusing attention to pursue an interest, gratify curiosity, respond to a challenge, or try out an idea.
 - Noticing relationships, making connections and organizing items based on observed details
 - Collaborating with others to accomplish a shared goal
- **Instructional Resources:**
 - The recommended primary instructional resource for Pre-K and Kindergarten are the lines of inquiry developed by teachers in response to their observations of students’ play. This includes district created resources for teachers to support play-based inquiry, classroom equipment/manipulatives, books that connect to the standards, and the natural world students will encounter.
 - For both Pre-K and Kindergarten, the following types of equipment are recommended for purchase, to support student-directed and inquiry-based learning (in lieu of Twig kits and student workbooks). These will be used to build more varied lines of inquiry for students in Engineering and Earth, Life, and Physical Sciences:
 - **Life Science:** Ant farm (Pre-K) and Worm habitat (K), magnifying glasses to explore collections of natural objects, and plant growing kits.
 - **Physical Science and Engineering:** K’nex (engineering manipulatives) kit, blocks, and ramp/ball sets to explore pushes and pulls and engage in the engineering design process.

- **Earth Science:** UV beads and various types of materials, plus exploration of outside spaces like the playground to investigate how materials and surfaces interact with the environment.
- For Kindergarten, the Twig Science program is recommended as a supplement. Including the 8-year Teacher Digital Platform, 8-year Media Suite, and Twig Science Reporter.

Grades 1-5

The Project Team recommends Twig Science as the primary instructional resource for Elementary, with supplementary use in Kindergarten. For information on the Twig Science Program and its evidence of efficacy, see Appendix A. In Grades 1-5, the following components of the Twig Science Program are recommended for adoption:

- 8-year Teacher Digital Platform and Digital Assessments
- 8-year Student Digital Platform
- 8-year Media Suite
- Print Teacher Edition
- 8-years of yearly printed Student Twig Books
- Modular Science Kits (1 year consumable and non-consumables)
- Grades 3-5 Science Essentials Kits
- Authentic text sets that connect to NGSS

Grades 6-8

The Project Team recommends the IQWST Integrated Edition from Activate Learning as the primary instructional resource for middle schools. For information on the IQWST Program and its evidence of efficacy, see Appendix B. The following components of the IQWST Program are recommended for adoption:

- 8-year Teacher Digital Platform and Digital Assessments - this is the Interactive Digital Edition for teachers that includes an assessment bank, teacher files, student files, and help/support.
- Print Teacher Edition
- 8-year Student Portal Access - this is where students can access the assignments, texts, and assessments in the curriculum, which will be accessible in Canvas.
- Classroom sets of Student Print Editions - student textbooks, each classroom would get a class set of each grade level text set.
- Science Kits (non-consumables and 1 year consumables)
- 7 years of consumable replenishment kits, purchased yearly.

In addition to the IQWST Integrated Edition, the following supplementary instructional resources are recommended for middle school:

- Vernier measuring devices for data collection (aligned with IQWST units and necessary for their implementation)
- Compound Microscopes
- A yearly budget for consumables that are required for IQWST units but not included in the replenishment kits (mostly food items that the vendor is not allowed to ship).
- Twig Secondary 8-year digital licenses for teachers. Twig Secondary includes a rich media suite, text resources, and interactive simulations.

High School Supplemental Resource

In addition to the Patterns Science instructional resource adopted in Phase 1 of the science adoption, the following supplemental resource is recommended for high school:

- Twig Secondary 8-year digital licenses for teachers. Twig Secondary includes a rich media suite, text resources, and interactive simulations.

K-12 ALC, SRC, SLC, ISC, and ACE Science Adoption Instructional Resource Plan

The following instructional resources have been selected to provide science and engineering experiences for students in Academic Learning Center (ALC), Structured Routines Center (SRC), Structured Learning Center (SLC), Independent Skills Center (ISC), and the Academic Communication Enhancement (ACE) classrooms. The specific resources (a combination of texts, online resources, media, and kits/hands on equipment) will be implemented for each level over time, in collaboration with classroom teachers and in response to student needs and interests. Implementation will start with Twig resources and sets of inquiry and play-based manipulatives at each level. As teachers work with their students and follow their investigative lead, additional opportunities, such as Engineering is Elementary kits, will be added on. This will allow us to respond to teacher and student input on the amount of time they have for science, and what is most engaging, relevant, and effective for learning science in our specialized classrooms. Additionally, please note that the other specialized classrooms (EGC, ELC, and SCC) will use the same on-grade level materials as mainstream classes (see above Pre-K-Kindergarten and Grades 1-5 plans).

Primary Elementary ALC, SRC, and SLC Classrooms, as well as K-12 ISC Classrooms

Summary: Utilization of a combination of hands on equipment and media to provide play and inquiry based learning experiences that support students in developing problem-solving and investigation skills. This approach is in alignment with the pre-K model of student-directed and inquiry based learning.

- Lakeshore Learning - Various inquiry and play-based STEM Learning items
- Amazon - Various inquiry and play-based STEM Learning items
- Constructive Play Things - Various inquiry and play-based STEM Learning items
- Unique - Science text-based materials

Intermediate Elementary ALC, SRC, and SLC Classrooms

Summary: We will utilize a combination of text, unit kits, hands on equipment, and media to provide play and inquiry based learning experiences that support students in developing problem-solving and investigation skills. Additionally, teachers will have access to a variety of kits and instructional resources from Twig Science and engineering kits from Engineering is Elementary.

- Twig Science - Kindergarten and 1st grade level media and lesson resources (modified as needed)
- Engineering is Elementary - Various Engineering Kits
- Unique - Science text-based materials
- Lakeshore Learning - Various inquiry and play-based STEM Learning items
- Amazon - Various inquiry and play-based STEM Learning items

Middle School ALC, SRC, and SLC Classrooms, and the ACE Program

Summary: A combination of text, unit kits, hands on equipment, and media to provide inquiry and engineering learning experiences that support students in developing problem-solving and investigation skills. Additionally, teachers will have access to a variety of kits and instructional resources from Twig Science and engineering kits from Engineering is Elementary.

- Twig - 2nd and 3rd grade level media and lesson resources (modified as needed)
- Engineering is Elementary - Various Engineering Kits
- Unique - Science text-based materials
- Attainment Company - Science Step-by-Step and Explore Life Science, these are science texts specifically designed for students with disabilities
- Amazon - Various inquiry and engineering STEM Learning items

High School ALC, SRC, and SLC Classrooms

Summary: A combination of text, unit kits, hands on equipment, and media to provide inquiry and engineering learning experiences that support students in developing problem-solving and investigation skills. Additionally, teachers will have access to a variety of kits and instructional resources from Twig Science and engineering kits from Engineering is Elementary.

- Twig - 4th and 5th grade level media and lesson resources (modified as needed) - these materials are at an appropriate level for students in these classrooms. The NGSS standards spiral over the grade bands, so these units cover the same topics as high school level standards, but at a level that is more developmentally appropriate.
- Engineering is Elementary - Various Engineering Kits
- Attainment Company - Science Step-by-Step and Explore Biology, these are science texts specifically designed for students with disabilities
- Unique - Science text-based materials
- Amazon - Various inquiry and engineering STEM Learning items

Elementary School Science Adoption Professional Development Plan

Each Elementary School teacher will participate in the following professional development opportunities (dates are tentative):

Kindergarten Science and Play - Introduction.

- Introduction to Play-Based Inquiry and NGSS at district-wide Kindergarten Ready, Reset, Play PD
- June 2020

Kindergarten NGSS, Lines of Inquiry, and Language Integration

NGSS overview

- Developing emergent curriculum with student-led lines of inquiry, and language integration
- August 2020 (pre-service week)

Grades 1-5 Unit 1 Twig online, NGSS pedagogy, and Unit 1 overview

- Navigating Twig online and Unit 1 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences with NGSS pedagogy embedded.
- August 2020 (pre-service week)

Pre-K NGSS and Play-Based Inquiry and Engineering

- Pre-K teachers will engage in a full day of science and NGSS PD, in alignment with our Pre-K Habits of Mind and student led inquiry model.
- November 2020

Grades 1-5 Unit 2 overview and assessment collaboration

- Unit 2 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon collaboration time to develop assessment plans.
- December 2020

Grades 1-5 Unit 3 overview and language integration

- Unit 3 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon collaboration time to learn and plan language integration strategies (talk protocols, writing supports, etc.).
- Pilot teachers - Feb. 2021. All other teachers - Fall

Grades 1-5 Unit 4 overview and assessment collaboration

- Unit 4 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon collaboration time to develop assessment plans.
- Pilot teachers - April 2021. All other teachers Dec/Jan 2021

Additional collaboration and leadership opportunities:

Science Leaders Summer 2020 Training, 2 teachers per school

- 1 Day NGSS Instructional shifts, language integration, navigating Twig/Carolina online, and 3-dimensional assessment.
- August 2020

Science Leaders PLC - 2 teachers per school

- Two leaders for each school (1 primary and 1 intermediate) to support implementation of the adoption district-wide. Their work will focus on supporting teachers in their building and cross-district collaboration.
- Monthly after school PLC meetings, plus extended contract time for school support

Kindergarten Leadership Team (10 kindergarten teachers)

- 2 Days of PD and Collaboration - Aligning Kindergarten science units with inquiry and play-based Kindergarten model.
- October and December

Middle School Science Adoption Professional Development Plan

Each Middle School Science teacher will participate in the following professional development opportunities (dates are tentative):

Introduction to IQWST, NGSS pedagogy, and Unit 1 overview

- Day 1 - NGSS Instructional shifts, language integration, navigating IQWST online, and 3-dimensional assessment
- Day 2 - Unit 1 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences, with time in the afternoon for team collaboration.
- August 2020 - Teachers can choose between this 2-day summer session or the Fall unit 1 option

Introduction to IQWST, NGSS pedagogy, and Unit 1 overview

- Navigating IQWST online and Unit 1 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences.
- Mid-September 2020

Unit 2 overview and assessment collaboration

- Unit 2 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon collaboration time to develop assessment plans.
- Mid-Late October 2020

Unit 3 overview and Language Integration

- Unit 3 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon collaboration time to learn and plan language integration strategies (talk protocols, writing supports, etc.)
- January 2021

Unit 4 overview and assessment collaboration

- Unit 4 (grade level specific), teachers learn the unit's storyline and key inquiry and engineering experiences. Afternoon
- January 2021

Additional collaboration and leadership opportunities:

Grade Level TOSAs

- Two 0.2 FTE TOSAs for each grade level to support implementation of the adoption district-wide. Their work will include development of Canvas courses, formative assessments, common summative assessments, creating/modifying differentiated student supports and extensions, and facilitating cross-district collaboration.
- Yearlong

2020 Summer Collaboration time

- Teachers who attend the 2-day summer PD option will have an optional 4 hours to meet with their team (alongside other schools' teams of the same grade level) to plan their implementation of the first unit.
- August (after 2-day training)

District Grade level Professional Learning Communities (PLCs)

- Once per month, each grade level team will meet to support implementation, share ideas, and develop common assessments. Ideally, at least one teacher per school will participate so they can share back with their school team. PLCs will be facilitated by Grade Level TOSAs.
- Once per month, before school via Zoom or after school (depending on teacher preference).

NGSS Twig Science Research



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Twig Education, Inc report prepared for:

Beaverton School District

**6475 Pacific Coast Highway, Suite 355
Long Beach, CA 90803**

Cheryl De La Vega--U.S. Vice President

Tel: (310) 800-3114

cdelavega@twigeducation.com

Candice Thomassen--Director of Sales

Tel: (805) 588-6582

cthomassen@twigeducation.com

TWIG SCIENCE

Twig Science is a complete PK–8 NGSS program built for Oregon. It supports educators as they implement the innovative NGSS by promoting student-centered instruction and three-dimensional learning. Twig Science’s hands-on and digital investigative lessons encourage the development of 21st century skills that enable equity for all students in STEM-related opportunities, technical careers, and college advancement. Skills such as critical thinking, problem solving, designing solutions, and making connections across science disciplines provide students with real-world experience—just like working scientists and engineers.

Twig Science is the only program custom-built from the NGSS Framework segments, saving teachers months of professional development. Every module of Twig Science mirrors a segment in the NGSS Framework for a 1:1 alignment.

Grade-level scope and sequences are built into each Teacher Edition, unpacking the NGSS Framework, Coherence, and Progressions. Included are the NGSS Framework segments, Performance Expectations, anchor module phenomena, and unique, engaging STEM storylines.

Performance Expectations are unpacked through their respective three dimensions of Disciplinary Core Ideas, Crosscutting Concepts and Science and Engineering Practices. Engineering, Technology and Applications of Science Standards, plus Environmental Principles and Concepts, are integrated into instruction and assessment across the science disciplines—a fundamental instructional shift.

Performance Expectation progressions located on the inside back cover of each Teacher Edition provides back-mapping or forward mapping to each set of three-dimensional standards covered in previous, current, and future grades.

Twig Science is built to spiral so students are introduced to foundational concepts in a grade-appropriate way as early as PK, revisiting them in more complexity in later grades.

twigScience | NEXT GEN NGSS Framework Alignment

GRADE	NGSS TOPIC ARRANGEMENTS	MODULE	MODULE ANCHOR PHENOMENON	CORE PERFORMANCE EXPECTATIONS
GRADE K	Interdependent Relationships in Ecosystems	My Big Nature Adventure	Different plants and animals live in different places.	K-LS1-1, K-ESS3-1
	Forces and Interactions; Engineering Design	Marble Run Engineer	What happens when we push, pull, and drop objects? How can we change their speed and direction?	K-PS2-1, K-PS2-2, K-2-ETS1-1
	Weather and Climate; Engineering Design	Be Prepared	How do we observe weather and collect data to describe weather patterns over time?	K-ESS2-1, K-ESS2-2, K-PS3-1, K-PS3-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3
	Interdependent Relationships in Ecosystems	I Can	How can I protect the environment from changes that harm it?	K-ESS2-2, K-ESS3-3, K-2-ETS1-1
GRADE 1	Structure, Function, and Information Processing; Engineering Design	Museum of Leafology	How are all plants alike and how are they different?	1-LS1-1, 1-LS1-2, 1-LS1-3, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3
	Waves, Structure, Function, and Information Processing; Engineering Design	Animal Reporters	How do animals use their body parts, communicate with their young, and make sounds?	1-LS1-2, 1-LS1-3, 1-PS4-1, 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2
	Waves	Shadow Town	Why is the town of Rjukan in a shadow?	1-PS4-2, 1-PS4-3
	Space Systems	Patterns in the Sky	What patterns do we observe in the sky?	1-ESS1-1, 1-ESS1-2
GRADE 2	Earth's Systems	My Journey West	How can we understand and describe the land and water on Earth?	2-ESS2-2, 2-ESS2-3
	Structure and Properties of Matter; Engineering Design	Master of Materials	How can we describe materials as different from one another and understand how their properties relate to their use?	2-PS1-1, 2-PS1-2, 2-PS1-3, 2-PS1-4, K-2-ETS1-2, K-2-ETS1-3
	Earth's Systems; Engineering Design	Save the Island	How do natural processes shape the Earth?	2-ESS1-1, 2-ESS2-1, K-2-ETS1-1, K-2-ETS1-2
	Interdependent Relationships in Ecosystems; Engineering Design	A Garden for Life	How do living things in an environment depend on one another and what do they need to grow?	2-LS2-1, 2-LS2-2, 2-LS4-1, K-2-ETS1-1, K-2-ETS1-2
GRADE 3	Forces and Interactions; Engineering Design	The Ultimate Playground	How are objects affected by the forces of push and pull?	3-PS2-1, 3-PS2-2, 3-PS2-3, 3-PS2-4, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3
	Inheritance and Variation of Traits	Welcome to the Biome	How do plants' and animals' life cycles help them survive?	3-LS1-1, 3-LS1-2, 3-LS1-3, 3-LS4-2
	Interdependent Relationships in Ecosystems	How to Survive on Ice Age	What is the relationship between an organism and its environment?	3-LS3-2, 3-LS4-1, 3-LS4-3, 3-LS4-4
	Weather and Climate	Weather Warning HQ	What is the weather like around the world?	3-ESS2-1, 3-ESS2-2, 3-ESS3-1, 3-5-ETS1-1, 3-5-ETS1-2
GRADE 4	Energy; Engineering Design	Egg Racers	What happens to energy when objects collide?	4-PS3-1, 4-PS3-3, 3-5-ETS1-3
	Energy; Engineering Design	Sparks Energy, Inc.	How do people produce and transfer energy for their use?	4-ESS3-1, 4-PS3-2, 4-PS3-4, 3-5-ETS1-1, 3-5-ETS1-2
	Earth's Systems	Time-Traveling Tour Guides	How have weathering and erosion sculpted some of Earth's most interesting landscapes?	4-ESS1-1, 4-ESS2-1, 4-ESS2-2, 4-ESS3-2, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3
	Earth's Systems; Engineering Design	Earthquake Engineering	How can we reduce the damage caused by earthquakes?	4-PS4-1, 4-ESS2-2, 4-ESS3-2, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3
GRADE 5	Waves, Structure, Function, and Information Processing	Super Survivors	How do the many parts of my body work together to help me live in the world? Communication involves transferring information through waves or signals.	4-LS1-1, 4-LS1-2, 4-PS3-2, 4-PS4-1, 4-PS4-2, 4-PS4-3, 3-5-ETS1-3
	Structure and Properties of Matter; Engineering Design	Matter Mysteries Hotline	What is matter made of?	5-PS1-1, 5-PS1-2, 5-PS1-3, 5-PS1-4, 3-5-ETS1-3
	Matter and Energy in Organisms and Ecosystems	Yellowstone: Uncovered	How do matter and energy move through an ecosystem?	5-LS1-1, 5-LS2-1, 5-PS3-1
	Earth's Systems; Engineering Design	H2O Response Team	Why do some places lack fresh water and what can we do to protect it?	5-ESS2-1, 5-ESS2-2, 5-ESS3-1, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3
GRADE 6	Space Systems	Galactic Guidebook	What patterns do we notice when we observe the sky?	5-PS2-1, 5-ESS1-1, 5-ESS1-2
	Structure, Function, and Information Processing; Engineering Design	BioTech Systems Worldwide	How do human body systems and subsystems work together?	MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS1-8, MS-ETS1-1, MS-ETS1-2
	Weather and Climate; Energy; Engineering Design	Destination Everywhere!	Weather and climate vary around the world, but we can use science and past trends to predict them.	MS-ESS2-4, MS-ESS2-5, MS-ESS2-6, MS-PS3-3, MS-PS3-4, MS-PS3-5, MS-ETS1-1, MS-ETS1-3
	Growth, Development, and Reproduction of Organisms	The Red List	How do the environment and genetics affect animals and plants?	MS-LS1-4, MS-LS1-5, MS-LS3-2, MS-ETS1-1, MS-ETS1-2
Weather and Climate; Human Impact; Engineering Design	Cities of the Future	How can we reduce harmful impacts on the environment in the places where people live?	MS-ESS3-3, MS-ESS3-5, MS-LS1-4, MS-LS1-5, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4	

Behind Twig Science is a team of teachers, scientists, filmmakers, writers, researchers, academics, and parents, all working together to support teachers in delivering engaging and effective student learning experiences. Our resources are used by over 150,000 teachers, in 60 countries, and in 20 different languages.

At Twig Science, we are proud to have established partnerships with leading universities including Imperial College London and Stanford University. We create our videos with some of the most amazing, awe-inspiring media in the world from the BBC, NASA, CBS, Science Photo Library and Getty Images. Using these and other resources, we combine entertainment with established teaching methods to bring learning to life and our world into the classroom. Most importantly, we work with teachers to ensure our resources are simple, flexible, and enjoyable to use.

