

Regular Board template

Wednesday, March 7, 2012 7:00 PM

Board of Education Auditorium, 129 Church Street, Bristol, CT 06010

1. **Call to Order, Pledge of Allegiance, Moment of Silence**

2. **March - Board of Education Month**

3. **2012 Bristol Scholastic Art Award Winners Presentation**

4. **Odyssey of the Mind Information Presentation**

5. **Approval of Minutes**

6. **Committee Reports**

7. **Consent Agenda**

7.1. Personnel

7.1.a. Central Office Retirement - Effective March 16, 2012

7.1.b. Teacher Resignations - Effective June 30, 2012

7.1.c. Sixth Year Salary Credit - Effective February 1, 2012

7.2. Grant

7.2.a. United Way Grant in Collaboration with the Bristol Community Organization

8. **Public Comment**

9. **Deliberated Items**

9.1. Addition of Lacrosse as a High School Sport

9.2. Certification of Phase IV of the Forestville School Building Project

9.3. Bristol Central High School Mission Statement Approval

9.4. Report of the Board Finance Committee and Vote on Proposed 2012-2013 Operating Budget

9.5. Policy Revision

9.5.a. Policy Revision - 3542.1 - Non-Instructional Operations - Purposes and Facilities: Food Service

9.5.b. Regulation Revision - 3542.31 - Non-Instructional Operations - Purposes and Facilities: Food Service

9.6. Curriculum Revision

9.6.a. AP Calculus - Second Presentation

10. **Old Business**

11. **New Business**

12. **Building Committee Reports**

13. **Information**

Presenter: Chris
Wilson

13.1. CAACE Award - Maria Groody

14. **Vote To Convene Into Executive Session for the
purpose of discussing:**

Presenter: Chris
Wilson

15. **Reconvene Into Public Session to vote on any
item from Executive Session:**

Presenter: Chris
Wilson

16. **Adjournment**

Presenter: Chris
Wilson

BOARD OF EDUCATION
Bristol, CT
Special Meeting – February 14, 2012

A special meeting of the Bristol Board of Education was held on Tuesday, February 14, 2012 at 5:30 p.m. at the Board of Education Administration Building, 129 Church Street, Bristol, Connecticut in the Auditorium.

PRESENT: Commissioners: Lawrence Amara, Karen Bourassa, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Thomas O'Brien, Karen Vibert, Christopher Wilson; Dr. Philip Streifer, Superintendent of Schools, Dr. Susan Kalt Moreau, Deputy Superintendent of Schools, Dennis Bieu, Director of Human Resources and David Mills, City Council Liaison.

CALL TO ORDER, PLEDGE OF ALLEGIANCE

Chairman Wilson called the meeting to order at 5:30 p.m. and invited the audience to join him in reciting the Pledge of Allegiance.

Dr. Streifer reviewed the proposed changes in the middle school curriculum.

PUBLIC COMMENT:

Paula O'Rourke – 1088 Hill Street, addressed the Board regarding the proposed change to the middle school music program. Her children have benefited from these programs. Chippens Hill Middle School won *CT Middle School of the Year* based on current programming. Why change programming that is working. College and scholarship applications benefit when able to list options available now.

David Lattimer – 5 Corona Drive, a Bristol teacher, expressed concern that reducing class time for language arts would be detrimental.

Dr. Streifer responded that instructional time would not be shortened. Change is required and necessary instruction would be received in other classes.

Susan Steele – 4 Garden Terrace, regarding computer classes being cut and being put in the choice category. CMT's are going online in the next few years, computer instruction is needed. Students need art and music choices to pursue college. Flex time is a productive time of day – students can get extra help.

Nick Amato – 90 Lincoln Street, stated statistics showing students who take music do better in class. Language Arts currently does not have enough time to do everything necessary. Sixth graders are not mature enough to know what they want to do in the future, so they should not have to choose.

Hayley Smith – 301 Westwood Road, why make kids choose. Chorus and band are classes students are excited about and love. Some students need flex for help with homework or extra tutoring because there is no time during class.

Lynn Johnson – 20 Fern Hill Road, a Bristol teacher, represented a group of teachers. She is concerned with reduction of language arts time. The district has made progress in CMT test scores but still needs further success. She thinks time constraints will prevent Reading/Language Arts from being incorporated into other classes.

Loretta Teevan – 150 Lake Avenue, a retired teacher, asked if any time is being taken from teaching English. Spanish is an elective, not mandated. She feels that the greatest world language is music.

Dr. Streifer responded that some time will be assigned to other core subjects.

Ryan Michaud – 4 Driftwood Road, he respects that this is a difficult decision but take politics out of it. Music is important. Children are our investment not a budget. The Board should be absolutely sure it is making the right decision.

Joy Cushing – 214 Brentwood Drive, frustrated with wording in proposal: Flex is now Reach and UA is now Encore. She is worried that Band and Chorus will not have enough students with the new proposal.

Tyler Melecio – 44 Coventry Road, CMT scores will go down. Music helps kids in everything they do. He had a list of students who want music to stay.

Nicky Dube – 34 Sherman Street, students should not have to choose. Music helps special education students fit in.

Kelle Barrieau – 147 Punch Brook Road, a Bristol teacher, presented information on studies showing music helps with other knowledge and brain growth.

Michael Coderre – 124 Jacqueline Drive, a Bristol teacher, his child is into art, music, band and chorus. Next year will be an impossible choice for her. He knows children also need technology but they will only be able to choose one. High School won *World Choral Singer*, which is a big honor. Pool of qualified students in high school will be lower. Students should not have to make a choice.

Thomas Burkholder – 70 Old Farm Road, feels it is impossible for students to choose between band and chorus. Proposed change will impact participation. Our music program is solid. Look at other things to eliminate, not music.

Alida Roberts – 291 Morris Avenue, a Bristol Teacher, she was brought up in Bristol, and has a doctorate. She received a well rounded education. Chippens Hill Middle School won *Middle School of the Year* because of everything involved, including current curriculum. She agrees change is needed but make sure it is the best change for everyone involved: BOE, parents, students, etc.

Teresa Acampora – 18 Fairlawn Street, technology is critical subject. Vote with hearts and facts. Parents and taxpayers have spoken and they want music and technology education.

Robert Quilty – 15 Misty Meadow, a retired Bristol teacher - all agree music is an enriching experience. Health/Wellness should be the number one priority because of childhood obesity, bullying and health issues.

Cathy Klouda – 35 Terrace Lane, if the Board eliminates Flex and music, there will not be enough students for band. Studies show music helps in other areas of life.

William Cushing – 214 Brentwood Drive, a student, music was removed in Plainville and it did not work out. We will be only one of a few towns without a music program. Please reconsider - at least keep Flex.

William Cushing – 214 Brentwood Drive, the arts have helped his child present himself and give him confidence. He mentioned a petition that has 770 signatures of people that want to keep music. With the present schedule students get everything they want.

Fonda Green – 142 Deer Run, Bristol teacher, listen to parents and students, they want music.

JoAnn Thomas – 40 Woodland Street, a former Bristol teacher, you think you are doing what is right. The Board wanted to cut music before but parents protested and programs were saved. Students are pleading to save programs. She does not believe all possibilities were explored. She feels music is always on the chopping block.

Scott Perkins – 34 Mechanic Street, a former Bristol student, it seems like the music proposal was made not to balance the budget but to add other subjects. Music seems to be considered less important. Many studies show that music helps with high test scores and social skills. He is worried about the long term affects and that music may be eliminated all together.

The Commissioners thanked the public for their input and assured them that this is a tough decision that they take very seriously.

The Commissioners discussed both the original and the revised middle school curriculum plan.

A motion was made by Commissioner Dolan to table the vote on the revised middle school curriculum to study it further. Seconded by Commissioner Amara.

VOTED: The motion failed with a vote of 5-4. Opposed were Commissioners: O'Brien, Vibert, Hintz, Morgan, and Wilson.

A motion was made by Commissioner Bourassa to accept the original October 5 middle school curriculum plan. Seconded by Commissioner Amara.

VOTED: The motion failed with a vote of 5-4. Opposed were Commissioners: O'Brien, Vibert, Hintz, Morgan, and Wilson.

A motion was made by Commissioner Vibert to accept the revised middle school curriculum plan. Seconded by Commissioner Morgan.

VOTED: The motion passed with a vote of 5-4. Opposed were Commissioners: Dolan, Fitzgerald, Amara, and Bourassa.

ADJOURNMENT:

On a motion by Commissioner Bourassa, seconded by Commissioner Morgan it was unanimously

VOTED: That the Board of Education meeting be adjourned at 7:44 p.m.

Respectfully Submitted:

Nancy Fandozzi

Nancy Fandozzi

Administrative Assistant

Bristol Board of Education

BOARD OF EDUCATION
Bristol, CT
Regular Meeting – February 1, 2012

The regular monthly meeting of the Bristol Board of Education was held on Wednesday, February 1, 2012 at 7:00 p.m., at the Board of Education Administration Building, 129 Church Street, Bristol, Connecticut.

PRESENT: Commissioners: Lawrence Amara, Karen Bourassa, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Thomas O'Brien, Karen Vibert, Christopher Wilson; Philip Streifer, Superintendent of School, Susan Kalt Moreau, Deputy Superintendent of Schools, Dennis Bieu, Director of Human Resources and David Mills, City Council Liaison

CALL TO ORDER, PLEDGE OF ALLEGIANCE, MOMENT OF SILENCE

Chairman Wilson called the meeting to order at 7:00 p.m. and invited the audience to join him in reciting the Pledge of Allegiance. A moment of silence was observed for Jeannette H. Ceppa, a Teacher at John J. Jennings from 1934 to 1975 and Gordon Higginbotham a Teacher from 1946 to 1952 and Director of Special Services to 1952 to 1975.

RECESS FOR A REASON

Student Nicolas Monteleone, a second grader at Greene Hills School presented his project "Recess for a Reason". Nicolas approached his Physical Education teacher Lisa Galske with a project to help the less fortunate at holiday time. She asked him to write a draft of the project. During the project students were able to buy a four week pass for a \$1 or a one day pass for .50; the passes allowed them to go to the gym for recess, where they participated in special activities, the project raised \$200 and it was used to buy presents for Bristol Youth Services. Dr. Streifer and Chairman Wilson commended Nicolas for this evening's presentation and his hard work.

APPROVAL OF MINUTES

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

VOTED: That the minutes of the January 4, 2012 Regular Meeting were unanimously approved as written.

COMMITTEE REPORTS

Operations Committee

Commissioner Fitzgerald reported that the committee met on January 24th and discussed the high school athletic fields. An item from that meeting will need to be added to tonight's agenda.

Addition of Modified Field Project to Agenda

On motion of Commissioner Fitzgerald, seconded by Commissioner Amara, it was unanimously

VOTED: That the Board of Education add the modified field project to the agenda for a vote.

On motion of Commissioner Fitzgerald, seconded by Commissioner Hintz, it was unanimously

VOTED: That the Board of Education forward a request to City Council that they name the Operations Committee of the Board of Education as the Building Committee for the proposed light project at Bristol Eastern High School.

This project will be funded through fund raising not Board of Education money. Commissioner Amara commended the staff for their work on this project.

Communication and Community Relations

Commissioner Bourassa reported that the Committee met on January 25th and discussed the parent survey and public inquiry.

Finance Committee

Commissioner Vibert reported that the committee met earlier this evening and an update on the current school budget was given. As of today, there is an approximate \$850,000 surplus that could be returned to the city. There was discussion of the cafeteria budget, and an anticipated deficit; the upcoming budget workshop in preparation of the 2012-2013 budget presentation to the Board of Finance. The committee was also given a budget analysis of closing Jennings School. The closure would net the district a one time savings of \$496,981.02.

Addition of Closure of John J. Jennings to the Agenda

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

VOTED: That the Board of Education add the closure John J. Jennings to the agenda for a vote.

Discussion followed regarding what will happen to the building; the possibility of a public hearing regarding the closure; why Jennings was chosen versus other schools; transportation costs to bus more students and the feasibility studies that were done for the district in 1998 and 2005.

Commissioner Vibert ask that board hold the vote until after Public Comment giving those interested parties in the audience the opportunity to speak.

CONSENT AGENDA

On motion of Commissioner O'Brien, seconded by Commissioner Hintz, it was unanimously

VOTED: That the Board of Education pull Item 5.2 – Sixth Year Salary Credits for further discussion.

Personnel

Teacher Requests for Unpaid Leave of Absence

On motion of Commissioner Hintz, seconded by Commissioner Amara, it was unanimously

VOTED: That the Board of Education approve the following Teacher Requests for Unpaid Leave of Absence:

Jennifer Cote – JJJ – Grade 3 – Effective March 6, 2012 through June 30, 2012

Jennifer Pace – ID – Psychologist – Effective March 2, 2012 through April 1, 2012

Coaching Appointments

On motion of Commissioner Hintz, seconded by Commissioner Amara, it was unanimously

VOTED: That the Board of Education approve the following Coaching Appointments:

Erin Carlson - Cheerleading Coach - NEMS - Effective 1/2/12

Salvatore Mazzarella - Volunteer Indoor Track Coach - BCHS - Effective 1/2/12

Grants

On motion of Commissioner Hintz, seconded by Commissioner Amara, it was unanimously

VOTED: That the Board of Education approve the following the Grants:

Education Jobs Fund 2010-2012 - Additional Authorization and Main Street Women & Girls Fund -

Professional Development of Women in Licensed Home-based Child Care

Sixth Year Salary Credit - Effective February 1, 2012

Commissioner O'Brien wanted to reiterate that sixth year salary credits should not be attained by attending workshops. Mr. Bieu assured Commissioner O'Brien that we have made progress in this area; while there may be one or two more teachers with workshop credits based on the plan that was previously in place; half, did attend accredited courses.

