Special Meeting

Wednesday, July 9, 2014 7:00 PM
Auditorium, 129 Church Street, Bristol, CT 06010

1.	**Call to Order, Pledge of Allegiance, Moment of Silence**	
2.	**Approval of Minutes**	
3.	**Committee Reports**	
4.	**Consent Agenda**	
4.1.	Personnel	
4.1.a.	Administrative Hires	
4.1.b.	Teacher Retirement - Effective June 30, 2014	
4.1.c.	Teacher Resignations - Effective June 30, 2014	
4.1.d.	Part Time Teachers Hired for Full Time Positions - Effective August 25, 2014	
4.1.e.	A-3 Teacher Resignation - Effective June 30, 2014	
4.1.f.	Teacher Request for an Unpaid Leave of Absence	
4.1.g.	Sixth Year Salary Credit Effective September 1, 2014	
4.1.h.	Coaching Resignations	
4.2.	Grants	
4.2.a.	Bristol Business Education Foundation WOW Grant	
4.2.b.	The Stocker Foundation and the Bristol Business Education Foundation WOW Grant	
4.2.c.	People Empowering People (PEP)	
5.	**Policy Revision**	
5.1.	Policy 6145-2 Extra-Curricular and Co-Curricular Activities – Second Reading	**Presenter:** Chris Cassin
6.	**Curriculum Revision**	
6.1.	CAD and Solid Modeling – Second Reading	
6.2.	Introduction to Computer Assisted Design (CAD) – Second Reading	
7.	**Textbook Adoption**	
7.1.	AP Physics C Textbook Adoption - Second Reading	**Presenter:** Richard Gagliardi
7.2.	AP Physics I Textbook Adoption - Second Reading	**Presenter:** Richard Gagliardi
7.3.	Environmental Science Textbook Adoption - Second Reading	**Presenter:** Richard Gagliardi

7.4.	Spanish IV Textbook Adoption - Second Reading	**Presenter:** Pam Brisson
7.5.	French III Textbook Adoption - Second Reading	**Presenter:** Pam Brisson
7.6.	Middle School Mathematics Textbook Adoption - Second Reading	**Presenter:** Lisa Bernabe
8.	**Deliberated Items/District Leadership Team Reports**	
8.1.	Local 2267 Labor Board Decision (June 16, 2014)	
8.2.	Superintendent's Contract - Renewal/Extension	
8.3.	Board of Education Legal Counsel	
8.4.	Report on Dress Down Days for 2013-2014 School Year	
8.5.	Approval of CT Pool Safety Laws (PA 13-161)	**Presenter:** Chris Cassin
8.6.	Sidewalk Waiver - 360 Minor Street	
8.7.	BOE Roof Final Plans and Specifications	
9.	**Adjournment**	

BOARD OF EDUCATION
Bristol, Connecticut
June 11, 2014 – Special Meeting

A Special meeting of the Bristol Board of Education was held on Wednesday, June 11, 2014 at 7:00 p.m., at the Board of Education Administration Building, located at 129 Church Street, Bristol, Connecticut.

PRESENT: Commissioners: Jennifer Dube, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Karen Vibert, Christopher Wilson and Chairman Lawrence Amara; Ellen Solek, Superintendent, Susan Moreau, Deputy Superintendent, Dennis Bieu, Director of Human Resources and Henri Martin, City Council Liaison

ABSENT: Commissioner Thomas O'Brien

CALL TO ORDER, PLEDGE OF ALLEGIANCE, MOMENT OF SILENCE
Chairman Amara called the meeting to order at 7:05 p.m. and invited the audience to join him in reciting the Pledge of Allegiance.

STAFF AND STUDENT RECOGNITION

The 2015 Teacher of the Year for the Bristol Public Schools
The Bristol Teacher of the Year Committee consisted of Karen Hintz, BOE Commissioner, Larry Amara, BOE Commissioner, Scott Gaudet, K-8 Principal, Dan Sonstrom, Middle School Principal, Lori Eschner, 2008 Teacher of the Year, Lisa Galske, 2011 Teacher of the Year, Jennifer Michalek, 2012 Teacher of the Year, Lisa Carroll, 2013 Teacher of the Year, and Corey Nagle, 2014 Teacher of the Year. A reception will be held in the fall to honor the Bristol 2015 Teacher of the Year. The 2015 Teacher of the Year for the Bristol Public Schools is Sharon Campolo.

Sharon is a Special Education Teacher at Greene-Hills School. She previously taught at Southside School. Sharon was awarded a Bachelors of Arts degree in Psychology from Marist College and a Master of Arts degree in Special Education from Central Connecticut State University. Sharon has been teaching for 11 years. Sharon is a highly committed and exemplary teacher. She currently works with students in grade 3 and 4. Sharon is a lifelong learner who is always looking for ways to increase her knowledge base and help her students to grow. She works with other teachers in a highly collaborative and innovative manner.

Sharon is actively involved in school, district, and community events. She was selected to be a member of the CT Dream Team, a group of 100 educations who are working in collaborative groups to create lessons and activities that are Common Core aligned. Sharon will be a member of the team who will present this information to teachers at Teach Fest this July. As an active member of her school community, Sharon was the United Way coordinator for Southside School for nine years, presented to her staff about the SRBI process, received two grants from the Bristol Business Foundation, implemented a school-wide Acts of Kindness initiative, and is member of the Greene-Hills School Improvement Team. Sharon also was a member of the Bristol Choral Society, a coordinator for Relay for Life, a team leader for the Hope in Motion run, and a cast member in a Thomaston Opera Hours production of *Anything Goes*. Dr. Solek on behalf of the Board thanked Mrs. Campolo for her dedication to our students and congratulated her on being named the 2015 Bristol Teacher of the Year.

APPROVAL OF MINUTES

On motion by Commissioner Morgan seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education approve the May 7, 2014 Regular Meeting Minutes.

APPROVAL OF MINUTES – con't

On motion by Commissioner Dolan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve the May 22, 2014 Special Meeting Minutes.

COMMITTEE REPORTS

Student Achievement – Commissioner Dube reported that the committee met and they are reviewing curriculum and several items will appear on this evening's agenda, and they will continue their curriculum review next Wednesday.

Finance – Commissioner Fitzgerald reported that the committee met on May 22, 2014 and reviewed the financial position for this school year as of April 30th. Our total school year budget is $105.3 million our current projection is to be on plan through the end of the year to June 30th. Also, on the agenda was the 2014-2015 budget which was approved by the City Council on May 19th to include the full day kindergarten we are still under discussion on details. There will be a Finance Committee meeting tomorrow (June 12, 2014) at 6:30 p.m.

Communications and Community Relations – Commissioner Vibert reported that the committee met and discussed Spotlight. The issue "has been put to bed" and will be coming out soon in The Observer.

Operations – Dr. Moreau reported that the committee met and discussed issuing checks for Bristol Eastern Lights Project and bringing electricity from the pole to the school.

SUPERINTENDENT REPORT

Whitsons Culinary Group Presentation – Representatives from Whitsons: John Whitcomb (COO), John Gersbeck (Senior VP) and Vincent "Ozzie" Orsillo (Regional VP) the contracted food service company that will oversee the lunch program in the Bristol Public Schools beginning with the 2014-2015 school year gave a presentation to the board regarding their plans for the various lunch programs in the district.

Safety of Student Athletes – At the request of Commissioner Vibert, Chris Cassin, Athletic Director presented a report outlining the districts' practices for keeping students safe. He discussed a few new items that will take effect in the 2014-2015 school year.

Battle for Banner – Mr. Cassin presented the Relay for Life Banner that will be passed between schools based on funds raised for the Relay for Life. This year $1,304.63 was raised, and Bristol Central will hang the banner until next year as they raised the most money.

Safety and Security - Dr. Solek thanked the Mayor, the Police and Fire Chiefs, Greg Boulanger, the Board of Education and BOE staff for their support during the recent bomb threat incidents. The Commissioner of Education, Stephan Pryor referred Dr. Solek to the Office of Homeland Security and she will be meeting with their office at the end of the school year. Joe Cirasuolo at CAPSS connected Dr. Solek with numerous Superintendents throughout this process; several of whom offered support and recommendations. The Bristol Police continue to investigate the incidents and work collaboratively with the Board of Education. There continues to be a $1,000 reward for any information leading to an arrest. The Safety and Security Task Force will meet next week to debrief.

Full Day Kindergarten - Full Day Kindergarten will be implemented in the Bristol School at the start of the 2014-2015 school year. A comprehensive FDK Implementation Committee has been formed. The committee consists of kindergarten teachers, support staff and administrators. The committee will begin meeting this week and continue to meet during the summer. Denise Carabetta will be working on implementation of the full day kindergarten program with the committee. The will be a full day of

Full Day Kindergarten – con't

professional development for kindergarten teachers on one of the two August PD days. Thanked the Board for their support of this much needed program. Commissioner Vibert reported that she attended a Joint Board meeting last night in which two items were approved for allocation to full day Kindergarten start up costs; $210,000 from the General Fund and $210,000 came a sinking fund.

Dr. Moreau reported that Bristol received 73 additional Pre-K slots (60 for Public Schools and 13 to the City; at the Imagine Nation Museum). We are looking to allocate 30 or 45 to Pre-K-3 and the additional slots will go to the four year old program. There was a question regarding transportation for the PreK Program.

CONSENT AGENDA
Dr. Moreau commented on the Stocker Foundation and the Bristol Business Education Grant and the work of Jeannie Audette. This grant will allow for the purchase of a van that will be outfitted by Bristol Tech with shelves to become a mobile library. Dr. Moreau thanked and congratulated Mrs. Audette for acquiring this grant.

Personnel
Administrator Retirement - Effective June 30, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following Administrator Retirement – Effective 6/30/14
Ellen Benham - BOE - Supervisor of Assessment, Evaluation & Special Programs

Administrator Hires - Effective July 1, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve the following Administrator Hires – Effective 7/1/14:
Erika Coleman – BOE - Teacher on Special Assignment – Elementary and K-8 Literacy
Lawrence Covino – Adult Education – Supervisor of Adult Education, Alternative Education & TESOL
Michelle LeVasseur – WB – Principal

Teacher Retirements - Effective June 30, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following Teacher Retirements - Effective 6/30/14:
Linda Cahill - GH - Library Media Specialist
Carol Hemming - NEMS - Social Studies

Teacher Resignations - Effective June 30, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following Teacher Resignations - Effective 6/30/14:
Jennifer Michalek - CHMS - Math - Grade 8
Zachariah Savic - SSS - Special Education - Goal

A-2 Teacher Resignation - Effective June 30, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following A-2 Teacher Resignations - Effective 6/30/14:
Marc Zimmerman - BEHS - Newspapers Co-Advisor

A-3 Teacher Resignation - Effective June 30, 2014
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following A-3 Teacher Resignations - Effective 6/30/14:
Barbara Tedesco - EPH - Technology Co-Advisor

A-3 Teacher Appointment
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve the following A-3 Teacher Appointment - Effective 8/25/14:
Barbara Kaminski - BEHS - Grade 9 Team Leader - Effective August 25, 2014

Coaching Resignations
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education accept the following Coaching Resignations:
Jaime Dasilva - Assistant Girls Volleyball Coach - BEHS - Effective 5/1/14
Andea Gallo – Heads Girls Swim Coach - BEHS - Effective 5/28/14

GRANTS
On motion by Commissioner Morgan, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve the following Grants:
Stocker Foundation and the Bristol Business Education
Dollar General for Bristol Adult Education Center
IDEA Section 611 and IDEA Section 619

Dr. Solek introduced the new administrative hires for the district: Lawrence Covino, Supervisor of Adult Education, Alternative Education & TESOL, Michelle LeVasseur, Principal at West Bristol and Erika Coleman, a Teacher on Special Assignment as the Elementary and K-8 Literacy Supervisor; the administrators stood to be recognized.

PUBLIC COMMENT

Mike Petosa – 30 Walnut Street – Addressed the Board regarding Outsourcing.

Mary Fortier – 163 Goodwin Street – Addressed the Board regarding the Cafeteria.

Calvin Brown – 286 Ivy Drive – Addressed the Board regarding Cafeteria Outsourcing and Meeting Cancellation.

Jennifer Doll'Aste – 79 Pheasant Run Road – Addressed the Board regarding Third Grade Class Size at Mountain View School.

Patrick Sampson – 82 Couture Drive – Addressed the Board regarding Outsourcing.

DELIBERATED ITEMS/DISTRICT LEADERSHIP TEAM REPORTS

BEHS Italy Trip – June 2015
Travel abroad is one of the most rewarding experiences a person can have. The chance to visit in person the places we study in the classroom, walk where the characters in our stories walked, live the world through

BEHS Italy Trip – June 2015 – con't

their eyes, often changes a student's perspective more profoundly than any words said in any classroom thousands of miles away from the actual site. A chance to travel abroad while young and impressionable is a life-informing experience that makes a student a global citizen and a traveler and a student for the rest of his/her life.

On motion by Commissioner Morgan seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education approve the BEHS Italy Trip in June 2015.

Healthy Food Certification Statement
The Board of Education voted to participate in the Healthy Food Certification Compliance Act. Each year the district must certify full compliance with the program. This year, we received approximately $60,000 in reimbursements from the State of Connecticut as a result of our participation in this program. Requested approval by the Board of Education is for the 2013-2014 school year. The Food Services budget for 2014-2015 includes anticipated revenue of $60,000 from the State. This is a decrease from prior years as a result of our declining participation. [In the first year of the program, we received approximately $90,000. The reimbursement rate has declined as well as our lunch participation rate.]

On motion by Commissioner Morgan seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education certify participation by the Bristol Public Schools in the Health Food Certification Compliance Act for the 2014-2015 school year.

TEAM Mentors/Cooperating Teachers Applicants
Teachers trained to serve as TEAM (Teacher Education and Mentoring) mentors and cooperating teachers provide assistance and support to student teachers and first year beginning teachers in the district in areas such as lesson design and classroom management and provide feedback and support in the areas of instructional planning and student assessment. Cooperating teachers are those teachers who are trained to work with student teachers. Mentors must be assigned to first-year teachers to provide mentoring and support to newly certified teachers; this program is required by the State Department of Education. Principals recruit teachers to apply to be a TEAM mentor/cooperating teachers; the applications are reviewed by the TEAM Coordinating Committee. The following teachers were approved by the TEAM Coordinating Committee and are recommended to be TEAM Mentors/cooperating teachers. Approved teachers must attend a three day training program and update their training every three years.

On motion by Commissioner Vibert seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve the following teachers as* TEAM Mentors/Cooperating Teacher Applicants*:
Barbara McLean - Special Education Teacher - Hubbell School
Jeffrey Fleischman - Social Studies Teacher/Department Coordinator - BEHS
Melissa Prentiss - Grade 3 Teacher - Edgewood School

Policy #5113 - Excused Absences - Second Reading

On motion by Commissioner Morgan seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education approve revisions to Policy #5113 – Excused Absences.

Policy 6145.2 - Extra-Curricular and Co-Curricular Activities - First Reading
Chris Cassin, Athletic Director presented Policy 6145.2 - Extra-Curricular and Co-Curricular Activities for a First Reading. Commissioners were provided the current policy and the revised policy for their review. Mr. Cassin explained the proposed revisions which are being sought to clarify and create consistent policy language for the implementation of the Full Extra-Curricular and Partial Extra-Curricular eligibility policy.

This is the first reading of the policy; any questions in the intervening weeks should be directed to Mr. Cassin.

CURRICULUM REVISION

AP Physics C Curriculum - Second Reading
On motion by Commissioner Dolan, seconded by Commissioner Vibert it was unanimously

VOTED: The Board of Education approve revisions to the AP Physics C Curriculum.

AP Physics I Curriculum - Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve revisions to the AP Physics I Curriculum.

Computer Programming and Video Games Design Curriculum - Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education approve revisions to the Computer Programming and Video Games Design Curriculum.

Environmental Science Curriculum - Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education approve revisions to the Environmental Science Curriculum.