To help find and save time for science, the Common Core English Language Arts, WIDA, Mathematics, History–Social Science, and Arts Standards are also provided at point of use in the Scope and Sequence and throughout the program.

MEET OUR COLLABORATIVE THINK TANK

Meet the team or—as we like to think of ourselves—the Twig Science Collaborative Think Tank. The development of Twig Science has been guided by our collective commitment to making science accessible to all. We do this through our engaging, phenomena-based storylines and flexible range of captivating resources, ensuring

that all learners can experience phenomena. Thanks to the thousands of teachers, students and specialists who have advised, reviewed and used Twig Science. From the genesis of NGSS, Twig Science was developed through a collaborative Think Tank of three groups essential to a well-balanced program:

Imperial College London

Our partners and owners. To assure that science and engineering content was 100% accurate and authentic. ICL is an international community, attracting undergraduates from more than 125 countries. Imperial College London is one of the world's most international universities. Imperial's global collaborations, discoveries and networks are transforming lives and creating opportunities around the world.

The College focuses on the four main disciplines of science, engineering, medicine and business and is renowned for its application of these skills to industry and enterprise. It is consistently ranked among the world's top ten universities and is ranked by Reuters as one of the World's Most Innovative Universities.

**Imperial College
London**

SCALE
Stanford Center for Assessment, Learning, & Equity

Distinguished members of ICL have included 14 Nobel Laureates and three Fields Medalists. Imperial holds a Silver Athena Swan Award, which recognizes advancing women's careers in science, technology, engineering, math and medicine in academia. Twig Education works closely with Alan Spivey.

Alan Spivey: A professor of chemistry at Imperial College London, Alan leads the scientific review team. He is a committed educator, spearheading the implementation of Imperial's new learning and teaching strategy, an ambitious and exciting project designed to establish it as a global leader in STEM education and active learning.

Stanford SCALE

3-Dimensional Performance Assessments created by STANFORD SCALE to ensure that all assessments are preparing students for 3-D Performance Tasks.

Cathy Zozakiewicz: Cathy provides technical consulting and support through Stanford Center for Assessment, Learning, and Equity (SCALE). Cathy develops innovative, educational, and state-of-the-art performance assessments for evaluating student learning.

Cross-Curricular Experts

A diverse team of Cross-Curricular Experts in English Language Arts, English Language Development, STEAM, and Mathematics to maximize instructional opportunities for transfer within Twig Science and STEM-Based Opportunities. A few of the experts include individuals such as **Wiley Blevins** (ELA/ELD), **Natasha Stillwell** (former TV Science Journalist), **Jan de Lange** (PISA Winner of Mathematics)

Wiley Blevins: An author and reading specialist, Wiley has written several books on reading instruction and teaching students to read informational text. He is a cross-curricular expert with extensive experience in English Language Arts and English Learners, including graduate work in education at Harvard University, elementary classroom teaching, and professional development in the United States, Latin America, and Asia.

Natasha Stillwell: An acclaimed broadcast-science journalist, Natasha Stillwell hosted and produced Discovery Channel's award-winning science and technology show Daily Planet. Natasha has a powerful gift for storytelling and engaging young learners, and she brought these talents to the development of award-winning international online classroom resources Twig and Twig Science Reporter.

Dr. Jan de Lange: Dr. Jan de Lange is director of the Freudenthal Institute and a professor at University of Utrecht in the Netherlands. During his directorate, the Freudenthal Institute was part of the Faculty of Mathematics and Computer Science and had as its task: Innovation in Mathematics Education by Research, Implementation, Dissemination and Professionalization. His research addresses modeling and applications and assessment issues and has broadened to a variety of issues including multimedia and on issues related to implementation.

He served as Co-Principal Investigator of the Assessment Study Group of the National Center for Improving Student Learning and Achievement in Science and Mathematics in the USA. In 1999, a Theoretical Framework for Classroom Assessment was published as the result of this project. In the international comparative assessment area, he has been a member of the international

commission for TIMSS-R, and Chairman of the Mathematical Functional Expert Group of the OECD PISA Project.

RESEARCH EVIDENCE BASE

Evidence indicates a thoughtful blend of learning and teaching strategies yields the greatest effect on student learning. Learning attached to students' preconceptions and prior knowledge plays an important role in concept building. Instruction is also most effective when it pursues a deep understanding of concepts. This is accomplished not only by skill building, but by providing multiple examples of the same concept and helping students develop metacognitive skills so that they are actively involved in their own learning.

In addition to the NGSS Framework, Twig Science is based on current research from meta-analysis studies of student outcomes and cognitive psychology. We worked with outstanding teachers, both in the United States and internationally, to pick the best practices for each learning journey. Next, we tested Twig Science in classrooms of students and teachers. From there, iterations were made until we were sure each approach worked successfully.

Current research-based strategies found within Twig Science:

The 5E Instructional Model (Bybee & Landes, 1990) as evidenced in Twig Science 5-Step Lesson Structure:

Spark (Engage): An engaging "hook" activity, which motivates students for the investigations ahead.

Investigate (Explore): Students think like scientists and design like engineers, through hands-on, digital, video, and informational text Investigations.

Report (Explain): Students articulate what they've learned today, citing evidence and their use of the three dimensions.

Connect (Elaborate): Students make connections to the Driving Questions and Module Investigative Problem, while building knowledge of CCCs and SEPs.

Reflect (Evaluate): Students use different means to think about what they have learned so far, and how they can use their new understandings to better figure out phenomena/problems.

Teacher Credibility (Hattie)—Background subject knowledge, professional learning, model lessons, and clear instruction in the teacher's edition with suggested questions and sample answers.

Conceptual Change/Building on Misconceptions/Preconceptions (Hattie/EEF)—Pre-Explorations and Progress Trackers.

Language of Science and Classroom Discussion (Hattie, EFF)—UL SCALE Language Routines

The aim of the Twig Science Language Routines is to support questioning strategies as a tool for formative assessment and to promote argumentation. These language routines are based on five ideas:

- Teachers, peers, and texts serve as language resources for learning (Vygotsky, 1978).

- Deep learning of subject content and skills is gained through language, as it is the primary medium of school instruction (Halliday, 1993).
- Through successive and supportive experiences with math ideas, learners make sense of math with their existing language toolkit (Moschkovich, 2012).
- Language is an inseparable part of all human action, so when students are engaged in meaningful activities (projects, presentations, investigations), language develops through perception, interaction, planning, research, and discussion (van Lier & Walqui, 2012).
- Language routines help focus attention on student language that support in-the-moment teacher, peer, and self assessment (Cazden, 2001).

Metacognition and Self-Regulation (Hattie/EEF)—Reflect through class discussions, hands-on, peer-to-peer as well as written responses.

Modeling: Written, Verbal, Visual (EFF)—Lots of modeling in Twig Science, films and 3D, and meta-think alouds.

Formative Assessment/Feedback (Hattie, EFF)—Assessments for learning are embedded in Twig Science.

Response to Intervention (Hattie)—We have support at point of use and support for small group work with readers.

Memory—Supporting students to retain knowledge (cognitive load theory, spaced review) (EFF). The modules scaffold learning in bite-sized chunks in lessons and Driving Questions with lots of points to activate prior knowledge and review learning.

Purposeful labs and problem solving (Hattie, EFF)—We do not include random acts of science in Twig Science. The hands-on investigations scaffold to build mastery of phenomena, concepts, and problem solving.

Research base citations and links:

NGSS Framework links: [Oregon NGSS Framework](#)

Hattie, John & Yates, G.C.R.. (2013). *Visible Learning and the Science of How We Learn*.

Hattie Effect Size: <https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/>

EEF Report:

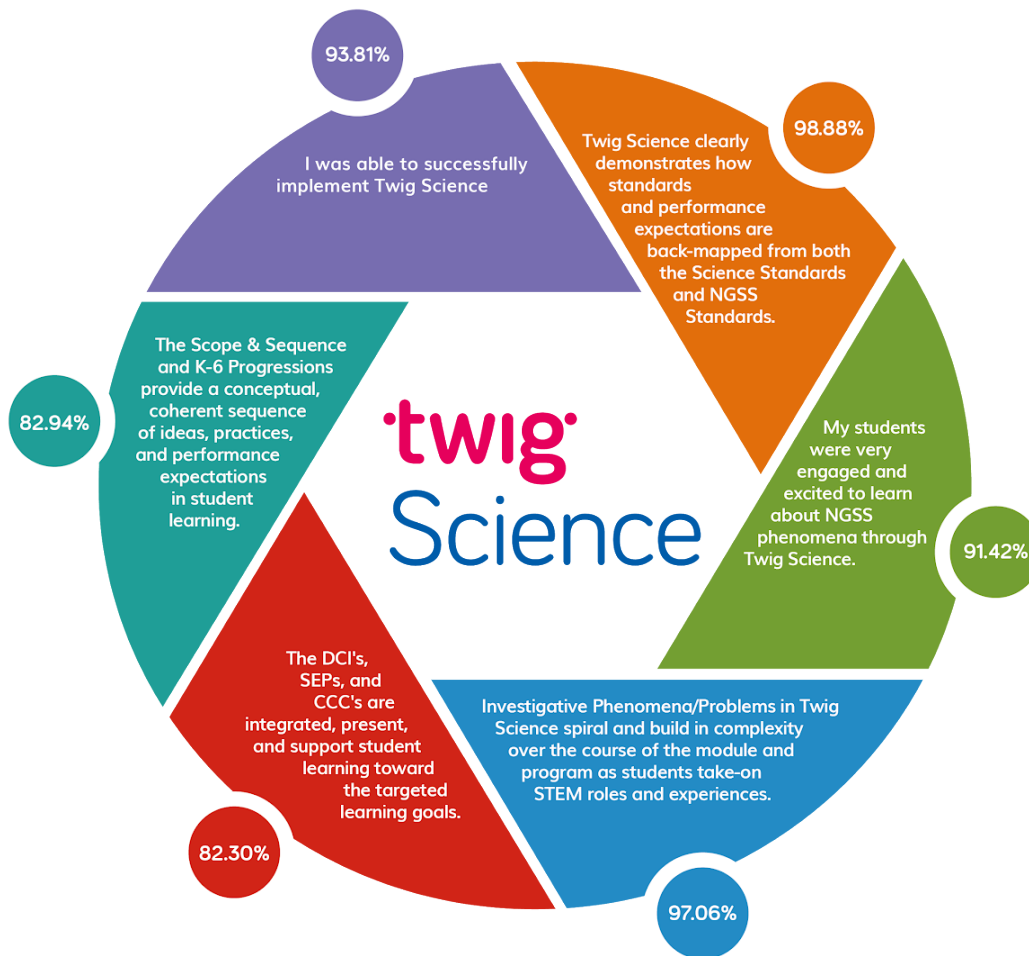
<https://educationendowmentfoundation.org.uk/tools/guidance-reports/improving-secondary-science/>

Usage and User Feedback

User Data: September 1, 2019 - December 31, 2019

Users: 25,783

Districts: 33



Top three strengths as selected by survey respondents:

- 1 Support students in learning through authentic and meaningful phenomena or design problems, support student learning across the 3-dimensions, make student thinking visible, promote reasoning, sensemaking, and problem solving; challenge student thinking; and develop metacognitive abilities.
- 2 Monitor student learning and progress over time, Make decisions about instruction and provide feedback to students, Variety of Measures to elicit full range of student thinking and multiple assessment opportunities so students can demonstrate their understanding
- 3 Background information about phenomena, problems and NGSS, Module Introduction Videos, Model Lesson Videos, In-Person Guidance, Modeling and/or Support

ActiVa Learning IQWST®

PUBLISHER'S BACKGROUND INFORMATION

January 2020

Activate Learning is dedicated to promoting science literacy and achievement through three essential principles:

- Engage students with authentic learning and phenomena that are relevant and meaningful.
- Inspire teachers with research-based curricula that support three-dimensional learning.
- Prepare students for STEM careers of tomorrow.

Designed for the Next Generation Science Standards

IQWST® (Investigating and Questioning our World through Science and Technology) was developed through grant funding from the National Science Foundation. The development team, with combined expertise in science education, literacy education, and the learning sciences was led by Principal Investigators Joe Krajcik, Ph.D. (Michigan State University), Brian Reiser, Ph.D. (Northwestern University), LeeAnn Sutherland, Ph.D. (University of Michigan), and David Fortus, Ph.D. (Weizmann Institute of Science). At IQWST's foundation is research on how students learn and how they learn science in particular, the very research on which *A Framework for K-12 Science Education* and the Next Generation Science Standards are also based.

As research indicates, and as the *Framework* and the NGSS describe, students learn best when they use coherent materials that support them in building understanding over time.

IQWST® Integrated Edition engages students in scientific practices as they experience, investigate, model, and explain phenomena while learning core ideas and engaging with crosscutting concepts. Students build understanding by connecting ideas from lesson to lesson, from module to module, and across grades. Students also pursue their own original questions in modules that integrate the fundamentals of Physics, Chemistry, Life, Earth and Space Sciences, and Engineering.

The Core Tenets of the IQWST curriculum are:

Three-dimensional: Every learning sequence engages students with all three dimensions of the Next Generation Science Standards. For teacher planning purposes, Performance Expectations are identified at the beginning of each IQWST lesson, and all three components of three-dimensional learning are identified at the beginning of each activity.

1. **Disciplinary Core Ideas (DCI)** are typically addressed in multiple lessons, with the aim of developing depth of understanding rather than simply achieving coverage.
2. **Scientific and Engineering Practices (SEP)** engage students meaningfully in the work of scientists as they explore and learn core ideas.
3. **Crosscutting Concepts (CCC)** thread throughout the curriculum so that students construct deep understanding of the ideas as they apply to each science discipline.

Phenomena-driven: Students experience phenomena firsthand where possible, secondhand where not possible, but always so that the goal of science learning is to be able to explain phenomena—to explain *how* and *why* things in the natural world happen as they do.

Coherent: Students build understanding through a progression within each grade and across grade levels, learning critical DCIs, CCCs, and SEPs across content areas. Curricular coherence—revising and building on ideas across time—provides students with opportunities to develop, reinforce, and apply their understandings on an ongoing basis.

Student-centered: Students' original questions are at the core of the curriculum, elicited by an anchoring phenomenon, setting them on a quest to find answers that motivate learning across time.

Discourse-centered: Combining small-group and whole-group discussion in every lesson, supported by tools including a Driving Question Board and a Word Wall, students have multiple opportunities to use the language of science. Talk is used to share ideas, to think together, to problem solve, and to make sense of in-class science, everyday experiences, and the larger world.

For all: IQWST engages *all* students with shared phenomena, common investigations, and opportunities to connect their everyday life experiences with science content. As students read, write, and talk about their experiences in a language-rich environment, every student has an opportunity to achieve success.

Joe Krajcik, Ph.D., a developer of the NRC Framework, NGSS, and IQWST, presents around the country on what makes teaching with three-dimensional learning different. Joe states: *"Perhaps the most significant shift in the Framework for K-12 Science Education and NGSS is the students need to make the sense of phenomena or design solutions for problems by scientific and engineering practices, disciplinary core ideas, and crosscutting concepts working together. The working together of the three dimensions to make sense of phenomena and design solutions to problems is referred to as three-dimensional learning. Making sense of phenomena and designing solutions drives the teaching and learning process. ... The Framework and NGSS, based upon the research literature, clearly point out that you cannot learn scientific content (core ideas and crosscutting concepts) separate from engaging in practice. We learn content by engaging in practices and we learn practice by using science content to make sense of phenomena or design solutions to problems."*

Evidence of Efficacy

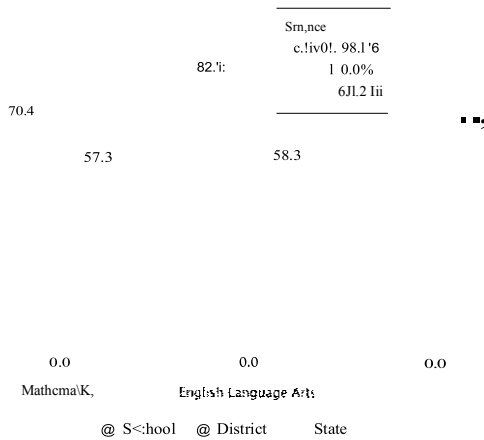
Students using JQWST in middle school classrooms across the country have demonstrated growth and excellence in standardized tests. Here are a few examples:

2018 8th Grade State Science Assessment STEM School, OH

Implemented IQWST in 2010-2011

Source: Ohio Department of Education, [Ohio School Report Card](#)

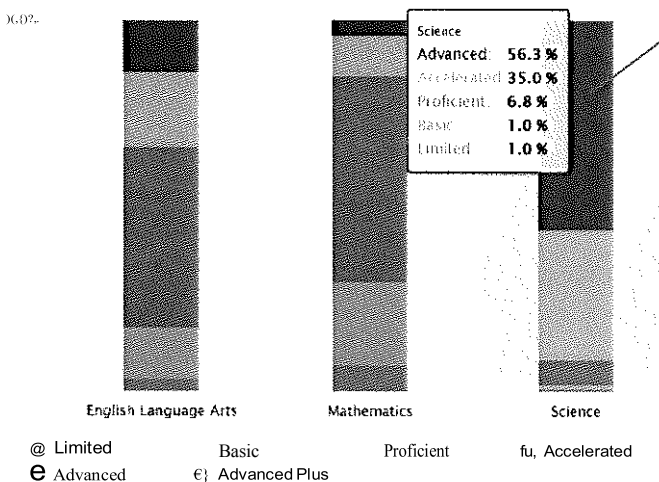
Eighth Grade



This chart compares the school to its district and to the state as a whole for each test.

98.1% of IQWST students passed the 8th Grade Science Assessment
Almost 30% higher than the state average

Eighth Grade

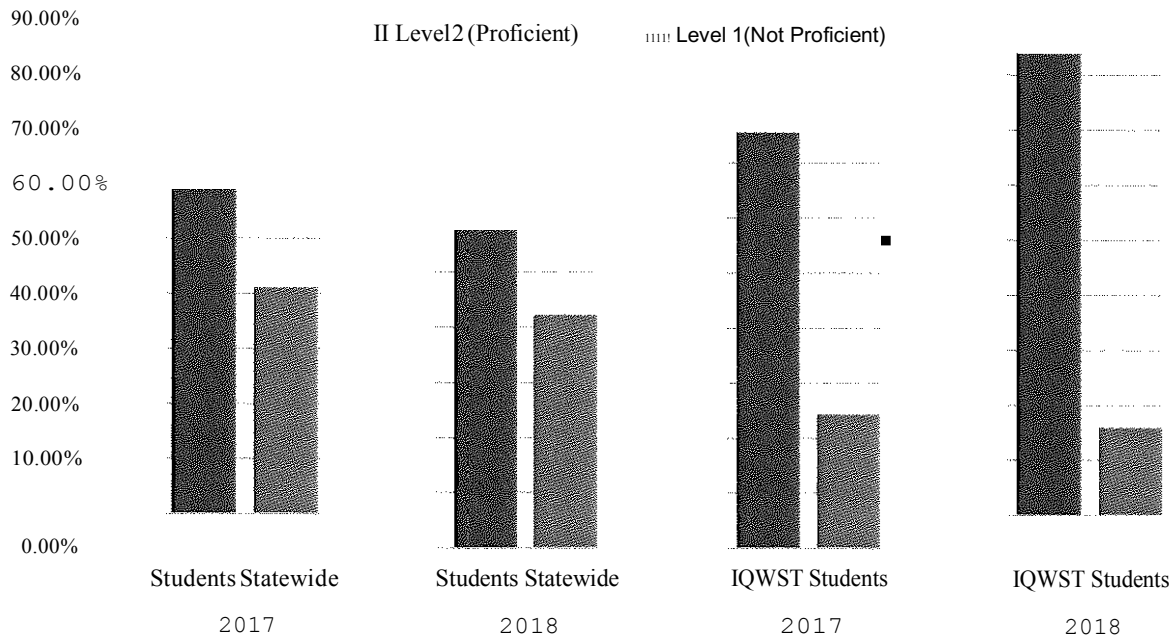


Over 90% of IQWST students passed with Advanced or Accelerated scores (>80%)

**2018 Student Growth
Suburban Midwest District**

Middle school science teachers taught IQWST in 2017 and 2018. While average performance of 8th graders on the state science assessment *decreased* slightly, scores for IQWST students *increased* during the same period.