On motion of Commissioner Hintz, seconded by Commissioner Amara, it was

VOTED: That the Board of Education approve the following Sixth Year Salary Credits

Julie Lamontagne – BEHS – English

David Luchina – NEMS – Math

Jonathan Maule – BEHS – Special Education

Paul Philipon – BEHS – Special Education

Lisa Rocco – BEHS – Social Studies

Melanie Vetrano – BEHS – Science

The motion was declared **PASSED** with two (2), Commissioners O'Brien and Vibert opposed.

PUBLIC COMMENT

Tyler Melecio – 44 Coventry Road – addressed the board regarding the Middle School Program.

Will Cushing – 214 Brentwood Drive – He expressed his displeasure with change to the Middle School curriculum. He has children at children at Ivy Drive and Northeast that will be greatly affected by the change.

William Cushing - 214 Brentwood Drive – a student at Northeast; spoke about band and chorus and how the middle school change will affect his ability to participate in both activities.

Deb Cahill – 65 Garden Street – she is a paraprofessional at a middle school, and she wanted to address the board regarding middle school music and how the current plan has helped the students in special services.

Kim Coyle – 126 Burlington Road – she is a middle school technology teacher and she addressed the board regarding the middle schedule and how it would adversely affect the technology students and their knowledge going into the high school.

Chris Sipes – Music teacher Memorial Boulevard; she addressed the board regarding the middle school plan and the lack of music and art in the schools and affects it will have on the students. She provided information regarding the benefits of music to the board commissioners.

Gregory Kramer – 114 Grove Avenue – He addressed the board regarding the middle school schedule. He is music educator and has sons at Northeast and Bristol Eastern.

Lisa Lacko – 135 Circle Street – she is a Bristol Eastern graduate; she has a junior at Bristol Eastern and a son at Northeast. Music has helped her son with special needs. Students will be greatly affected without music. We teach to the test, and do not take in account the UA classes that the students need as well.

Trinette Robinson – 200 Blakeslee Street – she is a student at Chippens Hill. Music has helped her with her speech, and has helped her to make friends. She sang for the audience.

Tabitha Robinson - 200 Blakeslee Street – her daughter is an Avid student at Chippens Hill. She was taken out of her UA classes to participate; taking these classes has helped her to fit in. The students in Tech Ed are learning things that they can teach their parents. Special Education students, have a much more open dialog in their UA classes.

Katie Kachidurian – 4 Sharon Street – she has three sons in middle school and she is very unhappy that general music may be taken away. Her son is now musically inclined, where he never would have been if he had not been exposed to it in middle school.

Amari Floyd – 39 Carolina Street – she is a student at Northeast she is protesting against getting rid of general music. She read a prepared statement.

Melina Floyd - 39 Carolina Street - she is a sophomore at Bristol Eastern, she attended Northeast as well, she knows what music mean to her. It allows people to be unique and express themselves they are able to do things not just in social studies, English, and language arts. She would like to study music in college. She has the opportunity to go to Cincinnati by being a part of the music program, and she has made so many friends in chorus and band.

Susan Steele – 4 Garden Terrace – She has been a music teacher for 28 years; she encouraged the board to keep general music in the curriculum.

Angela Lamaglio – she is the choral director at Chippens Hill, she feels without general music it will be detrimental to our students.

Roberta Verbyla – she has been a teacher since 1977; she, like Dr. Streifer, is a Hartt School of Music graduate. We should not be making the students choose. Do not change the middle school program.

Fonda Green – She is a teacher at Northeast Middle School. She is passionate about this change. The administration has not provided rationale for why this change is taking place.

Teresa Jo Acampora – 18 Fairlawn Street – she addressed the board regarding the curriculum and music. She wanted to know why are we changing the middle curriculum and she is very unhappy with the changes.

Stephen Butler – 525 Stevens Street - wanted to address the board about various items. He has been out of school for 11 years; he has had some of the teachers that have spoken and he can understand why they are changing the curriculum. He moved into his current home so that his children could go to Northeast and Ivy Drive, now he is hearing that he may be redistricted. He also wanted to know about the busing that will occur with the K-8 structure. Administration responded by letting him know about the redistricting meeting on February 8th at Bristol Eastern. In terms of busing, there just is not enough money to separate the students on the buses. There will be monitors on the buses for a while. All the variables are not in place the public will have the opportunity to speak.

Joanne Thomas – 40 Woodland Street – she is a former teacher in the district. She is now the curriculum coordinator at South Windsor. She addressed the board regarding the music program in the middle schools. She is now on the national level for establishing standards and knows that this is not an appropriate change.

Linda Casasanta – 64 Curtis Avenue addressed the board regarding music and redistricting. Her school is not one of the redistricted school, she would like her children to stay at school.

Birpit Berube – 90 Cypress Street addressed the board regarding Jennings school.

Mary Flores – 172 Arlington Street - spoke about the busing for the new schools, she understands that there will be monitors on the bus for a while; but after that it is important for the drivers to keep their eyes on the road, not monitoring the bus. She feels that we cannot put the middle school and elementary aged students on the same bus.

Dawn Whitford – 136 Empire Way – she has a Kindergartener and 2nd grader at Jennings. It is small community with the best education available. The teachers are awesome. She would like to do more, and

plans on contacting her Legislator. Dr. Streifer said that is the only way we are going to be able to address unfunded mandates, parents have to get involved.

Amy Bukowski – 245 Cameron Drive - addressed the board regarding the April vacation. She said it difficult for working families to schedule vacations. She feels that 80 days without a break is a long time, the board may want to reconsider the April vacation.

Raymond Krewiylow – addressed the board regarding changing the vacation schedule.

Bob Such – 195 Peacedale Street – spoke to the board regarding reduction of music classes.

Closure of John J. Jennings Schools

On motion of Commissioner Vibert, seconded by Commissioner O'Brien it was

VOTED: That the Board of Education close John J. Jennings School at the end of the current school year.

Chairman Wilson declared the motion **PASSED**, following a roll call vote of eight (8) commissioners in favor of the motion, and one (1), Commissioner Bourassa, opposed.

Safe School Climate Plan - Regulation 5131.911 - Second Reading

Dr. Moreau presented the Safe School Climate Plan Regulation.

Discussion followed regarding the Parent component, the Safe School Client Committee and the cost of training. Commissioner Amara noted clerical errors that will need to be corrected.

On motion of Commissioner Hintz, seconded by Commissioner Fitzgerald it was unanimously

VOTED: That the Board of Education approve Regulation 5131.911 - Safe School Climate Plan

OLD BUSINESS

Reconsideration of Cancellation of April Vacation

The Board decided to revisit its decision to cancel the April vacation. After some discussion, and in light of a very mild January, the Board would like to consider rescinding their earlier decision and reinstating the April vacation and following the April calendar as originally written.

On motion of Commissioner Dolan, seconded by Commissioner Amara it was

VOTED: That the Board of Education Board rescind their earlier decision and reinstate the April vacation and follow the April calendar as originally written.

Chairman Wilson declared the motion **PASSED**, following a roll call vote of seven (7) commissioners in favor of the motion, and two (2), Commissioners Wilson and Morgan opposed.

NEW BUSINESS

Commissioner Amara asked to put the establishment of consistent meeting dates on the agenda for discussion.

On motion of Commissioner Amara, seconded by Commissioner Dolan it was unanimously

VOTED: That the Board of Education discuss establishing a consistent meeting schedule for committees.

Discussion followed regarding possible days and the willingness of commissioners to commit another evening for meetings. Commissioner Amara withdrew the motion until next month.

BUILDING COMMITTEE REPORTS

Forestville Building Committee

Commissioner O'Brien reported that Forestville school is making a lot of progress. They have received authorization for the windows to go in, and they are 9 million dollars under budget.

West Bristol

Dr. Moreau reported that they are 60 % complete on the building, the FF&T's (Furniture, Fixtures & Technology) have been approved; and they are ready to start painting sheet rock. The architects will turn the building over on Aug 1st. We have discussed tours of both facilities and have set up a few evening dates for tours to take place with commissioners and building committee .

INFORMATION

2012 Bristol Scholastic Art Award Winners

Dr. Moreau presented the 2012 Bristol Scholastic Art Award Winners Bristol Public Schools students earned 23 awards in the 23rd annual Connecticut Regional Scholastic Art Awards competition and exhibition at the Hartford Art School, University of Hartford (art work is still on display). Top state award winners and gold key recipients' work is entered in a national competition with a national awards ceremony and exhibition in New York City. The artwork of Christa White, Francesca Souza, Julie Ciralli, Kelsea Paradis, Jessica Capezzone, Nicole Wolf, and Molly Watstein will represent Bristol.

A reception to recognize our outstanding middle and high school students will be held on March 7th at the BOE. Immediately following the reception, the Board will recognize students for their outstanding achievement during the Board of Education Meeting.

Enrollment Update:

Dennis Bieu presented the Quarterly Enrollment report. Noted items were Ivy Drive's speech program with 26 students; middle school enrollment down 76 students and high school enrollment down 31 students.

Commissioner Dolan shared with board members that he recently visited Mountain View and Edgewood school. He said the students were particularly interesting; the experience was enlightening.

Chairman Wilson wanted to share with board members information from the American School Journal. He also gave a brief description of how the ERG chart works; and discussed how well Bristol is doing in comparison to other districts that spend much more money on education. We should proud of what our district has done and will continue to do in the future.

CONVENE INTO EXECUTIVE SESSION

There being no further business to come before the Board and

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

VOTED: That the Board of Education convene into Executive Session for the purpose of discussing Retirement Incentive for 2012 and Review of Non-Bargaining Salaries and Benefits (10:20 p.m.)

EXECUTIVE SESSION

PRESENT: Commissioners: Lawrence Amara, Karen Bourassa, Genard Dolan, Jill Fitzgerald, Karen Hintz, Jeffrey Morgan, Thomas O'Brien, Karen Vibert, Christopher Wilson; Philip Streifer, Superintendent of School, Susan Kalt Moreau, Deputy Superintendent of Schools, Dennis Bieu, Director of Human Resources, Gretel Cote and David Mills, City Council Liaison

The Board of Education convened into Executive Session and the meeting was called to order **(10:40 p.m.)**

DISCUSSION

The board reviewed and discussed the administration's review of previous retirement incentive plans and decided to approve the administration's proposal, but would like to change the one time payout amount.

RECONVENE INTO PUBLIC SESSION

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

VOTED: That the Board of Education reconvenes into Public Session to take any necessary votes from Executive Session (11:45 p.m.)

On motion of Commissioner Vibert seconded by Commissioner O'Brien it was unanimously

VOTED: That the Board of Education approve the Retirement Incentive Plan with discussed revision.

ADJOURNMENT:

On motion of Commissioner Vibert seconded by Commissioner O'Brien it was unanimously

VOTED: That the Board of Education meeting be adjourned. (11:45 p.m.)

Respectfully Submitted:

Susan P. Everett

Susan P. Everett
Executive Secretary
Bristol Board of Education

2012 FEB 15 P 11:34

February 6, 2012

Philip Streifer, Ph.D.
Superintendent
Bristol Board of Education
PO Box 450
Bristol, CT 06011-0450

Dear Phil: *Phil*

I have decided that it is time for me to submit my letter of resignation. The last 10+ years at the Board of Education have been a wonderful experience. After a long career in finance of nearly 40 years - with little break, it's time for me to retire and enjoy my gardens, play golf, and most importantly, spend time with my family. Spring is my time....and I need to smell the roses - at last!

As I had indicated in earlier conversations, I intended to get you through the budget development - which I believe we've accomplished. There is no perfect time to leave in this position - particularly when there isn't a lot of overlap of functions. I wrestled with that since our last conversation, trying to figure out what would be best for you all and meet my own desires. My conclusion on all of this is that my last day at the Board will be Friday, March 16, 2012. As you already know, I will assist you in any way to transition the position over. I wish the Board and particularly the central office team all the best.

Sincerely,



Gretel Cote
Supervisor, Budget and Finance

received -12
MKJ. 8:15 AM

From: Merrill Ebner
22 Griswold Drive
West Hartford, CT

2012 FEB 17 A 9:01

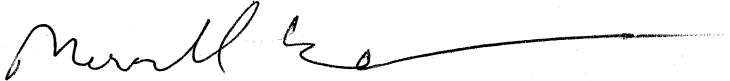
2/16/2012

To: Maria Groody
Director of Bristol Adult Education Center
Board of Education
Bristol Public Schools
129 Church Street, Bristol, CT 06010

Dear Mrs. Groody,

With this letter I am formally submitting my resignation of the position of teacher at West Woods Academy within the Bristol School System. My resignation is to be considered effective at the end of the 2011-2012 school year, the last school day in June 2012.

