

- I. CALL TO ORDER
- II. PLEDGE OF ALLEGIANCE
- III. APPROVAL OF THE MINUTES
 - III.A. February 18, 2016 - Regular
- IV. APPROVAL OF THE AGENDA
- V. PUBLIC PARTICIPATION - The Board welcomes public participation. Pursuant to our Board Policy, public participation is limited to no more than three (3) minutes per speaker and a total of no more than fifteen (15) minutes. People who wish to speak longer are encouraged to attend any and all related subcommittee meetings where most of the board's groundwork is done. We value your input, but due to these time limitations, we ask you to be concise and please do not repeat a previous comment. We know you will observe the rules of common courtesy. Thanks. [9320(a) of Board Bylaws]
- VI. BOARD AND ADMINISTRATIVE COMMUNICATIONS
 - VI.A. Chairman's Report
 - VI.B. Superintendent's Report ~ Recognition – March is “Connecticut Board of Education Member Appreciation” Month
 - VI.C. Student Representatives' Report
 - VI.D. Committee Reports
 - VI.D.1. Curriculum
 - VI.D.2. Communications/Community Outreach
- VII. INFORMATION ITEMS
 - VII.A. Big Ideas Implementation
 - VII.B. Math Benchmark Assessments
 - VII.C. New Fairfield High School Graduation - 2016
- VIII. ACTION ITEMS
 - VIII.A. Personnel Report
 - VIII.B. Board of Education Policies
 - VIII.B.1. Policy 3152 – Spending Public Funds for Advocacy
 - VIII.B.2. Policy 4131 Appendix – Required In-service Topics for Certified Personnel
 - VIII.B.3. Policy 5141.4 – Reporting Child Abuse/Neglect or Sexual Assault
 - VIII.B.4. Policy 6142 – Basic Instructional Program
 - VIII.B.5. Policy 6142.2 – Reading/Language Arts
 - VIII.B.6. Policy 6146 – Graduation Requirements
 - VIII.C. Leave of Absence Request (This item will be voted on after Executive Session.)
- IX. BOARD MEMBER COMMENTS
- X. EXECUTIVE SESSION FOR THE PURPOSE OF DISCUSSING A PERSONNEL ISSUE

XI. ADJOURNMENT

Math Program Committee

Report and Recommendations to the Curriculum
Subcommittee and Board of Education

Overview of Presentation

Section 1: The Process

Section 2: Big Ideas

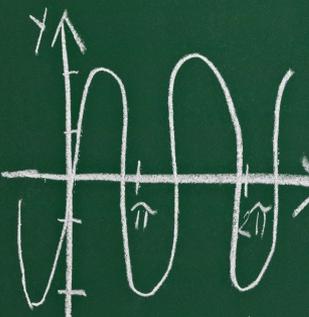
Section 3: Implementation

Section 4: Teacher Training,
Fidelity, and Student
Assessment

Section 3

IMPLEMENTATION

$\frac{\sqrt{3}}{4} = (a^2)$  $a^2 + b^2 = c^2$
 $\frac{1}{2} + B = 0 \Rightarrow \bar{B} = \frac{1}{2}$ $A = \frac{1}{2} AB \sin C = A^2 + B^2 + C^2$
 $\hat{c}^2 = \hat{a}^2 + \hat{b}^2 - 2ab \cos(C)$
 $27/32 = 0.8454 \uparrow$

 $\sqrt{1-x} \frac{1}{x} + \frac{1}{2y} \sum_n$
 $y = \frac{1}{4}x - \frac{1}{8} \left(\frac{1}{xy}\right) + x^2 = 10$
 $b^2 = \cos^2 C - 2ab \cos C$
 $= a^2(\cos^2 C + \sin^2 C)$
 $c = a^2 + c^2 - 2acc \cos C$
 $A = \hat{\pi} r^2 \frac{10}{25}$

$\hat{\pi} = 3.14$  90°
 $z = \frac{1}{\sqrt{2}} \hat{\pi} e$  $B \times A$

Grades 6,7,8

Phase 1: The Current School Year



5 days of PD

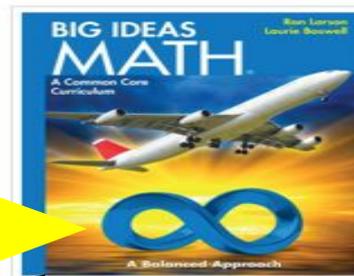
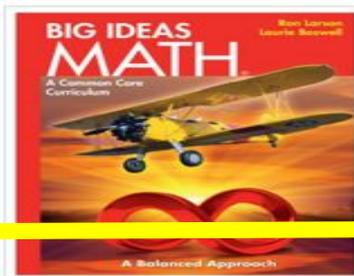
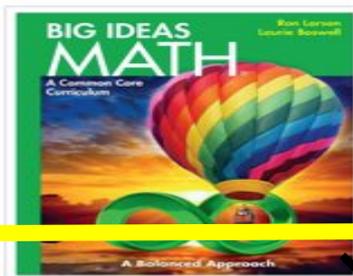
Pacing Guides