State Science Assessment Performance

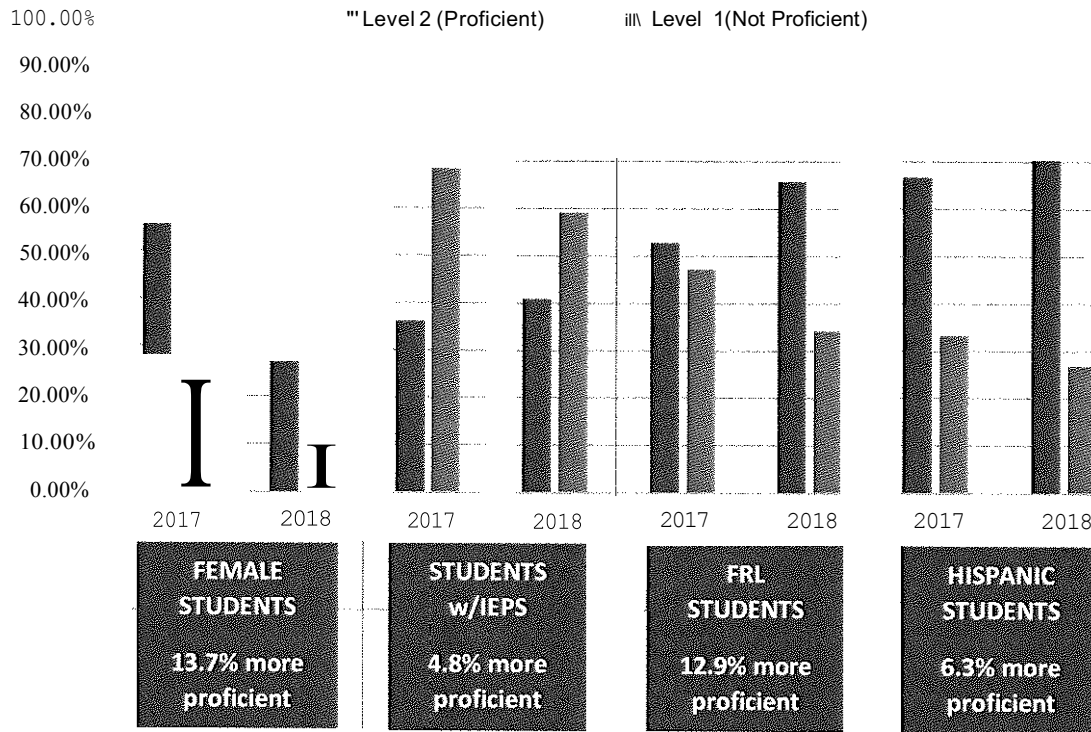


Percentage of students who measured proficient decreased by 1.2%

IQWST students' scores increased by 11% more

Disaggregated data of the same district shows improved performance of IQWST students by population subgroup.

Performance of IQWST Students by Subgroup



District Profile: 15% FRL, White 62%, Hispanic 31%, Black 3%, and the remaining 4% of the student population identifies as either Asian, American Indian, Pacific Islander, or a combination of two or more races.

2019 Science Pilot

Large Northwest School District

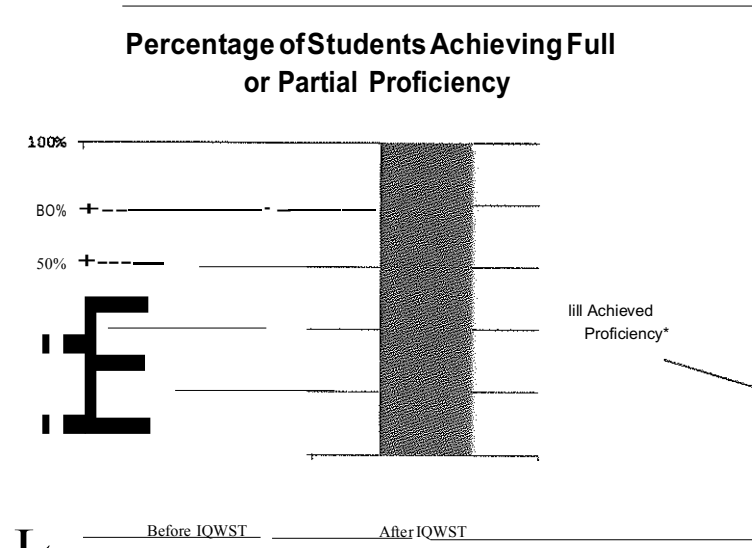
This district's middle schools piloted 3 science programs. Students were given pre- and post-assessments scored on a scale of 1(Developing) to 4 (Highly Proficient). Students in the IQWST pilot showed the largest growth with an average of 1.27 points higher on the post-test.

	IQWST (395 students)	Curriculum B (328 students)	Curriculum C (486 students)
Average Change to Scores from Pre- to Post-assessment	1.27	1.09	.92

Anecdotally, 70% of students in the IQWST pilot voted to adopt IQWST compared to 48% and 59% for Curricula B and C, respectively.

Student Growth Data on IQWST Unit {PS2: Energy} Middle School, OR

Students from 2 classes demonstrated growth in proficiency throughout the course of the unit as demonstrated by Pre- and Post-assessment data. *



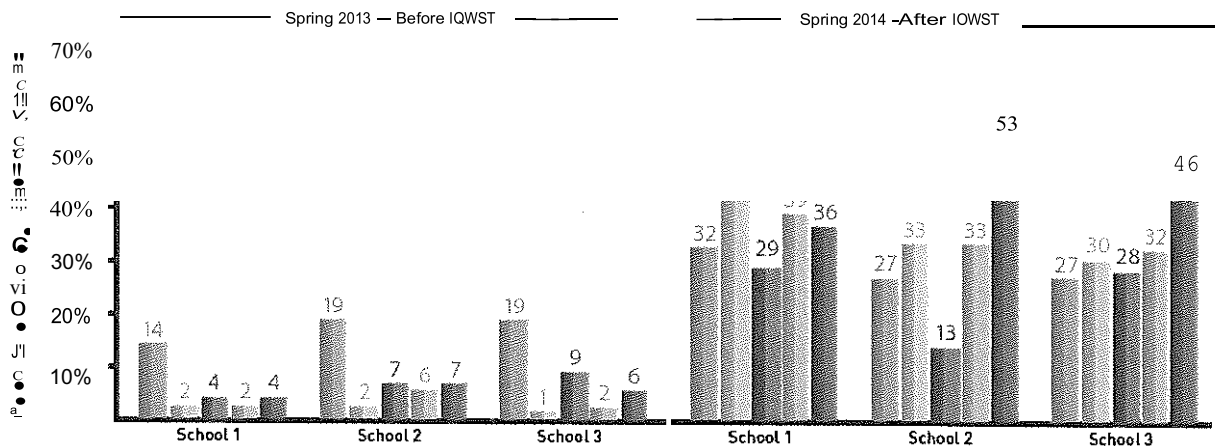
- 73% of students are at or above a proficient level.
- 27% are partially proficient at grade level.
- After the unit 0% are below proficient at grade level.

	Below Proficient	Partially Proficient	Proficient	Advanced
Score	1	2	3	4
Pre	95%	5%	0%	0%
Post	0%	31%	55%	14%

100% of IQWST students demonstrated growth

College Readiness Results After IQWST Implementation

Three diverse middle schools, 1000 students, before & after implementation of IQWST.



Science College Readiness Standards:

Select two or more pieces of data from a simple data presentation.

I Understand basic scientific terminology.

R Find basic information in a brief body of text.

II Determine how the value of one variable changes as the value of another variable changes in a simple data presentation.

II Understand the methods and tools used in a simple experiment.

**Mastery is defined as correctly answering at least 3 out of 4 questions aligned to tile standard.

Supplemental Services to Support Implementation

PROFESSIONAL LEARNING

The goal of Professional Learning for teachers is, of course, improved student learning! Research indicates that to improve student outcomes, Professional Learning must enable teachers to experience the curriculum firsthand, which is why in-person PD is always our priority.

In-school Professional Development

Our dedicated Professional Learning team works with districts to develop and execute successful implementation plans. Our consultants are award-winning educators who have taught the curriculum. Sessions engage teachers in a series of activities, focusing on how the instructional sequence uniquely supports students in building and applying science ideas, practices, and concepts over time.

Beyond face-to-face opportunities, we also offer virtual support options:

- ./ Supplementary Support Webinar
- ./ Q&A with a Curriculum Expert
- ./ IQWST Teacher Portal Support Site
- ./ IQWST Facebook Group
- ./ Lesson and Materials Setup Videos

STORYLINES

Part of the intellectual richness and rigor of IQWST is the challenge it provides as students connect ideas across modules. IQWST's storyline approach uses a Driving Question as the project or problem around which each module is built. That is, students build understanding of DCIs, CCCs, and SEPs in a coherent manner from one lesson to the next, with each activity raising a new question or a not-yet-solved problem that is addressed in the following activity. Hence, from a student perspective, a story is built from activity-to-activity, and lesson-to-lesson within each module, with the aim of answering the Driving Question in a complete, evidence-based explanation. In addition, the curriculum is designed such that each module connects to the one before it, providing a yearlong storyline to support student sense making across the entire school year. For teachers, the Storyline for each unit provides a detailed synopsis of each activity, serving as a both guideline and outline to support teachers in planning for and assessing learning.

DIFFERENTIATED INSTRUCTION

IQWST provides teachers with instructional supports and strategies to accommodate gifted and struggling students. These include:

- ./ Research-based general strategies described in the *JQWST Overview*
- ./ Lesson-specific strategies embedded in the Teacher Edition
- ./ Literacy strategies built into the readings
- ./ Audio versions of readings
- ./ Strategies modeled in PD
- ./ Biographies/Career Narratives that enables students to see themselves in STEM
- ./ IQWST Teacher Portal Support Site
- ./ IQWST Facebook Group
- ./ Spanish Student Editions for EL students

DEDICATED SUPPORT TEAM

Our team of experienced Product and Customer Support Specialists are ready to resolve any questions or technical issues in a timely manner.

Description and Evaluation of K-8 Current Science Program

Summary

Elementary

a. Time spent on science

Currently, one hour of instructional time on science is allocated in our Elementary Schedule and Structure Agreements at Beaverton elementary schools. This is approximately half the instructional time compared to the Oregon average of 1.9 hours/week and 2.3 hours/week nationally. Additionally, the majority (70.8%) of our elementary teachers reported on our 2018 survey that they do not have enough time to teach science. Only 16% of teachers reported spending more time on science than is scheduled per week (1 hour). 6% of Beaverton teachers reported they do not teach science. To increase time on science, the T&L team is reviewing the Beaverton Elementary Schedule and Structure Agreements document to make a recommendation that both addresses the need for an increased amount of time on science, and also better communicates about and supports teachers in integrating instruction across disciplines.

b. Teacher preparedness

According to our 2018 teacher survey, only 31% of Beaverton elementary teachers agree or strongly agree that they have the training they need to teach science. Since the last adoption, only optional training on the NGSS standards has occurred. Beaverton elementary teachers will need support in understanding the NGSS, the instructional shifts the NGSS call for, and the newly adopted instructional units.

c. Adequacy of materials

According to our 2018 teacher survey, the majority of teachers (66%) reported they do not have the materials they need to teach science. Additionally, teachers have reported great difficulty in managing the materials we do have when they are rotated between schools, as has been past practice. The Project Team has recommended that the adoption include kits for every teacher, to ensure that teachers can collaborate within their grade level teams and teach on the same schedule. This will also minimize teacher stress that would be caused by kit rotations.

d. Outcomes

The outcomes of our elementary students in science are currently predictable by race/ethnicity, SES, special education, and ELL status. Since 2013, Beaverton students have shown little to no growth in science achievement (as measured by Grade 5 OAKS scores) across all demographics.

Middle School Science

e. Time spent on science

The amount of time on science across Beaverton middle schools ranges from 63 to 80 minutes. When the common middle school experience is implemented, this will likely change for most schools. The instructional resource being recommended for adoption (IQWST) has lessons that are technically planned for 50 minute class periods, but Beaverton teachers who piloted the curriculum reported that they needed more time than that to teach the lessons. This same finding was also reported by another district, Eugene, who has 5 years of experience implementing IQWST. A key part of NGSS-aligned and engaging instruction in science are the hands-on laboratory and engineering student experiences. Having longer class periods (60 minutes or more) is widely accepted as necessary to providing these hands-on experiences.

f. Teacher preparedness

In the spring 2018 district student survey, a series of questions was asked from the Portland Metro STEM Partnership's "Student Survey of Teacher Instructional Practices." This survey measures the following three key areas of instructional practice in STEM:

- **Centeredness** - Teachers facilitate active engagement of students in their learning.
- **Relatedness** - Teachers implement learning activities that students find to be relevant, important, worthwhile, and connected to their cultural and personal lives
- **Assessment** - Teachers use frequent formative assessments (and summative assessments) to facilitate diagnostic teaching and learning.

The district average scores for each above areas were 2.1, 2.4, and 2.0 respectively. These scores correspond to a likert scale where 2 is "seldom/not often" and 3 is "sometimes." These scores were lower than the high school results and reflect a need for professional development and resource investment in all three of these key instructional areas, especially regarding the centeredness and formative assessment categories, which scored closest to the "seldom/not often" score. For more information on this survey see the end of this appendix.

a. Adequacy of materials

Current middle school materials are inadequate in multiple areas. All schools have reported insufficient funds to purchase both consumable supplies for hands on experiments and durable equipment to do sufficient and rigorous experiments. Many schools are short on basic supplies such glassware and engineering equipment. Additionally, all middle schools lack the probeware they need for students to collect quality data. In regards to other instructional resources, middle school has some, but not a complete set, of common assessments and assessment banks. Additionally, we do not have a full set of resources that meet the NGSS. Teachers across the district have developed various materials on their own, in collaboration, and with our previous adoption (CPO and PBIS), but with the last adoption being incomplete and teachers having little cross-district collaboration time, the materials being used across the district vary widely. New teachers have frequently reported difficulty in creating or finding materials in the absence of a complete district curriculum. Dual language science teachers do not have access to a full Spanish curriculum. Teachers have also reported that it is difficult to create common assessments or share materials due to a lack of common curriculum and collaboration time.

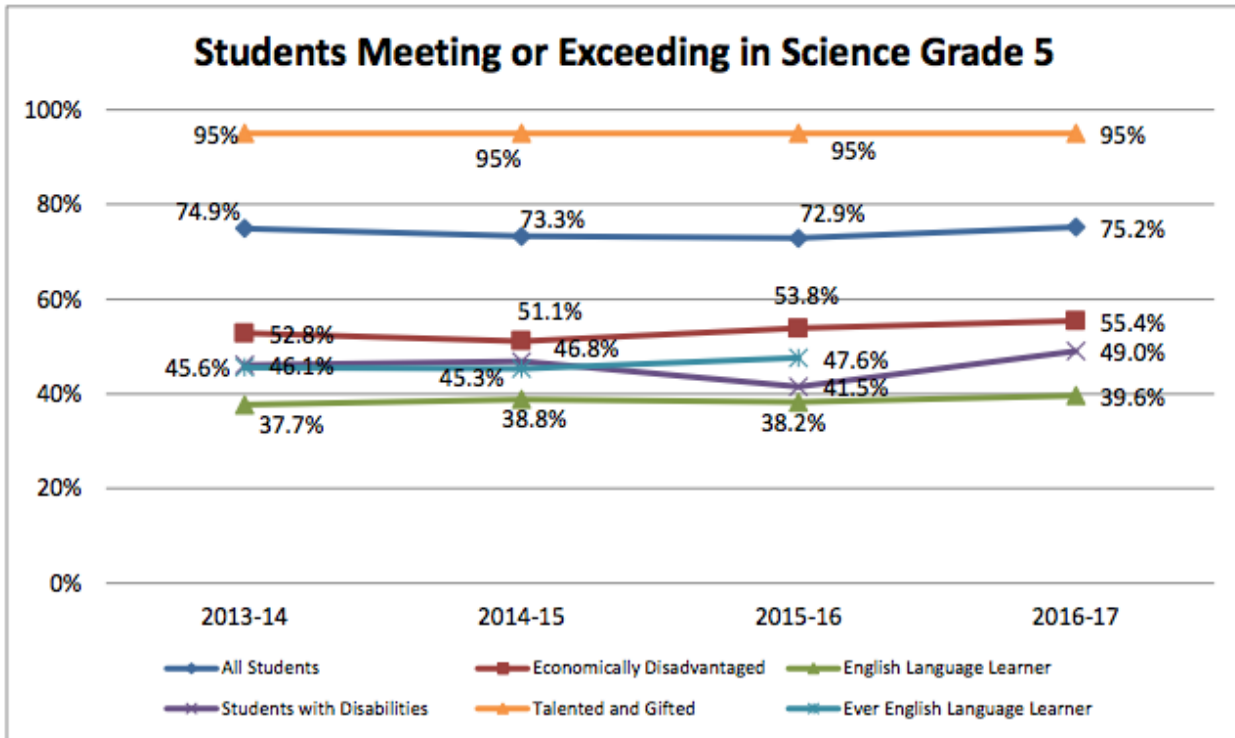
b. Outcomes

Overall, just under 50% of students are college and career ready in science as measured by the most recent Aspire test (2016-17). This number was relatively unchanged in the preceding 5 years as measured by the similar Explore test. These same outcomes are also predictable by race/ethnicity, SES, special education, and ELL status. Since 2013, Beaverton students have shown little to no growth in science achievement (as measured by Grade 8 OAKS scores, Aspire, and Explore data) across all demographics.

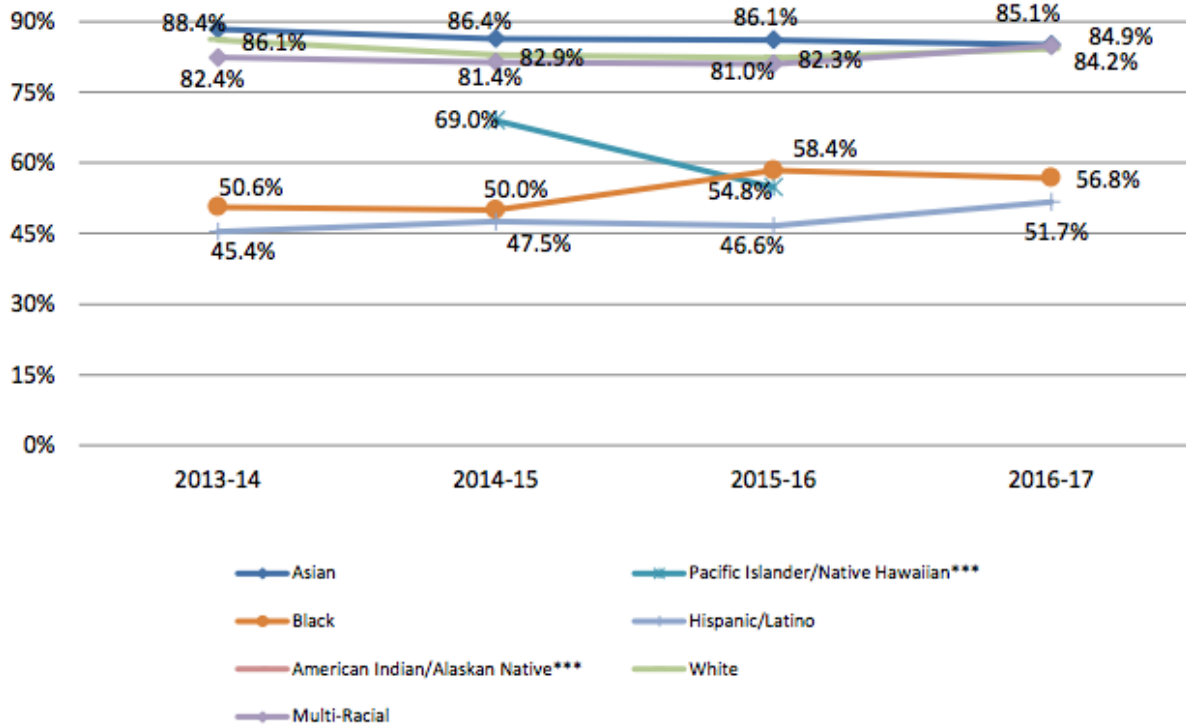
Evaluation of Current Program - Science Adoption

Science Achievement Scores

Grade 5 - Grade 5, 8, and 10 reports on Meeting and Exceeding in science are taken from the [board packet for 2/6/18 meeting](#).