Respectfully yours,



Merrill Ebner



BRISTOL CENTRAL HIGH SCHOOL

480 Wolcott Street
P.O. Box 700
Bristol, CT 06011-0700
860-584-7735
Fax: 860-584-7713

Learning Is Our Focus – Eruditio Diligentia Est

Peter L. Winger, *Principal*

Andrew P. Clapsall, *Assistant Principal*

Mary H. Gadd, Ed.D., *Assistant Principal*

2012 FEB - 2 P 2:36

February 1, 2012

Dennis Bieu
Bristol Board of Education
129 Church Street
Bristol, CT 06010

Dear Mr. Bieu

The purpose of this letter is to tender my resignation from my position as Guidance Counselor with Bristol Central High School. My last day will be the final day of school.

I will miss working with you and my coworkers and our students. My tenure with Bristol Central High School has been an opportunity to both learn and to contribute. I will take many positive memories with me in my future endeavors.

I thank you for the opportunities I have had here at BCHS. Please call on me if there is anything I can do to help ease the transfer of my work.

Regards,

Cortney Dunlap

Kimberly Gentile
21 Hillside Ave, West Haven, CT 06516
(203) 430-0052, kpgentile10@gmail.com

2012 FEB -6 P 12:51

February 6, 2012

To Whom It May Concern:

Please accept this letter as a notice of my resignation as an employee of Ivy Drive Elementary School, effective June 30, 2012. I am thankful for the professional relationships I have been able to develop with many of the teachers and support staff at Ivy Drive School. It has been a pleasure to work with the staff, students, and parents of the Ivy Drive community. Although my time at Ivy Drive Elementary School as a Kindergarten teacher has been productive and enjoyable, I will be pursuing career opportunities outside of Bristol Public Schools.

Thank you for the opportunity to work with such an outstanding school district.

Sincerely,

A handwritten signature in cursive script that reads "Kimberly Gentile".

Kimberly Gentile

Feb 1, 2012

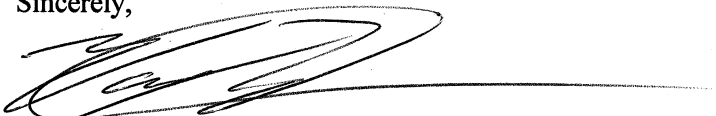
2012 FEB -1 P 3:35

Dear Mr. Bieu,

Please accept this notice as my official letter of resignation effective at the end of the 2011-2012 school year. I will miss working with the staff and students of Bristol Central High School.

It has been a pleasure working in this district and I am grateful for all the experience gained. I thank you, for the opportunities I had here at BCBS. Should there be anything I can do to assist with the transfer of my position, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read 'Wayne Kukucka', with a long horizontal line extending to the right.

Wayne Kukucka
BCBS Science Teacher

2/6/2012

Justin Tacchi
128 Queen St.
Bristol, CT 06010

2012 FEB -7 P 3:02

Dennis Bieu
Director of Human Resources
Bristol Public Schools
129 Church Street
Bristol, CT 06010

Dear Mr. Bieu,

I regret to inform you that I am resigning from my position as Language Arts Teacher at Memorial Boulevard Middle School effective June, 30th 2012.

Thank you for the valuable and rewarding experiences the Bristol Public Schools system has provided me with as an educator throughout my time here.

If there is anything I can do to aid in this transition, please do let me know.

Respectfully yours,

Justin Tacchi

**BOARD OF EDUCATION
Bristol, Connecticut**

RECOMMENDATIONS TO BOARD FOR SIXTH YEAR SALARY CREDIT
EFFECTIVE 2/1/2012

Name	Assignment	Transcribed Course Work	Work Shops	Instructor of College Course/s	Authorship	Travel	Total Credits
Janice Rustico	CHMS Language Arts	25	5.7				30.7
Geoffrey Sinatro	BCHS Special Education	33					33

2/22/12



Bristol Lacrosse Association

Bristol Board of Education
(abbreviated version)

March 7, 2012

BRISTOL LACROSSE



Introduction

Lacrosse is entering into our 9th season in the City of Bristol. Youth Lacrosse in Bristol was created as a co-op youth program with Burlington in 2001. After two years of a joint program the league grew in size to a point where a split had to be made. In 2003, Bristol Youth Lacrosse (BYL) was founded for boys in grades 2 through 8.

Four years later, in 2007, the Bristol Co-op Club Lacrosse program was formed for boys in Bristol Eastern and Central High School. With the continued success of the league it was determined that a girls team was necessary. In 2009, Bristol Lacrosse welcomed the Bristol Co-op Club Lacrosse program for girls in Bristol Eastern and Bristol Central High School.

The league continues to grow in numbers and for 2012 we are expanding to include the Lighting program for grades K through 1.

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Mission Statement

Bristol Youth Lacrosse (BYL) is an organization founded and run by volunteers who are dedicated to the sport of lacrosse in the city of Bristol.

Our mission is to promote the game of lacrosse through participation, teamwork and a commitment to excellence.

BYL is committed to creating an atmosphere in which members and players support, respect and encourage each other, as well as their coaches, opponents and officials. We endorse and require good sportsmanship, fair play and academic excellence as an integral part of lacrosse

*BYL offers 2 scholarships per team each season to student athletes.

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History

- ◉ Deemed the fastest game on two feet, lacrosse has a history that spans centuries and is the oldest sport native to the North American continent.
- ◉ Rooted in Native American ritual and religion, the game was often played to resolve conflicts, prepare for war, heal the sick and build strength.

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Growth

- Over the past decade, number of men, women and youths playing lacrosse has increased another 8.4% each year to reach the estimated 568,021 people playing today

<i>Level</i>	<i>2001</i>	<i>2008</i>	<i>2009</i>
Youth	125,000	265,214	297,271
High School	100,925	218,823	227,624
College	20,293	29,822	31,614
Professional	150	300	180
Post-College	7,563	10,071	11,342
Total	253,931	524,230	568031

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Growth – College Snapshot

Lacrosse is a fully-sponsored NCAA championship sport for both men and women

2009 US Lacrosse Participation Survey (Varsity and Club)

Men:.....	18,746
Women:.....	12,868
Total:.....	31,614

No. College Players Annually

2001:.....	20,293
2002:.....	23,179
2003:.....	24,331
2004:.....	23,162
2005:.....	24,502
2006:.....	26,251
2007:.....	28,282
2008:.....	29,822
2009:.....	31,614

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Growth – National College Snapshot

<u>College</u>	<u>Number of CT Players</u>
Virginia (2011 Nat'l Champs)	2
Maryland (2011 Runner Up)	3
Johns Hopkins	2
Syracuse	1
Duke	3
North Carolina	2
University of Hartford	5
Trinity	5
Gettysburgh	3
Eastern CT	26
Michigan (1st year of D1)	2
Notre Dame	1
Quinnipiac	12
Western New England	3
Cornell	1
Villanova	3
Stony Brook	2
UMASS	2

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Growth – National High School Snapshot

2008 US Lacrosse Participation Survey (NFHS & USL Data)

Boys:.....	136,710
Girls:.....	90,914
Total:.....	227,624

Growth Rates of NFHS Sports Boys 10-yr

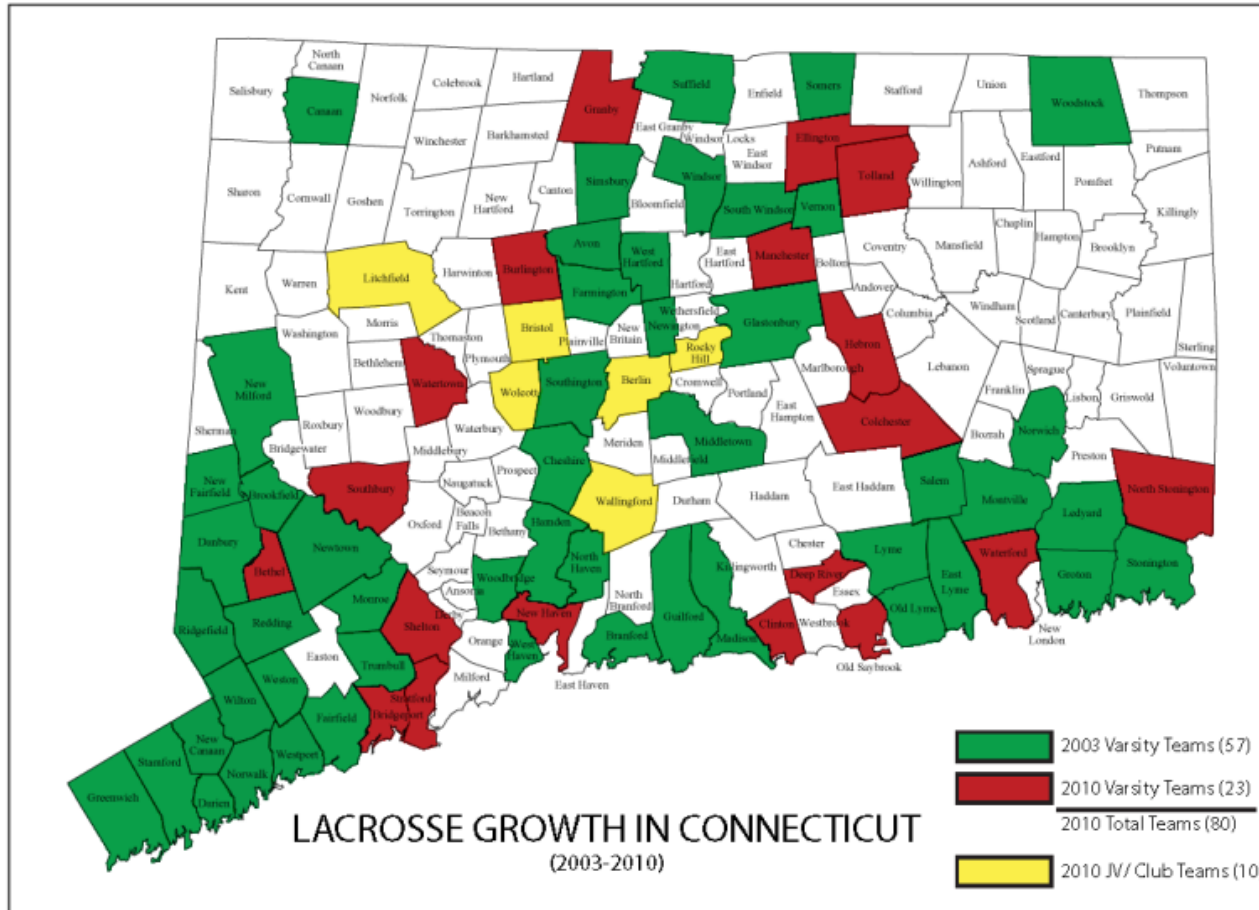
Bowling	208.4. %
Lacrosse.....	175.0%
Indoor Track.....	53.5%
Ice Hockey.....	39.2%
Water Polo.....	38.1%

Growth Rates of NFHS Sports Girls 10-yr

Lacrosse.....	208.0%
Bowling.....	187.4%
Ice Hockey.....	78.9%
Water Polo.....	46.3%
Golf.....	38.0%

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Growth – Connecticut High School



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Growth – Bristol, CT

- **Over the past decade, number of high school boys, high school girls and youths playing lacrosse has increased another 4.0% each year to reach the estimated 130 students playing from Bristol this year**
 - **Started as a youth co-op program with Burlington in 2001**

<i>Level</i>	<i>2003</i>	<i>2008</i>	<i>2012</i>
Youth	46	62	80
High School Boys	0	20	28
High School Girls	0	14	18
College	0	0	4
Total	46	96	130

* 30+ volunteer coaches, assistant coaches, team mothers, score keepers and committee members.

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Reasons For Lacrosse In Our High Schools

1. When you add up all the youth programs, middle school programs, and high school programs, Women's and Men's Lacrosse are the fastest growing sports in the United States.
2. To provide the children of Bristol an opportunity to play another competitive sport at the high school level.
3. Lacrosse is a spring sport and spring scholastic sports are limited. Other options are baseball, golf, tennis, and track and field.
4. Bristol Youth Lacrosse will continue to grow and become a feeder program to the Bristol High Schools Lacrosse Program.
5. Keeping children active in organized sports at any level has tremendous health benefits. More opportunities to play sports is a positive move for the school system.

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Reasons For Lacrosse In Our High Schools

6. Keeping high school children involved in an organized sports program will provide positive experiences, positive role models and mentors in the dedicated coaching staff.
7. Lacrosse has grown in popularity at the college level across the country. Most college lacrosse programs were only offered along the east coast. Now they are appearing in schools in the mid west and all the way to California. The opportunity for high school athletes to be awarded scholarships to play lacrosse in college has provided children additional opportunities to attend college. The number one sport qualifying for scholarships granted in CT is women's lacrosse with men's lacrosse also at the top of the list.