French III Curriculum - Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Dube it was unanimously

VOTED: The Board of Education approve revisions to the French III Curriculum.

Spanish IV Curriculum - Second Reading
On motion by Commissioner Dolan, seconded by Commissioner Morgan it was unanimously

VOTED: The Board of Education approve revisions to the Spanish IV Curriculum.

Pre-Calculus Curriculum - Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Fitzgerald it was unanimously

VOTED: The Board of Education approve revisions to the Pre-Calculus Curriculum.

TEXTBOOK ADOPTION

AP Biology Textbook Adoption – Second Reading
On motion by Commissioner Vibert, seconded by Commissioner Morgan it was unanimously

AP Biology Textbook Adoption – con't

VOTED: The Board of Education approve Cambell Biology in Focus for the AP Biology Textbook Adoption.

AP Chemistry Textbook – Second Reading
On motion by Commissioner Vibert seconded by Commissioner Morgan it was unanimously

VOTED: The Board of Education approve Chemistry: The Central Science as the AP Chemistry Textbook Adoption.

AP Physics C Textbook Adoption - First Reading
The College Board is discontinuing the AP Physics B course as of June 30, 2014. In response, Bristol will implement AP Physics C which will require a new textbook. The following textbook is recommended for AP Physics C:

- Fundamentals of Physics by Jearl Walker

This is the first reading of the text, please contact Dr. Richard Gagliardi in the intervening month with questions.

AP Physics I Textbook Adoption - First Reading
The College Board is discontinuing the AP Physics B course as of June 30, 2014. In response, Bristol will implement AP Physics 1 to expand AP offerings for students. The following textbook is recommended for AP Physics C:

- College Physics: A Strategic Approach by Randy Knight, Brian Jones, and Stuart Field.

This is the first reading of the text, please contact Dr. Richard Gagliardi in the intervening month with questions.

Environmental Science Textbook Adoption - First Reading
High School Science teachers have revised and updated the high school Environmental Science class. The existing textbook is 8-9 years old and needs to be updated to match new instructional standards.

This is the first reading of the text, please contact Dr. Richard Gagliardi in the intervening month with questions.

Computer Programming and Video Game Design - First Reading *
To support instruction in the Computer Programming and Video Game Design Course, curriculum committee members are recommending the adoption of the following text to facilitate reading skill development in the content area of computer programming: The Ultimate Guide to Video Game Writing and Design**.**

Dr. Gagliardi is requesting that the second reading of the textbook be waived so that the text can purchased with available funds in this fiscal year.

On motion by Commissioner Vibert seconded by Commissioner Dolan it was unanimously

VOTED: The Board of Education waive the second reading of the Computer Programming and Video Game Design textbook adoption.

Computer Programming and Video Game Design - First Reading - con't

On motion by Commissioner Hintz seconded by Commissioner Vibert it was unanimously

VOTED: That the Board of Education approve The Ultimate Guide to Video Game Writing and Design for use in the Computer Programming and Video Game Design Course.

French III Textbook Adoption - First Reading
The French III curriculum was revised this spring as part of the district's regular practice of updating curriculum. As a result of the process, a committee of French teachers from both high schools determined that a current and rigorous textbook was needed to help deliver the curriculum effectively. The committee recommends the approval the following textbook:

- D'accord Level 3 published by Vista Higher Learning

This is the first reading of the text, please contact Pam Brisson in the intervening month with questions.

Spanish IV Textbook Adoption - First Reading
The Spanish IV curriculum was revised this spring as part of the district's ongoing practice of updating curricula. As a result of the process, a committee of Spanish teachers from both high schools determined that a current and rigorous textbook was needed to help deliver the curriculum effectively.
The committee recommends the approval the following textbook:

- Aventura Level IV, published by EMC Publishing.

This is the first reading of the text, please contact Pam Brisson in the intervening month with questions.

Middle School Mathematics Textbook Adoption - First Reading
Two years ago, Bristol Public Schools adopted a middle school mathematics curriculum aligned to the Common Core State Standards. In support of that adoption, it is recommended to purchase instructional materials to meet the revised curriculum standards. After a review of several possibilities, the textbook selection committee recommends the following textbook for middle school mathematics.

Glencoe Math: Built to the Common Core CCSS by McGraw Hill Education

This is the first reading of the text, please contact Lisa Bernabe in the intervening month with questions.

Old Business
There was no Old Business to come before the board.

New Business
There was no New Business to come before the board.

Information
Commissioner Vibert reported on the walking school bus. Today Rocky from the Rock Cats came to walk with the students; a few weeks ago, four Bristol fire fighters walked with the students. She also congratulated Commissioner Wilson on recently being named the Chair of CREC (Capitol Region Education Council).

Commissioner Hintz reported that she attended the Adult Education graduation. The program was very moving. She also attended the graduation practice of Vocational graduates; the students did a phenomenal job; Bill Vaughn does such a good job with students.

Information – con't

Dr. Solek wanted to recognize three district leaders that have recently earned doctoral degrees: Kim Hapken, Michael Dietter and David Huber. They were present in the audience, and stood to be acknowledged. Commissioner Wilson reported on his recent appointment as the Chairman of CREC. He has been involved CREC since 2003 when Barbara Doyle asked him to sit on the committee. He continues to respect the group for their spirit.

Henri Martin – Reported about the recent Council Meeting and wanted to relay Calvin Brown's comments of the good job that Dr. Solek and the Administration did with the bomb threats.

VOTE TO CONVENE INTO EXECUTIVE SESSION ***for the purpose of conducting the Superintendent's Evaluation.***

On motion by Commissioner Hintz seconded by Commissioner Vibert it was unanimously

VOTED: That the Board of Education convene into Executive Session for the purpose of conducting the Superintendents' Evaluation.

EXECUTIVE SESSION

PRESENT: Commissioners: Jennifer Dube, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Karen Vibert, Christopher Wilson and Chairman Lawrence Amara; Ellen W. Solek, Superintendent of Schools, Susan Moreau, Deputy Superintendent, Dennis Bieu, Director of Human Resources and Henri Martin, City Council Liaison

ABSENT: Commissioner Thomas O'Brien

Executive Session was called to order (9:08 p.m.)

1. Presentation by Dr. Solek, followed by evaluation discussion.

RECONVENE INTO PUBLIC SESSION to discuss and/or take any votes from Executive Session.

Adjournment
The being no other business to come before the Board of Education the meeting should adjourn.

Respectfully Submitted
Susan P. Everett

Susan P. Everett
Executive Secretary to Board of Education

BOARD OF EDUCATION
Bristol, Connecticut
SPECIAL BOARD OF EDUCATION MEETING
Thursday, June 26, 2014

A special meeting of the Bristol Board of Education was held on Thursday, June 26, 2014 at 7:30 p.m. at the Board of Education Administration Building, located at 129 Church Street, Bristol, Connecticut in the Auditorium.

Present: Commissioners: Lawrence Amara, Jennifer Dube , Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Thomas O'Brien, Karen Vibert and Christopher Wilson. **Also present:** Dr. Ellen Solek, Superintendent of Schools; Dr. Susan Kalt Moreau, Deputy Superintendent of Schools; Denise Carabetta, Director of Teaching and Learning; Dennis Bieu, Director of Human Resources, Kim Hapken, Director of Special Services and Gary Franzi, Supervisor of Budgeting & Accounting.

1. Call to order
The meeting was called to order at 7:30 p.m.

2. Vote to Accept the 2014-2015 BOE General Fund Budget in the amount of $106,836,650.
On a motion by Commissioner O'Brien, it was voted: ***To* accept the 2014-2015 BOE General Fund Budget in the amount of $106,836,650.** Commissioner Wilson cast an opposing vote.

3. Revised Alliance Grant Funding
It was unanimously voted: ***To approve additional Alliance Grant Funding in the amount of $283,250.***

4. Vote to Convene Into Executive Session
It was unanimously voted to **Convene into Executive Session for the purpose of: Pending Litigation and Discussion of Superintendents' Evaluation**. **(7:47 p.m.)**

EXECUTIVE SESSION

Present: Commissioners: Lawrence Amara, Jennifer Dube, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Thomas O'Brien, Karen Vibert and Christopher Wilson. **Others Present:** Dr. Ellen Solek, Superintendent of Schools; Dr. Susan Kalt Moreau, Deputy Superintendent of Schools; Dennis Bieu, Director of Human Resources, Kim Hapken, Director of Special Services, Gary Franzi, Supervisor of Budgeting & Accounting and Brian Clemow, Attorney, Shipman & Goodwin

1. Call to order
Executive Session was called to order at 7:47 p.m.

2. Discussion of Pending Litigation

All others present in Executive Session were asked to recess while the Board Commissioners discussed the Superintendent's Evaluation.

3. Discussion of Superintendent's Evaluation

4. Reconvene Into Public Session

It was unanimously voted to reconvene into Public Session. (11:07 p.m.)

5. Adjournment

Unable to take any votes at this time; it was unanimously voted to adjourn the Special Meeting. (11:07 p.m.)

Respectfully Submitted,

Susan Everett

Susan Everett

Secretary Board of Education

Policy
6145.2(a)

Instruction

Co-Curricular Activities are extensions of curricular courses which occur during the school day. Students participate in the course during the school day and participation in the co-curricular activity is required as part of the course. Examples of co-curricular activities are orchestra, band, or choral performances outside of the school day when the courses take place during the school day.

Extra-Curricular Activities are not-for-credit activities, for which there is no curriculum, and these activities take place outside of the school day. Examples include athletic teams, intramurals, clubs, and performances in plays.

Middle School and High School Extra-Curricular Activities /Athletics

District participation in interscholastic athletics shall be subject to approval by the Board. This shall include approval of membership in any leagues, associations, or conferences, of rules for student participation.

It is the Board's policy to provide students interscholastic athletic competition in a variety of sports. Qualified personnel shall be provided for coaching and supervising individual sports. In addition, it is the policy of the Board to provide intramural athletic activities as an outgrowth of class instruction in physical education commensurate with the grade level of the students involved.

Each student who chooses to participate in an interscholastic athletic program is required to have on file, in the offices of the building nurse, a certificate of consent, which is signed by the parent or legal guardian. No student may start practice for any athletic team until he or she has been examined and approved by a medical doctor. This certificate of consent shall be in effect for each student as specified in Sec. 5141.31.

The purpose of school athletics is both educational and recreational. The athletic program should encourage participation by as many students as possible and should be carried on with the best interests of the participants as the prime consideration. Participation should be without unreasonable interference with other obligations in the school, community and home.

It is recognized that a well-organized and well-conducted athletic program is a potent factor in the morale of a student body and an important phase of good community-school relations.

Every possible effort shall be made to offer equal opportunities for both sexes in sports and activities that shall include life sports that a student can carry through adulthood.

Instruction

Middle School and High School Extra-Curricular Activities /Athletics

In addition, the student participating on an interscholastic team agrees:

1. Not to participate on another team outside of school in the same sport while on the school's team (applicable to high school student-athletes only)
2. Not to receive any personal economic gain based upon athletic skill.
3. To participate under his or her own name.
4. Not to participate in any post season or individual contests as a representative of the Bristol Public Schools without the school's explicit and expressed permission.

The failure of one (1) team member to abide by all of the eligibility rules will result in the forfeiture of all contests for the team while the individual was ineligible.

Students participating in interscholastic athletics assume a special responsibility. They serve as models for much of the student body and are representatives of our school district to other school districts and the communities served by our schools.

Student athletes are expected to behave in a manner that will bring credit to themselves and their schools. It is our expectation that students involved in the athletic program will refrain from smoking and the use of alcohol or any other behavior-altering drug.

Failure to comply with the school's expectations may result in removal from the activity and/or in disciplinary action being taken.

Students who are absent or suspended from school may not participate in an extra-curricular activity. Any student who is not present for a minimum of three periods must receive administrative approval to participate in a co-curricular activity held that day.

Extra-Curricular Activities/Athletics - Change in High School District Residency

When a student under 18 years of age leaves the residency of a legal guardian in one Bristol public high school district to reside with friends or relatives in another Bristol public high school district, having filed forms provided by the Board of Education for that purpose, that student will not be eligible to participate in interscholastic athletics at the receiving school in any sport the student previously participated in at the sending school for three hundred sixty-five (365) calendar days of continuous enrollment from the date of the first allowable play date following the date of enrollment (first day of attending classes) in the receiving school, or the first contest after the date of enrollment, if entry is after the first allowable play date at the receiving school.

Parents/legal guardians authorizing the minor student to change residence (i.e., leave home) will be required to provide the Board of Education with legal documentation, on request, to establish their current legal custody of the minor involved.

Instruction

Extra-Curricular Activities/Athletics - Change in High School District Residency

Students and/or their parents/legal guardians may file a waiver request with the Superintendent of Schools within thirty (30) days of change of residency, seeking exemption from this policy because the change in residency is required for compelling personal reasons unrelated to athletics, such as illness or incapacity of family members. The Superintendent of Schools shall consult with the two high school principals and the Supervisor of Physical Education, Health and Athletics and make a recommendation to the Board regarding the request. Should the Superintendent recommend against the waiver, the student and/or parents/legal guardian may appear before the Board, which shall issue the final decision regarding the requested waiver.

Extra-Curricular Activities/Athletics - High School Request for Pupil Transfer within the Bristol Public School System With No Change in Residency

Any student who is granted an out of area transfer request that results in attendance at the non-resident high school is ineligible for interscholastic athletics for thirty (30) calendar days from the date of the first allowable play date following the date of enrollment (first day of attending classes) in the receiving school, or the first contest after the date of enrollment, if entry is after the first allowable play date in any sport the student participated in at the previous school.

Students and/or their parents legal guardians may file a waiver request with the Superintendent of Schools within thirty (30) days of notification of denial of the out of area request, seeking exemption from this policy because the out of area request is required for compelling personal reasons unrelated to athletics/ such as illness or incapacity of family members. The Superintendent of Schools shall consult with the two high school principals and/or the Supervisor of Physical Education, Health and Athletics and make a recommendation to the Board regarding the request. Should the Superintendent recommend against the waiver, the student and/or parents/legal guardian may appear before the Board, which shall issue the final decision regarding the requested waiver.

Instruction

Extra-Curricular and Co-Curricular Activities

Middle and High School Co-Curricular Eligibility

An activity which occurs outside of the school day as an extension of curricula courses is a co-curricular activity. Students participate in the course during the school day and participation in the co-curricular activity is required as part of the course. This pertains specifically to student participation in band, orchestra and/or choral performances which are required for participation in the course. Students will be allowed to participate in such required performances even when on academic restriction (middle school level) or partial eligibility (high school level) for extra-curricular activities.

Middle School and High School Extra-Curricular Eligibility

Extra curricular eligibility policy pertains to not-for-credit activities which take place outside of the school day. This includes athletic teams, intramurals, clubs, performances in plays, adjudications, community concerts, and any other activity which takes place outside of the school day as a course requirement.

High School Full Extra-Curricular Eligibility

Marking period grades will be used to determine eligibility during the school year. Student eligibility is determined no later than the fourteenth (14) calendar day following the end of the marking period.

In order to be eligible to participate in all aspects of an extra-curricular activity, a student must meet the following criteria:

I. Scholarship

1. A student cannot at any time represent a school unless taking a minimum of five and a half (5.5) academic credits plus ½ physical education credit at the end of the regular marking period next preceding the contest/event.

2. At the end of the previous marking period, the student is eligible when he/she:
    1. Passes all courses OR
    2. Fails one class with a grade no lower than 60 and has a current weighted GPA of 2.0 or higher. The student must achieve a grade of 65 or higher in that failed course by the date of progress reporting of the marking period following the marking period in which the failure occurred.

Instruction

Extra-Curricular and Co-Curricular Activities

Middle and High School Co-Curricular Eligibility

I. Scholarship – con't

3. To be eligible for fall extra-curricular activities, the student must have received a minimum of 6 credits toward graduation by the beginning of the following school year in all full year and second semester courses. However, students entering grade 9 from grade 8 have full eligibility.