Students Meeting or Exceeding in Science Grade 5



Students Meeting or Exceeding Standard in Science, Grade 5	2013-14	2014-15	2015-16	2016-17
All Students	74.9%	73.3%	72.9%	75.2%
Economically Disadvantaged	52.8%	51.1%	53.8%	55.4%
English Language Learner	37.7%	38.8%	38.2%	39.6%
Ever English Language Learner	45.9%	45.6%	45.3%	47.6%
Students with Disabilities	46.1%	46.8%	41.5%	49.0%
Asian	88.4%	86.4%	86.1%	85.1%
Pacific Islander/Native Hawaiian***		69.0%	54.8%	
Black	50.6%	50.0%	58.4%	56.8%
Hispanic/Latino	45.4%	47.5%	46.6%	51.7%
American Indian/Alaskan Native***				
White	86.1%	82.9%	82.3%	84.2%
Multi-Racial	82.4%	81.4%	81.0%	84.9%
Talented and Gifted	99.1%	98.8%	99.1%	98.9%
Male	75.3%	73.6%	73.5%	75.7%
Female	74.5%	73.1%	72.2%	74.6%

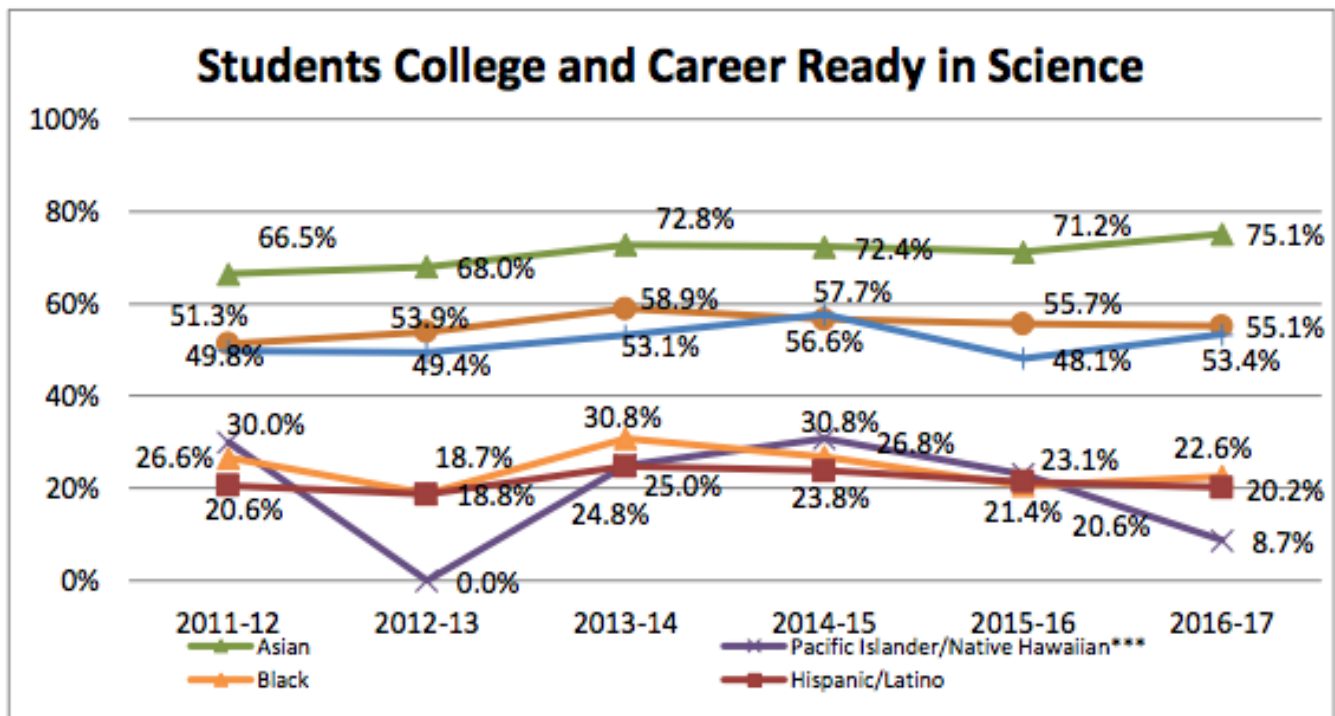
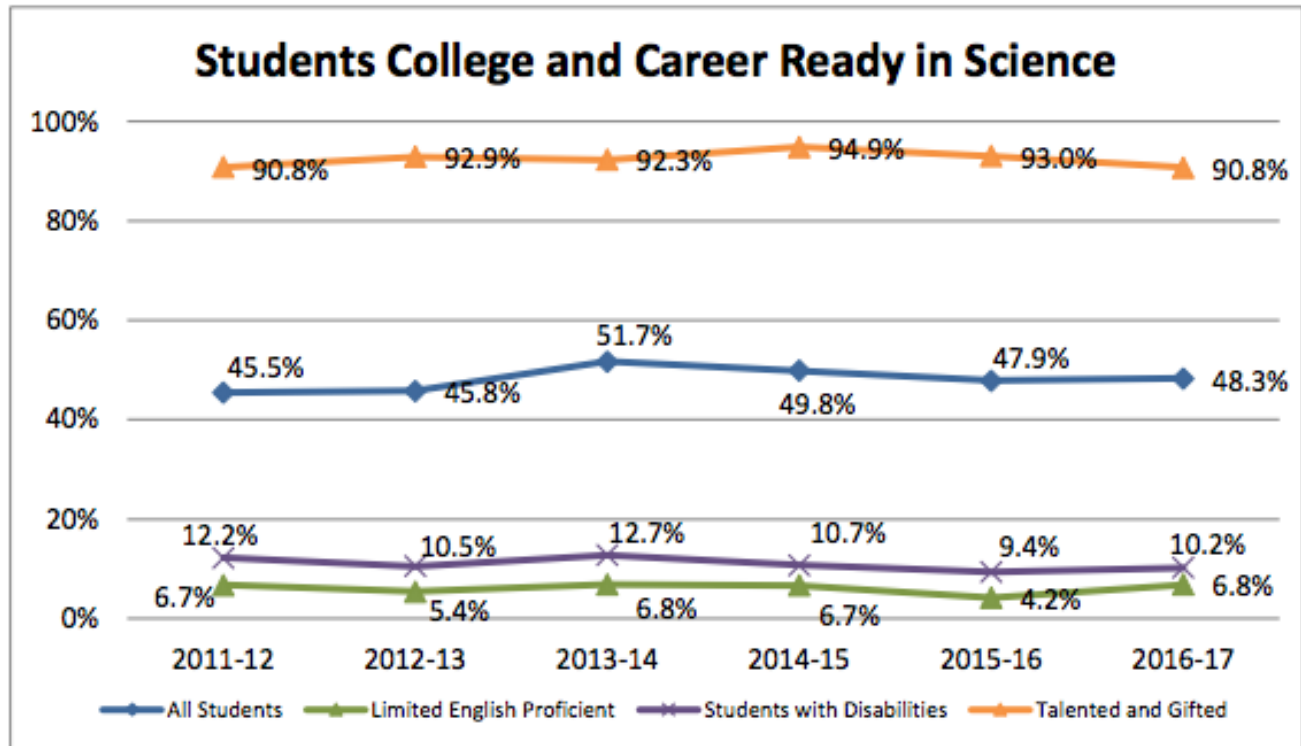
School Name	2013-14	2014-15	2015-16	2016-17
Aloha-Huber Park K-8 School	47.9%	50.4%	46.9%	50.8%
Barnes Elementary School	51.6%	50.0%	52.2%	51.7%
Beaver Acres Elementary School	57.5%	50.0%	52.2%	45.4%
Bethany Elementary School	92.8%	86.1%	82.1%	91.3%
Bonny Slope Elementary School	93.9%	90.2%	80.6%	89.7%
Cedar Mill Elementary School	79.1%	90.9%	98.0%	>95%
Chehalem Elementary School	58.5%	80.0%	67.1%	71.6%
Cooper Mountain Elementary School	87.5%	88.0%	88.9%	82.3%
Elmonica Elementary School	72.3%	77.3%	60.3%	62.3%
Errol Hassell Elementary School	89.6%	87.3%	87.2%	90.0%
Findley Elementary	94.7%	93.5%	95.0%	93.6%
Fir Grove Elementary School	62.8%	55.4%	65.1%	70.7%
Greenway Elementary School	62.7%	66.7%	64.1%	60.0%
Hazeldale Elementary School	73.2%	60.3%	73.1%	67.8%
Hiteon Elementary School	91.6%	85.7%	86.4%	79.8%
Jacob Wismer Elementary School	87.2%	88.6%	91.1%	>95%
Kinnaman Elementary School	50.0%	46.7%	47.7%	43.2%
McKay Elementary School	65.6%	65.5%	71.9%	81.1%
McKinley Elementary School	53.9%	47.7%	60.2%	59.4%
Montclair Elementary School	88.2%	89.7%	90.0%	>95%
Nancy Ryles Elementary School	84.1%	82.2%	79.3%	77.9%
Oak Hills Elementary School	87.1%	97.4%	89.5%	87.8%
Raleigh Hills K-8 School	72.4%	74.6%	64.3%	78.7%
Raleigh Park Elementary School	76.3%	71.9%	70.0%	69.2%
Ridgewood Elementary School	88.5%	81.0%	80.4%	86.8%
Rock Creek Elementary School	93.8%	90.9%	93.9%	88.3%
Scholls Heights Elementary School	89.0%	89.3%	86.1%	91.2%
Sexton Mountain Elementary School	86.6%	71.9%	78.6%	85.1%
Springville K-8 School	81.3%	82.1%	86.3%	85.0%
Terra Linda Elementary School	68.7%	73.6%	80.3%	74.0%
Vose Elementary School	56.3%	43.5%	42.9%	55.9%

West Tualatin View Elementary School	81.1%	87.1%	76.5%	70.0%
William Walker Elementary School	40.2%	46.1%	45.6%	56.7%

Students Meeting or Exceeding Standard in Science, Grade 5 (2016-17)	All students	Asian	Hispanic /Latino	Multi-Racial	White	Female	Male	Econ Disadv	Stdnts with Disab	TAG	English Lang. Learner	Ever ELL
Aloha-Huber Park K-8	51%		49%		56%	51%	51%	45%			32%	42%
Barnes	52%		27%		85%	40%	67%	37%			22%	22%
Beaver Acres	45%		31%		59%	43%	48%	43%			26%	33%
Bethany	91%	91%			93%	88%	94%			>95%		
Bonny Slope	90%	91%			90%	90%	89%			>95%		
Cedar Mill	>95%				>95%	>95%	>95%			>95%		
Chehalem	72%		62%		81%	73%	70%	61%			42%	52%
Cooper Mountain	82%				84%	85%	79%					
Elmonica	62%		43%			60%	65%	51%			38%	44%
Errol Hassell	90%				95%	86%	94%					
Findley	94%	95%			89%	95%	92%			>95%		
Fir Grove	71%		52%		79%	61%	81%	61%				50%
Greenway	60%		36%		86%	68%	52%	50%			20%	27%
Hazeldale	68%		49%		80%	73%	62%	59%			41%	52%
Hiteon	80%				83%	88%	73%	71%		>95%		
Jacob Wismer	>95%	>95%			92%	94%	>95%			>95%		
Kinnaman	43%		30%		60%	36%	51%	39%			19%	27%
McKay	81%					86%						
McKinley	59%		42%		79%	54%	65%	50%			23%	30%
Montclair	>95%				95%	94%	>95%					
Nancy Ryles	78%				84%	64%	90%	68%		>95%		
Oak Hills	88%				90%	85%	91%			>95%		
Raleigh Hills K-8	79%		58%		91%	76%	82%	70%			56%	61%
Raleigh Park	69%				88%	59%	77%					
Ridgewood	87%				87%	86%	88%					
Rock Creek	88%				94%	86%	91%	62%		>95%		
Scholls Heights	91%				94%	96%	86%			>95%		
Sexton Mountain	85%				87%	85%	85%					
Springville K-8	85%	92%			84%	90%	78%	70%		>95%		64%
Terra Linda	74%				81%	75%	73%	52%				
Vose	56%		47%		82%	50%	62%	46%			38%	39%
West Tualatin View	70%				81%		70%					
William Walker	57%		56%			54%	59%	57%			43%	48%

Science: The achievement data for 5th grade Science increased 2.3%, from 72.9% of our students proficient or exceeding in 2015-16 to 75.2% of our students proficient or exceeding in 2016-17. There has been an increase in the percentage of students with disabilities who have demonstrated proficiency in science.

Grade 8 - Explore or Aspire Scores (% that meet or exceed)



Students College and Career Ready in Science, Grade 8	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
All Students	45.5%	45.8%	51.7%	49.8%	47.9%	48.3%
Economically Disadvantaged						
Limited English Proficient	6.7%	5.4%	6.8%	6.7%	4.2%	6.8%
Students with Disabilities	12.2%	10.5%	12.7%	10.7%	9.4%	10.2%
Asian	66.5%	68.0%	72.8%	72.4%	71.2%	75.1%
Pacific Islander/Native Hawaiian***	30.0%	<5%	25.0%	30.8%	23.1%	8.7%
Black	26.6%	18.8%	30.8%	26.8%	20.6%	22.6%
Hispanic/Latino	20.6%	18.7%	24.8%	23.8%	21.4%	20.2%
American Indian/Alaskan Native***						
White	51.3%	53.9%	58.9%	56.6%	55.7%	55.1%
Multi-Racial	49.8%	49.4%	53.1%	57.7%	48.1%	53.4%
Talented and Gifted	90.8%	92.9%	92.3%	94.9%	93.0%	90.8%
Male	44.7%	44.6%	50.3%	47.7%	45.7%	47.0%
Female	46.2%	47.2%	53.2%	52.1%	50.2%	49.7%

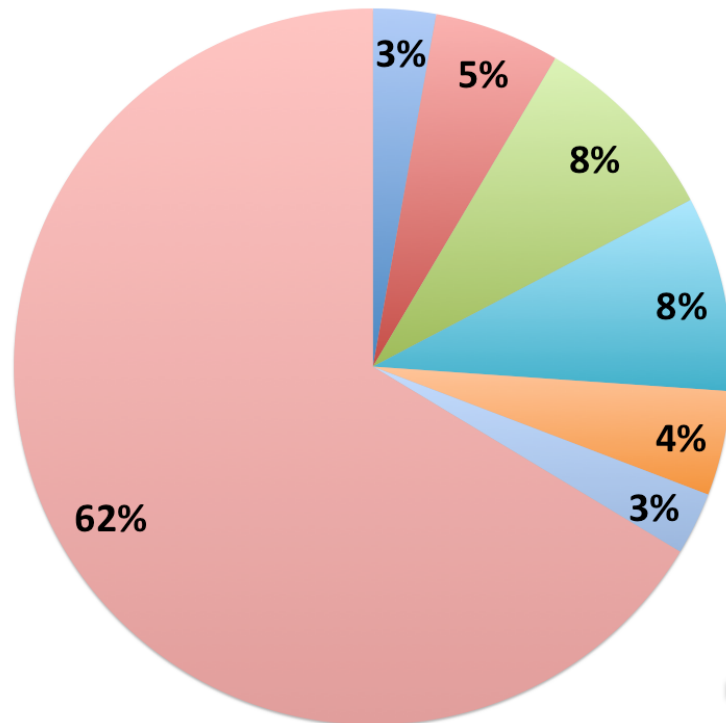
School Name	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Aloha-Huber Park K-8 School	14.9%	15.6%	22.0%	30.9%	14.5%	13.8%
Arts & Communication Magnet Academy	47.6%	41.2%	51.0%	58.9%	43.7%	43.5%
Cedar Park Middle School	47.6%	47.9%	51.0%	56.9%	51.8%	52.2%
Conestoga Middle School	45.0%	35.3%	51.3%	45.7%	35.7%	32.5%
Five Oaks Middle School	29.3%	32.9%	37.0%	29.4%	30.7%	33.7%
Health & Science School	45.7%	37.7%	60.0%	41.7%	39.2%	52.8%
Highland Park Middle School	43.4%	50.6%	50.0%	47.8%	43.0%	48.9%
International School of Beaverton	76.3%	70.6%	74.8%	75.6%	88.1%	83.0%
Meadow Park Middle School	49.8%	47.1%	54.7%	45.3%	51.9%	41.6%
Mountain View Middle School	29.0%	28.6%	38.2%	31.5%	27.7%	33.1%
Raleigh Hills Elementary School	52.5%	69.4%	62.7%	63.2%	51.6%	51.7%
Springville K-8 School		51.6%	55.8%	61.5%	66.7%	52.8%
Stoller Middle School	59.4%	67.0%	68.4%	69.4%	75.3%	72.9%
Whitford Middle School	44.4%	43.5%	46.9%	45.5%	35.2%	35.1%








Students College- and Career-Ready in Science, Grade 8 (2016-17)	All students	Asian	Hispanic /Latino	Multi-Racial	White	Female	Male	Stdnts with Disab	TAG	English Lang. Learner
Aloha-Huber Park K-8	14%		7%			12%	15%			
ACMA	44%				49%	46%			83%	
Cedar Park	52%	94%	17%	67%	59%	55%	50%	19%	92%	
Conestoga	32%	47%	21%		33%	40%	26%	8%	64%	
Five Oaks	34%	54%	20%		45%	36%	31%	7%	83%	<5%
Health & Science	53%		25%		67%	47%	58%		93%	
Highland Park	49%	65%	24%	58%	56%	53%	45%	7%	91%	
ISB	83%	82%		86%	86%	81%	85%		>95%	
Meadow Park	42%	82%	11%	39%	54%	40%	43%	6%	94%	<5%
Mountain View	33%	40%	22%		41%	36%	30%	<5%	86%	
Raleigh Hills K-8	52%				68%	59%	45%			
Springville K-8	53%				62%	50%	56%			
Stoller	73%	84%	53%	74%	68%	71%	74%	19%	>95%	38%
Whitford	35%		9%		54%	44%	27%	7%	87%	<5%

Data from Elementary Survey on Science in Elementary Schools

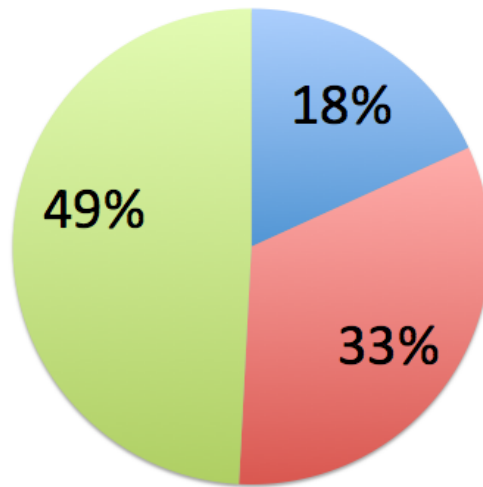
N = 344 teachers responded to the survey (there are about 800 elementary teachers in the district). Survey went out on 3.15.2018. [Link to summary of survey responses](#) in google form




Q1. What is your best guess on how many minutes a week you teach science, on average?