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Reasons For Lacrosse In Our High Schools

8. Potential homebuyers are always looking at the academic standing of the school system and also what opportunities are available for high school sports. Having high school lacrosse programs makes Bristol a more attractive opportunity for potential homebuyers.
9. Baseball is a popular sport in Bristol and after tryouts are completed, any child who does not make the team will have another option if lacrosse is added at the high school level.
10. In our surrounding area; Burlington, Southington, *St. Paul's Catholic*, Northwest Catholic, Avon, Simsbury, Farmington, Berlin, Watertown, West Hartford, Wolcott, *Kingswood Oxford, Choate, Chase Collegiate, Xavier, Watkinson, Masters School*, Rocky Hill, Newington and Cheshire all have high school programs. *See earlier slide.*

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Reasons For Lacrosse In Our High Schools

11. Surrounding town that have moved to JV/ Varsity from Club are not longer able to schedule games with club teams, thus limiting who we are able to schedule with.
12. According to the Connecticut Interscholastic Athletics Conference (CIA) Lacrosse ranks 6th in the state of CT for student participation. Baseball is ranked 8th .
13. The consortium of Educational leaders supports the participation of students in interscholastic athletics and considers sports as an important dimension of the total educational experience, which is mentioned in the CIAC mission statement.

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Reasons For Lacrosse In Our High Schools

14. Sports programs encourage the acceptance of responsibility to self, to team, and to school. They expose athletes to some of life's difficult lessons. For example, defeat, humility, the opportunity to know success, self satisfaction, and pride. All these experiences are valuable in the growth of a balanced individual.
15. A study by the American Testing Service and College Entrance Examining Board provided support for the importance of extra curricular activities as an important predictor of student success. In one study, four factors were evaluated as predictors of a student's success later in life. They were scores on SAT's, high grades in high school, high grades in college, and the fourth, which was achievement in extra curricular activities that proved to be the better predictor of success.

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Reasons For Lacrosse In Our High Schools

16. Here are some reasons most commonly offered in support of interscholastic athletics from a survey by the National Association of Secondary School Principals:

1. Interscholastic athletics develop good school competition.
2. Under proper auspices, they provide wholesome competition.
3. They teach the value of sportsmanship and teamwork.
4. They emphasize desirable social conduct and social adjustment.
5. They promote pupil interest in school life.
6. They provide an outlet for abundant energy.

BRISTOL LACROSSE



First Year Budget – High School Boys and High School Girls Co-Op Teams

Projected Start-up Costs:

1.	Uniforms (Boys)	\$2,850.00
1.	Home & Away (30x \$95.00)	
2.	Donated by Bristol Lacrosse	
2.	Equipment (Boys)	\$5,250.00*
3.	Helmets	\$3,750.00
1.	Boys only (30 x \$125.00)	
TOTAL – Boys		\$9,000.00
1.	Uniforms (Girls)	\$2,850.00
1.	Home & Away (30x \$95.00)	
2.	Donated by Bristol Lacrosse	
2.	Goggles	\$1,500.00
1.	Girls only (30 x \$50.00)	
3.	Equipment (Girls)	\$1,050.00*
4.	Goals	\$1,050.00
1.	Donated by Bristol Lacrosse	
TOTAL – Girls		\$3,000.00
TOTAL		\$18,750.00
TOTAL 1st Year Cost (after donation from Bristol Lacrosse)		\$11,000.00

*Not provided in other school systems (similar to a baseball glove) savings of \$6,300.00

BRISTOL LACROSSE



Budget – High School Boys and High School Girls Co-Op Teams

Projected Yearly Costs (per team):

1.	Coaches		\$7,274.00
	a.	Head Coach	\$5,000
	b.	Assistant Coach	\$2,274
2.	Athletic Trainer		\$0.00 (schools policy)
3.	Insurance		\$0.00 (schools policy)
4.	Transportation		\$1,920.00
	1.	Away Games (8 x \$200)	
5.	Referee's		\$1,400.00
	1.	Home Games (8 x \$175)	
6.	Field Costs		\$0.00
7.	Certification of Helmets	(boys only)	\$1,000.00
8.	Supplies (balls, scoring book, etc.)		\$500.00
	TOTAL (per team)		\$12,094.00
	TOTAL YEARLY COST FOR BOYS & GIRLS		\$23,188.00

BRISTOL LACROSSE



Budget – High School Boys and High School Girls Co-Op Teams

Projected Cost:

1.	High School Boys	\$12,094.00
2.	High School Girls	\$11,094.00
3.	First Year Start-up Costs	\$11,000.00

TOTAL

\$34,188.00*

**If equipment is not supplied a savings of \$6,300.00*

(\$27,888.00)

TOTAL COST PER YEAR AFTER

\$23,188.00

BRISTOL LACROSSE



THANK YOU!

We greatly appreciate your time.

WOLCOTT STREET

PECK LANE

Shotput
Javelin with grass runway
High jump
Discus
Pole vault
Long/Triple jump

400 meter, 8 lane running track ('Standard Track'). Field events to include Long/triple jump, High jump, Pole vault, Shotput and Discus.

Varsity soccer & football fields with combination goal posts

Softball field 250' outfield

Practice field: Football field Jr. high school soccer field, (100 YDS x 55 YDS)

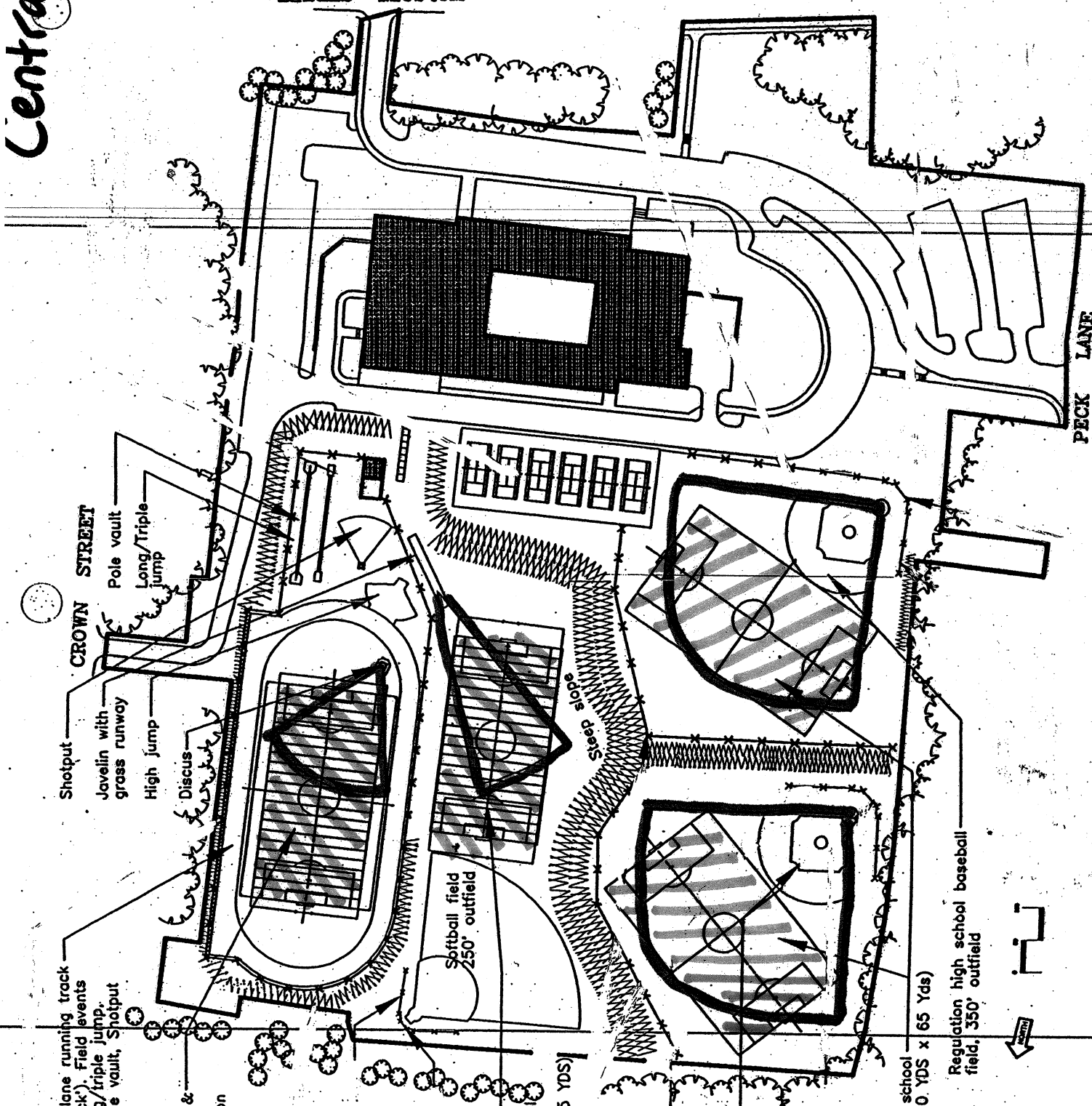
Regulation H.S. baseball field, 350' outfield

Regulation high school soccer field (110 YDS x 65 Yds)

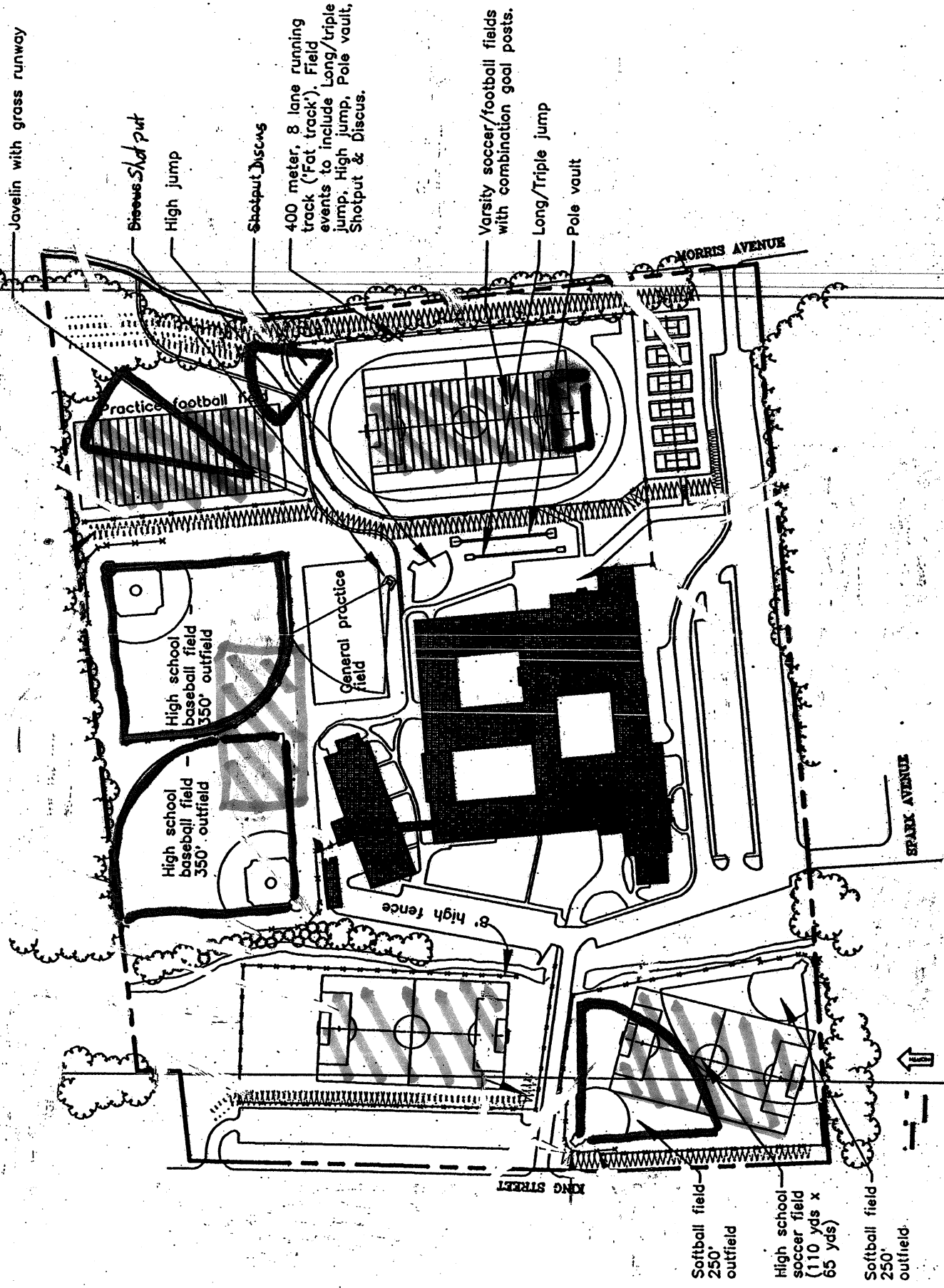
Regulation high school baseball field, 350' outfield

Steep slope

NOTE: THIS DRAWING IS A COMPILED OF INFORMATION TAKEN FROM SOME OR ALL OF THE FOLLOWING SOURCES: PUBLIC ASSESSOR'S MAP, CITY OF BRISTOL, CHARTERED MAPS, AERIAL PHOTOGRAPHS AND FIELD OBSERVATION.



Eastern



NOT: THIS DRAWING IS A COMPILED OF INFORMATION TAKEN FROM SOME OF ALL OF THE FOLLOWING SOURCES: CITY OF BRISTOL ASSESSOR'S MAP, CITY OF BRISTOL OFFICIAL MAP, WORKING DRAWINGS AND FIELD OBSERVATION. WHERE NECESSARY.