II. Student Eligibility

1. The student should be a member of that school in grade 9, 10, 11, 12.

2. The student shall not have reached his or her nineteenth (19) birthday, except that a player who reaches his or her nineteenth (19) birthday on or after July 1, shall be eligible to compete during the ensuing school year if he or she is otherwise eligible (CIAC eligibility regulation Section II B).

3. Any student who has been enrolled in grades 10, 11, 12 inclusive in any school (member or non-member) shall not participate in the same branch of athletics for more than (3) seasons. A student, upon enrolling in grade nine (9) shall have 4 continuous or uninterrupted years to complete his or her athletic eligibility.

Instruction

High School Full Extra-Curricular Eligibility

High School Partial Extra-Curricular Eligibility

A student placed on Partial Extra-Curricular Eligibility would be granted limited participation but will not be able to represent the school in any type of competition, performance, etc. (i.e., athletic, drama, musical etc.).

Partial Extra-Curricular Eligibility will be offered to a student only once per academic year.

To gain Partial Extra -Curricular Eligibility, a student must meet the following criteria:

1. Be carrying a full academic load; the load for all students is a minimum of five and a half (5.5) academic credits plus ½ physical education credit per year.

2. For the first marking period of the school year, a student must not have failed (defined as a grade lower than 65) more than 2 full year or 2 second semester subjects during the previous year.

3. For the current school year, fails (defined as a grade lower than 65) no more than 2 subjects at the end of the previous marking period. In the event that a student fails a first semester course, which cannot be repeated the second semester, the student will be placed on Partial Extra-Curricular Eligibility for the third marking period and must be passing all subjects with a current weighted GPA of 2.0 at the midpoint of the said marking period.

4. The period of Partial Extra-Curricular Eligibility will extend to the date of progress reporting of the marking period following the marking period in which the failure occurred. A student on Partial Extra-Curricular Eligibility must attain a minimum average of "70" in the subject that was failed. Partial Extra-Curricular Eligibility will be extended in the event that Bristol Summer School offerings are not available to make up the academic failure. In the event that Partial Extra-Curricular Eligibility is granted for the first marking period, the student must be passing all subjects with a current weighted GPA of 2.0 by the date of progress reporting of the marking period.

5. Students, who qualify under the Partial Eligibility Rule during a try-out period, may try-out for extracurricular activities, with the understanding that the Partial Eligibility Rule goes into effect immediately should he/she make the cut.

Instruction

High School Full Extra-Curricular Eligibility

6. Any student receiving a grade of "incomplete" shall be placed on Partial Extra-Curricular Eligibility until a grade is submitted by the teacher or by the date of progress reporting of the marking period.

7. Transfer students' grades are interpreted by the standards of the previously attended school.

8. By July 1 of the previous year, be less than nineteen (19) years old for athletic participation. (CIAC Regulation)

Middle School Co-Curricular and Extra-Curricular Eligibility

Middle School Co and Extra-Curricular eligibility is determined by a student's overall performance in all core subjects and all encore subjects. Students are issued a subject and conduct grade for each subject and these grades are considered. Incomplete grades constitute a failing grade of below 65 until incomplete grades are made up.

At the start of each school year, all students attending middle school, who were promoted to the next grade, are eligible for participation in extra-curricular activities for the first trimester. Students who were retained are not eligible for participation in extra-curricular activities for the first trimester. Student eligibility will be reviewed at the conclusion of the first and second trimesters.

All extra-curricular activities occurring outside of the school day are included in these eligibility guidelines (such as sports/intramurals, cheerleading, dances, school organized clubs and/or events, etc.). Band and chorus activities occurring outside of the school day are considered co-curricular activities; students will participate in the school band and/or choral performances required when enrolled in band and/or chorus during the school day. When on academic restriction, students will not participate in band or chorus performances, such as adjudications, community concerts, etc., that are not required as part of enrollment in band or chorus.

Instruction

Middle School Full Extra-Curricular Eligibility

In order to be eligible to participate in all aspects of an extra-curricular activity, a student must meet the following criteria:

1. Scholarship
    a. At the end of the first and second trimester, the student must pass all ~~8~~ subjects with a grade of 65 or higher.

2. Conduct
    a. At the end of the first and second trimester, a student must have no more than one grade of ***X*** in conduct.

Middle School Academic Restriction for Extra-Curricular Activities

A student placed on academic restriction will not participate in extra-curricular activities; a student on academic restriction will not be able to represent the school in any type of extra-curricular competition, performance, etc. (for example, sports/intramurals, a school play, adjudications, ensembles).

A student will be placed on academic restriction for the second and/or third trimester when the following occur:

1. Scholarship
    a. A student fails one or more subjects (grade of 64 or lower) in the first and/or second trimester.
    OR

2. Conduct
    b. A student has more than one grade of ***X*** in conduct.

A student on academic restriction may not remain in school after the school day ends unless the student is under teacher supervision for make-up work, extra help, or detention.

Academic restriction will be removed upon successful completion of the second and/or third trimester, defined as the student meeting the requirements for full extra-curricular eligibility.

Instruction

Policy adopted:	April 5, 1995	BRISTOL PUBLIC SCHOOLS
Policy revised:	August 21, 1996	Bristol, Connecticut
Policy revised:	March 5, 1997	
Policy revised:	July 1, 1998	
Policy revised:	June 6, 2001	
Policy revised:	June 2, 2004	
Policy revised	July 8, 2009	
Policy revised	August 19, 2009	
Policy revised	August 17, 2011	
Policy revised	June 5, 2013	

Proposed revisions May 21, 2014

Policy
6145.2(c)

Extra-Curricular Activities/Athletics - High School Request for Pupil Transfer within the Bristol Public School System With No Change in Residency

(Current) Any student who is granted an out of area transfer request that results in attendance at the non-resident high school is ineligible for interscholastic athletics for thirty (30) calendar days from the date of the first allowable play date following the date of enrollment (first day of attending classes) in the receiving school, or the first contest after the date of enrollment, if entry is after the first allowable play date in any sport the student participated in at the previous school.

(Proposed change from previous paragraph) Any student who is granted an out of area transfer request that results in attendance at the non-resident high school is ineligible for interscholastic athletics for thirty (30) calendar days from the first date of practice following the date of enrollment (first day of attending classes) (for students entering over the summer, the 30 days begin on the first day of practice) in the receiving school, or the first contest after the date of enrollment, if entry is after the first allowable play date in any sport the student participated in at the previous school

Students and/or their parents legal guardians may file a waiver request with the Superintendent of Schools within thirty (30) days of notification of denial of the out of area request, seeking exemption from this policy because the out of area request is required for compelling personal reasons unrelated to athletics/ such as illness or incapacity of family members. The Superintendent of Schools shall consult with the two high school principals and/or the Supervisor of Physical Education, Health and Athletics and make a recommendation to the Board regarding the request. Should the Superintendent recommend against the waiver, the student and/or parents/legal guardian may appear before the Board, which shall issue the final decision regarding the requested waiver.

Proposed revisions May 21, 2014

Policy
6145.2(d)

Eligibility Policy

High School Full Extra-Curricular Eligibility

(Added) Quarter 1, 2 and 3 grades will be used to determine eligibility during the winter and spring seasons. Final end of the year grades, 2nd semester and summer school grades will determine eligibility for the fall season. During the school year, student eligibility and ineligibility status is determined on the day report cards are distributed or on the fourteenth (14) calendar day following the end of the marking period.

In order to be eligible to participate in all aspects of an extra-curricular activity, a student must meet the following criteria:

Fall Season

A student is eligible when he/she:

- Is entering grade 9 from grade 8 OR must have received a minimum of five and a half (5.5) academic credits plus .5 physical education credit from the previous school (Change: year to year/summer school.) (Add: Students attending BTEC or transferring into a Bristol School, may have the .5 physical education credit waived by the building principal)
- Must be enrolled in a minimum of five and a half (5.5) academic credits plus .5 physical education credit during the current school year.
- Passes all courses OR
- Fails one class for the year or second semester with a grade no lower than 60, (Add: not retaken or failed in summer school), and has a weighted (Add: semester two) GPA of 2.0 or higher.
    - If the student retakes the failed course in the fall, the student must achieve a grade of 65 or higher in that failed course by the midterm of the marking period. (Add: Eligibility of these students will be determined on the third school day after the progress reporting period)

If the student does not repeat the failed course, all grades must be a 70 or better at the midterm of the first marking period. (Add: Eligibility of these students will be determined on the third school day after the progress reporting period)

- The student must be a member of the school in grades 9, 10, 11 or 12.
- (Updated: The student shall not have reached his or her twentieth (20th) birthday. A student-athlete will not be allowed to start a season or compete during a season in which his/her twentieth (20th) birthday falls.)

- A student has eight (8) consecutive semesters or four (4) consecutive years of eligibility from the date of entry into the ninth grade to be eligible for interscholastic competition.
- Any student who has been enrolled in grades 10, 11, 12 inclusive in any school (member or non-member) shall not participate in the same branch of athletics for more than (3) seasons. A student, upon enrolling in grade nine (9) shall have 4 continuous or uninterrupted years to complete his or her athletic eligibility.

Winter and Spring Seasons

- At the end of the previous marking period, the student is eligible when he/she:
- Is enrolled in a minimum of five and a half (5.5) academic credits plus ½ physical education credit.
- Passes all courses OR
- Fails one class with a grade no lower than 60 and have a weighted (Added: quarter) GPA of 2.0 or higher.
    - To maintain full eligibility the student must achieve a grade of 65 or higher in the failed course on the progress report following the marking period in which the failure occurred.
    - If the student does not repeat the failed course, all grades must be a 70 or better at the progress report following the marking period in which the failure occurred.
    - (Add: Eligibility of these students will be determined on the third school day after the progress reporting period)

- (Add: Students with an incomplete become ineligible the day grades are distributed or on the 14 calendar date after the close of the term. The student then has 10 days to make up the incomplete. If a student does not make up the incomplete within 10 days, the student remains ineligible. A student becomes eligible when the incomplete grade has been resolved within the 10 days.)
- The student should be a member of that school in grade 9, 10, 11, 12.
- (Updated: The student shall not have reached his or her twentieth (20th) birthday. A student-athlete will not be allowed to start a season or compete during a season in which his/her twentieth (20th) birthday falls.)
- A student has eight (8) consecutive semesters or four (4) consecutive years of eligibility from the date of entry into the ninth grade to be eligible for interscholastic competition.
- Any student who has been enrolled in grades 10, 11, 12 inclusive in any school (member or non-member) shall not participate in the same branch of athletics for more than (3) seasons. A student, upon enrolling in grade nine (9) shall have 4 continuous or uninterrupted years to complete his or her athletic eligibility.

Proposed revisions May 21, 2014

Policy
6145.2(d)

High School Partial Extra-Curricular Eligibility

Fall Season

A student placed on Partial Extra-Curricular Eligibility would be granted limited participation but will not be able to represent the school in any type of competition, performance, etc. (i.e., athletic, drama, musical etc.).

Partial Extra-Curricular Eligibility will be offered to a student only once per academic year.

To gain Partial Extra - Curricular Eligibility, a student must meet the following criteria:

- Fails two classes for the year or second semester, (Add: not retaken or failed in summer school.)
- Be carrying a full academic load; the load for all students is a minimum of five and a half (5.5) academic credits plus ½ physical education credit per year.

- The period of Partial Extra-Curricular Eligibility will extend to the progress reporting period of the first quarter.
- To become eligible at the progress reporting period, a student on Partial Extra-Curricular Eligibility must attain a minimum average of (Change: "70" to "65") in the subject(s) that were failed and be passing all other classes. If the student (Add: does not) or is unable to retake the failed class or classes, the student ***must have a 70 in all subjects.*** ***(Remove:*** with a current weighted GPA of 2.0 at the midpoint of the said marking period) (Add: Eligibility of these students will be determined on the third school day after the progress reporting period)
- Students, who qualify under the Partial Eligibility Rule during a try-out period, may try-out for extracurricular activities, with the understanding that the Partial Eligibility Rule goes into effect immediately should he/she make the cut.
- Transfer students' grades are interpreted by the standards of the previously attended school.
- (Updated: The student shall not have reached his or her twentieth (20th) birthday. A student-athlete will not be allowed to start a season or compete during a season in which his/her twentieth (20th) birthday falls.)
- A student has eight (8) consecutive semesters or four (4) consecutive years of eligibility from the date of entry into the ninth grade to be eligible for interscholastic competition.
- Any student who has been enrolled in grades 10, 11, 12 inclusive in any school (member or non-member) shall not participate in the same branch of athletics for more than (3) seasons. A student, upon enrolling in grade nine (9) shall have 4 continuous or uninterrupted years to complete his or her athletic eligibility.

Proposed revisions May 21, 2014

Policy
6145.2(d)

High School Partial Extra-Curricular Eligibility

Winter and Spring Seasons

A student placed on Partial Extra-Curricular Eligibility would be granted limited participation but will not be able to represent the school in any type of competition, performance, etc. (i.e., athletic, drama, musical etc.).

Partial Extra-Curricular Eligibility will be offered to a student only once per academic year.

To gain Partial Extra -Curricular Eligibility, a student must meet the following criteria:

- Be carrying a full academic load; the load for all students is a minimum of five and a half (5.5) academic credits plus ½ physical education credit per year.
- For the current school year, fails (defined as a grade lower than 65) no more than 2 subjects at the end of the previous marking period. The period of Partial Extra-Curricular Eligibility will extend to the date of progress reporting of the marking period following the marking period in which the failure(s) occurred**.** A student on Partial Extra-Curricular Eligibility must attain a minimum average of "65" in the subject(s) that were failed and be passing all classes.
- In the event that a student fails a first semester course, which cannot be repeated the second semester, the student will be placed on Partial Extra-Curricular Eligibility for the third marking period and must be passing all subjects with a grade of 70 at the quarter progress report. (Add: Eligibility of these students will be determined on the third school day after the progress reporting period)
- Students, who qualify under the Partial Eligibility Rule during a try-out period, may try-out for extracurricular activities, with the understanding that the Partial Eligibility Rule goes into effect immediately should he/she make the cut.
- Transfer students' grades are interpreted by the standards of the previously attended school.
- (Updated: The student shall not have reached his or her twentieth (20th) birthday. A student-athlete will not be allowed to start a season or compete during a season in which his/her twentieth (20th) birthday falls.)
- A student has eight (8) consecutive semesters or four (4) consecutive years of eligibility from the date of entry into the ninth grade to be eligible for interscholastic competition.
- Any student who has been enrolled in grades 10, 11, 12 inclusive in any school (member or non-member) shall not participate in the same branch of athletics for more than (3) seasons. A student, upon enrolling in grade nine (9) shall have 4 continuous or uninterrupted years to complete his or her athletic eligibility.

Bristol Public Schools
Office of Teaching & Learning

DEPARTMENT: Engineering and Technology

COURSE: CAD and Solid Modeling

PRE-REQUISITE: Introduction to CAD (Computer Assisted Design)

COURSE DESCRIPTION:

This second course will further advance your skills and knowledge of computer aided design. Advanced computer aided design tools and modeling concepts will be applied to create complex mechanical parts. Modeling techniques and methods will be explored to find the most efficient approach to creating advanced drawings. You will investigate the design process used in engineering through the use of exciting "hands on" projects. Mechanical parts will be created both virtually in CAD and then physically through the use of a 3D printer. Topics will include the creation of lines, arcs, points, symbols, and text; the methods of grouping, reusing, assembling, and manipulating these objects; and the development, modification, storage, and presentation of complex drawings.