Phase 1: The Current School Year

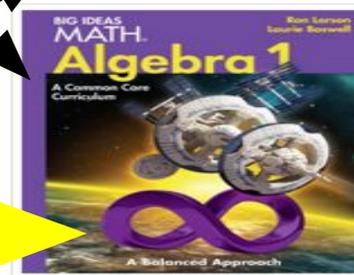
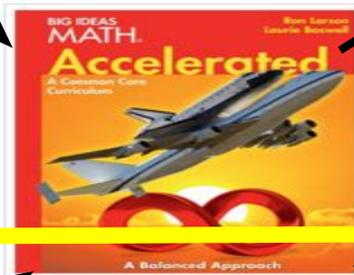
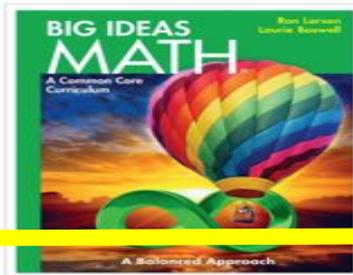


Multiple Pathways to Algebra 1

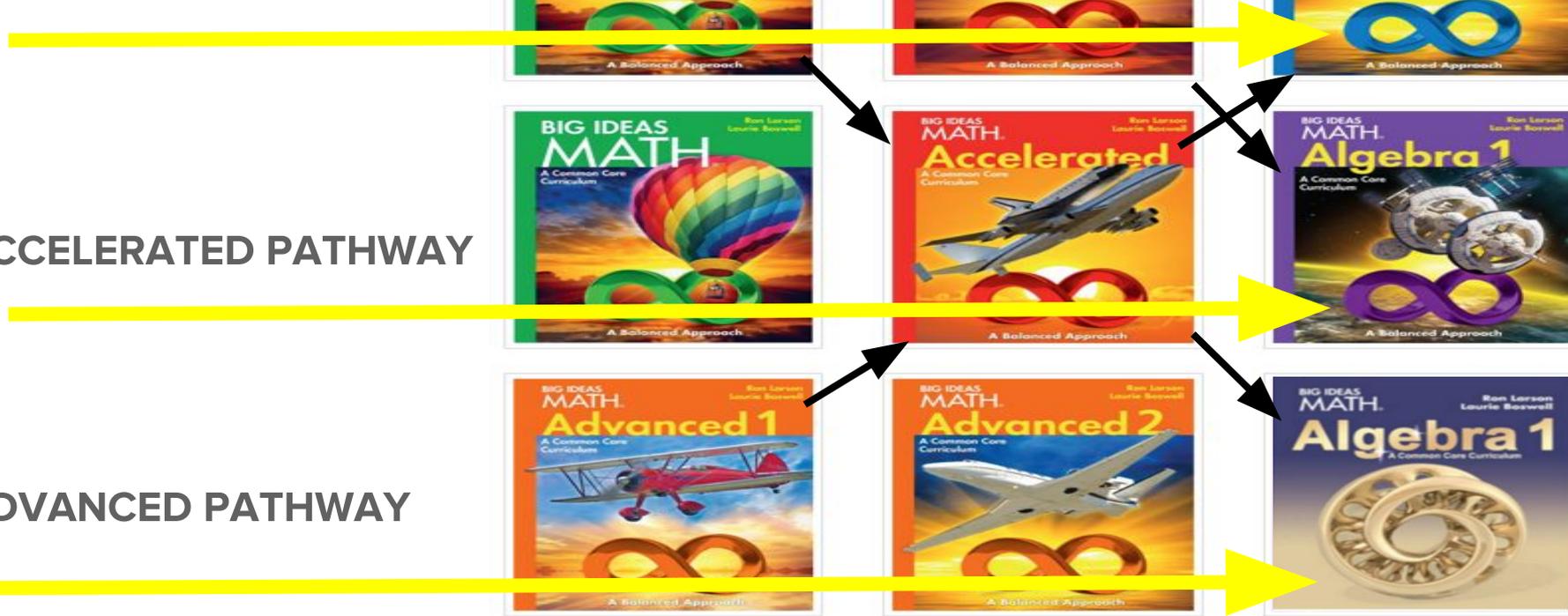
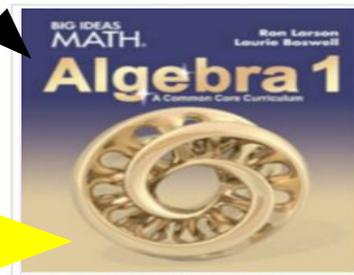
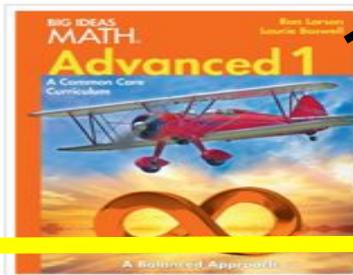
REGULAR PATHWAY