MEMORANDUM

TO: Board of Education Commissioners

FROM: Ellen Benham and Denise Carabetta

RE: Lacrosse Proposal

DATE: February 21, 2012

The Lacrosse Association has requested that lacrosse be added as a high school sport. This memo addresses (1) the recent history of requests for the addition of high school sports, (2) what is a co-op team, (3) projected growth and costs for lacrosse, and (4) the availability of fields for lacrosse.

(1) The Recent History of Requests for the Addition of High School Sports

- Lacrosse:
 - The Lacrosse Association presented information to the Student Achievement committee of the Board of Education on March 12, 2010, June 25, 2010, and February 6, 2011. The minutes of the March 12, 2010 also state that the BOE was approached about lacrosse becoming a high school sport three years previous to the March 12, 2010 meeting.
 - At the Student Achievement committee meetings on March 12, 2010 and June 25, 2010 the financial situation was discussed as well as Pay for Play. The superintendent reviewed the budget situation and that there were not funds to support the addition of lacrosse. No action was taken by the committee.
 - At the February 6, 2012 meeting of the Student Achievement committee, the Lacrosse Association presented information about the addition of lacrosse as a high school sport. The committee voted to bring lacrosse to the full Board for discussion.
- Gymnastics
 - Requests for a gymnastics program were discussed by the Student Achievement committee on September 19, 2008, October 14, 2008, October 2, 2009, December 4, 2009, and June 25, 2010.
 - Prior to 2008 and continuing in 2008, Bristol had one student compete as a Team of One with the Farmington High School team.
 - A Team of One is defined as up to three athletes from a town who compete with the team of another town when the sending town does not have a team of its own.
 - As of the October 14, 2008 meeting, there were four students from BCHS interested in competing as a Team of One; four students cannot be a Team of One because four students constitute a full team. There were not sufficient funds to add gymnastics as a sport.
 - On October 2, 2009, it was reported to the committee that there were three students from BCHS who wanted to participate in gymnastics and one or two students from BEHS who were interested in gymnastics. The committee voted to approve the formation of a gymnastics Team of One at both high schools for the 2009-2010 school year.

- Gymnastics was discussed at the December 4, 2009 meeting. Four students at BCHS and 8 students at BEHS expressed interest in gymnastics, which is higher than the number allowed for a Team of One. The committee directed the administration to contact parents and students at BC and BE and make a decision. If there were more than 5 students interested, the team would not run (five was the number that Southington High School was willing to have join their team.) A Team of One was established for the 2009-2010 school year.
- At the June 25, 2010 Student Achievement Committee meeting, the committee voted to not fund gymnastics and to not support the addition of any sport to the A-2 schedule for the 2010-2011 school year and to refer this policy to the full Board for the August meeting
- At the August 25, 2010 regular Board of Education meeting, the Board voted that the Team of One at BCHS be permitted to continue for students who previously participated or were originally interested and applied to participate in the 2008-2009 school year, which was the first year that the program was officially offered by the Bristol Board of Education. Additionally, the Board voted that when the participating students graduate or leave the district, the BCHS gymnastics team of one may be eliminated unless we get a financial windfall. (Note: the students are graduating at the end of the 2011-2012 school year.)
- Ice Hockey
 - In 2008, 2009, and 2010, interest was expressed by parents in a co-op team for ice hockey. At the regular meeting of the Board of Education on August 25, 2010, a parent requested approval of a co-op ice hockey team with Avon. Dr. Streifer reiterated the Board's financial constraints and the reasons behind maintaining existing programs and not supporting the addition of any new programs.

(2) What is a Lacrosse Co-Op Team?

The Lacrosse Association has proposed one co-op team for boys and one co-op team for girls at the high school level for the 2012-2013 school year. A co-op team is defined as one team comprised of students from more than one school. The rules for co-op teams per the CT Interscholastic Athletic Conference (CIAC) are listed below:

When forming a coop, each cooperating school may not have more than 16 interested students.

“When the CIAC believes that a cooperative arrangement will cause an unreasonable displacement of potential competitors from one of the schools, the request to form a cooperative will be denied. Schools having sufficient numbers of competitors are advised not to request the formation of a cooperative team in that sport.”

“When the number of potential participants in any school exceeds the limits listed below a cooperative team will not be approved.”

Lacrosse.....16

Q. “In light of the requirement that cooperative teams may not limit participation opportunities, must a no-cut policy be established for each cooperative team that is formed?”

A. “Yes”

The Lacrosse Association indicated that they have 28 high school boys and 18 high school girls currently in the program. For the boys, if the participants are evenly divided between BCHS and BEHS, that leaves two spots opened for other students at each school, who may want to participate before we exceed the number of 16. If there are more than 16 students at either school who want to participate on the lacrosse team, we would exceed the number of students allowed for a co-op team and would need to go directly to an individual school based team. Note that a lacrosse team has 10 players on the field at one time, including the goalie.

(3) Projected Growth and Costs for Lacrosse

Listed below is a summary of the costs to add lacrosse as a high school sport. This model assumes that the interest in the program would continue to grow necessitating the addition of teams. For a detailed breakdown of the costs, please refer to pages 7, 8 and 9.

2012-2013: Year 1 – Two Co-op teams – one boys team and one girls team

Equipment	\$15,498(with donated uniforms from Lacrosse Club)
Personnel	\$20,244
Transportation	\$5,760
Total with donated uniforms	\$41,502
Total with BOE purchase of uniforms	\$48,702

Start-up costs of \$14,408 plus yearly cost for two co-op teams of \$26,994 = \$41,502, if uniforms are donated by the Lacrosse Association. Yearly continuing cost for two co-op teams = \$26, 994.

2013-2014: Year 2

Anticipated growth in the program would necessitate a Varsity Lacrosse program for boys and girls at each high school. This totals four teams – 1 Varsity Boys and 1 Varsity Girls at BCHS and 1 Varsity Boys and 1 Varsity Girls at BEHS.

Equipment and uniforms	\$37,098
Personnel	\$40,504
Transportation	\$8,480
Totals	\$86,082

2014-2015: Year 3

Based on anticipated growth, we may need to add Junior Varsity teams at each high school. This results in 4 teams at each high school – two JV and two Varsity teams.

Equipment and uniform (additional needed)	\$17,420
Personnel	\$68,414
Transportation	\$8,480
Totals	\$94,314

On the following pages, please find:

- Comparison of year 1 costs – Bristol Lacrosse and Bristol Board of Education
- Description of the field situation
- Breakdown of the Year 1, Year 2, and Year 3 costs above – please refer to pages 8, 9, 10

Comparison of Costs Year 1

BRISTOL LACROSSE CLUB			BOARD OF EDUCATION		
First Year Budget			First Year Budget		
BUDGET- High School Boys and Girls		COSTS	BUDGET- High School Boys and Girls		COSTS
Co-op Teams for 2012-13			Co-op Teams for 2012-13		
PROJECTED START UP COSTS			PROJECTED START UP COSTS		
1. Uniforms (boys)		\$2,850	1. Uniforms (boys)		\$3,600
1. Home and Away (30 X\$95.00)			1. Home and Away (30 X \$120.00)		
2. Donated by Bristol Lacrosse Club					
2. Equipment (boys)		\$5,250	2. Equipment (boys)		\$5,450
			To include: shoulder pads (\$1200), arm pads (\$750), gloves (\$1200),		
			Sticks (\$1500) and complete goalie package (\$800))		
3. Helmets		\$3,750	3. Helmets		\$3,900
1. boys only (30X \$125.00)			1. Boys only (30 X \$130.00)		
TOTAL-BOYS		\$9,000	TOTAL BOYS		\$12,950
			Total boys without uniforms \$9350		
1. Uniforms (girls)		\$2,850	1. Uniforms (girls)		\$3,600
1. Home and Away (30 X\$95.00)			1. Home and Away (30 X \$120)		
2 Donated by Bristol Lacrosse Club					
2. Goggles		\$1,500	2. Goggles		\$1,500
1. girls only (30X\$50.00)			1. Girls only (30 X \$50)		
3. Equipment (girls)		\$1,050	3. Equipment (girls)		\$2,300
			To include: sticks, goalie package		
TOTAL GIRLS		\$2,250	TOTAL GIRLS		\$7,400
			Total girls without uniforms \$3,800		
Goals		\$1,050	Goals		
1. Donated by Bristol Lacrosse Club			1. one set for the boys		\$679
			2. one set for the girls		\$679
TOTAL all costs including uniforms & goals		\$18,750	TOTAL all costs including uniforms and goals		\$21,708
TOTAL 1ST YEAR COSTS		\$11,250	TOTAL 1st year costs after donation of uniforms from the Lacrosse Club		\$14,508
(after donation from Lacrosse Club)			Cannot accept donation of equipment		

Comparison of Costs Year 1

BRISTOL LACROSSE CLUB		BOARD OF EDUCATION		
Projected Yearly Costs (per team)		COSTS		
Boys and Girls Co-op Teams for 2012-13		BOYS		GIRLS
1. Coaches	\$7,274	1. Coaches	\$7,990	\$7,990
a. Head Coach	\$5,000	1. One Head Coach		
b. Assistant Coach	\$2,274			
2. Athletic Trainer	\$0	2. Athletic Trainer (will depend on practice times)	\$0	\$0
3. Insurance	\$0	3. Insurance (will depend on injurys)	\$0	\$0
4. Transportation	\$1,920	4. Transportation		
1. away games (8x\$200)		1. away games (8 X \$180-avaerage)	\$1,440	\$1,440
		2. home games for BC students (no field available at BC)		
		(8 X \$108.00- 3 hours)	\$864	\$864
		3. Daily transportation for BC students to practice-approx.	\$1,152	Shared with boys
5. Referees	\$1,400	5. Referees- 3 per game		
1. Home Games (8X\$175)		1. home games (8 X \$88.84)	\$2,132	\$2,132
6. Field Costs	\$0	6. Field Costs	\$0	0
7. Certification of Helmets (boys only)	\$1,000	7. Certification of helmets (\$25 each)	\$750	\$0
8. Supplies (balls, score books etc.)	\$500	8. Supplies (balls- 4dz per team)	\$120	\$120
Total per Team	\$12,094	Total per Team	\$14,448	\$12,546
TOTAL YEARLY COST FOR BOYS & GIRLS	\$23,188	TOTAL COST FOR YEAR 2012-13	\$26,994	

Summary - Projected Costs for Co-Op Teams	
High School Boys	\$12,094
High School Girls	\$11,094
First Year Start-Up	\$11,250
TOTAL	\$34,188
Total cost per year after	\$23,188

Summary - Projected Costs for Co-op Teams		
High School Boys	\$14,448	
High School Girls		\$12,546
First Year Start-Up	\$14,508	
TOTAL (without uniforms)	\$41,502	
Total with uniforms	\$48,702	
Total cost going forward staying as co-op teams	\$26,994	

(4) Fields

Lacrosse is played on a field that is 110 feet long by 53 1/2 to 60 feet wide.

There is one high school field available at Bristol Eastern High School in the spring.

2012-13

2 co-op teams (1 boys, 1 girls)

1 high school field at BE only / nothing at BC

2013-14

Possible Boys & Girls varsity program at each high school

4 teams

1 high school field at BE

2014-15

If we continue to grow

Possible addition of JV team

8 teams

1 high school field at BE

Detail of fields:

At **Bristol Eastern**, we have five (5) possible locations for a field 110 feet long by 54-60 feet wide. Four out of the five fields are already being used by a spring sport.

1. The stadium field, which is the football/soccer field located inside the running track, has multiple track events occurring around it and sometime on it as practice deems necessary. The high jump pit, including the approach and take-off pad along with the actual landing mats, sits at the end of the field. It would be dangerous to have lacrosse balls flying around with the number of student athletes using the track surface.
2. The practice football field is used by Outdoor Track and Field as the discus throw and javelin throw areas.
3. There is open space behind the building that overlaps the two baseball fields, which are being used by the baseball teams throughout the spring.
4. The boys' soccer field, which is on the right side of the driveway as you enter the school from King Street, is used by our softball team in the spring.
5. The girls' soccer field, which is to the left as you enter from King Street, is the only available field space at the school that is not being used by another spring varsity program at Bristol Eastern.

At **Bristol Central**, we have four locations where a field 110 feet by 54-60 feet could be found.

1. The stadium field is used by the track program for multiple events. In addition, the discus cage is located inside the track and this causes this field to be unusable for any other sport.
2. The practice football field is not long enough to fit a lacrosse field without infringing on the outfield of the softball field, which is being used by the varsity softball program.
3. The varsity soccer field is the field immediately visible as you drive down around the school to the back. It is completely engulfed by the varsity baseball field which is used in the spring by the varsity team.
4. The JV soccer field has the same issues as the varsity soccer field. Although there is enough room for a lacrosse field, this field is used and needed for both the JV and the freshman baseball team.

As you can see, there is no available space at Bristol Central to be designated a lacrosse field without disturbing another established varsity program.

So what do we do?