DEPARTMENT GOALS:

- Encourage students to pursue advanced technical study
- Provide experiences for students to develop and demonstrate technological skills and knowledge
- Employ instructional methods and interdisciplinary activities that stimulate student interest in technology
- Emphasize the ethical and safe use of tools and technology
- Engage students with real-world problem solving experiences
- Prepare students to be responsible, technologically literate citizens and consumers
- Prepare students to work cooperatively as a team member toward a common goal
- Prepare students to explore, understand and evaluate different aspects of technology
- Prepare students to competently use a variety of technologies, tools, materials and technical processes

PHILOSOPHY OF INSTRUCTION:

Engineering & Technology Education in the Bristol Public Schools prepares students to employ technology to solve problems and appreciate the overall contribution of technology to our society. Recognizing that students learn in different ways, technology teachers will utilize a variety of instructional methods to facilitate student learning.
Experiences in Engineering & Technology Education will provide students with opportunities to explore a variety of technologies, work independently and cooperatively toward a common goal, and to view technology from personal, societal, and career perspectives. Hands-on learning will occur in laboratory settings that employ methods of research, design, engineering, problem-solving, experimentation, and material science.

PHILOSOPHY OF ASSESSMENT:

Based on our department philosophy and goals, Engineering and Technology teacher will:

- Use formative, summative and performance assessments to measure the attainment of student learning goals and content standards
- Collaborate with colleagues to develop exemplars and rubrics to help students better understand outcome expectations
- Collaborate with colleagues to develop common assessments for collecting student learning data to assist with continuous and school and district improvement
- Utilize multi-level cognitive questioning to engage student thinking
- Modify and change instructional strategies based on data
- Provide regular and constructive feedback on student work and learning

UNIT OUTLINE:

Instructional topics for this **45 day** experience include:

1. CAD Concepts and Skills
2. Advanced CAD Functionality
3. CAD Applications
4. CAD and Design

Content Standards

Connecticut Technology Education Standards

CADD.03 - Utilize measurement and annotation systems as they apply to CADD technology design.
CADD.05 - Utilize proper projection techniques to develop orthographic and pictorial drawings.
CADD.06 - Demonstrate use and application of alternate view application and functions.

Performance Standards

Connecticut Technology Education Standards

- CADD.03.01 - Explain how the various measurement systems are used in CADD drawings.
- CADD.03.04 - Apply dimensioning to various objects and features.
- CADD.03.08 - Demonstrate the methods of creating a title block.
- CADD.05.01 - Understand the commands and concepts necessary for producing drawings through traditional or computer-aided means.
- CADD.05.02 - Understand the orthographic projection process for developing multi-view drawings.
- CADD.06.05 - Create a 2-D drawing from a 3-D model.
- CADD.06.06 - Create a 3-D drawing from a 2-D model.

Common Core Reading Standards for Literacy in Science and Technical Subjects

- 10. By the end of grade 12, read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Utilize	Measurement and annotation systems as they apply to CADD technology design.
Utilize	Proper projection techniques to develop orthographic and pictorial drawings.
Demonstrate	The use and application of alternate view applications and functions.
Explain	How the various measurement systems are used in CADD drawings.
Apply	Dimensioning to various objects and features.
Understand	The commands and concepts necessary for producing drawings through traditional or computer-aided means.
Understand	The orthographic projection process for developing multi-view drawings.
Create	A 2-D drawing from a 3-D model.
Create	A 3-D drawing from a 2-D model.
Read	Science/technical texts independently and proficiently.
Comprehend	Science/technical texts independently and proficiently.

Learning Plan	
Essential Questions	**Big Ideas**
Why are construction planes important in CAD design?	Computer aided design is used as a communication tool.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	**Objectives** The students will be able to:	**Common Learning Experiences and Assessments** Engineering & Technology teachers will assess and provide feedback to students about the following:
• Review CAD software interface and use of tools • Model techniques used in creating CAD drawings • Monitor student progress toward completing objectives • Conduct daily instructional closure	• Utilize basic CAD drawing tools • Perform geometric construction • Create basic 3D parts using CAD tools • Identify advanced CAD tools • Properly complete drawings using advanced CAD tools: lofts, sweeps, revolve and the hole wizard • Create orthographic drawings along with appropriate annotations	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Create and draw geometric shapes • Create and draw 2-dimensional models • Create and draw 3-dimensional models • Create orthographic drawings of complex models using appropriate annotations **Formative and Summative Assessments** • Measure daily understandings • Quiz students on 2-D concepts • Quiz students on 3-D concepts • Quiz students on orthographic concepts

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

F. Drawing and Designing Assemblies: Create assemblies and views in 3-D format.

Connecticut Technology Education Standards

CADD.06 - Demonstrate use and application of alternate view application and functions.
CADD.07 - Create assemblies views in 3-D format.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

32. Create an assembly in 3-D geometry.
33. Create an exploded view of a 3-D assembly.

Connecticut Technology Education Standards

CADD.06.01 - Identify the function of alternate views.
CADD.06.02 - Demonstrate the use of cutting planes to clarify hidden features of an object.
CADD.06.03 - Create and manipulate construction planes.
CADD.06.04 - Generate/modify geometric components on construction planes.

Common Core Reading Standards for Literacy in Science and Technical Subjects

10. Read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Create	An assembly in 3-D geometry
Create	An exploded view of a 3-D assembly
Create	Assembly views in 3-D format
Identify	The function of alternative views
Demonstrate	The use of cutting planes to clarify hidden features of an object.
Create	Construction planes
Modify	Construction planes
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan	
Essential Questions	**Big Idea**
What advantages do CAD assemblies and presentations have over traditional sketching and technical drawings?	Designers create assemblies and presentations to formally convey design information.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	**Objectives** The students will be able to:	**Common Learning Experiences and Assessments** Engineering and Technology teachers will assess and provide feedback to students about the following:
• Select and assign students to teams to design and create assemblies of complete parts • Review, explain and demonstrate CAD software interface tools • Facilitate student-led discussions and demonstrate part assemblies • Conduct daily instructional closure	• Investigate CAD assembly modeling methodologies • Create CAD assemblies from individual parts • Create exploded views of an assembly to show all the parts and the manner in which it is assembled	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Create individual parts that will be used to complete an assembly. • Use CAD tools to place constraints, assemble, mate, rotate, and move individual parts. • Assemble individual parts to create a model • Create an exploded view of assembly **Formative and Summative Assessments** • Measure daily understandings • Test technical and CAD drawing skills of students

Content Standards

Connecticut Technology Education Standards

CADD.02 - Analyze the use of current CADD design technology.

Performance Standards

Connecticut Technology Education Standards

CADD.02.03 - Describe and demonstrate the process of using mechanical and electronic measuring devices accurately as required by the design intent.
CADD.02.07 - Express a design of an object as a 3D model.
CADD.02.10 - Revise a design and update finished drawings appropriately.

Common Core Writing Standards for Literacy in Science and Technical Subjects

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
6. Use technology, including the internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core Reading Standards for Literacy in Science and Technical Subjects

4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
7. Translates quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
10. By the end of grade 12, read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Identify	Mechanical and electronic measuring devices
Demonstrate	The accurate use of mechanical and electronic measuring devices
Express	A design of an object as a 3D model
Revise	A design and update finished drawings appropriately
Produce	Clear and coherent writing appropriate to task, purpose, and audience.
Use	Technology to produce and display information flexibly and dynamically.
Determine	Meaning of symbols, key terms and other domain-specific words
Translate	Quantitative or technical information expressed in words in a text into visual form.
Translate	Information expressed visually or mathematically into words.
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan

Essential Questions	Big Ideas
What purpose does reverse engineering serve?	Engineers utilize reverse engineering to innovate and learn more about existing designs.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	Objectives The students will be able to:	Common Learning Experiences and Assessments Engineering and Technology teachers will assess and provide feedback to students about the following:
• Discuss and present reverse engineering topics • Promote class discussion on reverse engineering • Select and assign students to teams for reverse engineering project. • Approve students selected model for reverse engineering • Facilitate peer interaction to compare and contrast their approach to part creation. • Conduct daily instructional closure	• Investigate the use and application of reverse engineering • Examine an object's construction and determine how it is assembled • Create a sketch of an object and subassembly • Perform mathematical computations using fractions and decimals • Utilize different measuring devices such as dial/digital calipers and micrometers • Annotate sketches with notes and dimensions • Reconstruct a selected object's individual parts using CAD software • Assemble individual parts using CAD software • Produce final documentation of reverse engineered objects	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Select a model that has a minimum of four discrete parts • Perform a visual and functional analysis of the model • Measure the various parts using a micrometer and vernier gauge to determine the dimensions • Create sketches and drawings along with annotations to communicate product design • Create individual model parts • Replicate the model using CAD **Formative and Summative Assessments** • Measure daily understandings • Reverse engineering project assessed using rubric • Test basic mathematical computations and the use of scale geometric construction • Test geometric constructions • Observe student activities and work on projects

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

F. Drawing and Designing Assemblies: Create assemblies and views in 3-D format.

Connecticut Technology Education Standards

CADD.02 - Analyze the use of current CADD design technology.
CADD.10 - Maintain a portfolio to document knowledge, skills, materials and experience in CADD.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

32. Create an assembly in 3D geometry.
33. Create an exploded view of 3-D assembly.

Connecticut Technology Education Standards

CADD.02.01 - Apply conventional Computer Aided Drafting and Design processes and procedures accurately, appropriately, and safely.
CADD.10.01 - Gather educational and work highlights to include in portfolio.
CADD.10.02 - Organize and provide a compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience.
CADD.10.03 - Prepare and conduct effective portfolio oral presentation(s).

Common Core Writing Standards for Literacy in Science and Technical Subjects

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
6. Use technology, including the internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core Reading Standards for Literacy in Science and Technical Subjects

4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
7. Translates quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
10. By the end of grade 12, read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Create	An assembly in 3-D geometry.
Create	An exploded view of a 3-D assembly.
Apply	CADD processes and procedures.
Collect	Educational and work highlights to include in portfolio.
Organize	Compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience.
Produce	Compact disc, web site and/or other digital media for use in demonstrating knowledge, skills, and experience.
Prepare	Effective portfolio and oral presentation(s).
Conduct	Effective portfolio and oral presentation(s).
Produce	Clear and coherent writing appropriate to task, purpose, and audience.
Use	Technology to produce and display information flexibly and dynamically.
Determine	Meaning of symbols, key terms and other domain-specific words.
Translate	Quantitative or technical information expressed in words in a text into visual form.

Unwrapped Standards	
Skills	**Concepts**
Translate	Information expressed visually or mathematically into words.
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan	
Essential Questions	**Big Ideas**
What is the Design Process and how is it utilized?	The Design Process is a sequential set of steps used to solve a problem.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	**Objectives** The students will be able to:	**Common Learning Experiences and Assessments** Engineering and Technology teachers will assess and provide feedback to students about the following:
• Present the design process utilized by engineers • Discuss and present a design challenge • Discuss the roles and responsibilities of an engineering team • Select and assign students to engineering teams • Model how an engineering team functions with student involvement • Assist students with implementing the design process • Use an exemplar of an engineering portfolio • Conduct daily instructional closure	• Apply concepts of the design process used by engineers • Produce 3D models which contain assemblies that will communicate a design process's solution • Create final drawings with annotations • Utilize part sketches and notes to create models using CAD • Produce a portfolio showcasing each step of the design process used to solve a given problem	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Design challenge project • Create sketches and drawings with annotations to communicate design solutions • Create 3D models of sketches • Create orthographic drawings of models with annotations • Document each step of the design process in a portfolio **Formative and Summative Assessments** • Measure daily understandings • Observe student activities and projects

Bristol Public Schools
Office of Teaching & Learning

DEPARTMENT: Engineering and Technology

COURSE: Introduction to CAD (Computer Assisted Design)

PRE-REQUISITE: None

COURSE DESCRIPTION:

If you enjoy sketching, drawing, and using computers this course is for you. This introductory course will give you the theory and skills needed to create technical drawings on both paper and computers. Drafting standards will be used to communicate engineering designs through orthographic views. In this course you will be introduced to drafting and computer aided design concepts and skills that are used in the engineering and technical professions. Drawing techniques will be explored and applied to develop quality sketches and drawings. The use of basic manual drafting tools will be applied to create geometric shapes, as well as to make mechanical parts. As the course progresses, the focus will shift to computer aided design software. You will learn how to navigate and utilize the software tools available to create both 2 and 3 dimensional drawings. The technical drawings that you produce will be based on drafting standards that are used throughout the manufacturing and engineering industries.

DEPARTMENT GOALS:

- Encourage students to pursue advanced technical study
- Provide experiences for students to develop and demonstrate technological skills and knowledge
- Employ instructional methods and interdisciplinary activities that stimulate student interest in technology
- Emphasize the ethical and safe use of tools and technology
- Engage students with real-world problem solving experiences
- Prepare students to be responsible, technologically literate citizens and consumers
- Prepare students to work cooperatively as a team member toward a common goal
- Prepare students to explore, understand and evaluate different aspects of technology
- Prepare students to competently use a variety of technologies, tools, materials and technical processes

PHILOSOPHY OF INSTRUCTION:

Engineering & Technology Education in the Bristol Public Schools prepares students to employ technology to solve problems and appreciate the overall contribution of technology to our society. Recognizing that students learn in different ways, technology teachers will utilize a variety of instructional methods to facilitate student learning.
Engineering & Technology Education will provide students with opportunities to explore a variety of technologies, work independently and cooperatively toward a common goal, and to view technology from personal, societal, and career perspectives. Hands-on learning will occur in laboratory settings that employ methods of research, design, engineering, problem-solving, experimentation, and material science.

PHILOSOPHY OF ASSESSMENT:

Based on our department philosophy and goals, Engineering and Technology teacher will:

- Use formative, summative and performance assessments to measure the attainment of student learning goals and content standards
- Collaborate with colleagues to develop exemplars and rubrics to help students better understand outcome expectations
- Collaborate with colleagues to develop common assessments for collecting student learning data to assist with continuous and school and district improvement
- Utilize multi level cognitive questioning to engage student thinking
- Modify and change instructional strategies based on data
- Provide regular and constructive feedback on student work and learning

UNIT OUTLINE:

Instructional topics for this **45 day** experience include:

1. The Role of Drafting and CAD in Technology
2. Technical Sketching
3. Technical Drawing
4. CAD Concepts and Skills

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

A. Materials and Processes: Identify and describe the basic elements used in computer aided design.

Connecticut Technology Education Standards

CADD.01 - Demonstrate an understanding of the historical and current events related to CADD and the impact on society.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

4. Evaluate and select appropriate method of communication for a given problem.

Connecticut Technology Education Standards

CADD.01.01 - Develop a timeline showing important periods that have significance to CADD and explain the impact on society.
CADD.01.04 - Explain the significance of the development Computer Aided Drafting and Design had on society.

Common Core Writing Standards for Literacy in Science and Technical Subjects

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
6. Use technology, including the internet, to produce, publish and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core Reading Standards for Literacy in Science and Technical Subjects

10. Read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Subject: Introduction to CAD (Computer Assisted Design) **Unit: 1-The Role of Drafting and CAD in Technology**

Unwrapped Standards	
Skills	**Concepts**
Select	Appropriate method of communication for a given problem.
Develop	A timeline showing important periods that have significance to CADD
Explain	The significance of the development Computer Aided Drafting and Design had on society.
Produce	Clear and coherent writing appropriate to task, purpose, and audience.
Use	Technology to produce and display information flexibly and dynamically.
Read	Science/technical texts independently and proficiently.
Comprehend	Science/technical texts independently and proficiently

Learning Plan	
Essential Questions	**Big Ideas**
Why do engineers use graphics to record and communicate information?	Technological advances allow for new avenues to communicate information graphically.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	**Objectives** The students will be able to:	**Common Learning Experiences and Assessments** Engineering and Technology teachers will assess and provide feedback to students about the following:
• Explain, present and demonstrate the design process • Facilitate class discussion about CAD and its relationship to the design process • Guide students with on-line research about the historical aspects of CAD • Model presentation techniques for students • Conduct daily instructional closure	• Identify the correct form of communication to convey design ideas • Construct a timeline of graphic communications used in design engineering, and manufacturing	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Design Process Activity **Student Presentations**: [assessed using Speaking and Listening rubric]: • Career profile presentation • Timeline presentation **Formative and Summative Assessments** • Measure daily understandings • Quiz students on design process • Observe student activities and projects

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

A. Materials and Processes: Identify and describe the basic elements used in computer aided design.

Connecticut Technology Education Standards

CADD.08 - Explain and utilize the concepts of sketching and the sketching process used in preliminary design and development.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

3. Describe and demonstrate the use of graphic communication skills through sketching.
10. Identify basic geometric elements (e.g. line, circle, rectangle, sphere, cube).