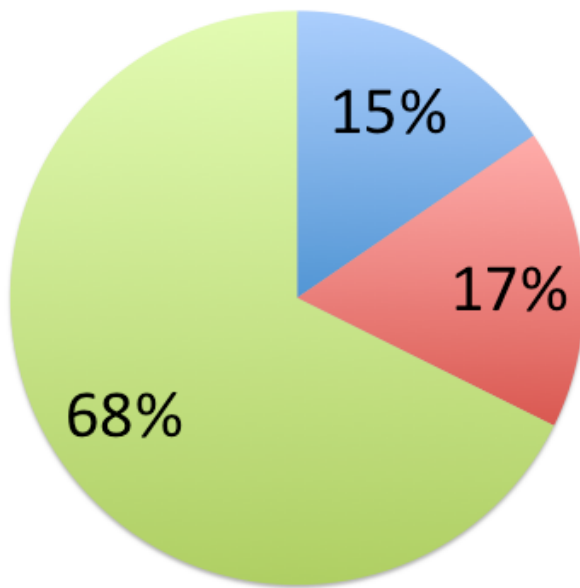
Color	% Response	Response Choice
	62%	It is hard for me to estimate how many minutes I teach science in a year because I do not teach science every week, I teach it in units that are spread throughout the year
	3%	0 - 15 minutes
	5%	15 - 30 minutes
	8%	30 - 60 minutes
	8%	60 - 90 minutes
	4%	90 - 120 minutes
	3%	I am a specialist, I am not expected to teach science




Q2. What proportion of content time do you spend on science as compared to social studies and health?



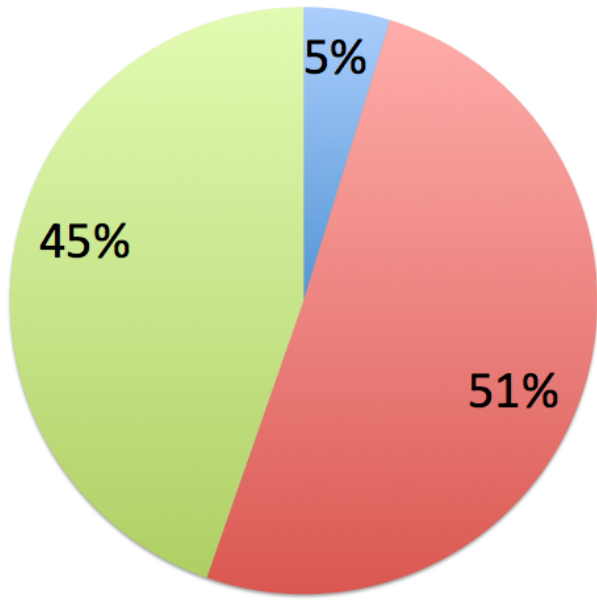
Color	% Response	Response Choice
	49%	I spend about the same amount of time on science as I do on social studies and health
	18%	I probably spend less time on science than I do on social studies and health
	33%	I probably spend more time on science than I do on social studies and health




Q 3: Is science grouped into your content time (ie. - is it grouped with health and/or social studies ?)



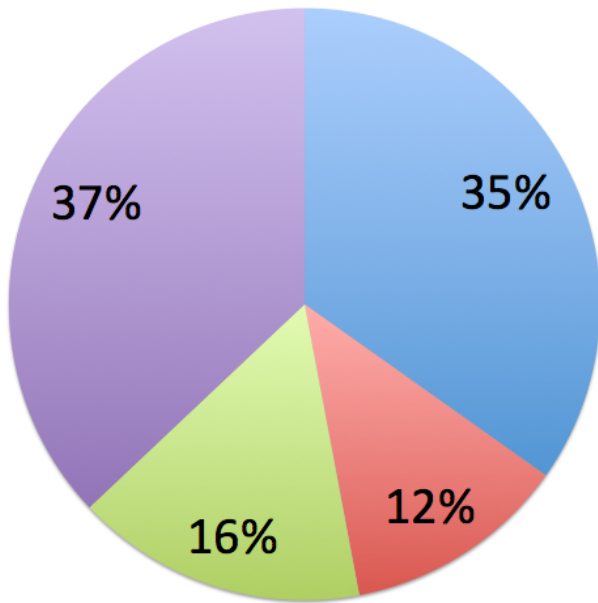
Color	% Response	Response Choice
	68%	Yes
	15%	Other
	17%	No





Q 4: Is your content time determined by your master schedule and created by your administrator?



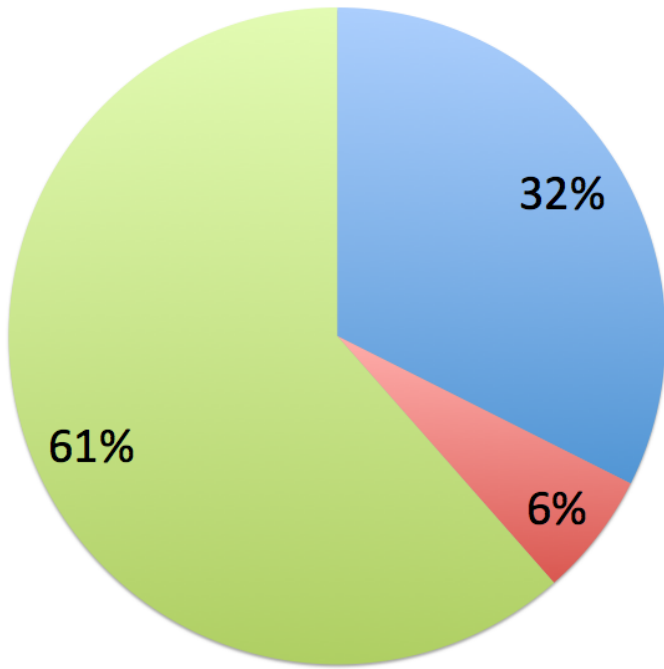
Color	% Response	Response Choice
	45%	Yes
	5%	I do not know
	51%	No

Q5: If your science time is scheduled for you, do you teach more, the same, or fewer minutes of science, on average, than is scheduled into your week?



Color	% Response	Response Choice
	16%	I teach more minutes of science than are scheduled
	35%	I teach about the same amount of minutes as are scheduled
	12%	I teach fewer minutes than are scheduled
	37%	Science is not scheduled into my day/week

Q6: If your science time is not scheduled, do you still teach science?

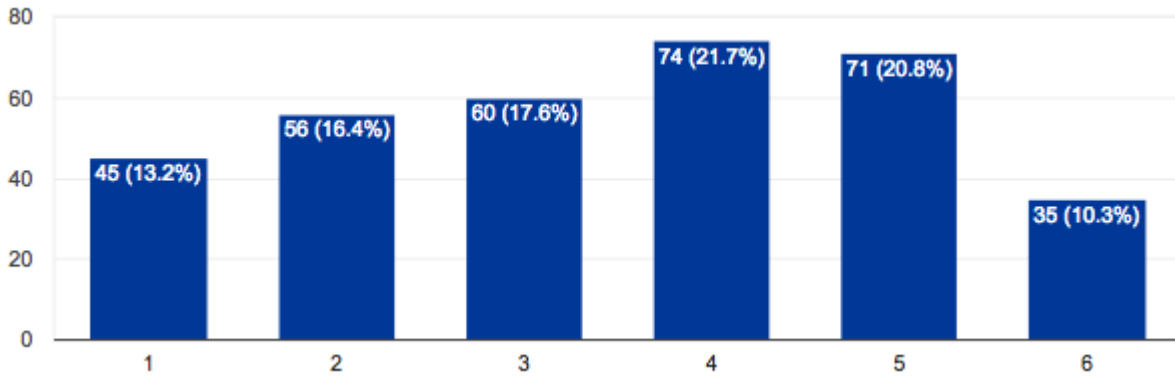


Color	% Response	Response Choice
Green	61%	Yes
Blue	32%	Does no apply to me
Red	6%	No

The following questions were Likert Scale Questions

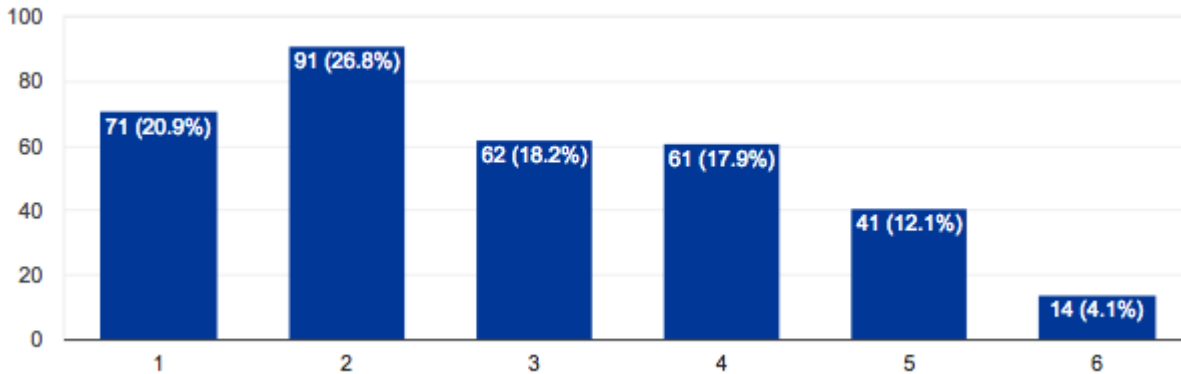
1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Q7: I have had the training I need to teach science

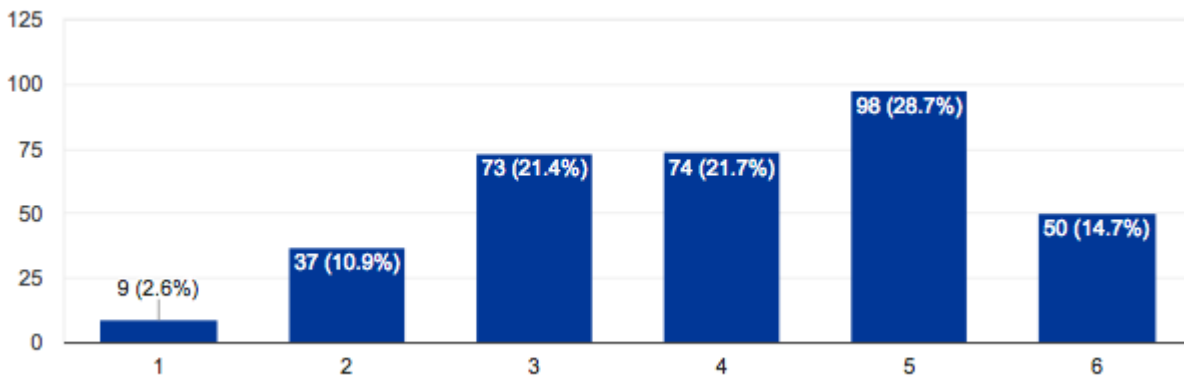


1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

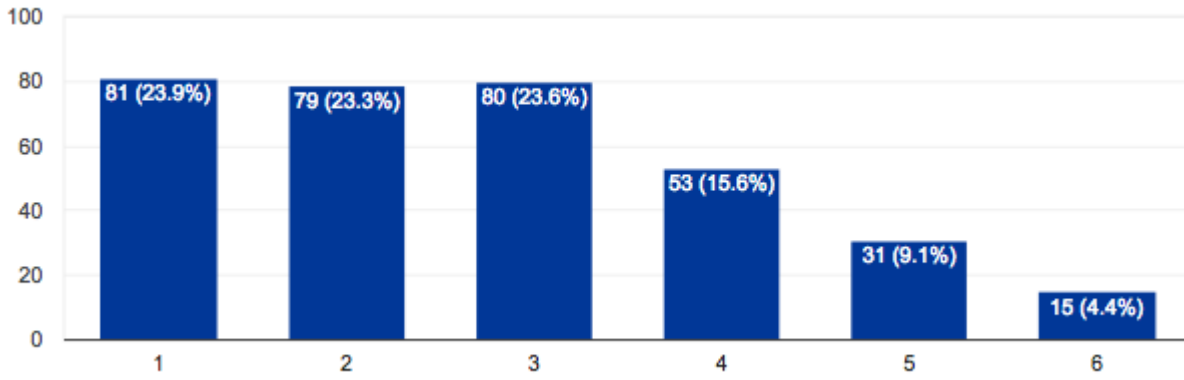
Q8: I have the materials I need to teach science



Q9: I feel confident about teaching science

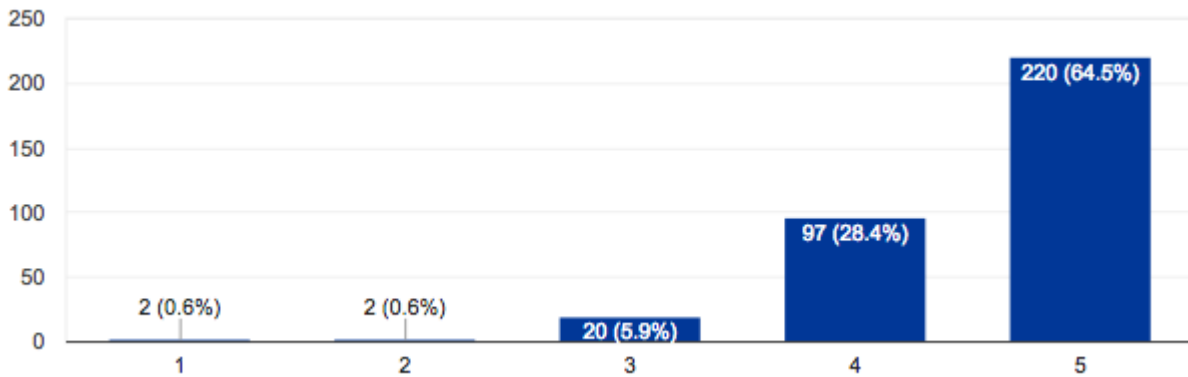


Q10: I have the time that I need to teach science

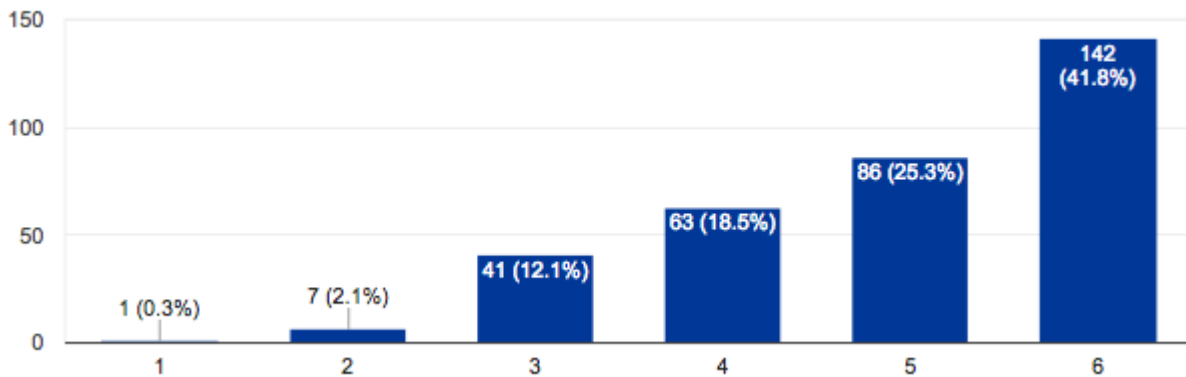


1	2	3	4	5	6
Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree

Q11: I think teaching science helps increase student engagement in my classroom



Q12: I think that teaching science helps ELL students with academic language acquisition.



Q13: Anything else that you would like us to know about science in elementary school?

Generalized Teacher Responses	Count
Too much focus on reading and math, not enough time for science. Blocked schedule makes it hard to find time for science	17
District resources are difficult to pair with PYP. Need materials that correlate to PYP units and are more integrated.	11
Want kits/science materials kept in schools (not dropped off). Liked Foss kits.	11
Do not like current materials/books. Do not like workbook.	9
Teaching in elementary needs to be more integrated (ie science/writing, science/math), not siloed	9
Want more PD/guidance on teaching science	8
When science is hands-on students are engaged (When only reading/writing - about science they are not, even best readers/writers)	5
Teaching Science is time and labor intensive. Need time for planning.	4
Create(d) own units	3
Spanish version of curriculum is a need/ ELL support needed	3
Give money for science to schools	2
Need elementary science TOSA.	2
Teachers still teaching old lessons they have always taught	1
Look at free materials before buying new materials	1
Create videos of master teachers teaching science	1
Use IA to teach science and technology	1
ELL/SPEd students pulled during science	1
Large class size makes teaching science difficult	1
Do not make science a workshop model	1
Admin is supportive of adding time for science	1

Middle School Student Survey Data

Student Survey of Instructional Practices:

The Student Survey of Instructional Practices was administered to all middle and high school students in the spring of 2018 to inform the adoption process. The survey is designed to measure three research-based instructional approaches that are considered to be the most influential on student achievement in STEM (Saxton, et al., 2014).

1. Centeredness

- Teachers facilitate active engagement of students in their learning.
 - Teachers assume the role of facilitator rather than authority figure
 - Students assume the role of active learners making sense of learning activities for themselves

2. Relatedness

- Teachers implement learning activities that students find to be relevant, important, worthwhile, and connected to their cultural and personal lives outside of the classroom and encourage students to actively use real-world examples in their thinking.

3. Assessment

- Teachers use frequent formative assessments (and summative assessments) to facilitate diagnostic teaching and learning.
 - The teacher's role includes setting clear, developmentally appropriate learning targets or performance criteria and selecting or developing formative assessment tasks that align with learning goals
 - The student's role includes assuming ownership over their learning and engaging in metacognitive activities
 - Teachers and students both contribute to a classroom culture of assessment for learning

Why should educators use this survey?

The three instructional practices identified in this survey - facilitating active engagement of students in their learning, the use of assessment, and the implementation of culturally and personally relevant curriculum - have been shown by research to impact student achievement in STEM. However, because instructional practices are complex, it is not possible to use one tool to see the whole picture. In addition to using this survey, we encourage teachers to look at student work, listen to student talk, and collaborate with colleagues to reflect on how to best facilitate student-centered learning in the classroom.

What kinds of questions or statements are on the survey?

Below are examples taken from the survey. Students are asked to indicate their answers from 1 (Almost never) to 5 (Very often).

- My teacher asks questions that have more than one answer.
- My teacher asks me to give reasons for my answers.
- My teacher encourages me to ask questions.
- I talk to my classmates about how to solve problems.

How can the results be used to improve outcomes for students?