1. Bristol Eastern has one field available. One co-op, either the boys or girls can use that field for practice and/or home games. That leaves one field left to find.
2. Memorial Boulevard School has a field but it overlaps their baseball and softball field.
3. Chippens Hill Middle School has two soccer fields but according to the lacrosse club, they are not large enough for high school play.
4. Northeast Middle School has a soccer field in the back of their school that has the potential to become a lacrosse field. However this field is not maintained at the level that the high school fields are so additional monies may be needed for upkeep to ensure the safety of the athletes and to pass the officials' determination of field safety.
5. The new Greene Hills K-8 school will have a field large enough for a lacrosse game but at the expense of intramurals and/or middle school sports. The same would be true for the new West Bristol K-8 school. Although at West Bristol the field does not overlap the baseball and softball playing areas like at Greene Hills, it will still inhibit the space for intramurals for those students.
6. If a school site does not work out for a second field, we would have to investigate the possibilities of using a park field.

If the program grows and we have a varsity program for boys and girls at each school, three additional fields would be needed. Funds would also need to be budgeted for field maintenance (repair, mowing and lining).

DETAIL OF THE COSTS LISTED ON PAGE 2

YEAR ONE 2012-2013: Detail of the costs:

EQUIPMENT	QUANTITY	PRICE	BOYS	GIRLS	
Helmet	30	\$130	\$3,900		
Goggles	30	\$50		\$1,500	
Shoulder pads	30	\$40	\$1,200		
Arm pads	30	\$25	\$750		
Gloves	30	\$40	\$1,200	Optional	
Sticks	30/30	\$50	\$1,500	\$1,500	
Goalie equipment Throat protector, special stick, heavy duty gloves, chest protector, padded pants, shin guards (women only)	2/2	\$400	\$800	\$800	
Subtotal of equipment			\$5450 (not helmets)	\$3800	
Balls	4dz/4dz	\$30/dz	\$120	\$120	
Goals	2 sets	\$679/pr	\$679	\$679	
Game jerseys (home and away)	30/30	\$80 (40 each)	\$2,400	\$2,400	
Game shorts	30/30	\$40	\$1,200	\$1,200	
Reconditioning of helmets yearly	30	\$25	\$750		
Final Costs with helmets			\$14,499	\$8,199	
Minus cost of uniforms if donated by Lacrosse Asso.			- \$3,600	- \$3,600	
Adjusted Cost			\$10,899	\$4,599	\$15,498

PERSONNEL	QUANTITY	COST	BOYS	GIRLS	
Head Coach (based on the head soccer coach's salary for 12-13)	1 Boys 1 Girls	\$7,990.00	\$7,990.00	\$7,990.00	
Referees-8 home games, 3 officials assigned per game	24/24	\$88.84 each	\$2,132.16	\$2,132.16	
Final Total			\$10,122.16	\$10,122.16	\$20,244

TRANSPORTATION	QUANTITY	COST	BOYS	GIRLS	
Transportation- 8 away games	8/8	\$180.00 (average)	\$1,440.00	\$1,440.00	
Transportation – 8 home games for BC students	8/8	\$108	\$864.00	\$864.00	
Daily transportation to practice from Bristol Central (no field space available at the school) <ul style="list-style-type: none"> Possible 57 days of practice (start March 18, end May 23, allowed to practice 6 days/week). Subtract 16 game days (reflected in above chart). Leaves 41 practice days, minus Saturdays (9) =32 bus trips @ \$36.00 - \$1,152.00. Can be shared with boys and girls. 			\$1,152		
Final Totals			\$3,456	\$2,304	\$5760
Total Program Cost Year 1					\$41,502

YEAR TWO 2013-2014: Boys and Girls Varsity teams at each high school, which yields 4 teams

Varsity Teams at each high school	QUANTITY	COST	BOYS	GIRLS	
Head Coach (based on the head soccer coach's salary for 13-14)	2 Boys 2 Girls	\$7,990	\$15,980	\$15,980	
Referees-8 home games, 3 officials assigned per game	24 x2boys team 24x2girls teams	\$89 each	\$4,272	\$4,272	Personnel = \$40,504
Transportation- 8 away games	8 X 2 boys 8 X 2 girls	\$180.00 (average)	\$2,800	\$2,800	
Transportation – 8 home games for BC students	8 boys 8 girls	\$108.00	\$864	\$864	
Daily Transportation for practice for BC students			\$1,152		Transportation =\$8,480
Plus startup costs from page one- forming 2 new teams			\$14,499	\$8,199	
Another set of uniforms- set purchased in year one was for a coop. Each school and team will need their own identifying colors	2 set for boys (BE & BC) 2 set for girls (BE & BC)		\$7,200	\$7,200	Equipment and uniforms = \$37,098
		Totals	\$46,767	\$39,315	
Total Program Costs Year 2 for 2 Varsity teams at each school = 4 teams			\$86,082		

Year Three 2014-2015: Add JV teams at each high school = adding 4 more teams

JV Teams At each high school	QUANTITY	COST	BOYS	GIRLS	
Head Coach (based on the head coach salary for 14-15)	2 Boys 2 Girls	\$8,130	\$16,260	\$16,260	
JV Coach (based on the assistant soccer coach salary for 14-15)	2 Boys 2 Girls	\$5,894	\$11,788	\$11,788	
Referees-8 home games 3 referees per varsity games	8 varsity games Boys and girls (BE & BC)	\$89.89	\$4,315	\$4,315	Personnel = \$68,414
2 referees per JV games	8 JV games Boys and girls (BE & BC)	\$57.61	\$1,844	\$1,844	
Varsity Transportation for 8 away games Transportation shared with varsity for JV games	8 varsity games Boys and girls (BE & BC) 16/16	\$180 (average)	\$2,800	\$2,800	
Transportation – 8 home games for BC students	8 boys 8 girls	\$108	\$864	\$864	
Daily Transportation for practice for BC students			\$1,152		Transportation = \$8480
Another set of uniforms	16/16	\$100	\$1,600	\$1,600	
Equipment for additional 12 players plus 1 goalie	12		\$8,220	\$6,000	Equipment and uniforms = \$17,420
		Totals	\$48,843	\$45,471	
Total Program Costs for Year 3 with Varsity and JV at both schools = 8 teams			\$94,314		

NEW BCHS LEARNING EXPECTATIONS

- *Global Awareness and Civic Responsibility:*
 - Students will demonstrate an understanding of civic, environmental, and financial responsibility by employing skills necessary to be active and productive citizens.
- *Critical Thinking and Problem Solving:*
 - Students will solve problems through research, analysis, application, evaluation and creativity.
- *Communication:*
 - Students will use a variety of methods to communicate facts and ideas effectively in a clear and well-reasoned manner.
- *Collaboration:*
 - Students will be conscientious and respectful while working together in a variety of settings to achieve a common goal.
- *Media and Information Literacy:*
 - Students will use technology to access, evaluate, and apply appropriate information while participating in authentic learning experiences.
- *Life and Career Skills:*
 - Students will take initiative and personal responsibility for setting life and career goals and following through in an ethical and responsible manner.

STATEMENT OF BCHS's CORE VALUES AND BELIEFS (MISSION STATEMENT):

BCHS promotes an environment wherein all members of its community employ 21st century skills to become creative thinkers, conscientious problem-solvers, collaborative learners and committed citizens in a global society.

BCHS's NEW SCHOOL MOTTO:

Be Creative, Be Conscientious, Be Collaborative, Be Committed

The following draft statement of core values and beliefs was approved by the Bristol Central High School faculty. This statement was drafted by a committee of teachers, parents and students over the course of the semester. Also included are the new Bristol Central motto and expectations for student learning developed and agreed upon by the faculty.

DRAFT STATEMENT OF CORE VALUES AND BELIEFS (MISSION STATEMENT):

BCHS promotes an environment wherein all members of its community employ 21st century skills to become creative thinkers, conscientious problem-solvers, collaborative learners and committed citizens in a global society.

NEW BCHS LEARNING EXPECTATIONS

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OUR NEW SCHOOL MOTTO:

Be Creative, Be Conscientious, Be Collaborative, Be Committed

Teaching and Learning Standard

1

Core Values, Beliefs, and Learning Expectations

Effective schools identify core values and beliefs about learning that function as explicit foundational commitments to students and the community. Decision-making remains focused on and aligned with these critical commitments. Core values and beliefs manifest themselves in research-based, school-wide 21st century learning expectations. Every component of the school is driven by the core values and beliefs and supports all students' achievement of the school's learning expectations.

1. The school community engages in a dynamic, collaborative, and inclusive process informed by current research-based best practices to identify and commit to its core values and beliefs about learning.
2. The school has challenging and measurable 21st century learning expectations for all students which address academic, social, and civic competencies, and are defined by school-wide analytic rubrics that identify targeted high levels of achievement.
3. The school's core values, beliefs, and 21st century learning expectations are actively reflected in the culture of the school, drive curriculum, instruction, and assessment in every classroom, and guide the school's policies, procedures, decisions, and resource allocations.
4. The school regularly reviews and revises its core values, beliefs, and 21st century learning expectations based on research, multiple data sources, as well as district and school community priorities.

2**Curriculum**

The written and taught curriculum is designed to result in all students achieving the school's 21st century expectations for student learning. The written curriculum is the framework within which a school aligns and personalizes the school's 21st century learning expectations. The curriculum includes a purposefully designed set of course offerings, co-curricular programs, and other learning opportunities. The curriculum reflects the school's core values, beliefs, and learning expectations. The curriculum is collaboratively developed, implemented, reviewed, and revised based on analysis of student performance and current research.

1. The curriculum is purposefully designed to ensure that all students practice and achieve each of the school's 21st century learning expectations.
2. The curriculum is written in a common format that includes:
 - units of study with essential questions, concepts, content, and skills
 - the school's 21st century learning expectations
 - instructional strategies
 - assessment practices that include the use of school-wide analytic and course-specific rubrics.
3. The curriculum emphasizes depth of understanding and application of knowledge through:
 - inquiry and problem-solving
 - higher order thinking
 - cross-disciplinary learning
 - authentic learning opportunities both in and out of school
 - informed and ethical use of technology.
4. There is clear alignment between the written and taught curriculum.
5. Effective curricular coordination and vertical articulation exist between and among all academic areas within the school as well as with sending schools in the district.
6. Staffing levels, instructional materials, technology, equipment, supplies, facilities, and the resources of the library/media center are sufficient to fully implement the curriculum, including the co-curricular programs and other learning opportunities.
7. The district provides the school's professional staff with sufficient personnel, time, and financial resources for ongoing and collaborative development, evaluation, and revision of the curriculum using assessment results and current research.

3

Instruction

The quality of instruction is the single most important factor in students' achievement of the school's 21st century learning expectations. Instruction is responsive to student needs, deliberate in its design and delivery, and grounded in the school's core values, beliefs, and learning expectations. Instruction is supported by research in best practices. Teachers are reflective and collaborative about their instructional strategies and collaborative with their colleagues to improve student learning.

1. Teachers' instructional practices are continuously examined to ensure consistency with the school's core values, beliefs, and 21st century learning expectations.
2. Teachers' instructional practices support the achievement of the school's 21st century learning expectations by:
 - personalizing instruction
 - engaging students in cross-disciplinary learning
 - engaging students as active and self-directed learners
 - emphasizing inquiry, problem-solving, and higher order thinking
 - applying knowledge and skills to authentic tasks
 - engaging students in self-assessment and reflection
 - integrating technology.
3. Teachers adjust their instructional practices to meet the needs of each student by:
 - using formative assessment, especially during instructional time
 - strategically differentiating
 - purposefully organizing group learning activities
 - providing additional support and alternative strategies within the regular classroom.
4. Teachers, individually and collaboratively, improve their instructional practices by:
 - using student achievement data from a variety of formative and summative assessments
 - examining student work
 - using feedback from a variety of sources, including students, other teachers, supervisors, and parents
 - examining current research
 - engaging in professional discourse focused on instructional practice.
5. Teachers, as adult learners and reflective practitioners, maintain expertise in their content area and in content-specific instructional practices.

Teaching and Learning Standard

4

Assessment of and for Student Learning

Assessment informs students and stakeholders of progress and growth toward meeting the school's 21st century learning expectations. Assessment results are shared and discussed on a regular basis to improve student learning. Assessment results inform teachers about student achievement in order to adjust curriculum and instruction.

1. The professional staff continuously employs a formal process, based on school-wide rubrics, to assess whole-school and individual student progress in achieving the school's 21st century learning expectations.
2. The school's professional staff communicates:
 - individual student progress in achieving the school's 21st century learning expectations to students and their families
 - the school's progress in achieving the school's 21st century learning expectations to the school community.
3. Professional staff collects, disaggregates, and analyzes data to identify and respond to inequities in student achievement.
4. Prior to each unit of study, teachers communicate to students the school's applicable 21st century learning expectations and related unit-specific learning goals to be assessed.
5. Prior to summative assessments, teachers provide students with the corresponding rubrics.
6. In each unit of study, teachers employ a range of assessment strategies, including formative and summative assessments.
7. Teachers collaborate regularly in formal ways on the creation, analysis, and revision of formative and summative assessments, including common assessments.
8. Teachers provide specific, timely, and corrective feedback to ensure students revise and improve their work.
9. Teachers regularly use formative assessment to inform and adapt their instruction for the purpose of improving student learning.
10. Teachers and administrators, individually and collaboratively, examine a range of evidence of student learning for the purpose of revising curriculum and improving instructional practice, including all of the following:
 - student work
 - common course and common grade-level assessments
 - individual and school-wide progress in achieving the school's 21st century learning expectations
 - standardized assessments
 - data from sending schools, receiving schools, and post-secondary institutions
 - survey data from current students and alumni.
11. Grading and reporting practices are regularly reviewed and revised to ensure alignment with the school's core values and beliefs about learning.