Connecticut Technology Education Standards

CADD.08.01 - Produce proportional two- and three-dimensional sketches and designs.
CADD.08.02 - Use sketching techniques as they apply to a variety of objects.
CADD.08.03 - Use freehand graphic communication skills to represent conceptual ideas, analysis, and design concepts.

Common Core Reading Standards for Literacy in Science and Technical Subjects

10. Read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Describe	How ideas are communicated through sketching
Demonstrate	Sketching techniques
Identify	Geometric elements (e.g. line, circle, rectangle, sphere, cube)
Produce	Proportional two and three dimensional sketches
Apply	Sketching techniques to a variety of objects
Use and apply	Sketching to represent conceptual ideas and design concepts
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan	
Essential Questions	**Big Ideas**
Why is sketching an important skill?	Sketches are created to visualize and communicate ideas.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	**Objectives** The students will be able to:	**Common Learning Experiences and Assessments** Engineering and Technology teachers will assess and provide feedback to students about the following:
• Facilitate class discussion on sketching as a form of communication • Provide guided practice • Provide independent practice • Conduct daily instructional closure	• Describe how sketches are used to visualize and communicate ideas • Identify basic geometric elements (e.g. line circle, rectangle, sphere, cube) • Use a variety of techniques to sketch objects • Create two-and three-dimensional sketches using geometric elements • Create a sketch of an object as a 3D model (oblique and perspective) • Create proportional two and three dimensions sketches relates to freehand sketching	**Design, Drafting and CAD work** [assessed using Design, Drafting, or CAD rubrics]: • Create and draw geometric shapes • Create proportional two and three dimensional sketches given a physical object **Formative and Summative Assessments** • Measure daily understandings • Assess student sketches (using rubric)

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

A. Materials and Processes: Identify and describe the basic elements used in computer aided drafting and design.

Connecticut Technology Education Standards

CADD.09 - Identify various symbols to interpret and read technical drawings.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

10. Identify basic geometric elements (e.g. line, circle, rectangle, sphere, cube).
11. Describe and apply the basic geometric concepts to building 3D models (e.g.., tangent, parallel, concentric, etc.).

Connecticut Technology Education Standards

CAD.09.01 - Interpret basic views and dimensions in a working drawing.
CAD.09.02 - Identify geometric tolerance symbols.
CAD.09.03 - Interpret drawings, pictures, and symbols.

Common Core Reading Standards for Literacy in Science and Technical Subjects

10. Read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Identify	Geometric elements (e.g. line, circle, rectangle, sphere, cube)
Describe	Basic geometric concepts
Create	Basic geometric concepts
Interpret	Contents of a technical drawing
Identify	Geometric tolerance symbols
Interpret	Drawings pictures and symbols
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan

Essential Questions	Big Ideas
Why are technical drawings an important source of information?	Technical drawings convey all information about an object in an appropriate view(s).

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	Objectives The students will be able to:	Common Learning Experiences and Assessments Engineering and Technology teachers will assess and provide feedback to students about the following:
• Model drawing and drafting techniques for students • Demonstrate drawing and drafting techniques for students • Provide guided practice • Provide independent practice • Conduct daily instructional closure	• Identify basic geometric elements (e.g. line, circle, rectangle, sphere, cube) used in technical drawings • Apply geometric line relationships to technical drawings • Create geometric line types (e.g. tangent, parallel, concentric, etc.) found in 2D and 3D technical drawings using appropriate drafting instruments. • Produce technical drawing which include appropriate symbols.	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Student use of drafting tools to create geometric shapes • Student use of drafting tools to create two and three dimensional technical drawings • Student production of technical drawings (assessed using rubric) **Formative and Summative Assessments** • Measure dialing understandings • Quiz students on measuring

Content Standards

Connecticut Career & Technical Education Performance Standards & Competencies

A. Materials and Processes: Identify and describe the basic elements used in computer aided design.

Connecticut Technology Education Standards

CADD.03 - Utilize measurement and annotation systems as they apply to CADD technology design.
CADD.04 - Identify, describe, and utilize the basic hardware and operating systems used in CADD.
CADD.06 - Demonstrate the use and application of alternate view applications and functions.

Performance Standards

Connecticut Career & Technical Education Performance Standards & Competencies

6. Express the design of an object as a 3D model.
8. Evaluate choice and placement of dimensions, notes and annotations to clearly communicate design intent.
10. Identify basic geometric elements (e.g. line, circle, rectangle, sphere, cube).
11. Describe and apply the basic geometric concepts to building 3D (e.g.., tangent, parallel, concentric, etc.).

Connecticut Technology Education Standards

CADD.03.01 - Explain how the various measurement systems are used in CADD drawings.
CADD.03.04 - Apply dimensioning to various objects and features.
CADD.03.08 - Demonstrate the methods of creating a title block.
CADD.04.01- Identify and describe various types of hardware and software.
CADD.04.02 - Identify and describe the purpose of operating system components.
CADD.04.03 - Define and apply computer terminology .
CADD.04.04 - View file names of a storage device.
CADD.04.05 - Store, copy, move, and retrieve information to/from various drives.
CADD.04.06 - Rename and backup files.
CADD.06.05 - Create a 2-D drawing from a 3-D model.
CADD.06.06 - Create a 3-D drawing from a 2-D model.

Common Core Reading Standards for Literacy in Science and Technical Subjects

10. Read and comprehend science/technical texts in the grade 11-CCR text complexity band independently and proficiently.

Unwrapped Standards	
Skills	**Concepts**
Express	The design of an object as a 3D model.
Evaluate	Choice and placement of dimensions, notes and annotations to clearly communicate design intent.
Identify	Basic geometric elements (e.g. line, circle, rectangle, sphere, cube)
Describe	The basic geometric concepts to building 3D (e.g. tangent, parallel, concentric, etc)
Apply	Basic geometric concepts to building 3D (e.g. tangent, parallel, concentric, etc)
Explain	How the various measurement systems are used in CADD drawings.
Apply	Dimensioning to various objects and features.
Demonstrate	The methods of creating a title block.
Identify	Basic hardware and operating systems used in CADD.
Describe	Basic hardware and operating systems used in CADD.
Utilize	Basic hardware and operating systems used in CADD.
Identify	Various types of hardware and software
Describe	Various types of hardware and software

Unwrapped Standards	
Skills	**Concepts**
Identify	The purpose of operating system components.
Describe	The purpose of operating system components.
Define	Computer terminology
Apply	Computer terminology
View	File names of a storage device
Show	How to store, copy, move, and retrieve information to/from various drives.
Show	How to rename and backup files
Create	A 2-D drawing from a 3-D model.
Create	A 3-D drawing from a 2-D model.
Read	Science/technical texts independently and proficiently
Comprehend	Science/technical texts independently and proficiently

Learning Plan

Essential Questions	Big Ideas
Why is it important to understand the geometric concepts used to create CAD based models?	Computer aided design is a communication tool.

Instructional Strategies Based on our department philosophy for student learning, Engineering and Technology teachers will:	Objectives The students will be able to:	Common Learning Experiences and Assessments Engineering and Technology teachers will assess and provide feedback to students about the following:
• Present 2D & 3D concepts • Assign student presentations for creating CAD parts • Lead class discussion about drawing techniques • Monitor student learning • Model techniques for dimensioning and annotations • Model techniques for creating 2D & 3D CAD drawings • Demonstrate techniques for creating 2D & 3D CAD drawings • Conduct daily instructional closure	• Investigate CAD tools used for creating technical drawings • Create 2D and 2D CAD drawings • Create orthographic drawings using CAD software • Apply annotations to orthographic drawings including title block. • Understand and apply CAD software annotation tools • Apply auxiliary view to orthographic drawings • Create a 2-D drawing from a 3-D models • Create a 3-D drawing from a 2-D model	**Design, Drafting and CAD Work** [assessed using Design, Drafting, or CAD rubrics]: • Use CAD software to create geometric shapes • Use CAD software to create 2 and 3 dimensional models • Use CAD to create an orthographic drawing of complex models with appropriate annotations • Use CAD and ANSI standards to dimension all features of an object **Formative and Summative Assessments** • Measure daily understandings • Quiz students on computer hardware • CAD drawings (assessed using rubric) • Teacher observations of student activities and projects.

AP Physics C Electricity and Magnetism Audit Outline

Primary Textbook: (Every student is provided with a copy)

Halliday, Resnick, and Walker, Fundamentals of Physics, 8th Edition, 2008

Supplementary Textbooks: (Students do not have copies of these, but materials and approaches are used from them)

- Giancoli, Physics, 4th edition
- Sears, Zemansky, Young, University Physics, 5th edition complete
- Crummett, Western, University Physics, Free Copy1994
- Cutnell, Johnson, Physics, 3rd edition
- Feynman, et al, Feynman Lectures on Physics, Addison Wesley 1970
- E. Mazur, Peer instruction, A User's Manual, Prentice Hall, 1997
- White and Manning, Experimental College Physics, 3rd edition
- Cioffari,Edmunds, Experiments in College Physics, 6th edition
- Any other related texts from undergraduate, and graduate physics courses.

Supplementary Materials:

- Ideas occasionally taken from "The Physics Teacher", AAPT publication
- The College Board Website
- Hand-outs and materials from College Board seminars including released AP multiple-choice, and free-response questions, and Teacher's guide.
- AP Physics Lab Guide

Audio-Visual/Computer Supplements:

- 6 networked computers in lab run Vernier Logger Pro 3 which is used to make graphs and analyze data.
- "The Mechanical Universe" and "Beyond the Mechanical Universe" video series from Cal. Tech. Videos are shown throughout the year to give historical, and alternate points of view.
- "Frames of Reference" Video
- PhET computer simulations and accompanying inquiry-based exercises.

General Course Description:

- Town has 2 high schools, and AP physics B is currently offered at both. The physics teachers at both schools meet frequently to discuss and share ideas.
- The physics teachers at each school are proposing to implement Physics C at both schools. The course is not currently offered. This document was jointly created by the two physics teachers.
- AP physics is the first physics course taken by students at my school.
- AP Calculus will be a co-requisite for this course, however the concepts of differentiation and integration will be covered by this course within the context of physics applications.
- We have an A/B day Block schedule, with four 85-minute periods a day, and Wednesday classes meet for 79 minutes.
- AP Physics meets every day for the whole year.
- AP Physics C Mechanics will be covered in the fall/winter, and AP Physics C Electricity and Magnetism will be covered in the winter/spring. The pace of the courses will include time for review and exam preparation.
- Labs are done on any day as required by curriculum
- We have a separate physics lab room that is connected to the physics room.
- Homework is typically assigned every night.
- Pacing is calculated from percentages per topic on the course outline in Acorn Book multiplied by the number of class meetings until AP exam in May.
- Due to the length of the class, students are sometimes given time to work together in groups on problems. This use of class time for group work becomes more frequent as the exam date nears. I encourage the students to form study groups outside of class, as an essential way to learn, and also as practice for next year in college. Very often students meet in groups to prepare the night before quizzes. This helps to satisfy the student-centered requirement.
- A few times a year, special homework assignments are given about one week before quiz. Students can gain points on the quiz by doing a certain number of problems. This type of assignment further encourages students to work together.

Physics Laboratory:

Labs generally fall into two categories. Some labs are designed so that the student can discover a physical principle that has not yet been formally introduced to them by the teacher. Other labs verify principles that the student has already been exposed to. Occasionally students go into lab to quickly obtain data for analysis in the classroom. Due to time constraints, and lack of student experience, full-fledged inquiry student-designed labs are not attempted. We do a mixture of "traditional labs" in which students are provided with explicit instructions, (which are still popular in colleges), and more modern "guided inquiry labs" where students have more freedom to determine the exact procedure, and experimental set up. Labs of this type help to satisfy the guided inquiry

and student-centered learning requirements. Due to the A/B block scheduling, we do not have to wait for a lab period. We have the freedom to do labs at any time. However over the semester, we average at least a day a week in lab with hands on experiments. Thus, lab work takes up roughly 20% of our class time. To further enhance the inquiry nature of the course we have begun to insert exercises from the PhET computer simulations available online. These quality simulations provide an excellent opportunity for student centered work. We will select from pre-made "labs" for this purpose, and will add more of our own written exercises in the future.

Since the first version of this Audit, our departments have obtained a class set of Vernier LabQuest hand-held data collection interfaces, assorted physics sensors, and Logger Pro 3 data collection and analysis software. I am ordering additional physics sensors including magnetic field sensors for next year. Finally, the two physics teachers have made a serious effort to pool our lab equipment, thus allowing us to do more lab activities.

- There is a separate lab room, which is connected to the physics room.
- Labs are done on any day as required by the curriculum.
- Students keep a portfolio of completed labs.
- A sample lab is included at the end of this document.

Assessments:

- At least 3 full period tests are given each marking period.
- Tests include problems from previously released AP Physics C exams.
- Open-ended questions, such as those found in Peer Instruction by Eric Mazur are sometimes included on quizzes. This helps to satisfy the student-centered requirement.

AP Physics C Electricity and Magnetism Course Outline:

Unit 1: Static Electricity

Charge and charging, conductors and insulators, conservation of charge
Point charges, Coulomb's Law and superposition
Electric Fields, superposition, and uniform electric fields
Lines of force, electric flux, Gauss's Law as the first Maxwell Equation
Electric fields of continuous charge distribution

The typical static demonstrations are done, including pith balls, electroscope, etc…to stimulate class discussion.

Electric potential of point charges, continuous charge distributions, and uniform electric fields

LAB: EQUIPOTENTIAL SURFACES AND LINES OF FORCE (Traditional and inquiry) Students map electric fields by mapping equipotential surfaces, and drawing in lines of force perpendicular to equipotential surfaces. After doing the dipole and parallel plates, students design their own charge configuration and predict the resulting equipotential surfaces and lines of force. The instructor then produces the configuration, and the students experimentally check it the next day.

Capacitance and capacitors
Parallel plate, cylindrical, and spherical capacitor
Dielectrics, polarization, and its effects on capacitance
Energy stored in a capacitor

Inquiry activity: PhET Capacitor simulation and "The Two Plate Special" exercise written by Hewitt/Baird.

Unit 2: Current Electricity

Electric current and potential difference
Ohm's Law and resistance
Electric energy

LAB: OHM'S LAW (Traditional) Students get practice connecting series circuits, using volt and ammeters, and determine resistance of various resistors.

LAB: RESISTANCE OF WIRES (Traditional) Students analytically determine the resistance of a wire of known length, cross-sectional area and material. Then they measure its resistance as part of a circuit, and compare result to calculation.

LAB: THE ELECTRICAL EQUIVALENCE OF HEAT (Inquiry) Using water in a Styrofoam cup, students are directed to design an experiment to verify the amount of energy dissipated by a resistor.

Unit 3: DC Circuits

Kirchhoff's Rules
Circuits with resistors
Circuits with resistors and/or capacitors
RC circuits and time constants

LAB: SERIES/PARALLEL CIRCUITS (Traditional) Students connect series and parallel circuits and verify current and voltage relationships discussed in class.

LAB: SERIES/PARALLEL LIGHTBULBS (Inquiry) Students design a series/parallel combination circuit using lightbulbs as resistors, and predict what happens to bulb brightness when each bulb is removed (unscrewed). They then check their results experimentally.

LAB: KIRCHHOFF's RULES (Inquiry) Students design series/parallel circuits with with more than one emf, and calculate the currents using Kirchhoff's rules. They then connect the circuits in lab and verify their results.

LAB: RC CIRCUITS (Traditional) Attached as sample lab at the end of this document

LAB: WHEATSTONE BRIDGE (Traditional) Students construct wheatstone bridge and measure unknown resistances, including ammeter and voltmeter resistance.