The data is intended to be used at the individual teacher level to inform decisions that help educators create student-centered, relevant and meaningful learning experiences in STEM. The Portland Metro STEM Partnership, our STEM Hub, developed this survey. A sample

Almost never 1	Seldom/Not often 2	Sometimes 3	Often 4	Very often 5
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	Questions by Category	Example Data
	Question In science class, ...	
C e n t e r e d n e s s	My teacher asks questions that have more than one answer	3.4
	My teacher asks me to give reasons for my answers	4.1
	My teacher encourages me to ask questions	3.6
	My teacher encourages me to talk to my classmates about how to solve problems	3.6
	I memorize facts and science principles for no reason.	3.6
	My teacher spends a lot of time talking to the whole class.	2.2
	My teacher has me work with my classmates to learn.	3.7
	My teacher asks me to use evidence from classroom experiences, reading, group work, or other learning to support my answers.	3.6
	My teacher has us read from lots of printed material.	2.9
Centeredness Mean =		3.4
R e l e v a n c e	We relate what we are learning to our daily lives	3.2
	We connect what we are studying to current events or real-world problems	3.4
	I don't see a connection between what we are studying and my life outside of school*	3.4
	My teacher encourages me to use real-world examples in my thinking	3.6
	I don't think what we are studying is important outside of school*	3.8
	I think what we are learning is related to my life outside of school	3.3
Relevance Mean =		3.5
A s s e s m e n t	My teacher provides feedback on how I am doing.	3.4
	My teacher helps me understand my work so I can do better	4.2
	I understand what is expected of me.	4.0
	My teacher clearly explains what I should be learning.	4.2
	My teacher only gives us tests at the end of the unit we are studying.	1.8
	If I do not understand something during science time, I know I'll have a chance to ask questions about it.	3.9
Assessment Mean =		3.6

Results of the above survey (2018): On average, high schools performed stronger on this survey, across all three categories, than middle schools.

MS 2018 Spring Student Survey of Teacher Instructional Practices in Science - Category Means				
School		Centeredness	Relevance	Formative Assessment
Cedar Park	Mean	2.2	2.4	1.8
	N	124.0	123.0	121.0
	Std. Deviation	0.9	1.0	0.8
Conestoga	Mean	2.4	2.8	2.3
	N	313.0	304.0	310.0
	Std. Deviation	0.7	0.9	0.9
Five Oaks	Mean	2.0	2.2	1.8
	N	225.0	222.0	225.0
	Std. Deviation	0.7	0.9	0.8
Highland Park	Mean	2.1	2.4	1.9
	N	190.0	185.0	190.0
	Std. Deviation	0.8	1.0	0.9
Meadow Park	Mean	2.1	2.5	1.9
	N	169.0	167.0	169.0
	Std. Deviation	0.8	1.0	0.8
Mountain View	Mean	2.3	2.4	1.9
	N	205.0	197.0	200.0
	Std. Deviation	0.8	1.0	0.8
Stoller	Mean	1.8	2.2	1.7
	N	494.0	483.0	493.0
	Std. Deviation	0.7	0.9	0.8
Whitford	Mean	2.2	2.5	2.5
	N	196.0	192.0	195.0
		128		

	Std. Deviation	0.8	0.9	1.0
District Mean	Mean	2.1	2.4	2.0

Elementary Time Research Summary

The State of Instructional Time: Beaverton versus National Averages

The below tables and graphs compares the amount of time students in Beaverton spend on each instructional area or activity per day and week as compared to national averages.

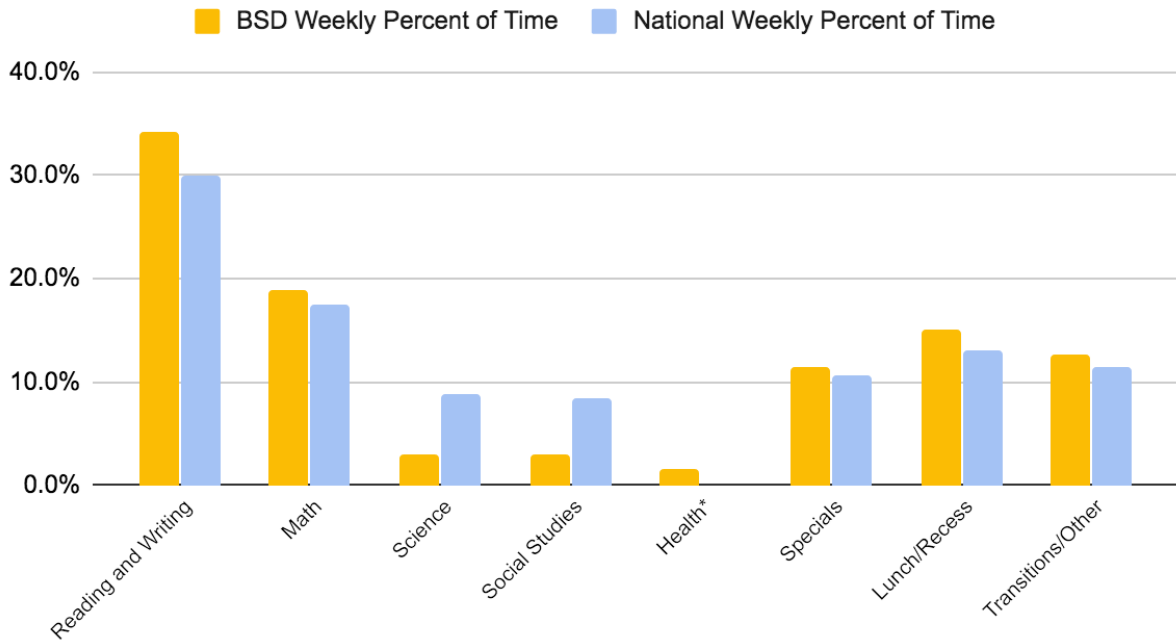
Source: NCES study published by the US Department of Education in 2017.

	<u>BSD Instructional Time (Averages)</u>			<u>Average Instructional Time Nationally (NCES)</u>	
	Daily Minutes	BSD Weekly Hours	Percentage of Time	National Weekly Hours	Percentage of Time
ELA / Reading and Writing	135	11.3	34.2%	9.9	30.0%
Math	75	6.3	19.0%	5.8	17.6%
Science	12	1.0	3.0%	2.9	8.8%
Social Studies	12	1.0	3.0%	2.8	8.5%
Health*	6	0.5	1.5%	*	*
Specials (on average)	45	3.8	11.4%	3.5	10.6%
Lunch/Recess**	60	5.0	15.2%	4.3	13.0%
Transitions/Other	50	4.2	12.7%	3.8	11.5%
Total Time	395	32.9	100.0%	33	100.0%

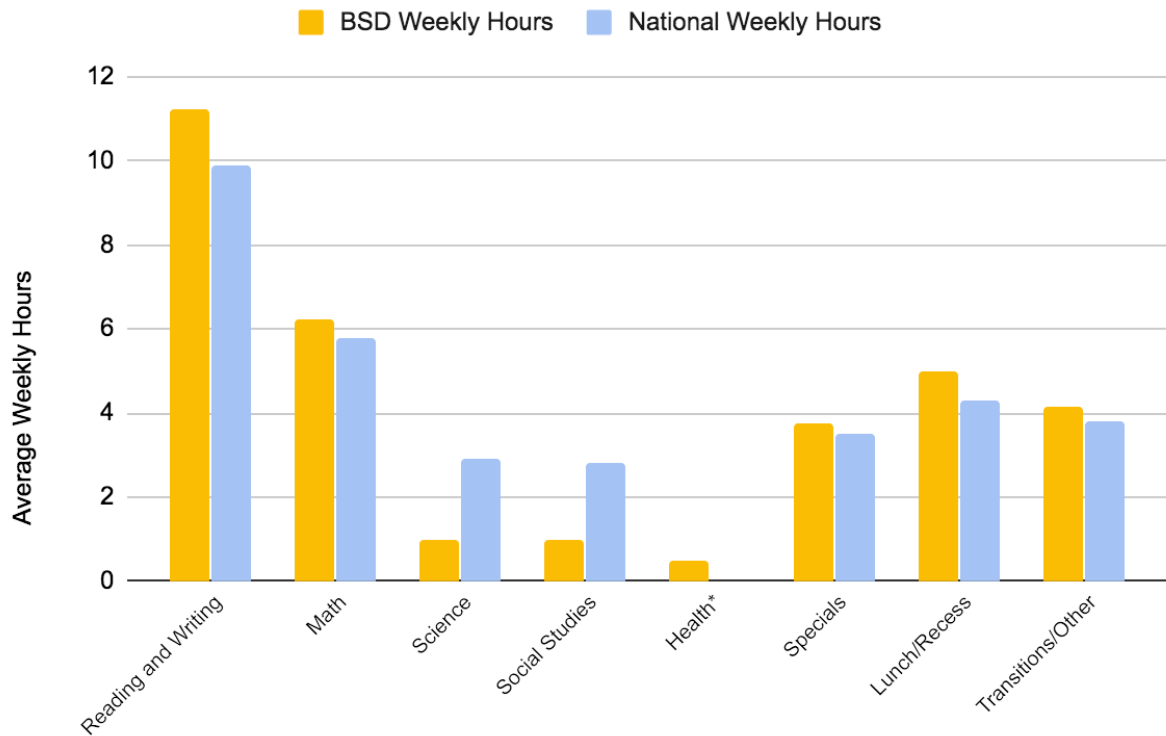
*Health was not reported separately in the NCES study. Above, health should be assumed as part of "Other," to reach the total school time average per week of 33 hours nationally.

**For NCES data, assumption of daily lunch time of 30 minutes was added to the recess category in the study. Average recess only time was reported as 1.8 hours by NCES. For the BSD Lunch/Recess, a 45 minute lunch/recess plus an additional 15 minute recess was assumed.

Percent of Time: BSD versus National Average (NCES)



Weekly Hours - BSD versus National Averages



State of Scheduling and Instructional Minutes

- There is a significant amount of variation between schools in how much time is dedicated to different instructional blocks, and the amount of teachers' time spent on collaborative planning, administrative meetings, personal prep time, and assigned school duties varied significantly by school (Choi & Nicholson, 2018).
 - *What is the state of BSD's elementary scheduling expectations and considerations?*

State of Science

- Nationally, elementary science instruction in 2008 was at the lowest number of hours per week as an average since trend data on the measure began in 1988 (Blank, 2013)
- NSTA recommends that science be given equal priority as other core subjects, recommending that schools should strive for at least 60 minutes of science instruction a day (NSTA, 2020).
 - Instructional time for science in the elementary grades has dropped to an average of 2.3 hours per week, and states' averages vary widely in class time spent on science, with average hours per week ranging from 1.9 hours per week in Oregon (which is cited amongst the lowest in the nation, and this cited time is *still* higher than BSD's current model) to 3.8 hours per week in Kentucky (Blank, 2012)
 - Many elementary educators do not receive an adequate amount of professional learning to gain the confidence needed to teach science (Horizon Research 2013; McClure et al. 2017).
 - *How can we use the BSD Science adoption as a vehicle to address this?*

Importance of Science

- Performance on a first-grade general knowledge exam, which included science content, was more predictive of science achievement through eighth grade than measures of achievement in other subjects or student background characteristics (Morgan, Farkas, Hillemeier, & Maczuga, 2016)
 - *How can we design our elementary science program and instructional time to close the gaps we see in secondary science, in terms of both access to rigorous science coursework in HS, and science achievement?*
- A strong STEM identity is a significant predictor of future STEM academic success ([Saxton, et al, 2014](#)).
 - How can we design our science and instructional program to nurture student academic identity and motivational resilience in STEM?
- Research on human development has outlined the importance of middle childhood and early adolescence science instruction (i.e., the years between age 6 and 14; Eccles, 1999). Teaching science through playful experiences is an important approach to promote kindergarten students' developing understanding of science concepts (Bulunuz, 2013)

- Additionally, science equity does not exist as early as third grade. Science education should begin earlier and address the inequities in science teaching, learning, and assessment related to gender, ethnicity, and poverty (Lin & Chu, 2010).
 - *If equity gaps emerge in Science as early as third grade, how can our K-2 approaches be crafted to eliminate inequity and promote play-based inquiry?*

An Integrated Approach and Mindset: *Could BSD follow a more formally supported integration approach? What could it look like?*

- Many states are planning curriculum under the literacy standards of the Common Core that can **lead to integrated approaches to instruction** across language arts, mathematics, science, social studies, and technology (Blank, 2013)
- **Integrated approaches led to greater student achievement in science and language arts across elementary grade levels**, and at all grade levels, teachers linked a variety of strategies including read-alouds, independent reading, at home reading, and writing in various genres that connected hands-on science activities to language arts skills. (Bradbury, 2017)
- Students in an experimental group who received in-depth science instruction that replaced a district-adopted basal reading program with science-content reading designed to facilitate applied comprehension skills **showed significantly greater standardized test achievement as measured by the Iowa Tests of Basic Skills Reading Subtest and the Metropolitan Achievement Test science subtest**, but also displayed a more positive attitude toward science and reading and greater self-confidence in learning science (Romance & Vitale, 1992).
- In an experimental study with 4th graders, students who received an integrated science and literacy approach showed **significantly greater gains on measures of science understanding, science vocabulary, and science writing** (Cervetti, Barber, Dorph, Pearson & Goldschmidt, 2012).
- Re: Social Studies (which is on the horizon for adoption): Teachers who used discipline-specific methods, integrated within English Language Arts, and who reported being satisfied with teaching social studies spent significantly increased time on social studies (Fitchett, Heafner & VanFossen, 2014).

Considerations: Standards vs. Instructional Minutes. *What are the implications of this consideration on the state of SBLS in BSD?*

- With the wave of new standards being adopted by states in mathematics, ELA, and science, and assuming the current length of the school day continues, the key question for reporting from teachers may be what content gets taught relevant to the standards across each subject, rather than how much time is spent on each subject (Blank, 2013)

Elementary Science Pilot Data Summary

Spring 2019 Pilot Data - Carolina, Amplify & STEMScopes

Pilot Teachers - Would you recommend we adopt this curriculum?

Amplify:

Yes	3	38%
No	4	50%
Maybe	1	13%

Carolina Biological

Yes	6	50%
No	6	50%
Maybe	0	0%

STEMScopes

Yes	1	9%
No	9	82%
Maybe	1	9%

Based on the above teacher input, student assessment data, and student interviews. The Project Team voted to move forward with further testing of the Carolina Biological curriculum. Additionally, between spring 2019 and fall 2019, the science leadership team learned of a new curriculum that was not yet published at the beginning of the review process, Twig Science. After the Teacher Cadre and Project Team reviewed Twig, they

found it to be high quality and recommended it for side by side piloting with Carolina Biological, the remaining publisher from the spring 2018 pilots.

Fall 2019 Pilot Data - Carolina and Twig

The following was written by the Project Team, summarizing all post pilot data (teacher and student) from the Fall 2019 pilots:

	Carolina	Twig
Positives	<ul style="list-style-type: none"> • Lots of hands on investigations, that the students seemed to enjoy • Appears that teachers found the planning for the pilot reasonable (not too difficult) (n=7 out of 9) 	<ul style="list-style-type: none"> • Readers/note taking materials are age appropriate and very good (n=1) • High engagement with real world phenomenon • Twig is under the Heinemann umbrella, so there may be synergies to be gained due to our ELA curriculum having the same publisher and approaches. • ELL supports are high quality and are aligned to our ELD adoption.
Negatives	<ul style="list-style-type: none"> • Carrying out an investigation • Seems like none of the teachers used any of the readers materials or the readers were not helpful. (n=4) • Few mathematics and computational thinking opportunities • Lack of support for ELL students • Felt like needed to support the lesson with additional materials (visuals, videos, other activities) • Time estimates provided by Carolina are not accurate. • Few hands-on materials for earth science unit. • Students did not like the “packets” • The student worksheets were not engaging and often not phenomena-based. • Student readers were not used by teachers. 	<ul style="list-style-type: none"> • Taking a lot of time (more than teachers have) • Teacher reported having to buy items that were needed but not included in the kits/not things she had in her classroom. (note: this was only for food items, which publishers are not allowed to ship - district will need to provide these items) • Few hands on investigations for earth science unit. (n=1) • Lots of reading, not enough hands on opportunities • Leveled readers in English only - for Spanish, only 1 option.
Twig/Carolina Comparison	<ul style="list-style-type: none"> • I taught the 4th grade Carolina unit and Twig in first grade. Twig had many more language supports for students with limited English proficiency. My students enjoyed working in their TWIG notebooks but many of my fourth graders didn't like 	

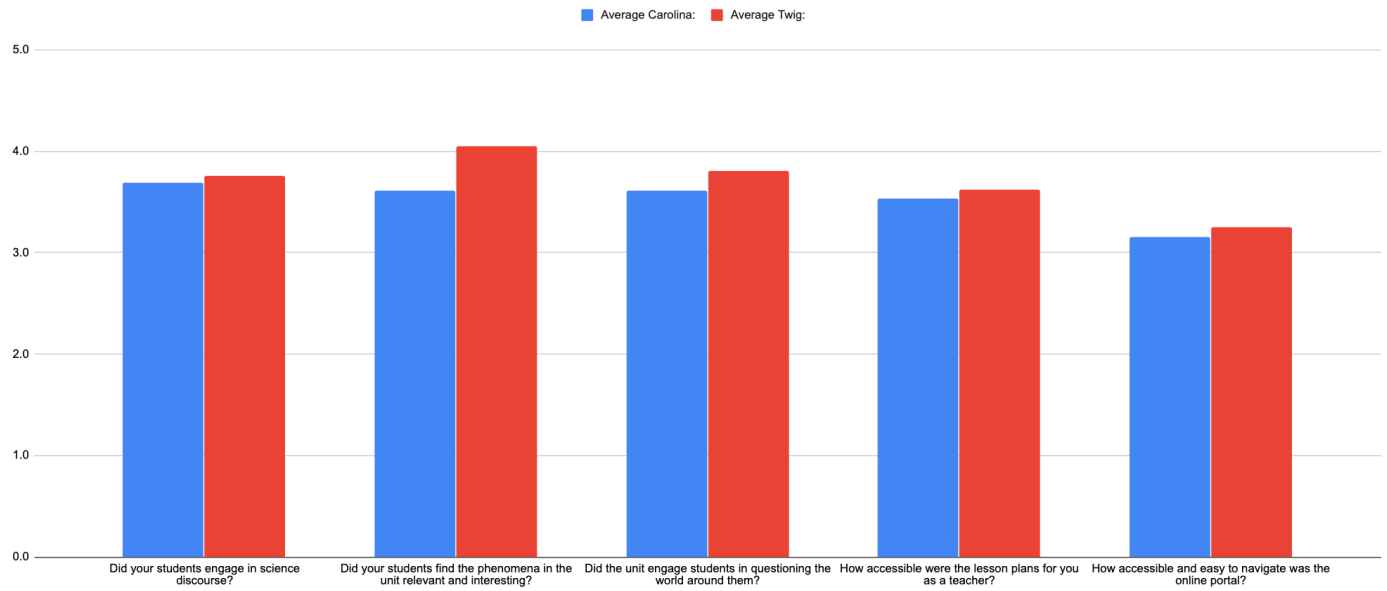
Summary Statements

the Carolina worksheets.