5

School Culture and Leadership

The school culture is equitable and inclusive, and it embodies the school's foundational core values and beliefs about student learning. It is characterized by reflective, collaborative, and constructive dialogue about research-based practices that support high expectations for the learning of all students. The leadership of the school fosters a safe, positive culture by promoting learning, cultivating shared leadership, and engaging all members of the school community in efforts to improve teaching and learning.

1. The school community consciously and continuously builds a safe, positive, respectful, and supportive culture that fosters student responsibility for learning and results in shared ownership, pride, and high expectations for all.
2. The school is equitable, inclusive, and fosters heterogeneity where every student over the course of the high school experience is enrolled in a minimum of one heterogeneously grouped core course (English/language arts, social studies, math, science, or world languages).
3. There is a formal, ongoing program through which each student has an adult in the school, in addition to the school counselor, who knows the student well and assists the student in achieving the school's 21st century learning expectations.
4. In order to improve student learning through professional development, the principal and professional staff:
 - engage in professional discourse for reflection, inquiry, and analysis of teaching and learning
 - use resources outside of the school to maintain currency with best practices
 - dedicate formal time to implement professional development
 - apply the skills, practices, and ideas gained in order to improve curriculum, instruction, and assessment.
5. School leaders regularly use research-based evaluation and supervision processes that focus on improved student learning.
6. The organization of time supports research-based instruction, professional collaboration among teachers, and the learning needs of all students.
7. Student load and class size enable teachers to meet the learning needs of individual students.
8. The principal, working with other building leaders, provides instructional leadership that is rooted in the school's core values, beliefs, and learning expectations.
9. Teachers, students, and parents are involved in meaningful and defined roles in decision-making that promote responsibility and ownership.
10. Teachers exercise initiative and leadership essential to the improvement of the school and to increase students' engagement in learning.
11. The school board, superintendent, and principal are collaborative, reflective, and constructive in achieving the school's 21st century learning expectations.
12. The school board and superintendent provide the principal with sufficient decision-making authority to lead the school.

6

School Resources for Learning

Student learning and well-being are dependent upon adequate and appropriate support. The school is responsible for providing an effective range of coordinated programs and services. These resources enhance and improve student learning and well-being and support the school's core values and beliefs. Student support services enable each student to achieve the school's 21st century learning expectations.

1. The school has timely, coordinated, and directive intervention strategies for all students, including identified and at-risk students, that support each student's achievement of the school's 21st century learning expectations.
2. The school provides information to families, especially to those most in need, about available student support services.
3. Support services staff use technology to deliver an effective range of coordinated services for each student.
4. School counseling services have an adequate number of certified/licensed personnel and support staff who:
 - deliver a written, developmental program
 - meet regularly with students to provide personal, academic, career, and college counseling
 - engage in individual and group meetings with all students
 - deliver collaborative outreach and referral to community and area mental health agencies and social service providers
 - use ongoing, relevant assessment data, including feedback from the school community, to improve services and ensure each student achieves the school's 21st century learning expectations.
5. The school's health services have an adequate number of certified/licensed personnel and support staff who:
 - provide preventative health services and direct intervention services
 - use an appropriate referral process
 - conduct ongoing student health assessments
 - use ongoing, relevant assessment data, including feedback from the school community, to improve services and ensure each student achieves the school's 21st century learning expectations.
6. Library/media services are integrated into curriculum and instructional practices and have an adequate number of certified/licensed personnel and support staff who:
 - are actively engaged in the implementation of the school's curriculum
 - provide a wide range of materials, technologies, and other information services in support of the school's curriculum
 - ensure that the facility is available and staffed for students and teachers before, during, and after school
 - are responsive to students' interests and needs in order to support independent learning
 - conduct ongoing assessment using relevant data, including feedback from the school community, to improve services and ensure each student achieves the school's 21st century learning expectations.

7. Support services for identified students, including special education, Section 504 of the ADA, and English language learners, have an adequate number of certified/licensed personnel and support staff who:
- collaborate with all teachers, counselors, targeted services, and other support staff in order to achieve the school's 21st century learning expectations
 - provide inclusive learning opportunities for all students
 - perform ongoing assessment using relevant data, including feedback from the school community, to improve services and ensure each student achieves the school's 21st century learning expectations.



Community Resources for Learning

The achievement of the school's 21st century learning expectations requires active community, governing board, and parent advocacy. Through dependable and adequate funding, the community provides the personnel, resources, and facilities to support the delivery of curriculum, instruction, programs, and services.

1. The community and the district's governing body provide dependable funding for:
 - a wide range of school programs and services
 - sufficient professional and support staff
 - ongoing professional development and curriculum revision
 - a full range of technology support
 - sufficient equipment
 - sufficient instructional materials and supplies.
2. The school develops, plans, and funds programs:
 - to ensure the maintenance and repair of the building and school plant
 - to properly maintain, catalogue, and replace equipment
 - to keep the school clean on a daily basis.
3. The community funds and the school implements a long-range plan that addresses:
 - programs and services
 - enrollment changes and staffing needs
 - facility needs
 - technology
 - capital improvements.
4. Faculty and building administrators are actively involved in the development and implementation of the budget.
5. The school site and plant support the delivery of high quality school programs and services.
6. The school maintains documentation that the physical plant and facilities meet all applicable federal and state laws and are in compliance with local fire, health, and safety regulations.
7. All professional staff actively engage parents and families as partners in each student's education and reach out specifically to those families who have been less connected with the school.
8. The school develops productive parent, community, business, and higher education partnerships that support student learning.

Non-Instructional Operations

Purposes and Facilities: Food Service

The school lunch program shall be an integral part of the total educational program. An attractive, wholesome, well-balanced lunch is essential for the best work from the students.

To accomplish this objective with appropriate economy, all administration of the food services program will be coordinated in the office of the Superintendent or his/her designee. Business functions to be centralized will include central purchasing of food and supplies, a district-wide salary schedule for all food service employees, centrally planned menus, and regular audit of all accounts.

The educational aspects of the school lunch program will be the responsibility of each school Principal, subject to advice, counsel and direction from the Superintendent of Schools.

Legal Reference: Connecticut General Statutes

10-215 Lunches, breakfasts and other feeding programs for public school children and employees.

State Board of Education Regulations

10-215b-1 School lunch and nutrition programs.

Policy adopted: July 6, 1994

BRISTOL PUBLIC SCHOOLS
Bristol, Connecticut

Non-Instructional Operations

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The school Food Service program shall be an integral part of the total educational program. Attractive, wholesome, well-balanced meals are essential for the best work from the students.

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10-215 Lunches, breakfasts and other feeding programs
for public school children and employees.

State Board of Education Regulations

10-215b-1 Child Nutrition programs.

Policy Adopted: July 6, 1994
Policy Revised:

BRISTOL PUBLIC SCHOOLS
Bristol, Connecticut

Non-Instructional Operations

Free Food Service

According to state law, a Board of Education which offers a school lunch program shall also participate in the provisions of the National School Lunch Act in providing free or reduced price lunches to students whose economic or health needs so require.

The Bristol Board of Education shall participate in conformity with state and federal regulations.

Legal Reference: Connecticut General Statutes

10-215 Lunches, breakfasts and the feeding programs for public school children and employees.

10-215a Non-public school participation in feeding program.

10-215b Duties of state board of education re feeding programs.

10-216 Payment of expenses.

State Board of Education Regulation

10-215b-1 School lunch and nutrition programs

Non-Instructional Operations

Free Food Service

General Regulation Applicable in All Districts

Regulations for participation in the National School Lunch Program include:

1. Following the established criteria for determining eligibility;
2. Naming one staff member within each school as the official to determine eligibility;
3. Making applications for free or reduced price meals available to parents, interested community groups, and agencies, and initiating applications for children when this need has not been met by parents or others;
4. Providing parents or others with means of appeal when an application has been denied;
5. Conducting appeal hearings in the manner set forth by state regulations;
6. Using one of the methods recommended by the State Department of Education for collecting lunch payments from all paying students, in order to protect the anonymity of the students receiving a free or reduced price meal;
7. Protecting from public view and announcement the names of students who are receiving, or who have applied for, free or reduced price meals;
8. Publicly announcing, however, the availability of, and general eligibility requirements for, the free/reduced price lunch program by September 15 of each school year, along with the procedure for making application;
9. Informing all local governmental welfare and other major charitable agencies of the full state regulations and local procedures;
10. Submitting to the Food Program Administration of the State Department of Education all reports and exhibits specified in the regulations.

Non-Instructional Operations

Free Food Service

National School Lunch Program regulations require that lunches be provided for needy students when family income is insufficient to provide the basic necessities, including food of the proper quality and amount for good nutrition.

Parents shall be informed of the district policy concerning "Meals for Needy Children." A letter and application form will be distributed to all parents during the first few weeks of school. The letter will contain information on the eligibility standards, procedures for applying for free "Meals for Needy Children," and how an appeal may be filed for an adjustment in the decision with respect to the application. This information and an application form will also be provided whenever a new student is enrolled.

A public news release containing this same information will be made available to local news representatives early in the school year. Copies of this public release will be made available upon request to any interested party. Subsequent changes in the district eligibility standards during the school year, which are approved by the state agency, will also be publicly announced.

1. Free or reduced price lunches and/or supplementary milk will be provided for all students who qualify on the basis of financial need. Breakfast snacks may be provided in cases of extreme nutritional deficiency.
2. There shall be no discrimination in the furnishings of meals or supplementary milk because of race, religion, source of income, etc.
3. The anonymity of students receiving assistance under this policy shall be protected. The names of these students will be treated in a confidential manner. They will use the same tickets for milk and lunch and will obtain these items in the same manner and place as do other children.
4. Requests for free lunches, reduced price lunches, and/or supplementary milk which have been denied may be appealed to the Superintendent.
5. Records of students receiving assistance will be kept in each school. A monthly report will be submitted to the district office where records for audit purposes will be maintained.

6. Eligibility for the "Meals for Needy Children" program will be based on the following:
 - A. Emergency Situations

A child's statement of need is sufficient for providing assistance on a temporary basis. A family contact should be made immediately to determine extent and probable duration of need. In cases of family emergency such as sudden unemployment, illness, death, desertion, etc., assistance will be provided as needed.
 - B. Objective Standards of Need

Eligibility for assistance, other than for emergency situations, will be determined on the basis of income and family size as indicated on the scale provided by the district.
 - C. Priority to Neediest Families

If it is not possible for the district to meet all requests for free or reduced price meals, priority shall be given to those children from families whose income is lowest on the scale regardless of source of income.
7. If school authorities feel that a family's financial situation has changed, and the students are no longer eligible for free meals, a hearing procedure will be used by the Superintendent to challenge the continued eligibility. In the event of such a challenge, the family will be given a reasonable period of time in advance of the hearing to review the information on which the challenge is based. Children will continue to receive free meals until the conclusion of the hearing.

Legal Reference: (see next page)

**Non-Instructional Operations
Free and Reduced Price Lunches**

Legal Reference: Connecticut General Statutes

10-215 Lunches, breakfasts and the feeding programs for public school children and employees.

10-215a Non-public school participation in feeding program.

10-215b Duties of state board of education re feeding programs. 10-216 Payment of expenses.

State Board of Education Regulation

10-215b-1 School lunch and nutrition programs.

Regulation Approved:

July 6, 1994

BRISTOL PUBLIC SCHOOLS
Bristol, Connecticut

Non-Instructional Operations

Free Food Service

According to state law, a Board of Education which offers a school lunch program shall also participate in the provisions of the National School Lunch Act in providing free or reduced price lunches to students whose economic or health needs so require.

The Bristol Board of Education shall participate in conformity with state and federal regulations.

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10-216 Payment of expenses.

State Board of Education Regulation

10-215b-1 School lunch and nutrition programs

Policy Adopted: July 6, 1994

BRISTOL PUBLIC SCHOOLS
Bristol, Connecticut

REVISED

Non-Instructional Operations

Free Food Service

General Regulation Applicable in All Districts

Regulations for participation in the National School Lunch Program include:

1. Following the established criteria for determining eligibility;
2. The Food Service Director shall function as the official to determine eligibility;
3. Making applications for free or reduced price meals available to parents, interested community groups, and agencies, and initiating applications for children when this need has not been met by parents or others;
4. Providing parents or others with means of appeal when an application has been denied;
5. Conducting appeal hearings in the manner set forth by state regulations;
6. Using one of the methods recommended by the State Department of Education for collecting lunch payments from all paying students, in order to protect the anonymity of the students receiving a free or reduced price meal;
7. Protecting from public view and announcement the names of students who are receiving, or who have applied for, free or reduced price meals;
8. Publicly announcing, however, the availability of, and general eligibility requirements for, the free/reduced price lunch program by September 15 of each school year, along with the procedure for making application;
9. Informing all local governmental welfare and other major charitable agencies of the full state regulations and local procedures;
10. Submitting to the Child Nutrition Program of the State Department of Education all reports and exhibits specified in the regulations.