Unit 4: Magnetic Fields

Magnetism, poles, lines of force, and fields
Gauss's Law for magnetic fields as Maxwell's second equation (no magnetic monopoles)
Magnetic forces on moving electric charges
Magnetic forces and torques on current carrying conductors
Magnetic fields of current-carrying conductors and the Law of Biot and Savart.
Ampere's Law as (almost) Maxwell's third equation

LAB: MAPPING MAGNETIC FIELDS (Traditional) Students sprinkle iron filings to investigate the shape of permanent magnets and current-carrying conductors.

LAB: CURRENT BALANCE (Class lab) The current balance is used to determine a value for the permeability of free space.

LAB: AP Physics Lab Guide Lab Ten MAGNETIC FIELDS (Inquiry) Students determine magnetic fields of loops of wires and of the Earth. In addition students determine the magnetic field of a solenoid.

Unit 5: Electromagnetism

Magnetic flux
Faraday's Law as Maxwell's fourth equation
Induced currents and Lenz's Law
Motional emf
Self-inductance and inductors
Circuits with inductors

Lab: TRANSFORMERS (Traditional) Students investigate transformers by performing several short experiments using LEYBOLD-HERAEUS Science Teaching Modules (STM) for Electromagnetism and induction.

Inquiry activity: PhET Faraday's Law simulation and worksheet (to be written next year).

Unit 6: AC circuits and Maxwell's equations

RL circuits
LC circuits
Maxwell's generalization of Ampere's Law and Maxwell's equations as a foundation for electricity and magnetism

LAB: LR, LC, and RLC Circuits: (Traditional) Students examine AC voltage, currents and their phase relationships for various series circuits, including RLC, using an oscilloscope.

Unit 7: Review and Exam Preparation (Student Centered)

Review
Practice and present released exam questions
Students work in pairs to prepare solutions, which are presented to the class. A student-lead discussion of big ideas and a question and answer round follow
Students evaluate their strengths and weaknesses

Sample Lab

RC Circuits*

(Discharge of a Capacitor)

Preceding experiments dealt with circuits in which currents and potential differences did not vary with time except possibly for variations due to changes in resistance with temperature and variations due to changes in the terminal voltages of seats of emf, resulting from polarization. In this experiment the capacitor will be used as a circuit element which will lead to the concept of time varying charges, currents, and potential differences.

As shown in your text, when an uncharged capacitor C is charged through a resistance R by an emf ε, the charge on the capacitor at a time t after the initiation of the process is given by the equation:

$$q = c\varepsilon\left(1 - e^{\frac{-t}{RC}}\right) \qquad (1)$$

Similarly, it is shown that when a capacitor C is discharged through a resistance R, the charge remaining on the capacitor at a time t is:

$$q = q_o e^{\frac{-t}{RC}} \qquad (2)$$

Where q_0 is the initial charge on the capacitor, i.e. when $t = 0$.

Since $C = qV$, equation 2 may be written as:

$$V = \frac{q_0}{C} e^{\frac{-t}{RC}} = V_o e^{\frac{-t}{RC}}$$

Where V is the potential difference across the cap at a time t and V_o is the potential difference across when $t = 0$.

There are various ways in which the discharge of a capacitor may be studied. For example, making use of Ohm's Law, one could rewrite the above equation as:

$$i = i_o e^{\frac{-t}{RC}}$$

One could charge the capacitor and then connect to it, in series, a high resistance and ammeter and observe the current in the circuit as a function of time.

In the present experiment a capacitor will be charged to a known potential difference and then discharged through a high resistance voltmeter connected across its terminals. The

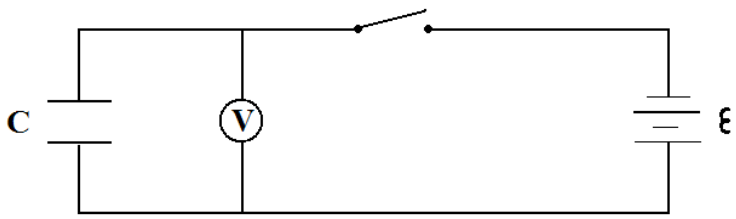
variation of the voltage with time will be observed and plotted. Note that, since a voltmeter is essentially an ammeter with a high resistance in series, this method is basically the same as the first mentioned method.

Apparatus:
1 voltmeter
1 power supply
1 switch
6 connection leads
1 timer
2 capacitors

Procedure:

1. Set the dial on the voltmeter for the 200 VDC. In this setting, its resistance will be sufficiently high so that the capacitor discharges slowly enough to record its values at different times. You will need to determine a method for finding the resistance *R* of the meter with this setting.

2. Connect the apparatus using one of the capacitors according to the following circuit design.



3. After your instructor has checked the circuit, close the switch and charge the capacitor.

4. Open the switch and, without recording any data, observe the time variation of the potential difference across the capacitor and decide on what time increments should be used so that several readings of the voltage can be made during the discharge of the capacitor.

5. Charge the capacitor again. Open the switch and record *V vs. t* during the discharge of the capacitor.

6. Plot the data on regular graph paper with t on the x-axis and *V* on the y-axis.

7. On semi-log paper, plot *V vs. t* again in the same manner. Your instructor will explain the use of semi-log paper.

8. The time constant of the circuit t_c is defined as the time it takes q (or V) to reach 1/e of its maximum value when the capacitor is discharging. Determine the time constant from your graphs. Compare with the value calculated from $t_c=RC$.

9. Show mathematically that the time constant t_c is given by $t_c = RC$.

10. Sketch the curves of *q vs. t* and *i vs. t* for the discharge of a capacitor.

11. What quantity is represented by the slope of the *q vs. t* curve at any instant?

12. The product of the slope of the V vs. t curve, multiplied by *C*, gives what?

13. Prove that the area under the curve of the i vs. t curve is equal to q_0. If one measured this area, what additional information would be required to determine the value of an unknown capacitor?

14. Sketch a *V vs. t* curve for a capacitor during the charging process.

15. Repeat parts 2 to 8 using both capacitors in parallel.

16. Given, $\varepsilon - R\frac{dq}{dt} - \frac{q}{C} = 0$ derive equation (1)

17. Given $R\frac{dq}{dt} = -\frac{q}{C}$ derive equation (2)

*from SUNY-ALBANY physics 221 lab manual

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Textbook Recommendation to the Board of Education

Subject/Course: AP Physics 1 ***Grade Level***: 11-12

First Presentation BOE Meeting Date: June 4, 2014 ***Second Presentation BOE Meeting Date***: July 2, 2014

Describe need for the textbook/materials: The College Board is discontinuing the AP Physics B course and AP Physics 1 is the replacement. This textbook will be used in the Physics 1 class.

Listed below are textbooks/materials evaluated by the Textbook Selection Committee:

Subject/Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	Rubric Score Total
AP Physics 1	Physics: Principles with Application	Douglas Giancoli	6th	2014	Pearson	41/54
AP Physics 1	College Physics: A Strategic Approach	Knight, Jones, & Field	3rd	2015	Pearson	49/54

The following textbook(s)/materials are recommended by the Textbook Selection Committee

Subject/ Course	Title of Book	Author(s)	Edi-tion	Copyright Date	Publisher	City, State Of Publisher	Publisher Website
AP Physics 1	College Physics: A Strategic Approach	Knight, Jones, & Field	3rd	2015	Pearson	Boston	www.pearson.com

Reasons for recommendation (include information on match to curriculum concepts and skills):

Chapters match AP Frameworks with end of chapter problems progressively increasing in sophistication. Order of physics topics is rock solid and will support instruction. Text appears to meet industry standards and included simulations and real world applications. The book will assist students interested in careers as engineers, or scientists. Online resources provides support for completing homework and conducting research.

Textbook Recommendation to the Board of Education

Student Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: #Texts per School**
120	College Physics: A Strategic Approach	$153.00	$18,360.00	60 to BC, 60 to BE
	Course Mate eBook, Enhanced Web Access	No charge		

Teacher Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: # per School**
	Included in Enhanced Web Access	No charge		

TOTAL COST	
Total Cost for Student Texts/Materials	$18,360.00
Total Cost for Teacher Materials	
GRAND TOTAL	$18,360.00

Textbook Selection Committee		
Staff member	**School**	**Grade/Course Taught**
David Brewer	Bristol Central	Physics 11-12
David Bittel	Bristol Eastern	Physics 11-12

Textbook Recommendation to the Board of Education

Subject/Course: Environmental Science ACA ***Grade Level***: 11/12

First Presentation BOE Meeting Date: ***Second Presentation BOE Meeting Date***:

Describe need for the textbook/materials: updated and revised curriculum. Existing text does not contain recent environmental events.

Listed below are textbooks/materials evaluated by the Textbook Selection Committee:

Subject/ Course	Title of Book	Author(s)	Edi-tion	Copyright Date	Publisher	Rubric Score Total	Readability
Env Sci ACA	Global Science		7	2009	Kendall Hunt		7-9
Env Sci ACA	Environmental Science Your World, Your Turn	Jay Withgott	1	2011	Pearson		9-10

The following textbook(s)/materials are recommended by the Textbook Selection Committee

Subject/ Course	Title of Book	Author(s)	Edi-tion	Copyright Date	Publisher	City, State Of Publisher	Publisher Website
Env Sci ACA	Environmental Science Your World, Your Turn	Jay Withgott	1	2011	Pearson	Upper Saddle River, NJ	www.pearsoned.com

Reasons for recommendation (include information on match to curriculum concepts and skills):

Recommended text is better organized and should facilitate student comprehension of science concepts. Text aligns well with science and engineering practices. On line resources are superior and will greatly enhance student experiences.

Textbook Recommendation to the Board of Education

Student Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: #Texts per School**
300	Student Textbook	$84.97	$25491	150
150	Study Resource Book (Student Edition)	$10.87	$1630.50	75

Teacher Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: # per School**
10	Teachers Edition	$106.47	$1064.70	5
10	Study Workbook (Teacher Edition)	$26.97	$269.70	5
2	Exam View CD-ROM	$138.47	$276.94	1
10	Classroom Resource DVD-ROM	No charge	No Charge	5

TOTAL COST	
Total Cost for Student Texts/Materials	$2,7121
Total Cost for Teacher Materials	$1,611.34
GRAND TOTAL	$28,732.34

Textbook Selection Committee		
Staff member	**School**	**Grade/Course Taught**
Kimberly Nettleton	BCHS	Env Sci ACA
John Couture	BCHS	Env Sci ACA
Elizabeth DiLernia	BEHS	Env Sci ACA

Textbook Recommendation to the Board of Education

Subject/Course: World Languages / Spanish IV ***Grade Level***: 10-12

First Presentation BOE Meeting Date: June 2, 2014 ***Second Presentation BOE Meeting Date***: July 2, 2014

Describe need for the textbook/materials: Curriculum for the Spanish IV course was revised this spring, as part of the district's routine cycle of curriculum review. The revision created more rigorous expectations in preparing students to study Spanish at an accelerated and deeper level, which will better prepare them to become proficient and to study the language in college. A new textbook was needed to meet the demands of this revision.

Listed below are textbooks/materials evaluated by the Textbook Selection Committee:

Subject/ Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	City, State Of Publisher	Rubric Score Total	Readability	Publisher Website
World Languages / Spanish I	***Aventura 4***	**Vargas Bonilla**	**Spanish**	**2009**	**EMC Publishing**	**St. Paul, MN**	**49/54**	**Appropriate for Level 4**	**educate@emcp.com**
World Languages / Spanish I	***Avancemos 4***	Gahala, Hamilton-Garlin, Heining-Boynton, Otheguy, Rupert	**Spanish**	**2010**	**Holt McDougal**		**39/54**	**Appropriate for Level 4**	**holtmcdougal.hmhco.com**

The following textbook(s)/materials are recommended by the Textbook Selection Committee:

Subject/ Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	City, State Of Publisher	Publisher Website
World Languages / Spanish IV	***Aventura 4***	**Vargas Bonilla**	**Spanish**	**2009**	**EMC Publishing**	**St. Paul, MN**	**educate@emcp.com**

Student Materials Needed				
Qty	**Item Name**	**Cost /Item**	**Total Cost**	**Distribution:**
150	***Aventura 4 student edition***	**$78.95 plus 10%**	**$15,658.50**	**BCHS 75**
	Aventura 4 student workbook	**S&H**		**BEHS 75**

		TOTAL COST
	Total Cost for student materials	$11,842.50
	Total Cost for teacher materials (plus, student workbooks)	$2,392.50
	Shipping and Handling 10%	$1,423.50
	GRAND TOTAL	

		Textbook Selection Committee	
	Staff member	**School**	**Grade/Course Taught**
	Andrea Rajotte	Bristol Eastern High School	Spanish
	Debra Kempton	Bristol Eastern High School	Spanish
	Norma Torres	Bristol Eastern High School	Spanish
	Edwin Garcia	Bristol Central High School	Spanish
	Kathleen Archibald	Bristol Central High School	Spanish
	Frances Nickeson	Bristol Central High School	Spanish

Reasons for recommendation (include information on match to curriculum concepts and skills):

Vargas Bonilla's textbook, entitled *Aventura 4*, is recommended for the following reasons:

- Provides greater rigor, consistent with teachers' and district's goal of preparing students to develop proficiency and study Spanish in college
- Embeds rich and relevant cultural references
- Unfolds learning objectives in a way that allows students to reinforce and build upon learning from unit to unit
- Provides plenty of opportunities and materials for students to practice skills
- Offers robust ancillary material, with a wealth of interactive on-line material to help student to listen, speak and write as a Spanish speaker

Textbook Recommendation to the Board of Education

Textbook Recommendation to the Board of Education

Subject/Course: French III ***Grade Level***: high school

First Presentation BOE Meeting Date: June 4, 2014 ***Second Presentation BOE Meeting Date***: July 2, 2014

Describe need for the textbook/materials:
The French III curriculum was recently revised, and approved by the Board of Education's Student Achievement Committee, to provide more rigorous course work for students. The previous textbook has become outdated and no longer meets the demands to support the course.

Listed below are textbooks/materials evaluated by the Textbook Selection Committee:

Subject/ Course	Title of Book	Author(s)	Copyright Date	Publisher	Rubric Score Total	Readability
French III	D'accord	José A. Blanco	2011	Vista Higher Learning	41	Level 3
French III	Bon Voyage	J. Schmitt, Katia Brillié Lutz	2008	Glencoe	39	Level 3
French III	C'est à toi	Karla Winther Fawbush, Toni Thiesen, Dianne B. Hopen, Sarah Vaillancourt	2007	EMC	41	Level 3

The following textbook(s)/materials are recommended by the Textbook Selection Committee

Subject/ Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	City, State Of Publisher	Publisher Website
French III	D'accord	Vista Higher Learning		2011	José A. Blanco	Boston, MA	www.vistahigherlearning.com

Reasons for recommendation (include information on match to curriculum concepts and skills):
See last page.

Textbook Recommendation to the Board of Education

Student Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: #Texts per School**
70	Level 3 Student Edition w/ Supersite code	$108.00 978-1-60576-657-1	$7,560	40 BCHS, 30 BEHS

Teacher Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: # per School**
3	Complete teacher resource kit	$333	$0 ($999 value gratis)	2 to BCHS
				1 to BEHS

TOTAL COST	
Total Cost for Student Texts/Materials	$7,560
Total Cost for Teacher Materials	$0 ($999 value gratis)
Shipping & handling	$599.13
GRAND TOTAL	$8,159.13

Textbook Selection Committee		
Staff member	**School**	**Grade/Course Taught**
Anya Rochester	Bristol Central High School	French 9-12
Kelly Lynne Thibodeau	Bristol Eastern High School	French 9-12
Also, 6 French students		

French Textbook Selection
Present: Kelly Lynne Thibodeau, Anya Rochester; 6 French students
Materials used:

- 3 French texts
- Textbook evaluations
- Pacing/vocabulary comparison
- CT State Frameworks
- CT Common Core
- Bristol Power Standards
- Bristol Curriculum
- Notes from textbook presentations
- Student comments from textbook presentations
- Personal notes from textbook review
- National French Contest Specifications (by level) for 2012; this will help to maintain the rigor in our program and a competitive edge

What are we looking for in a textbook?