ACCELERATED PATHWAY



ADVANCED PATHWAY



Grades 9-12

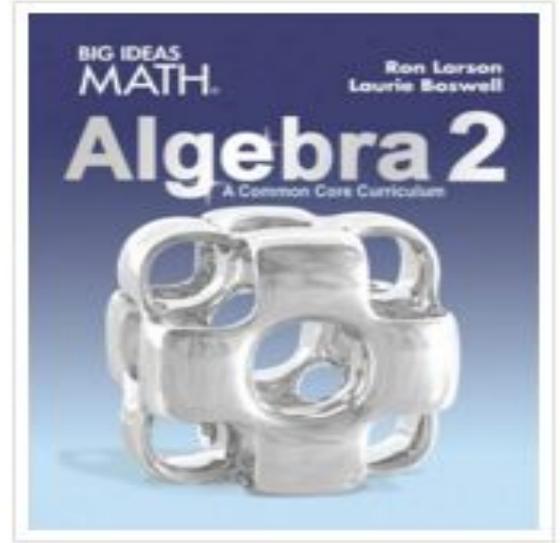
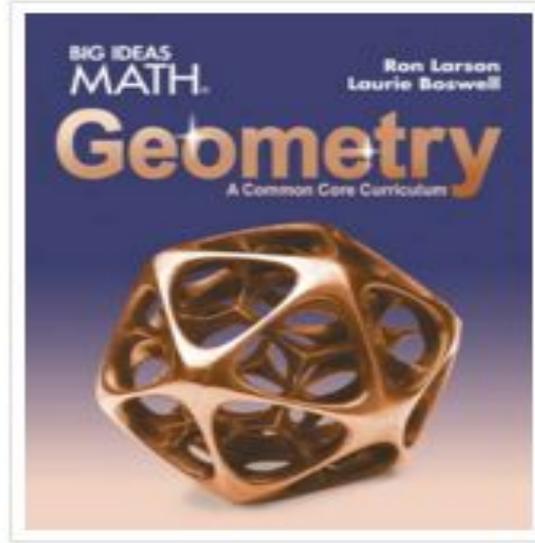
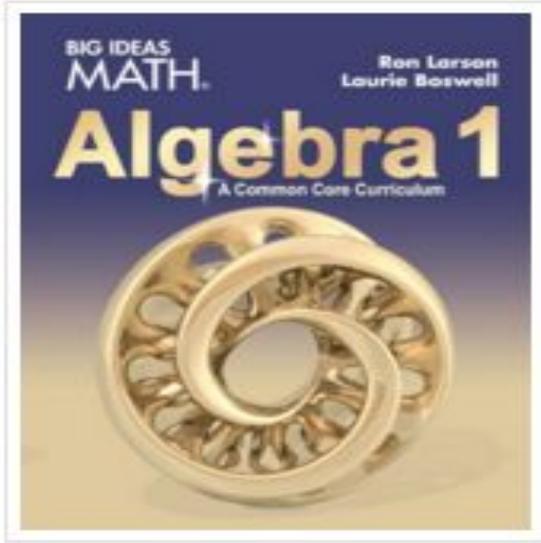
Phase 2: Next Year (2016-2017)



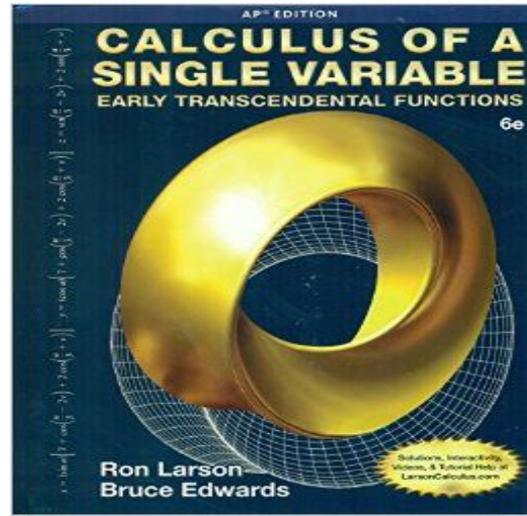
10 days of PD + Calculus Texts

Phase 2: Next Year (2016-2017)