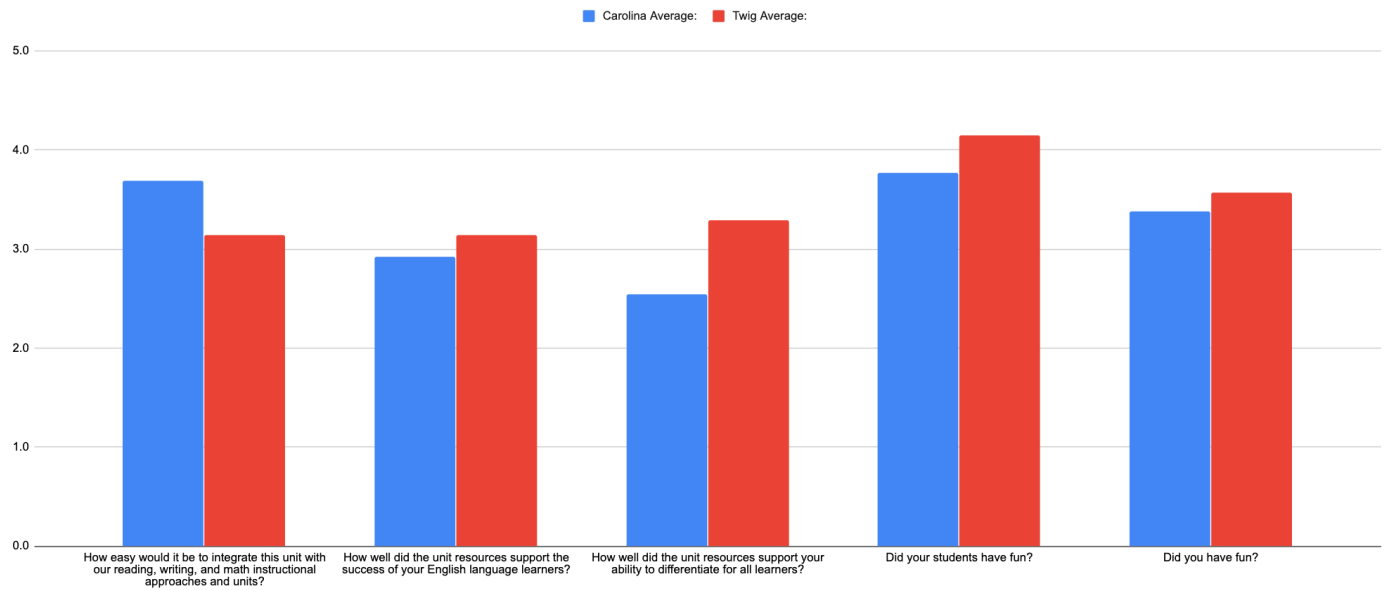
- Observational data is stronger for Twig
- Student responses are similar for both programs
- Both appear to integrate the SEP's appropriately.
- Incorporation of SEPs is evident in both, but Twig surpassed Carolina in Planning and Carrying out Investigations, Math & Computational Thinking, and Obtaining, Evaluating and Communicating Info (~0.5 or more point difference in each case on 2 point scale)
- My team and I taught the 5th grade Twig unit on Earth science. It was overall well received by all of us. We found the lessons engaging, the videos well done, the Twig book very user friendly for the kids and the hands-on that we did helped them to see a link between the phenomenon and all of unit tasks. The few things that we found that were not user friendly were changed or will be changed in the next iteration of the Twig Book. The staff was super helpful and made sure we had what we needed.
- Twig has a more STEM focus that allows for students to uncover the phenomenon through either investigations, research, and simulations versus "verifying" what they were told the concepts were in the initial video in Carolina. The written work that is done by students in TWIG incorporates more of the "writing, thinking and communicating of scientists" than Carolina. The format is more engaging in TWIG and is not so redundant and repetitive as Carolina.
- Twig surpasses Carolina in all of the numerical measures except for one.
- Twig materials don't need to be changed, they are interactive and engaging as is
- Carolina is very worksheet heavy
- Many Carolina lessons don't align with NGSS
- Based on conversations with pilot teachers at Project Team meetings, it seems that the professionals at Twig were very responsive to teacher questions and concerns. I see this as a distinct advantage.
- The data appear to support the adoption of Twig. Additionally, the data appear to show that the lessons and media are engaging.
- Observational data seems to support Twig
- Twig's connection to reading and writing is solid.
- Multi-media supports Twig.
- Twig appears to have a more embedded set of ELD supports which will allow the content to be more accessible.

Post Pilot Teacher Feedback

Average Carolina: and Average Twig:



Average Twig: vs. Average Carolina:



How accessible and helpful were the student readers?

Twig

Most teachers did not use the readers due to a lack of time. Those who did try them out commented that the reading level was too high so they read them as a group.

Carolina

Most teachers did not use the readers due to a lack of time.

Tell us about the hands-on investigations. Were there enough of them? Did they engage students in all three NGSS dimensions (science and engineering practices, crosscutting concepts, and core ideas)? Did they work effectively in the classroom?

Twig

Teachers commented that hands on takes a lot of time. Some units had enough hands on, one did not.

Carolina

Some units had enough hands on, others did not.

Would you recommend this curriculum to the Project Team for adoption by the district? Why or why not?

Twig

Yes - 13 (65%)

No - 5 (25%)

Maybe - 2 (10%)

“I would recommend this curriculum. It is inquiry based, it responds to the learning targets. Very engaging for the students. Having the spanish components, including the teacher manuals is a fantastic resource for our Dual Language programs.”

“No, teachers do not have enough time to support this curriculum. We also do not have enough time dedicated to science to work with this curriculum.”

Carolina

Yes - 5 (38%)

No - 5 (38%)
 Maybe - 3 (23 %)

“Yes, I think a lot of the activities were worthwhile. With more practice and fine-tuning I think this would be a good curriculum.”

“I would not recommend that this is adopted by the district. There are many lessons that do not align to our standards. The lessons take FAR longer than they say they are going to. It is a very worksheet heavy curriculum (or you can do it digitally, but honestly, that's still a worksheet...it's just on the computer) where students are answering comprehension questions. The curriculum had very few visuals and did not support our ELLs. We did a lot of front loading with vocabulary when those words weren't yet relevant to students...and they engaged in investigations after the phenomena was fed to them in some instances.”

Was the time spent planning for and teaching the pilot realistic for teachers in the district?

Twig

- 10% - Yes, Very doable
- 25% - Yes, but it will be a challenge
- 40% - Maybe- it would be difficult for most teachers but they could likely get through most of it
- 25% - No - teachers will find this so difficult as to be prohibitive of them teaching the unit

Carolina

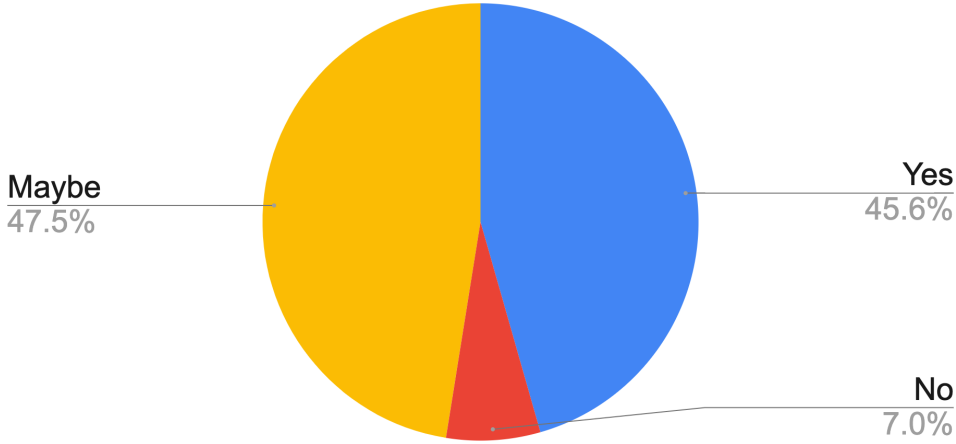
- 23% - Yes, Very doable
- 46% - Yes, but it will be a challenge
- 31% - Maybe- it would be difficult for most teachers but they could likely get through most of it

Post Pilot Student Feedback (1-5 Scale)

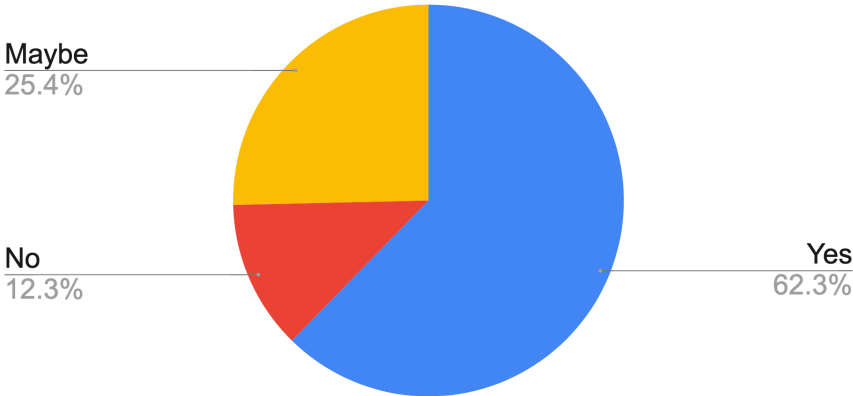
Which Science curriculum did your teacher use? (your teacher can tell you this)	Did these science lessons give you opportunities to discuss your ideas with your classmates?	How easy was it to understand the directions?	How easy was it to navigate or use the online site (if you used it)?	Did these science lessons give you opportunities to do hands on activities?	Did the science lessons make it easy for you to understand the science ideas and improve the skills you were learning?	Did you feel you were challenged?
Carolina Average	3.89	3.74	3.26	3.66	3.71	3.69
Carolina SD	0.97	0.96	1.42	1.07	1.10	1.23

Twig Average	3.85	3.78	3.20	3.83	3.70	3.96
Twig SD	0.99	0.97	1.24	1.08	0.99	1.05

Twig-Adopt this curriculum?



Carolina-Adopt this curriculum?



Excerpts from Student Surveys

Twig

I liked the hands on activities.

We did not have a lot of time to work on or build our car.

Carolina

The packets were very confusing and boring.

I liked the hands on stuff because it helps me learn better.

Post Lesson Student Interviews

What did you learn in the science lesson today?

Twig

-go outside and find objects and figure out what they are made from
-historic earthquakes that were smaller magnitude, but bigger deaths, and bigger magnitude but less deaths, that is probably due to better structures, more support on the bridges and stadiums and buildings, wire or more support on the bottom.

Carolina

-We learned about different plants and animals, how they are the same and different.
-how weather and climate are different

Tell me something you have liked about your science lessons in the last few weeks?

Twig

-Feliz, porque todo el tiempo en las ciencias leemos los libros de las ciencias y hacemos experimentos. (Happy because we read and do experiments all the time in science)
-Online-made custom earthquakes where students can make different magnitudes, random-ended up in oceans, also picked date, write it down on paper, building tower with paper.

Carolina

-Seeing the butterflies grow.
-I like the labs. I like the plants and growing the butterflies. I love science right now, I wish we did it more.

Middle School Science Pilot Data Summary Spring/Fall 2019

Spring 2019 Pilot:

Curriculum	Patterns/Trends	Questions	Conclusions	Recommendations
Amplify	High rate of "no's" from teachers. PD seemed to be of high quality (but not local).	Cost of kits: consumable vs. non-consumable? Are lessons aligned to HS and Elem targets?	Survey shows lack of teacher support.	No teacher support = no go
IQWST	Strong positives about student discussions. Evidence of higher student engagement. Higher level of consistency of quality and better alignment.	Cost of kits: consumable vs. non-consumable? Are lessons aligned to HS and Elem targets? Would student survey results been different if the sample size was higher? Spanish materials: how good are they? Is the scope well-aligned to what teachers need? What PD is available?	High ratings from students. Assessment and growth scores were highest. Best alignment with Patterns curriculum.	Strong front-runner, "yes"
STEMScopes	Lessons based off of whole class approaches. Student quotes indicate perhaps too easy. Tend to be more positives from newer teachers.	Cost of kits: consumable vs. non-consumable? Are lessons aligned to HS and Elem targets?	Evidence points to a possible lack of rigor. Easy to use, but almost too easy perhaps? Lowest student outcomes (on pre/post).	Need to explore rigor. Leaning "no".

Would you recommend we adopt this curriculum? (Teacher Responses)

Amplify			IQWST			STEMScopes		
Yes	2	25%	Yes	4	57%	Yes	3	50%
No	6	75%	No	1	14%	No	2	33%
Maybe	0	0%	Maybe	2	29%	Maybe	1	17%

Fall 2019 Pilot:

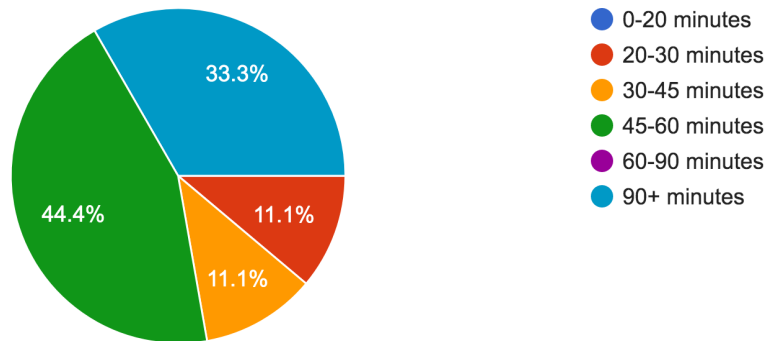
Summary of IQWST data by project team:

	IQWST
Positives	<ul style="list-style-type: none">• A majority of students feel successful with IQWST• Students enjoy the experiments and hands-on aspect.• Teachers indicate there is strong support for differentiation• Observational data is strong. All of the practices were engaged with and all students interviewed had positive responses/experiences to share.• Students like the amount of hands on.• Student feedback indicates that there is a lot of hands-on, more than they had done in previous years
Negatives	<ul style="list-style-type: none">• Teachers were concerned that it was difficult to modify or reformat the worksheets for students, but the vendor has let us know that they will provide editable files if we adopt (the pilot teachers only had PDFs).• This will be a shift in practice for some teachers, to more hands on. This might be challenging for teachers and we will need to support them with PD on how to do the labs.

Post Pilot Teacher Feedback

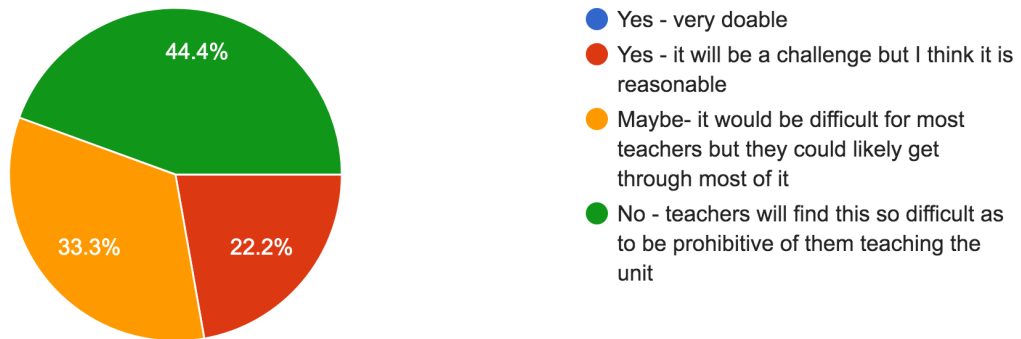
How much time did you need to devote to the planning of science per day of instruction with the pilot?

9 responses



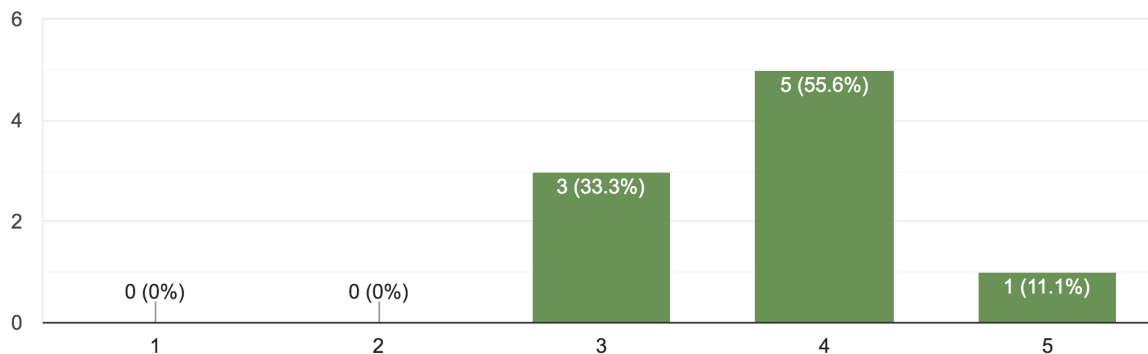
Was the time spent planning for and teaching the pilot realistic for teachers in the district?

9 responses



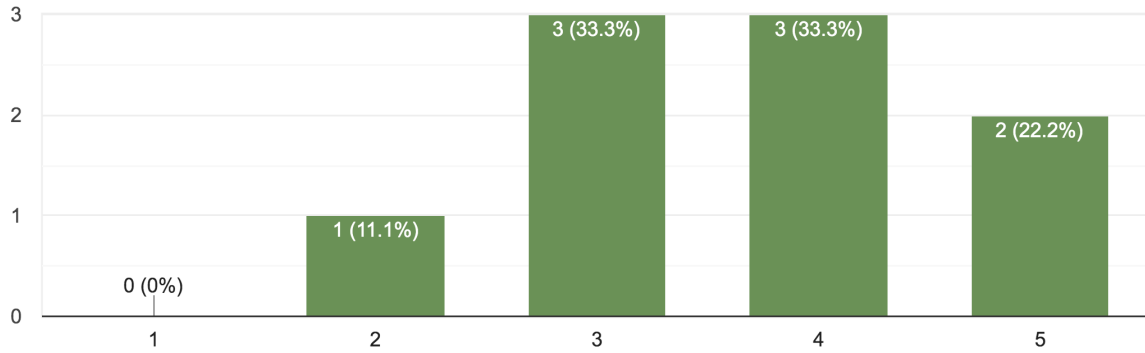
Did the unit engage students in questioning the world around them?

9 responses



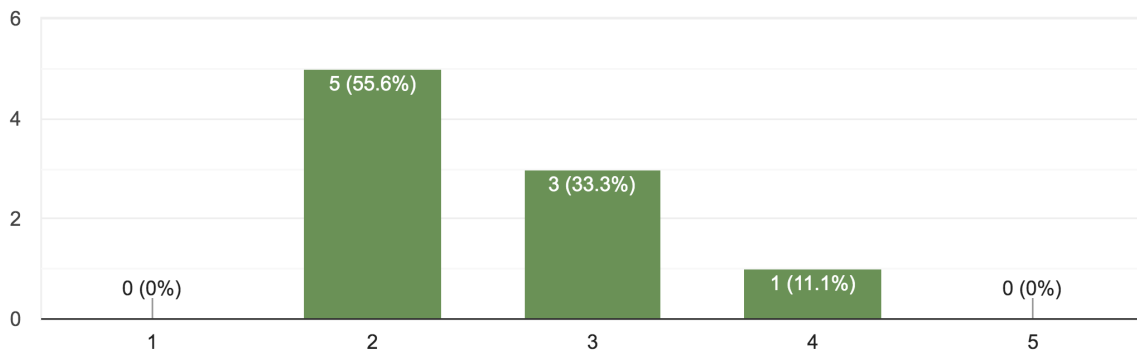
Did your students engage in science discourse?

9 responses



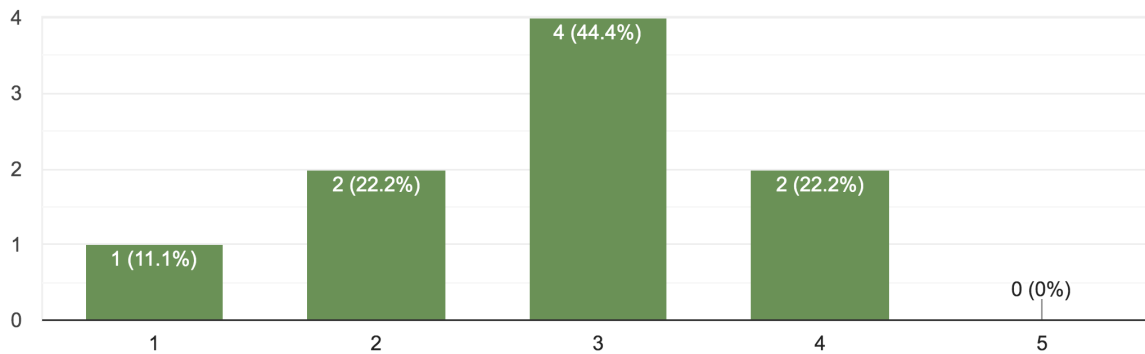
How accessible were the unit instructions for you as a teacher?