- Level-appropriate
- Finish each level in 1 year
- More rigor than prior years; the textbook needs more material and faster pacing
- Appropriate articulation of vocabulary, structures, and concepts; no "forced units."
- We also want more of key structures, such as the past tense, to be introduced sooner than it is in the current curriculum and the textbook
- Meet district guidelines
- Book that appeals to students (We will use the student feedback)
- Up-to-date materials
- One book per year, per level

Initial/thoughts and comparisons

C'est à Toi (EMC)	D'accord (Vista)	Bon Voyage (Glencoe)
• We liked the paired practice and materials that are actually in the textbook; she liked how there were cartoons, and some of the personal prompts were suited to student needs • It seemed like the culture was not as appealing as the other books; it was "boring." • There were not as many prompts that helped students to connect to their own culture • We have the Spanish version of this text,	• **We all liked this book best.** • **Is the text too overwhelming visually? Is that why many of our students didn't like it?** • **We really liked the visuals – modern, lots of pictures – doesn't look too old.** • **We liked the videos, which used real videos, not just contrived situations (which are also there).** • **We really liked the structure of the book.** • **Is the material in this book too**	• The representative told us that students will "learn all the grammar they need to know in the first two books." This philosophy makes it seem like the grammar is overwhelming; there is too much, and it seems forced. • The books look old. • Most of the students found this book to be visually more appealing; although it had less online, the students found this text to be less overwhelming and more structured. They really liked that this

C'est à Toi (EMC)	D'accord (Vista)	Bon Voyage (Glencoe)
which Anya does not like. They have similar structures. • Etre is not in the first few chapters; it is later. We feel this is a critical item to come sooner. • We liked some of the other items that were introduced sooner. • The online resources are phenomenal, with amazing resources for contemporary culture. • The layout is "childish;" students found it to be not appealing. • It looks "skimpy" in terms of how things are shared. • The text in this (as compared to the Spanish text, which follows a similar structure), there is a disconnectedness to the materials. The units don't seem cohesive. • No level 4 book offered in this series, and no suggestions or books sold by the same publisher for level 4.	**dense?** • **We like that the textbook is available online, as well as the videos; however – we would have to pay an additional fee for access to online workbooks, which there is not for "C'est à Toi."** • **The book is divided into manageable pieces.** • **There is a level four for this (a choice of two), but they are not officially in the series.** • **Anya did like the structure and pacing; she liked that être is at the beginning of the book.** • **What is taught in level 1 in this book is what we teach through level 3 in terms of grammatical concepts.** • **How much is the workbook for online access? How much is that paid?** • **What is the difference in price between the paper copy of the workbook and the online?** • **How complicated is the online stuff?** • **We really liked the units in level 3.** • **Vista has the least amount of ancillary materials.**	textbook seemed to be a resource unto itself. • We really liked the assessments at the end of each chapter. • Foldables, tips, etc., very usable in the teacher edition. The book seems to have many resources. • They really liked the images. • We liked that in the teacher's edition, it tells that the books are structured to help to meet the needs of a variety of levels – half of the activities are "required" and half are extras. The extras are readings, and could be used to differentiate between ACA/ACC. • 14 chapters – very long! Would this put is in the same situation as now, where we don't accomplish the entire book in one year? • Has PowerPoint presentations already made. • Has Level 4 text that is different from the series, but one is offered.

Final decision:
Based on the CT frameworks, the articulation, the pacing, the focus on higher-order thinking, and authentic materials, the national standards, the district curriculum, the variety of materials, we choose **Vista's D'accord.**

Concerns/Questions about Vista:

1. What do the level 4 books look like? Will we want to purchase those? Anya is going to request copies of those.

VISTA
HIGHER LEARNING

COST PROPOSAL

Quote Prepared On Dec. 13, 2013
Quote Valid Through Feb 25, 2014
Payment Terms Net 30 Days
Quote No. 13112105

COST PROPOSAL

Prepared For	Prepared By
Keri Coombs Bristol Public School District 129 Church Street Bristol CT, 06010	Shannon DiStefano sdistefano@vistahigherlearning.com (800) 618-7375 ext. 9356 Vista Higher Learning 500 Boylston St, Suite 620 Boston, MA 02116-3736

Daccord 1e

Qty	Item Number	Description	Unit Price	Total Value	Total Cost
3	978-1-60576-614-0	Daccord *L3 Teacher Resource Box	$333.00	$999.00	$0.00
70	978-1-61767-940-7	Daccord L3 SE + SS + CA + CE	$108.00	$7,560.00	$7,560.00

Total Value	$8,559.00
Total Gratis	$999.00
Total Cost	$7,560.00
Est. Shipping (7%)	$599.13
Est. Grand Total Cost	**$8,159.13**

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Thank you for your business!

TEXTBOOK REVIEW BY STANDARDS

TEXTBOOK TITLE: _____Glencoe Math _Course 1_____

Standards in 6th Grade Mathematics Curriculum		**Evidence Demonstrated** (Section)
Ratios and Proportional Relationships *A. Understand Ratio concepts and use ratio reasoning to solve problems.*		
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes.*	**1.2**
6.RP.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.)*	**1.3**
6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	**1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.6, 2.7, 2.8, 4.5, 7.4**
	a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	**1.4, 1.5**
	b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*	**1.3, 1.4, 1.6, 1.7**
	c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.	**2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8**
	d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	**4.5**
The Number System *B. Apply and extend previous understanding of multiplication and division to divide fractions by fractions.*		
6.NS.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of*	**4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8**

	chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?	
C.	*Compute fluently with multi-digit numbers and find common factors and multiples.*	
6.NS.2	Fluently divide multi-digit numbers using the standard algorithm.	**3.5, 3.6**
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	**3.1, 3.2, 3.3, 3.4, 3.7, 3.8, 6.1**
6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*	**1.1, 6.6**
D.	*Apply and extend previous understandings of numbers to the system of rational numbers.*	
6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	**5.1**
6.NS.6	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.	**5.1, 5.2, 5.5, 5.6, 5.7**
	a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.	**5.1, 5.2**
	b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	**5.6, 5.7**
	c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	**5.1, 5.4, 5.5, 5.6, 5.7**
6.NS.7	Understand ordering and absolute value of rational numbers.	**5.2, 5.3, 5.5**
	a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.*	**5.3, 5.4, 5.5**
	b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ^{o}C > –7 ^{o}C to express the fact that –3 ^{o}C is warmer than –7 ^{o}C.*	**5.3**
	c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as	**5.2**

	magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*	
	d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*	**5.2, 5.3**
6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	**5.7, 9.5**
Expressions and Equations *E. Apply and extend previous understanding of arithmetic to algebraic expressions.*		
6.EE.1	Write and evaluate numerical expressions involving whole-number exponents.	**6.1, 6.2**
6.EE.2	Write, read, and evaluate expressions in which letters stand for numbers.	**6.2, 6.4, 6.7, 8.1, 8.2**
	a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.*	**6.4**
	b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*	**6.7**
	c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*	**6.3, 6.4, 8.1, 8.2**
6.EE.3	Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*	**6.5, 6.6, 6.7**
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*	**6.7**
F. Reason about and solve one-variable equations and inequalities.		
6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an	**7.1, 7.2, 7.3, 7.4, 7.5, 8.5, 8.7**

	equation or inequality true.	
6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	**6.3, 6.4, 8.2, 8.6, 8.7**
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.	**7.2, 7.3, 7.4, 7.5**
6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	**8.5, 8.6, 8.7**
G.	*Represent and analyze quantitative relationships between dependent and independent variables.*	
6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*	**8.1, 8.2, 8.3, 8.4**
Geometry		
H.	*Solve real-world and mathematical problems involving area, surface area, and volume.*	
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	**9.1, 9.2, 9.3, 9.4, 9.5, 9.6**
6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	**10.1, 10.2**
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems	**9.5**
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	**10.3, 10.4 10.5**

Statistics and Probability *I. Develop understanding of statistical variability.*		
6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*	
6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	**12.3, 12.4**
6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	**11.1, 11.2, 11.3**
K. Summarize and describe distributions.		
P.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	**12.1, 12.2, 12.4, 12.5, 12.6**
6.SP.5	Summarize numerical data sets in relation to their context, such as by:	**11.2, 11.3, 11.4, 11.5, 12.1, 12.2, 12.3, 12.4**
	a. Reporting the number of observations.	**12.1, 12.2**
	b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.	**11.2, 11.4, 12.1, 12.2, 12.3**
	c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	**11.2, 11.3, 11.4, 11.5, 12.1, 12.3**
	d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	**11.5, 12.4**

TEXTBOOK REVIEW BY STANDARDS

TEXTBOOK TITLE: _____Glencoe Math_Course_2_____

Standards in 7th Grade Mathematics Curriculum		**Evidence Demonstrated** (Section)
Ratios and Proportional Relationships *A. Analyze proportional relationships and use them to solve real-world and mathematical problems.*		
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*	**1.2**
7.RP.2	Recognize and represent proportional relationships between quantities.	**1.1, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9**
	a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	**1.4, 1.5, 1.9**
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	**1.1, 1.4, 1.6, 1.7, 1.8, 1.9**
	c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn*.	**1.6, 2.4**
	d. Explain what a point *(x, y)* on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r)* where *r* is the unit rate.	**1.7**
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	**1.3, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 4.7**
The Number System *B. Apply and extend previous understanding of operations with fractions to add, subtract, multiply, and divide rational numbers.*		
7.NS.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	**3.2, 3.3, 4.3, 4.4, 4.5**
	a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	**3.2**
	b. Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational	**3.2**

	numbers by describing real-world contexts.	
	c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	**3.3, 4.3**
	d. Apply properties of operations as strategies to add and subtract rational numbers.	**3.2, 3.3, 4.3, 4.4, 4.5**
7.NS.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	**3.4, 4.1, 4.2, 4.6, 4.7, 4.8**
	a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	**3.4, 4.6**
	b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real world contexts.	**4.2**
	c. Apply properties of operations as strategies to multiply and divide rational numbers.	**3.4, 4.6, 4.8**
	d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	**4.1**
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	**1.2, 3.1, 3.2, 3.3, 3.4, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8**
Expressions and Equations *C. Use properties of operations to generate equivalent expressions*		
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	**5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8**
7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."*	**2.6, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8**
D. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.		
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her*	**2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8, 3.2, 3.4, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.8**

	salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.	
7.EE.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	**6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8**
	a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*	**6.1, 6.2, 6.3, 6.4, 6.5**
	b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	**6.6, 6.7, 6.8**
Geometry *E. Draw, construct, and describe geometrical figures and describe the relationships between them.*		
7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	**7.4**
7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	**7.3**
7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	**7.5, 7.6**
F. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.		
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	**8.1, 8.2, 8.3**
7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	**7.1, 7.2**
7.G.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**8.3, 8.4, 8.5, 8.6, 8.7, 8.8**
Statistics and Probability		

G.	*Use random sampling to draw inferences about a population.*	
7.SP.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	**10.1, 10.2, 10.3, 10.5**
7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*	**10.1, 10.2**
H.	*Draw informal comparative inferences about two populations.*	
7.SP.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*	
7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*	**10.4**
I.	*Investigate chance processes and develop, use, and evaluate probability models.*	
7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	**9.1, 9.5**
7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*	
7.SP.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	**9.1, 9.2**
	a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine	**9.1, 9.2**

	probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*	
	b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*	**9.2**
7.SP.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	**9.3, 9.4, 9.5, 9.6, 9.7**
	a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	**9.3, 9.5, 9.6, 9.7**
	b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	**9.3, 9.5, 9.7**
	c. Design and use a simulation to generate frequencies for compound events. . *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*	**9.4**

TEXTBOOK REVIEW BY STANDARDS

TEXTBOOK TITLE: Glencoe Math – Bridge to Algebra

Standards in 7th Grade Bridge to Algebra Mathematics Curriculum		**Evidence Demonstrated** (Section)
Rational Numbers and Exponents *A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.*		
7.NS.1	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	**2.1, 2.2, 2.3, 3.1, 3.5, 3.6**
	a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	**2.1, 2.2**
	b. Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	**2.2**
	c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	**2.3**
	d. Apply properties of operations as strategies to add and subtract rational numbers.	**2.3, 2.3, 3.5, 3.6**
7.NS.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	**2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 7.1**
	a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	**2.4, 3.3, 3.4**
	b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real world contexts.	**2.5**
	c. Apply properties of operations as strategies to multiply and divide rational numbers.	**2.4, 2.5, 3.3, 3.4, 7.1**
	d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	**3.1, 3.2**
7.NS.3	Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational	**1.1, 1.2, 1.3, 1.5, 2.2, 2.3,**

	numbers extend the rules for manipulating fractions to complex fractions.)	**2.4, 2.5, 3.3, 3.4, 3.5, 3.6, 5.3**
B.	*Know that there are numbers that are not rational, and approximate them by rational numbers.*	
8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	**3.1, 3.2, 4.7**
8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	**4.6, 4.7**
C.	*Work with radicals and integer exponents*	
8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.*	**4.1, 4.2, 4.3, 4.4, 4.5**
8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	**4.6, 4.7**
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.*	**4.4, 4.5**
8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	**4.4, 4.5**
Proportionality and Linear Relationships		
D.	*Analyze proportional relationships and use them to solve real-world and mathematical problems.*	
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*	**5.1, 5.2, 5.3, 5.4**
7.RP.2	Recognize and represent proportional relationships between quantities.	**1.6, 2.6, 5.5, 5.6, 5.7, 5.9, 5.10, 6.1, 6.3, 9.4**
	a. Decide whether two quantities are in a proportional	**1.6, 2.6, 5.5, 5.6, 9.4**

	relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	**1.6, 2.6, 5.5, 5.6, 5.7, 9.3, 9.4**
	c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn*.	**5.5, 5.7, 5.9, 5.10, 6.1, 6.3, 9.3**
	d. Explain what a point *(x, y)* on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r)* where *r* is the unit rate.	**1.6, 2.6, 5.6, 9.3**
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	**1.6, 2.6, 5.6, 9.3**
E.	*Use properties of operations to generate equivalent expressions.*	
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	**1.4, 7.1, 7.2, 7.3, 7.4, 7.5**
7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*	**1.4, 6.4, 6.5, 7.1, 7.2**
F.	*Solve real-life and mathematical problems using numerical and algebraic expressions and equations.*	
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*	**1.1, 1.5, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 6.1, 6.2, 6.3, 6.4, 6.5**
7.EE.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	**1.3, 1.7, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 9.1, 9.2, 9.5**
	a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its*	**8.2, 8.3, 8.4, 8.5, 8.8**

	width?	
	b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	**8.7, 8.8**
G.	*Understand the connections between proportional relationships, lines, and linear equations.*	
8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*	**1.6, 2.6, 5.6, 9.3, 9.4**
8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	
H.	*Analyze and solve linear equations and pairs of simultaneous linear equations*	
8.EE.7	Solve linear equations in one variable.	**8.1, 8.2, 8.3, 8.4, 8.5, 8.8**
	a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	**8.8**
	b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	**8.1, 8.2, 8.3, 8.4, 8.5, 8.8**
Introduction to Sampling and Inference		
I.	*Use random sampling to draw inferences about a population.*	
7.SP.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	**10.5**
7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction*	**10.5**

	might be.	
J.	*Draw informal comparative inferences about two populations.*	
7.SP.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*	
7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*	**10.1, 10.2, 10.3, 10.4**
K.	*Investigate chance processes and develop, use, and evaluate probability models.*	
7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	**10.6**
7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*	
7.SP.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	**10.7**
	a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*	**10.7**
	b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*	**10.7**
7.SP.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	**10.8**
	a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample	**10.8**

	space for which the compound event occurs.	
	b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	**10.8**
	c. Design and use a simulation to generate frequencies for compound events. . *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*	
Creating, Comparing, and Analyzing Geometric Figures *L. Draw, construct, and describe geometrical figures and describe the relationships between them.*		
7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	**5.8**
7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	
7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	**12.4**
M. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.		
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	**12.1, 12.2, 12.9**
7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	**11.1**
7.G.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**12.3, 12.5, 12.8, 12.10**
N. Understand congruence and similarity using physical models, transparencies, or geometry software.		
8.G.1	Verify experimentally the properties of rotations, reflections, and translations:	
	a. Lines are taken to lines, and line segments to line segments of the same length.	
	b. Angles are taken to angles of the same measure.	
	c. Parallel lines are taken to parallel lines.	
8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent	**11.6**

	figures, describe a sequence that exhibits the congruence between them.	
8.G.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	**11.4, 11.5, 11.7**
8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**11.8**
8.G.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*	**11.1, 11.2, 11.3**
O.	Solve real-world and mathematical problem involving volume of cylinders, cones, and spheres.	
8.G.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	**12.6, 12.7**