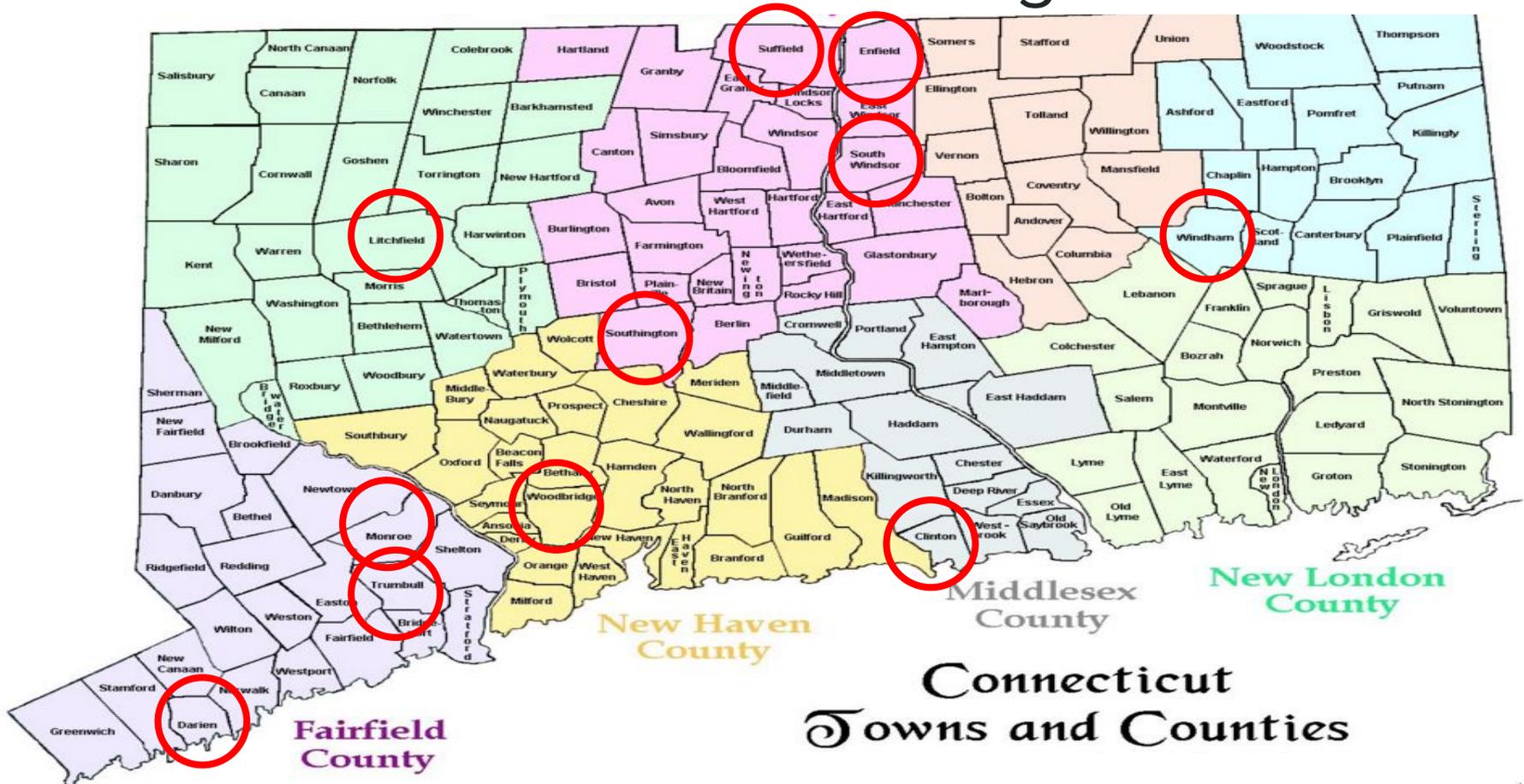




Grades 9-12
includes



School Districts with Big Ideas



Section 4

Teacher Training,
Fidelity, and Student
Assessment



Fidelity of Implementation



Implementation Components

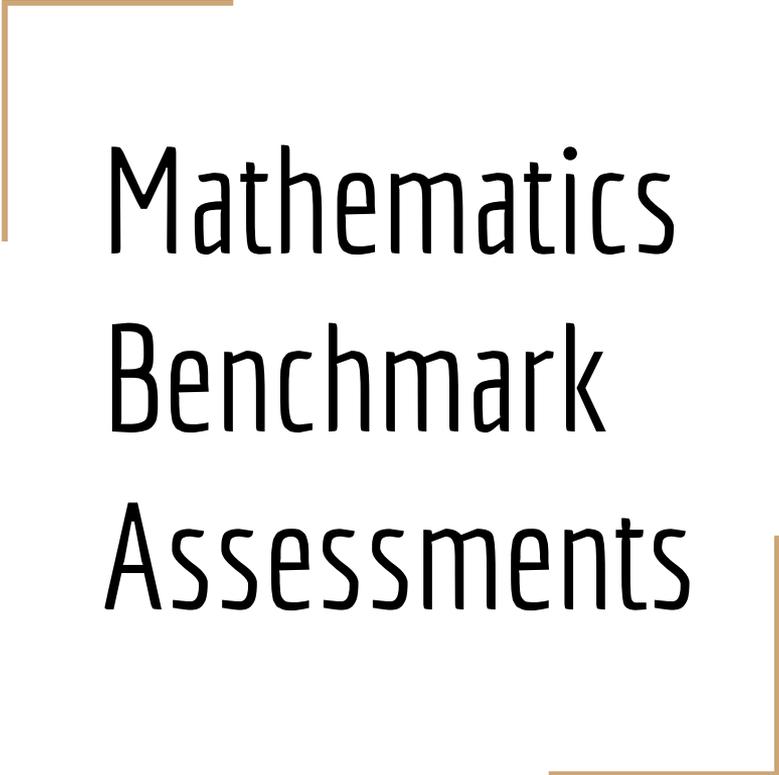
1. **Program** - All appropriate elements and resources of the program are purchased, including leveled texts for each pathway.
2. **Teacher Training** - Significant professional development opportunities are provided for teachers to ensure that all teachers fully understand important program elements.
3. **Pacing Guides** - Pacing guides are developed to ensure that appropriate coverage of the material is achieved by all teachers.
4. **Walkthroughs** - Administrators and coaches conduct walkthroughs to ensure that program elements are being implemented effectively.
5. **Coaching** - Administrators and coaches will provide teachers with regular feedback to provide an opportunity for continuous improvement.
6. **Student Achievement** - Benchmark assessments will be created for all courses to ensure students respond positively to the new program.

Professional Development Opportunities

1. **Initial Program Overview-** Instructional components, organization & technology
2. **Increasing Depth of Knowledge-** Lesson planning and targeted instruction
3. **Questioning in the Classroom-** Questioning that facilitates critical thinking and sharpens class discussion (Tool: Bloom's Taxonomy)
4. **Increasing Rigor-** Increasing student engagement through inquiry, investigations, and experimentation (Tool: Hess Cognitive Rigor Matrix)
5. **Assessment-** Development of formative and summative assessments to measure and inform student learning
6. **Promote Active Learning-** Strategies to implement the Mathematical Practices Standards and students' habits of mind to improve achievement
7. **Meeting students' needs through Differentiation-** Evidence based instructional strategies to help teachers identify and support students with different profiles
8. **Ongoing Coaching**

Curriculum Development

- **Increases program fidelity**
- **Vertical alignment K-12**
- **Formative and benchmark assessments**
- **High quality standards**

A decorative L-shaped bracket made of thin brown lines, framing the text on the left and bottom sides.