9 responses



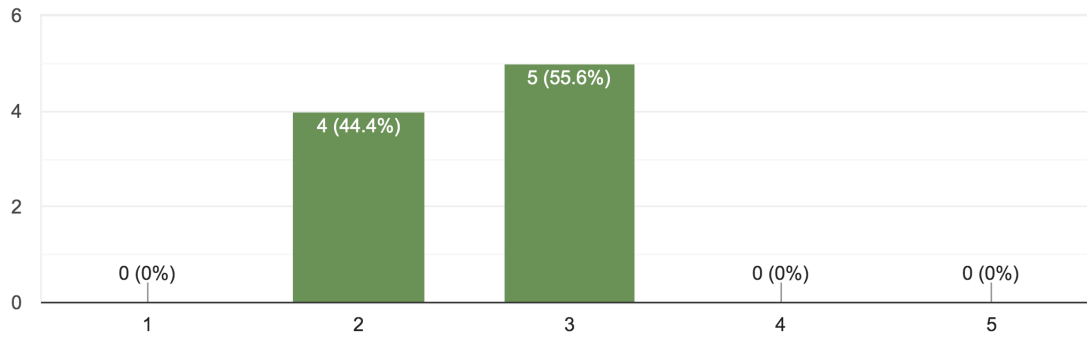
How well did the unit resources support the success of your English language learners?

9 responses



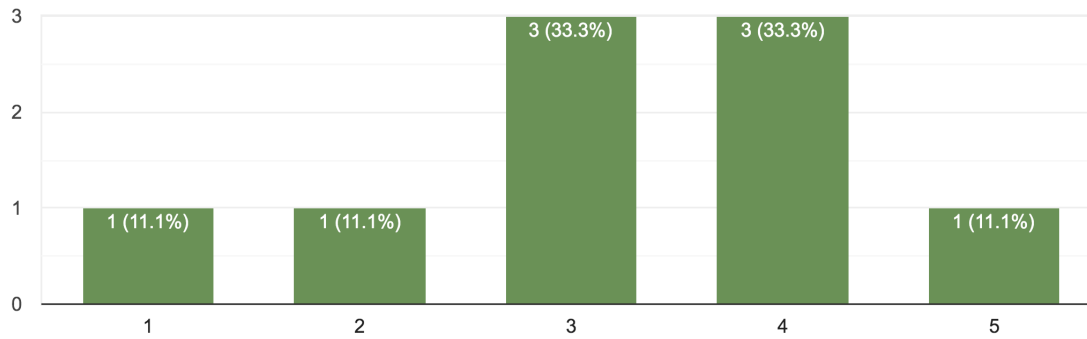
How well did this curriculum support students in reading engaging, accessible non-fiction text?

9 responses



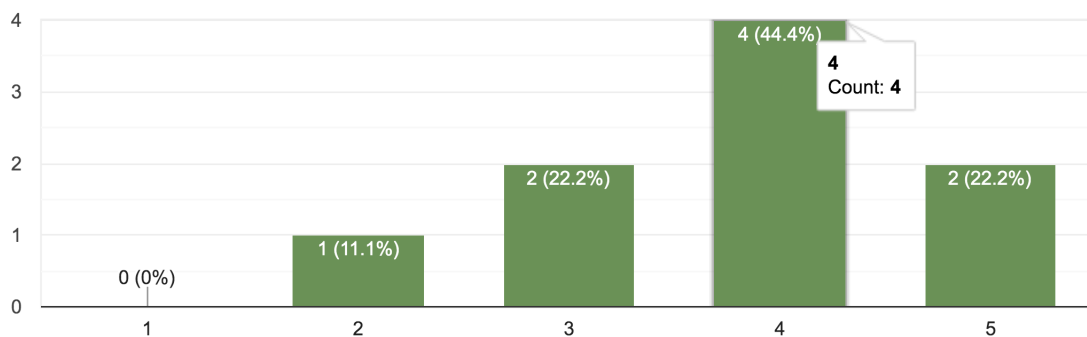
How well did the unit resources support your ability to differentiate for all learners?

9 responses



Did your students have fun?

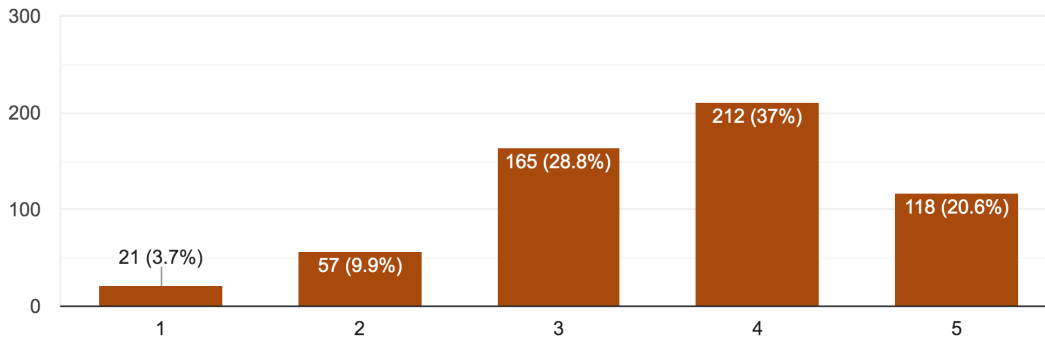
9 responses



Post Pilot Student Feedback

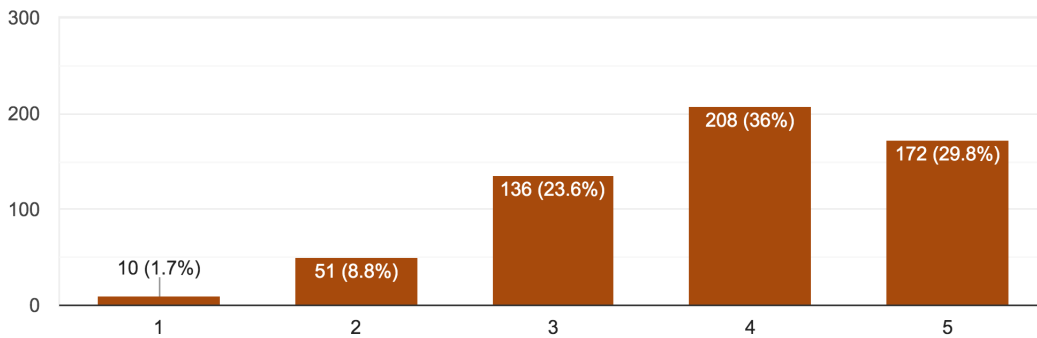
Did the curriculum allow you to share ideas with your classmates through discussion?

573 responses



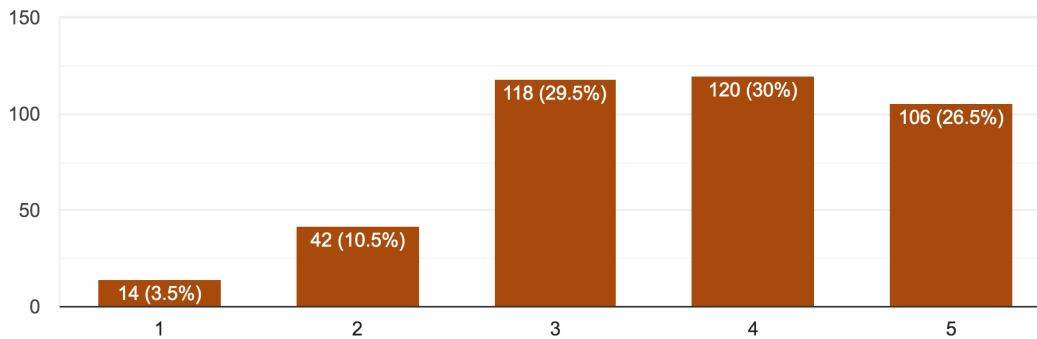
How easy was it to understand the lab and activity directions?

577 responses



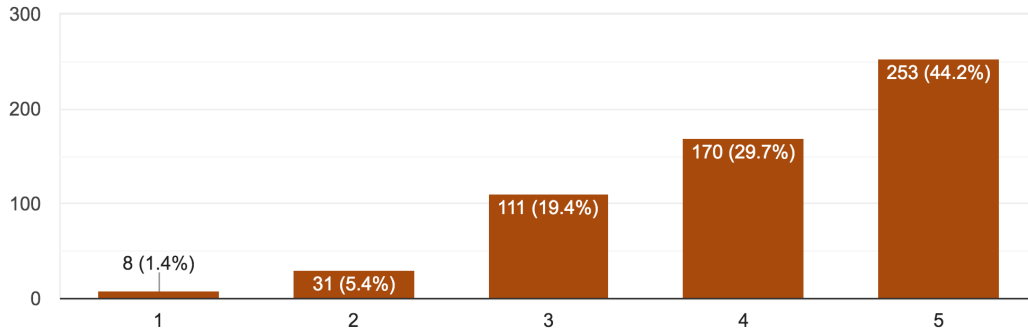
How easy was it to navigate or use the curriculum (if you used the online site)?

400 responses



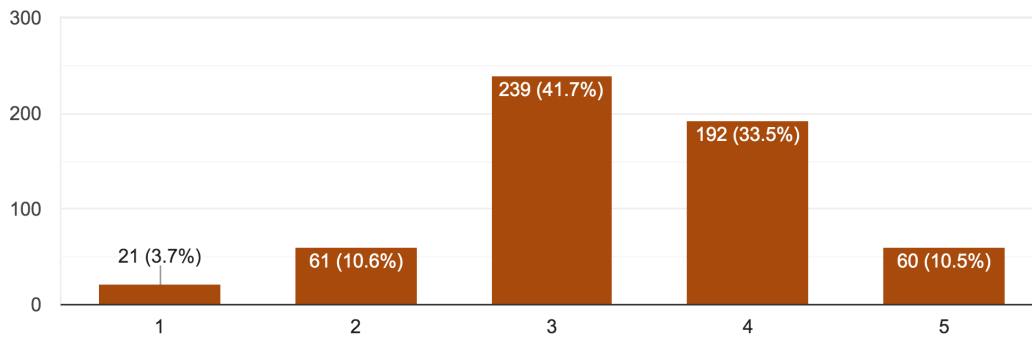
Did these science lessons give you opportunities to do hands on activities?

573 responses



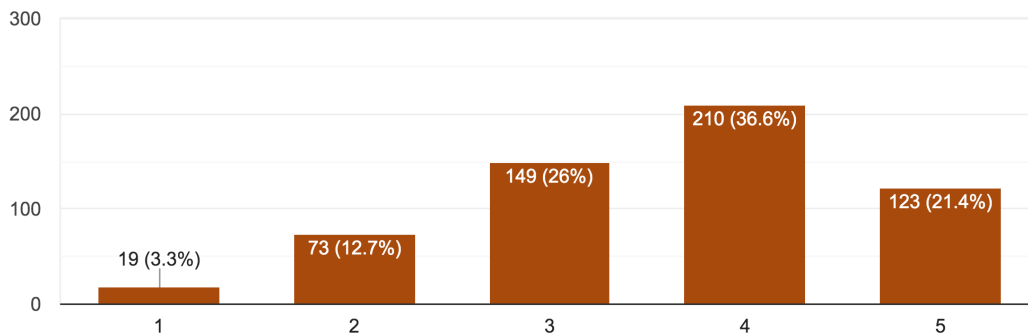
Did the lessons and activities make it easy for you to understand the science ideas and improve the skills you were learning? (3 = I was about as confident as I usually am)

573 responses



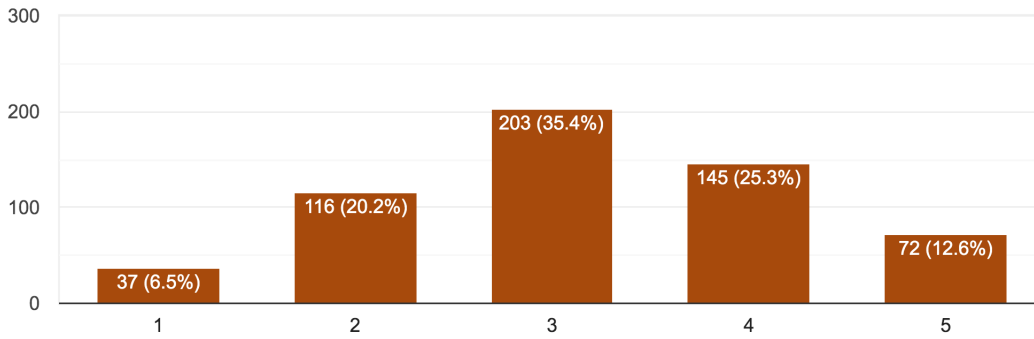
Did you feel you were appropriately challenged?

574 responses



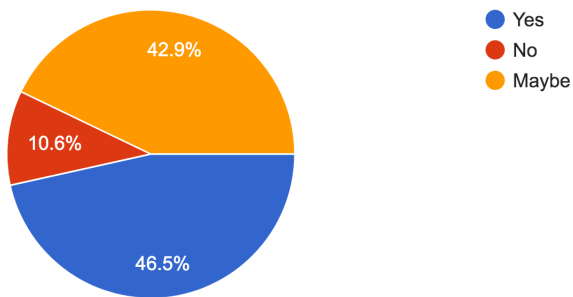
Did you have opportunities to self assess and provide feedback to your peers?

573 responses



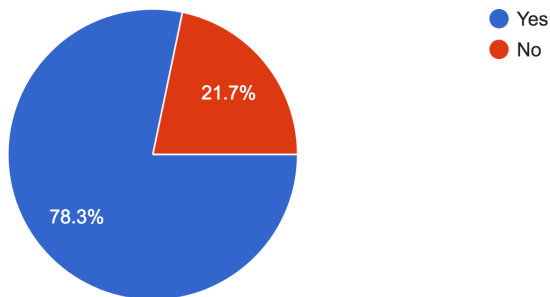
Would you like to have more science lessons like these?

576 responses



Would you recommend Beaverton adopt and use this curriculum?

571 responses



Tell me something you have liked about your science lessons in the last few days/weeks?

149

8

-Obviously the labs, we are doing way more labs than we usually do. Last year we didn't do labs very often, and now we do them basically every day. I also like the group work, because I can get other people's opinions. I also really like typing my labs in the online notebook. Usually I can focus better when I have it online.

-The experiments, there are a lot more experiments than we've had before. They are fun, it's not just notes. (when asked about readings) I do find them helpful, some of the readings have some information I don't need, but it's fine, and in general they are good.

-I like that it is more about us figuring it out, she doesn't tell us the answer, we have to use evidence to figure it out. Like with the convection box, and the water bottle, she didn't have to tell us, we figured it out and I like that.

How have you felt during science time in the last few days/weeks? Do you feel more, about the same, or less successful than usual?

-I feel more successful, I feel like I'm doing good in science. I'm doing way better in science than my other classes, and better in science now than last year.

-I feel more successful than normal. Last year I didn't feel successful in science because we didn't do much partner grouping. In this class I'm doing better because I get to practice saying my ideas in a small group and I feel more confident. Nothing has been a problem, I like this unit so far. Right now I really like science, but up until this class I've never really liked science. I like this unit even better than when we started, I like my teacher, but this unit is even better. I'm more skilled with my hands, so I feel like I'm successful with this unit.

-I feel about the same, but it is more fun than usual.

Is there anything you haven't liked or found too difficult?

-Learning how to use Chromebooks was hard at first, because that was new for us, but it is good now because we learned. The lessons are informative and it is easy to take what we know and explain it. Nothing I don't like.

-I don't like the writing part because it's difficult. I have to explain what happened and what I saw.

-Some of the questions are hard or confusing, but not always. I feel like I do get it by the end.



Hope Chinese Borrowing Approval

POLICY ISSUE/SITUATION

As a 501(c)(3), Hope Chinese Charter School is eligible for a PPP loan from the SBA under the federal CARES Act of 2020. Under the school’s charter, School Board permission is required for the school to apply for any loan that is more than 5% of annual income.

BACKGROUND INFORMATION

The CARES Act was enacted to provide immediate assistance to individuals, families, and businesses affected by the COVID-19 emergency. Among the provisions contained in the CARES Act are provisions authorizing the Small Business Administration (SBA) to temporarily guarantee loans under a new loan program titled the “Paycheck Protection Program.” Small businesses and 501(c)(3) organizations affected by the COVID-19 pandemic are eligible for funds to maintain staff and pay rent and utilities. Loans guaranteed under the Paycheck Protection Program (PPP) are 100 percent guaranteed by SBA, and the full principal amount of the loans may qualify for loan forgiveness. The amount of loan forgiveness can be up to the full principal amount of the loan and any accrued interest. That is, the borrower will not be responsible for any loan payment if the borrower uses all of the loan proceeds for forgivable purposes (staff payroll, rent, and utilities) and employee and compensation levels are maintained.

Hope Chinese’s PPP application is for \$508,208. This amount is 13.9% of annual income for the 2019-20 school year and requires School Board approval under the terms of the school’s Charter.

13.5 Borrowing Prohibited. Without the prior approval of the Board, during the term of the Charter, HCCS will not borrow more than 5 percent of the budgeted income for the Charter School on an unsecured basis or encumber any of its assets, except that the Charter School may borrow more than 5 percent of its budgeted income if such borrowing is solely for capital acquisitions and, in connection with such borrowing, may use the acquired assets as security for repayment of the borrowed funds, without the prior approval of the Board.

(Of note, Arco Iris is applying for a PPP loan, but the school’s Charter allows its board to borrow up to 15% of income without School Board approval.)

The PPP application was approved by the school’s Board on April 6, 2020.

RECOMMENDATION:

The Board approves the request by Hope Chinese to apply for a PPP loan.

District Goal: WE Empower all students to achieve post-high school success.

The District prohibits discrimination and harassment based on any basis protected by law, including but not limited to, an individual's actual or perceived race, color, religion, sex, sexual orientation, gender identity, gender expression, national or ethnic origin, marital status, age, mental or physical disability, pregnancy, familial status, economic status, veteran status, or because of a perceived or actual association with any other persons within these protected classes.

Finance & Investment Strategies Committee

Virtual Meeting

April 20, 2020

7:30 a.m.

Attendees: Don Grotting, Eric Simpson, Josh Gamez, Danielle Hudson, Mike Schofield, David Williams, Ginny Hansmann, Jason Guchereau, Maureen Wheeler, Carl Mead, Anne Bryan, Becky Tymchuk

Facility Assessment Report

- FCA – Total list of 11,000+ assets and can estimate the current deferred maintenance budget needed at any point (Currently ~\$500M) – All in Tableau tool (interactive Database)
- Data is provided to Mahlum for the long-range facility project plans
- Seismic report from prior year were included into this report (with estimates)
- Update on FCA Report at the May School Board meeting
- This report/information/database is key for usage by the Future Bond Committee

Nov'21 Bond Measure

- BSD & Facility staff are moving full speed ahead
- No crystal ball – COVID-19 impact cannot be measured or determined yet
- School Board keeping eye out on direction as we get closer to the next school year
- May/June – will solicit to gather good members for the Future Capital Bond Committee (30 or so people)

Bond Refinance

- Market has been volatile and currently not in a range that make sense to refinance. For district to lock in rating is expensive and is not being pursued at this time.