TEXTBOOK REVIEW BY STANDARDS

TEXTBOOK TITLE: Glencoe Math_-Course 3

Standards in 8th Grade Mathematics Curriculum		**Evidence Demonstrated** (Section)
The Number System *A. Know that there are numbers that are not rational, and approximate them by rational numbers.*		
8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	**1.1, 1.10**
8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	**1.9, 1.10**
Expression and Equations *B. Work with radicals and integer exponents.*		
8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.*	**1.2, 1.3, 1.4, 1.5**
8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	**1.8, 1.9, 1.10, 5.5, 5.6, 5.7**
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3 × 108 and the population of the world as 7 × 109, and determine that the world population is more than 20 times larger.*	**1.7**
8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	**1.6, 1.7**
C. Understand the connections between proportional relationships, lines, and linear equation.		
8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*	**3.1, 3.2, 3.3**
8.EE.6	Use similar triangles to explain why the slope m is the same	**3.3, 3.4, 7.6**

	between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.	
	D. Analyze and solve linear equations and pairs of simultaneous linear equstions.	
8.EE.7	Solve linear equations in one variable.	**2.1, 2.2, 2.3, 2.4, 2.5**
	a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	**2.1, 2.2, 2.3, 2.4, 2.5**
	b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	**2.1, 2.2, 2.3, 2.4, 2.5**
8.EE.8	Analyze and solve pairs of simultaneous linear equations.	**3.7, 3.8**
	a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	**3.7**
	b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.*	**3.7, 3.8**
	c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	**3.5, 3.6, 3.7, 3.8**
Functions		
	E. Define, evaluate, and compare functions.	
8.F.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.)	**4.2, 4.3, 4.4, 4.7**
8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*	**3.3, 4.5,**
8.F.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function A = s2 giving the area of a*	**3.4, 4.4, 4.7, 4.8**

	square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.	
	F. Use functions to model relationships between quantities.	
8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x*, *y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	**3.3, 3.4, 4.1, 4.3, 4.4, 4.5, 4.6**
8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	**4.7, 4.8, 4.9**
Geometry *G. Understand congruence and similarity using physical models, transparencies, or geometry software.*		
8.G.1	Verify experimentally the properties of rotations, reflections, and translations:	**6.1, 6.2, 6.3, 7.1**
	a. Lines are taken to lines, and line segments to line segments of the same length.	**7.1**
	b. Angles are taken to angles of the same measure.	**7.1**
	c. Parallel lines are taken to parallel lines.	
8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	**7.1, 7.2**
8.G.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	**6.1, 6.2, 6.3, 6.4**
8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**7.3, 7.4, 7.7**
8.G.5	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*	**5.1, 5.3, 5.4, 7.5**
	H. Understand and apply the Pythagorean Theorem.	
8.G.6	Explain a proof of the Pythagorean Theorem and its converse.	**5.2**
8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	**5.5, 5.6**

8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**8.1, 8.2, 8.3, 8.4, 8.5, 8.6**
I.	*Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.*	
8.G.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	**8.1, 8.2, 8.3, 8.4, 8.5, 8.6**
Statistics and Probability *J.*	*Investigate patterns of association in bivariate data.*	
8.SP.1	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	**9.1, 9.2**
8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	**9.2**
8.SP.3	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*	**9.2**
8.SP.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*	**9.3**

Textbook Recommendation to the Board of Education

Subject/Course: Middle School Mathematics ***Grade Level***: 6 - 8

First Presentation BOE Meeting Date: June 4, 2014 ***Second Presentation BOE Meeting Date***: July 2, 2014

Describe need for the textbook/materials: Two years ago, Bristol Public Schools adopted a middle school curriculum aligned to the Common Core State Standards. In support of that adoption, it is recommended to purchase a common set of instructional materials to meet the revised curriculum standards.

Listed below are textbooks/materials evaluated by the Textbook Selection Committee:

Subject/ Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	Rubric Score Total	Readability
Math Grade 6-8	Go Math 2015	Kanold, Larson, Leinwand	1st	2014	Houghton Mifflin Harcourt	40	
Math Grade 6-8	Carnegie Learning	Bartle, Meyer	1st	2011	Carnegie Learning	28.6	
Math Grade 6-8	Glencoe Common Core Edition 2015	Carter, Cuevas, Day, Malloy, Kersaint, Reynosa, Sibley, Vielhaber	1st	2015	McGraw Hill Education	43.1	800-880

The following textbook(s)/materials are recommended by the Textbook Selection Committee

Subject/ Course	Title of Book	Author(s)	Edition	Copyright Date	Publisher	City, State Of Publisher	Publisher Website
Math Grade 6-8	Glencoe Math: Built to the Common Core CCSS 2015	Carter, Cuevas, Day, Malloy, Kersaint, Reynosa, Sibley, Vielhaber	1st	2015	McGraw Hill Education	Bothell, WA Chicago, IL Columbus, OH New York, NY	https://www.mheonline.com/program/view/2/16/2853/GLNMATH015/

Reasons for recommendation (include information on match to curriculum concepts and skills): see attached document

Textbook Recommendation to the Board of Education

Student Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: #Texts per School**
654	Glencoe Math Course 1 Student Bundle – Grade 6	$74.97	$49,030.38	GH-104, WB-98, CHMS-271, NE-150
441	Glencoe Math Course 2 Student Bundle – Grade 7	$74.97	$33,061.77	GH-64, WB-84, CHMS-190, NE-82
130	Glencoe Math Accelerated Student Bundle – Bridge to Algebra Grade 7	$74.97	$9,746.10	GH-18, WB-19, CHMS-49, NE-44
517	Glencoe Math Course 3 Student Bundle – Grade 8	$74.97	$38,759.49	GH-73, WB-75, CHMS-238, NE-106

Teacher Materials Needed				
Quantity	**Item Name**	**Cost Per Item**	**Total Cost**	**Distribution: # per School**
11	Glencoe Math Course 1 Vol. 1 & 2 Teacher Edition	Free	Free	GH-2, WB-2, CHMS-4, NE-3
11	Glencoe Math Course 2 Vol. 1 & 2 Teacher Edition	Free	Free	GH-2, WB-2, CHMS-4, NE-3
7	Glencoe Math Accelerated Vol. 1 & 2 Teacher Ed.	Free	Free	GH-1, WB-1, CHMS-3, NE-2
10	Glencoe Math Course 3 Vol. 1 & 2 Teacher Edition	Free	Free	GH-2, WB-2, CHMS-3, NE-3

TOTAL COST	
Total Cost for Student Texts/Materials	$130,597.74 + $6084.59 for shipping and handling
Total Cost for Teacher Materials	free
GRAND TOTAL	$136, 682.33

Textbook Selection Committee		
Staff member	**School**	**Grade/Course Taught**
Susan Sirois	Northeast	Grade 6/7 math
Elizabeth Lafferty	Northeast	Grade 8 math
Sharon Dixon	West Bristol	Grade 6
Kyle Phelan	West Bristol	Grade 7
Sue Martel	West Bristol	Grade 8
Mariliz Fitzpatrick	Chippens Hill	Grade 6
John Dauphinee	Chippens Hill	Grade 6
Gina Rivera	Chippens Hill	Grade 7
Reinhard Walker	Chippens Hill	Grade 8
Jennifer Michalek	Chippens Hill	Grade 8
Karen Mancuso	Greene-Hills	Grade 6
Sarah Lupa	Greene-Hills	Grade 7
Cheryl Caron	Greene-Hills	Grade 8

THANK YOU!

THANK YOU!

THANK YOU!

Due to your generosity we raised a total of **$25,227.45** in the 2013-2014 School Year for charitable causes through our monthly "Dress Down Days". The monthly breakdown is as follows:

DATE:	CHARITY	AMOUNT
9/27/13	Henry Barnard Fund	$2,825.00
10/25/13	Bristol BOE Immediate Response Fund	2,500.00
11/22/13	Bristol Business Education Foundation	2,459.35
12/20/13	Bristol Food Pantry/Soup Kitchen	2,553.00
1/31/14	Edgewood Challenger Little League	2,547.00
2/28/14	Bristol Fuel Bank	2,446.00
3/28/14	Bristol BOE Immediate Response Fund	2,498.00
4/25/14	Bristol Hospital Parent & Child Foundation	2,360.00
5/30/14	District Unified Programs	2,315.00
6/13/14	Jake Small Fund	2,724.10

CONGRATULATIONS TO ALL!

Ellen W. Solek *Susan K. Moreau*

Ellen W. Solek, Ed.D.
Superintendent of Schools

Susan K. Moreau, Ph.D.
Deputy Superintendent

SAFETY REQUIREMENTS FOR ALL SCHOOL AQUATIC ACTIVITIES LOCATED AT BRISTOL PARK & RECREATION FACILITIES

The following safety requirements must be adhered to in order to ensure optimum safety in the swimming pool:

1. Two Red Cross certified lifeguards must be on the pool deck in addition to any instructor or coach supervising the aquatic activity. They must be designated with the sole responsibility for monitoring the students ' safety at an aquatic activity and they must:
   - Ensure the safety of all students.
   - Adhere to all scanning and lifeguarding policies as outlined in the Bristol Parks & Recreation Manual.
2. The qualified lifeguards, and qualified coach must always enter the pool area first and be the last to leave the facility.
3. The qualified lifeguards, and coach must ensure the pool has all the necessary safety equipment and is readily available each time the pool is in use. Pool deck must be kept clear of unnecessary equipment.
5. The coach must be familiar with the facilities layout and location of the designated telephone for emergency calls.
6. The instructor/coach in addition to the qualified lifeguards, required to be on the deck must be wearing attire that would permit a safe in water rescue.
7. A safety orientation, demonstration and review of all policies and requirements for all participants must be conducted by the coach or instructor prior to initially using the pool.
   It must include all safety rules and regulations, including "horse play", diving restrictions, safety procedures, water depth, and any other pertinent safety information.
8. Pool rules will be enforced at all times.
9. Attached pool rules are posted at each facility and available as a paper copy.
10. The diving board/starting blocks are only to be used by those instructed in the proper techniques of diving and only with the permission and supervision of the instructor/coach.
11. Only Bristol Parks and Recreation staff and those involved as a participant in the aquatic activity such as an instructor, coach, official, timers, etc. are allowed on the pool deck. No others are permitted.

EMERGENCY ACTION PROTOCOLS

ALL SWIM TEAMS WILL FOLLOW THE EMERGENCY PROTOCOLS FOR THE FOLLOWING SITUATONS AS OUTLINED IN THE BRISTOL PARKS AND RECREATION STAFF MANUAL AND THIS SAFETY PLAN.

Procedures to be followed for life-threatening swimming pool related emergencies. (clearing pool of students, emergency contacts, first-aid)

Life Threatening Emergencies in the Water

Primary Rescuer

1. Blow a long, loud whistle blast to initiate EAP
2. Use appropriate entry into the pool and perform appropriate rescue.
3. Assume the role of primary rescuer.

All other chairs

1. Hold stations monitoring the situation
2. Blow whistle (3 times) if the area needs to be cleared
3. Clear the pool (if necessary)

Lead Guard/Asst. Lead Guard/ Head Coach

1. At whistle, get phone and first aid kit.
2. Go to scene and determine whether or not it's appropriate to call 911.
3. Assign duties to other staff members.

Security/ Desk Staff

1. Stop letting people in and out of the facility.
2. Open gates/or doors to prepare for EMS to arrive.
3. Initiate crowd control.

Guards on Break/ Assistant Coach

1. Make sure the first-aid kit, AED (if necessary) and a phone was taken to the scene.
2. Go to scene to receive further instruction from Lead Guard
   i.e. meet EMS at gate, helper for spinal emergency, crowd control, etc.
3. Assume secondary rescuer if necessary.

When the incident is over, all personnel involved shall document their involvement in the incident on the appropriate report. All equipment must be checked and any used or damaged equipment must be replaced. The Aquatics Supervisor and school's Athletic Director needs to be notified as soon as the situation allows.

Procedures to be followed for minor injuries in the pool and locker room areas.

Minor First Aid

(This includes small abrasions, lacerations, sprains, bloody noses, etc.)

- If you are on break, provide first aid as stated in the American Red Cross Lifeguarding Program.
- If you are in the chair, double whistle and raise your rescue tube to signify to the other guard on duty you are leaving your post or to indicate the need for a supervisor.
- Do not allow the patron to walk alone, especially if they are bleeding. **Always go to the patron wherever there location may be**, and bring supplies if necessary.
- Complete an Injury Incident Report Form (Appendix C) in the Bristol Parks and Recreation Staff Manual.

Pool Rules and Regulations

It is the responsibility of the Aquatics Staff to know and enforce all of the following rules and policies to ensure staff cohesiveness and the safety of our patrons.

1. Proper swimming attire must be worn in the pool.
   - Cut-offs or T-shirts are not allowed in the pool.
2. Disposable diapers are not allowed in the pool.
   - "Swimmies" diapers are required for all children who are not potty trained.
3. Admission requirements and facility schedules must be adhered to.
4. Children **8-10 years of age** must be accompanied in the building by a parent or adult at least 18 years of age. Children **under the age of 8** must be accompanied in the water by an adult at all times. No exceptions.
5. Per public health code, all persons must shower before entering the pool. Any person known or suspected of having a communicable disease shall not use the pool.
6. The pool is not to be used unless there is a lifeguard on duty.
7. Per public health code, spitting or blowing the nose in the pool is prohibited.
8. Use of flotation equipment is limited to supervised classes and adults. Children will not be allowed to use flotation belts, face masks, snorkels, fins, water wings, inflatables, beach balls, kickboards, noodles, and other equipment during open swim sessions.
9. Any activity that may endanger patron safety or the facility including running, "horseplay", hanging on the lane lines, or improper use of equipment, is not allowed.
10. Food and/or glass containers are not allowed in the pool or locker room areas. Plastic beverage bottles may be used on the pool deck.
11. Tobacco and alcohol products of any kind are not allowed in the facility or on facility grounds.
12. Bandages, bobby pins, or chewing gum are not to be used in the pool.
13. Visiting with or distracting lifeguards on duty is prohibited.
14. The Parks and Recreation Department reserves the right to schedule swim lessons, swim meets, team practices, special events, and to limit swimmer capacity for health and safety reasons as needed.
15. Private swim lessons are not allowed at any time unless it is a Parks & Recreation sanctioned program.
16. Use of any media device, including but not limited to cameras, camcorders, and cell phones is strictly prohibited in all restrooms and locker rooms.
17. The Parks and Recreation Department is not responsible for lost or stolen items. If locks are used, they must be removed by the end of each business day or they will be cut off.
18. Spectators must remain in the bleacher area. For health and sanitation reasons, street shoes **may not** be worn on the pool deck.
19. **Diving Board Use:**
    - Only one person on the diving board or ladder at a time.
    - The fulcrum must remain in the forward-most position.
    - Be sure that the pool area in front of and below the diving board is clear before diving or jumping.
    - Do not swim in the area in front of the diving board when it is in use.
    - All reverse and inverted dives are prohibited- forward motion only.
    - Anyone using the diving board must be able to do so independently, including climbing the ladder, jumping off the board, and swimming safely to the side.