Mathematics Benchmark Assessments

Dr. Jason McKinnon
Mr. Keegan Finlayson

Curriculum Needs

1. Scope and Sequence
2. Appropriate Pacing
3. Inter-Teacher Alignment
4. Goal-Oriented Planning
5. Early Identification of Student Need
6. Balance of Assessment and Instruction

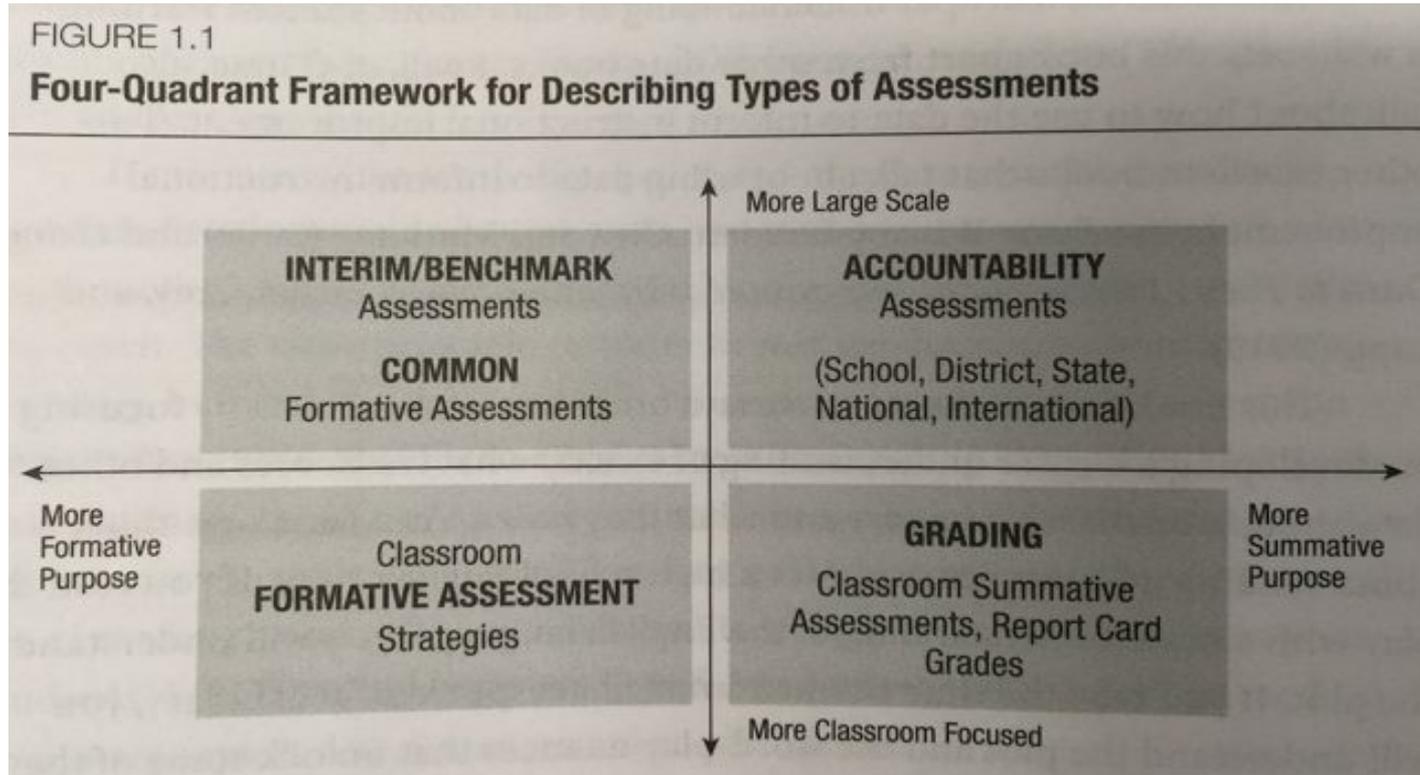
Formative Assessment

The goal of formative assessment is to monitor student learning and provide ongoing feedback that can be used by teachers to improve their teaching, facilitate collaborative planning, and improve student learning.

Formative assessment should:

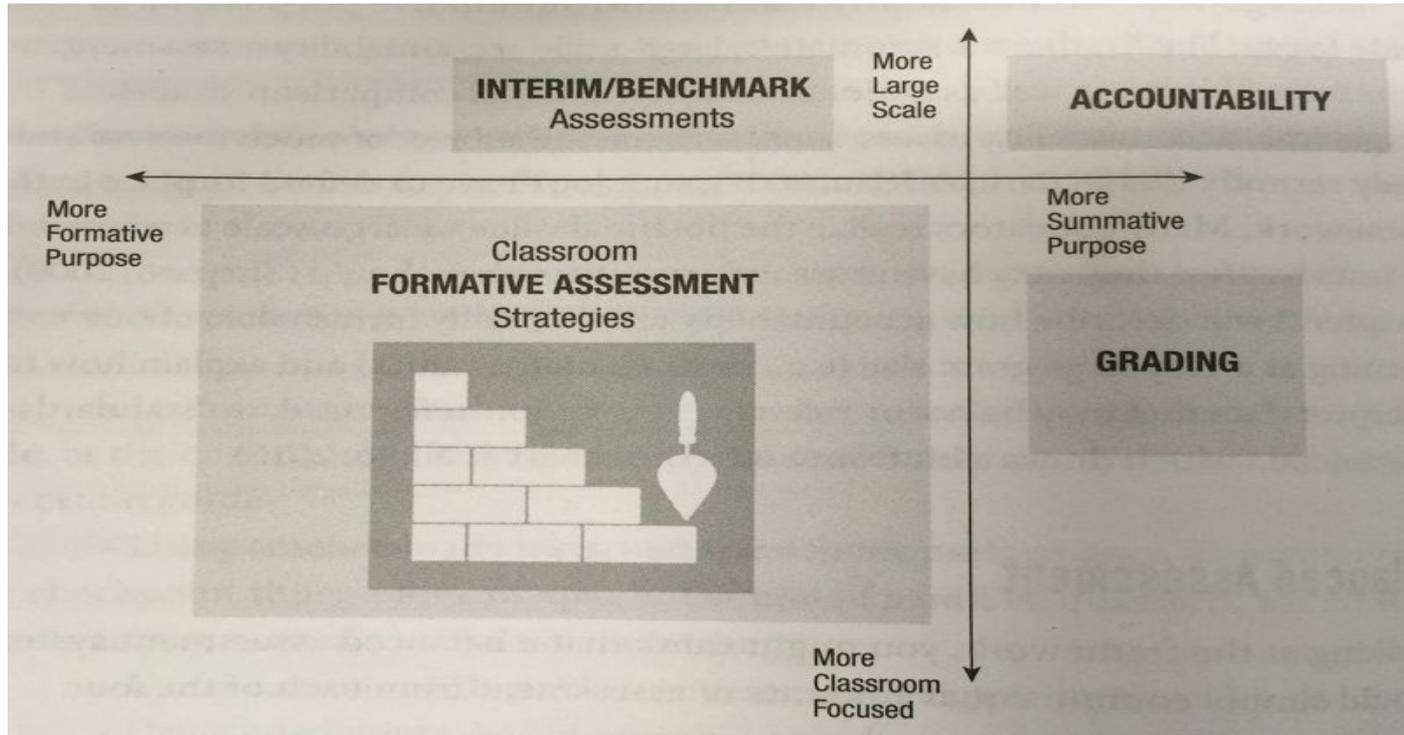
- help students identify their strengths and weaknesses and target areas that need work.
- include periodic review of student work with clear exemplars.
- help teachers recognize where students are struggling and adjust accordingly.

Assessment Types and Purposes



Brookhart, S (2016). *How to Make Decisions with Different Kinds of Student Assessment Data*. Alexandria, VA. ACSD

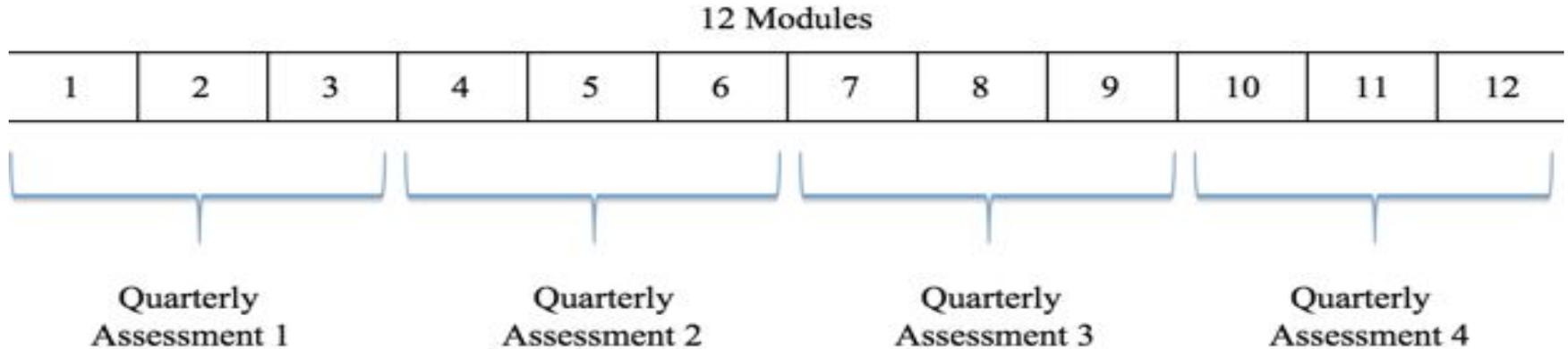
More Effective Assessment



Brookhart, S (2016). *How to Make Decisions with Different Kinds of Student Assessment Data*. Alexandria, VA. ACSD

Two types of Benchmark Assessments

Quarterly Benchmark Assessments: Measures content knowledge & ensures fidelity



Math Problem Solving Tasks: Measures problem solving ability and communication

Quarterly Assessments

Grade	Modules	Module Focus	Performance Tasks	Goal 80-100%	Watch 60-80%	Intervention 59% or <
K	ESGI ESGI 7-9 10-12	-add/sub with pictures and equations, describe features of 2D and 3D shapes, add within 5 -add/sub with pictures & equations, identify & count teen numbers, more /less to 20, 2D/3D shapes	ESGI ESGI Quarterly Assessment 3 Quarterly Assessment 4	10/12 10/12	<10 <10	<7 <7
	1-3 4-6 7-9 10-12	-commutative property, teen numbers, place value of 2 digit numbers, measurement- time & length -add/sub word problems, count on & back by 2's, subtraction- parts & total, doubles add strategy -associative property,,solve missing addend subtraction problems, >,< symbols, half past the hour -represent numbers to 130, add 1 & 2 digit numbers w/in 100, interpret data, join 3D shapes	Quarterly Assessment 1 Quarterly Assessment 2 Quarterly Assessment 3 Quarterly Assessment 4	14/18 14/18 14/18 14/18	<14 <14 <14 <14	<10 <10 <10 <10
2	1-3 4-6 7-9 10-12	- add/sub within 20; 2 & 3-digit place value, measuring of time & length, odd & even numbers -add/sub within 20; use place value to add/subtract 2-digit; 2D shapes, CM, line plot -add/sub within 20; add/subtract w-place value; arrays; fractions; measure lbs/kg; -add/sub within 20; add/subtract w-place value; 3D shapes; capacity; represent x div	Quarterly Assessment 1 Quarterly Assessment 2 Quarterly Assessment 3 Quarterly Assessment 4	19/24 19/24 19/24 19/24	<19 <19 <19 <19	<14 <14 <14 <14
	1-3 4-6 7-9 10-12	- multiply by 0 & 2, represent 3 digit numbers to 999, round 2 digit numbers, liquid measurement -relate multiplication to division, represent division, fractions, number line/area models, #'s to 9,999 -multiply by 6,8 & 9, word problems with multiplication, mass- kilograms, grams, bar/picture graphs -fractions- compare >, <, equivalent using area/length, number line models, area & perimeter	Quarterly Assessment 1 Quarterly Assessment 2 Quarterly Assessment 3 Quarterly Assessment 4	24/30 24/30 24/30 24/30	<24 <24 <24 <24	<18 <18 <18 <18
4	1-3 4-6 7-9 10-12	-factors & multiples, addition standard algorithm, numbers to 99,999, rounding & adding 5 digit #'s -solve word problems w/ 4 operations, standard algor for subtraction, add fractions & mixed #'s, -represent & round numbers to 999,999, subtract mixed numbers & fractions, mult fractions -metric liquid volume, represent and compare decimal fractions, measurement conversions	Quarterly Assessment 1 Quarterly Assessment 2 Quarterly Assessment 3 Quarterly Assessment 4	24/30 24/30 24/30 24/30	<24 <24 <24 <24	<18 <18 <18 <18
	1-3 4-6 7-9 10-12	-place value; measurement(ft and mi); equivalent fractions; decimals; multiplication; volume -order of operations; adding fractions; rounding decimals; adding decimals, polygons; subtracting fractions; in, ft, yds, mi; line plots -subtracting decimals; coordinates; division; metric system; multiplying fractions; oz and lbs -multiplying decimals; conversion in metric; dividing fractions; dividing decimals, liquid volume	Quarterly Assessment 1 Quarterly Assessment 2 Quarterly Assessment 3 Quarterly Assessment 4	24/30 24/30 24/30 24/30	<24 <24 <24 <24	<18 <18 <18 <18

Quarterly Assessments

4. Dad sold his car for \$3,750. He then bought another car for \$9,845. What is the difference in price of the two cars? Show your thinking.

\$ _____

5. Write the first common multiple of 4 and 6 that is greater than 0.

6. Use the standard subtraction algorithm to calculate the difference between 472 and 2,836.

7. Color the beside the correct answer.

The product of 4×700

is the same as

28 thousands

28 tens

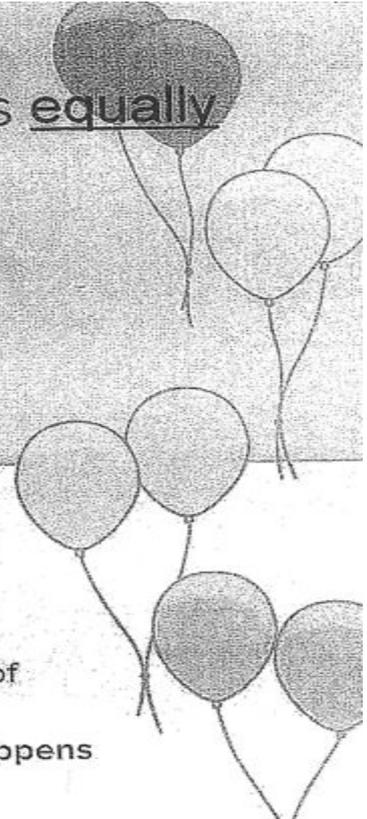
28 hundreds

Math Problem Solving Tasks



3.03

How could you share 100 balloons equally between 2 children, then among 4 children, and then 8 children?



Think

- How many balloons would 2 children receive?
- Do you think that each time we make equal shares that all of 100 balloons will be used?
- As the balloons are shared among more children, what happens to the size of each child's share?

Math Problem Solving Tasks

My Thir

10

10

10

My Solu

10

10

My written Explanation

First to divide 100 balloons for 2 children, I did $100 \div 2$ that's 50. So each child get 50. Then for 4 children I did $100 \div 4$

That must be half of 50 so... 25. Because $25 \times 2 = 50$. For 8 kids I tried

$100 \div 8$ **but** I can't do that so instead of half of 25, (an odd number) (which I can't split in half) I did half of 24: 12. So I have one left over. that's how I came up with

my answers,



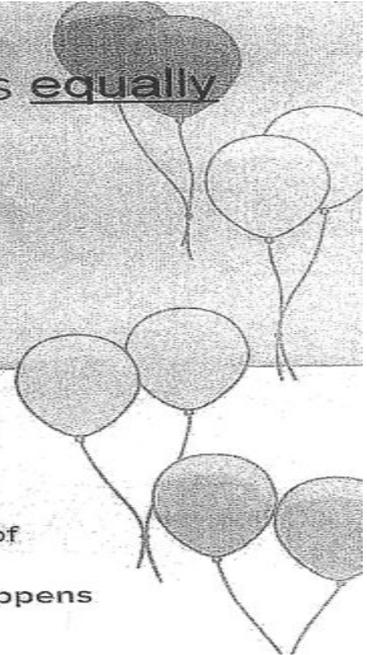
✓
$\div 4$
can't
$10 \div 8$
$\div 8$
bons

Problem Solving Solution Video



3.03

How could you share 100 balloons equally between 2 children, then among 4 children, and then 8 children?



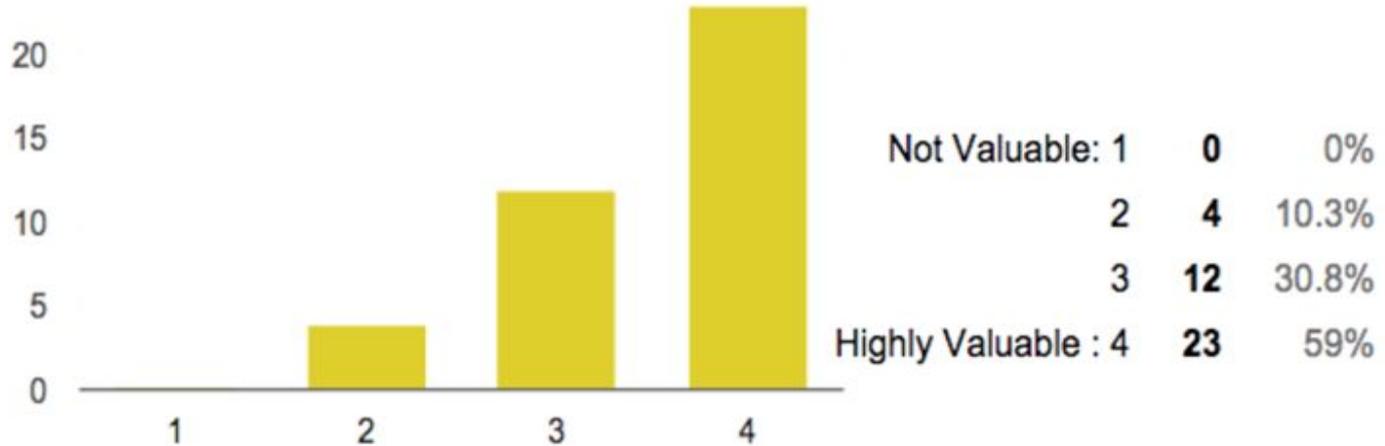
Think

- How many balloons would 2 children receive?
- Do you think that each time we make equal shares that all of 100 balloons will be used?
- As the balloons are shared among more children, what happens to the size of each child's share?

<https://www.educations.com/lesson/embed/35554641/?s=lyMP3d&ref=app>

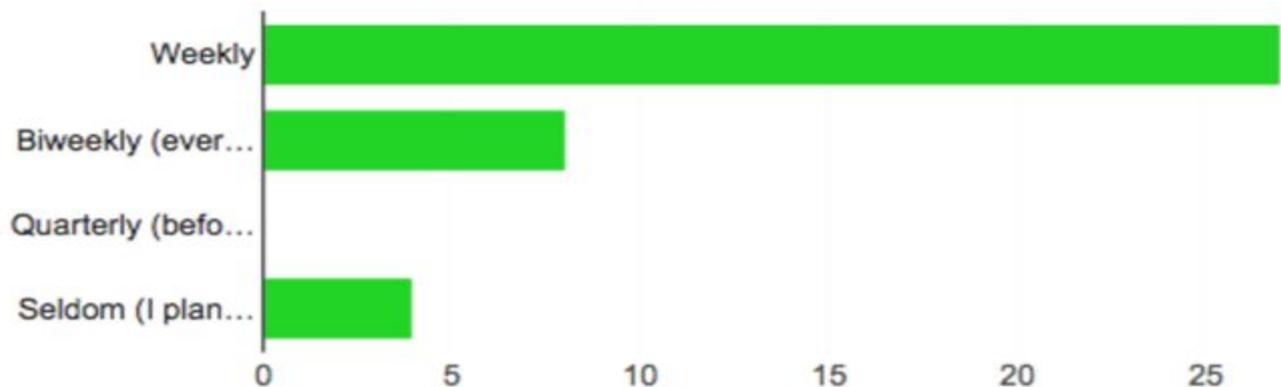
Survey Results

Do you value time collaborating with colleagues assessing student problem solving performance tasks?



Survey Results

How frequently do you plan or collaborate in the area of mathematics with your colleagues?



Weekly	27	69.2%
Biweekly (every other week)	8	20.5%
Quarterly (before or after a performance task)	0	0%
Seldom (I plan by myself)	4	10.3%

Next Steps

1. Administer Quarterly Assessments 3 and 4 to students this year.
2. Development criteria for goal and intervention levels
3. Developing curriculum calendar and pacing guides in math for grades 6-12
4. Create benchmark assessments for each course
5. Provide professional and develop and training in the formative assessment process
6. Development criteria for goal and intervention levels for grades 6-12