Non-Instructional Operations

Free Food Service

National School Lunch Program regulations require that meals be provided for needy students when family income is insufficient to provide the basic necessities, including food of the proper quality and amount for good nutrition.

Parents shall be informed of the district policy concerning "Free or Reduced Priced Meals." A letter and application form will be distributed to all parents during the first few weeks of school. The letter will contain information on the eligibility standards, procedures for applying for "Free or Reduced Priced Meals" and how an appeal may be filed for an adjustment in the decision with respect to the application. This information and an application form will also be provided whenever a new student is enrolled. This information will also be posted on the Board of Education's website.

A public news release containing this same information will be made available to local news representatives early in the school year. Copies of this public release will be made available upon request to any interested party. Subsequent changes in the district eligibility standards during the school year, which are approved by the state agency, will also be publicly announced.

1. Free or reduced priced meals and milk will be provided for all students who qualify on the basis of financial need. Breakfast snacks may be provided in cases of extreme nutritional deficiency.
2. There shall be no discrimination in the furnishings of meals or supplementary milk because of race, religion, source of income, etc.
3. The anonymity of students receiving assistance under this policy shall be protected. The names of these students will be treated in a confidential manner. They will use the same tickets for milk and lunch and will obtain these items in the same manner and place as do other children.
4. Requests for free lunches, reduced price lunches, and/or supplementary milk which have been denied may be appealed to the Superintendent.
5. Records of students receiving assistance will be kept in the Food Service Central Office. A monthly report will be submitted to the district office where records for audit purposes will be maintained.

**Regulation
3542.31(c)**

6. Eligibility for the "Free or Reduced Priced Meals" program will be based on the U.S. Department of Agriculture Guidelines supplied annually.
7. If school authorities feel that a family's financial situation has changed, and the students are no longer eligible for free meals, a verification compliance order will be issued by the determining official to challenge the continued eligibility. In the event of such a challenge, the family will be given a reasonable period of time in advance of the hearing to review the information on which the challenge is based. Children will continue to receive free meals until the conclusion of the hearing.

Legal Reference: Connecticut General Statutes

10-215 Lunches, breakfasts and the feeding programs for public school children and employees.

10-215a Non-public school participation in feeding program.

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State Board of Education Regulation

10-215b-1 School lunch and nutrition programs.

Regulation Approved: July 6, 1994
Regulation Revised:

BRISTOL PUBLIC SCHOOLS
Bristol, Connecticut



Bristol Public Schools Office of Teaching & Learning

DEPARTMENT: Mathematics

COURSE: AP Calculus AB/BC

COURSE DESCRIPTION

Calculus AB/BC is a full-year course in the calculus of functions of a single variable. It includes all topics taught in Calculus AB including analytic geometry, functions, derivatives of algebraic, trigonometric, transcendental, hyperbolic functions, and various methods of integration. Applications of the derivative and integral are also covered leading to the fundamental theorem of Integral Calculus. The additional topics include parametric, polar, and vector functions, applications of derivatives including L'Hospital's Rule, applications of integrals, antidifferentiation of improper integrals, polynomial approximations and series. The content of Calculus BC is designed to qualify the student for placement and credit in a course that is one course beyond that granted for Calculus AB (freshman Calculus). Students taking this course are expected to take the AP test in the spring in order to seek college placement, college credit or both.

COURSE GOALS

The goals listed below are set by the College Board for AP Calculus AB/BC. Students should be able to:

- work with functions represented in a variety of ways: graphical, numerical, analytical or verbal. They should understand the connections among these representations.
- understand the meaning of the derivative in terms of a rate of change and local linear approximation and should be able to use derivatives to solve a variety of problems.
- understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change and should be able to use integrals to solve a variety of problems.
- understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- communicate mathematics and explain solutions to problems both verbally and in written sentences.
- model a written description of a physical situation with a function, a differential equation or an integral.
- use technology to help solve problems, experiment, interpret results and support conclusions.
- determine the reasonableness of solutions, including sign, size, relative accuracy and units of measurement.
- develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

DEPARTMENT PHILOSOPHY

The philosophy of the mathematics department is to develop mathematically literate and productive students who can effectively and efficiently apply mathematics in their lives to make informed decisions about the world around them. To be mathematically literate, one must understand major mathematics concepts, possess computational facility and have the ability to apply these understandings to situations in daily life. Making connections between mathematics and other disciplines is key to the appropriate application of mathematics skills and concepts to solve problems. The ability to read, discuss and write within the discipline of mathematics is an integral skill that supports mathematical understanding, reasoning and communication. The opportunity to think critically and creatively to solve problems is important to deepen mathematical knowledge and foster innovation. A rich mathematical experience is essential to provide the foundational knowledge and skills that prepare students to be mathematically literate, productive citizens.

The Bristol mathematics curriculum focuses on high expectations for **all** students and provides a balanced approach to mathematics education, placing equal importance on conceptual understanding, computational and procedural fluency and problem solving through the use of a variety of strategies, tools and technologies. The mathematics curriculum is responsive to the individual needs of students. While providing a structure tied to the Common Core State Standards in Connecticut, it allows for classroom experiences, additional supports and enrichment ensuring students' access to the content at an appropriate level of challenge.

DEPARTMENT GOALS

Through a planned, sequential curriculum, Bristol Public schools strives to educate each student in conjunction with the Common Core State Standards in Connecticut. In addition, teachers will support students in developing the following mathematical practices¹:

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

¹ The mathematical practices listed are those found in the Common Core State Standards in Connecticut.

PHILOSOPHY OF INSTRUCTION

Based on our department philosophy and goals, math teachers will:

- provide a safe, supportive and respectful classroom environment conducive to learning, where students are encouraged to take risks and share ideas;
- have a deep understanding of the mathematical concepts and skills in the curriculum and strong pedagogical content knowledge;
- use the BOE approved textbook and a variety of resources to have students read about, explore and reinforce curriculum concepts and skills;
- build upon students' prior knowledge and experience, and real-world events, to foster connections and make learning relevant and meaningful;
- provide students with developmentally appropriate opportunities to question, explore, observe, synthesize and draw conclusions based on their mathematics understanding;
- use high-level questions and rich tasks to facilitate classroom discourse, both oral and written, to encourage student-student, student-teacher and teacher-student communication;
- incorporate and highlight key mathematical vocabulary during instruction and require students to use this vocabulary appropriately in their communications;
- model and have students use manipulatives, tools and technology to actively explore and build understanding of mathematical concepts;
- structure learning experiences that utilize a variety of grouping strategies to encourage collaborative problem solving; and
- differentiate instruction to meet the needs of a variety of learners based on student readiness, interest, and learning style and provide supplemental mathematics intervention or enrichment as needed.

Note: The instructional strategies recommended in our resource document are specific examples of these expectations in practice. They serve as a starting point for planning and implementing instruction that will develop our students as thinkers. Teachers may create new instructional strategies and activities as they continue to grow professionally and as they develop an understanding of each student's unique strengths, weaknesses, and interests.

PHILOSOPHY OF ASSESSMENT

Based on our department philosophy and goals, math teachers will:

- align assessments with instruction;
- use a variety of formative and summative assessment throughout each unit of instruction;
- design and use assessments that include questions at varied levels of cognitive demand;
- analyze results and plan or modify instruction based on the results;
- provide specific, constructive feedback for students; and
- collaborate with colleagues and use scoring rubrics to evaluate student work as appropriate.

Unit 1 – Limits

College Board Topics

I. Functions, Graphs and Limits

Analysis of graphs. With the aid of technology, graphs of functions are often easy to produce. The emphasis is on the interplay between the geometric and analytic information and on the use of calculus both to predict and to explain the observed local and global behavior of a function.

Limits of functions (including one-sided limits)

- An intuitive understanding of the limiting process.
- Calculating limits using algebra.
- Estimating limits from graphs or tables of data.

Asymptotic and unbounded behavior

- Understanding asymptotes in terms of graphical behavior.
- Describing asymptotic behavior in terms of limits involving infinity.
- Comparing relative magnitudes of functions and their rates of change (for example, contrasting exponential growth, polynomial growth and logarithmic growth).

Continuity as a property of functions

- An intuitive understanding of continuity. (The function values can be made as close as desired by taking sufficiently close values of the domain.)
- Understanding continuity in terms of limits.
- Geometric understanding of graphs of continuous functions (Intermediate Value Theorem and Extreme Value Theorem).

Big Ideas

Student's statements of enduring ideas

1. The concept of the limit is essential to the development of the derivative and the integral.
2. Limits can be determined algebraically, graphically, or by using a table.
3. Limits can give information about the behavior of a function, including local values, discontinuities and asymptotes.

Essential Questions

Teacher's guiding questions

1. How are limits, derivatives and integrals related?
2. What are the methods used to determine limits?
3. What do limits tell us about functions?

Unit 1 – Limits

Essential Question	Learning Objectives The students will be able to:	Instructional Strategies Based on our department philosophy for student learning, mathematics teachers will:	Assessments/Common Learning Experiences Through these assessments/experiences, students will demonstrate mastery of the learning objectives. Teachers will assess and provide feedback to students about the following:
How are limits, derivatives and integrals related?	a. Understand the concept of a limit as the value that a function approaches.	<p>Discuss the importance of limits in the development of the derivative (slope of a tangent line) and the integral (area under a curve).</p> <p>Have students investigate numerically and graphically.</p> <p>Ensure students understand that limits may not exist.</p> <p>Explore the formal definition of the limit (epsilon/delta).</p>	<p>Evaluate the limits of functions numerically using a calculator.</p> <p>Determine limits of functions at various points from graphs.</p> <p>Formative assessments to determine student understanding, (e.g., homework, journal prompts, exit tickets, AP practice)</p>
What are the methods used to determine limits?	b. Calculate limits using various methods.	<p>Walk through examples of substitution, cancel a common term, create and cancel.</p> <p>Be sure to include limits as x approaches infinity.</p>	Calculate limits using the various methods given a variety of problem types.
What do limits tell us about functions?	<p>c. Describe the properties of continuous functions.</p> <p>d. Identify locations of potential discontinuity.</p> <p>e. Construct a piecewise function that is continuous.</p> <p>f. Understand and apply the Intermediate Value Theorem (IVT)</p>	<p>Show the formal definition of continuity (limit equals the value) and explain the simple concept to encourage mathematical literacy.</p> <p>Show solutions to released AP questions related to continuity to acclimate students to AP questions and acceptable solutions.</p>	<p>Compare and contrast functions that</p> <ul style="list-style-type: none"> • have no limit • have a limit but are discontinuous • are continuous <p>at a specified point.</p> <p>Explain the IVT using words and sketches.</p> <p>Sketch a possible corresponding graph given a limit prescription.</p> <p>Complete an AP-like assessment, having both a calculator active and non-calculator component.</p>

Unit 2 - Derivatives

College Board Topics

II. Derivatives**Concept of the derivative**

- Derivative presented graphically, numerically and analytically.
- Derivative interpreted as an instantaneous rate of change.
- Derivative defined as the limit of the difference quotient.
- Relationship between differentiability and continuity.

Derivative at a point

- Slope of a curve at a point. Examples are emphasized, including points at which there are vertical tangents and points at which there are no tangents.
- Tangent line to a curve at a point and local linear approximation.
- Instantaneous rate of change as the limit of average rate of change.
- Approximate rate of change from graphs and tables of values.

Derivative as a function

- Corresponding characteristics of graphs of f and f' .
- Relationship between the increasing and decreasing behavior of f and the sign of f' .
- The Mean Value Theorem and its geometric interpretation.
- Equations involving derivatives. Verbal descriptions are translated into equations involving derivatives and vice versa.

Second derivatives

- Corresponding characteristics of the graphs of f , f' and f'' .
- Relationship between the concavity of f and the sign of f'' .
- Points of inflection as places where concavity changes.

Applications of derivatives

- Analysis of curves, including the notions of monotonicity and concavity.
- + Analysis of planar curves given in parametric form, polar form and vector form, including velocity and acceleration.
- Optimization, both absolute (global) and relative (local) extrema.
- Modeling rates of change, including related rates problems.
- Use of implicit differentiation to find the derivative of an inverse function.
- Interpretation of the derivative as a rate of change in varied applied contexts, including velocity, speed and acceleration.
- Geometric interpretation of differential equations via slope fields and the relationship between slope fields and solution curves for differential equations.
- + Numerical solution of differential equations using Euler's method.
- + L'Hospital's Rule, including its use in determining limits and convergence of improper integrals and series.

Computation of derivatives

- Knowledge of derivatives of basic functions, including power, exponential, logarithmic, trigonometric and inverse trigonometric functions.
- Derivative rules for sums, products and quotients of functions.
- Chain rule and implicit differentiation.
- + Derivatives of parametric, polar and vector functions.

*An * or + indicates additional topics beyond AP Calculus AB*

Unit 2 - Derivatives

Big Ideas

Student's statements of enduring ideas

1. Using limits of the difference quotient, it is possible to calculate the instantaneous rate of change/slope of tangent line.
2. You can derive a variety of limit-based shortcuts for the practical calculation of derivatives.
3. Using the characteristics of first and second derivatives, one can sketch and analyze the slope and concavity of a curve.
4. Using derivatives, one can model real-life behavior such as optimization and motion.
5. A tangent line can be used to approximate the value of a function.

Essential Questions

Teacher's guiding questions

1. How can you calculate instantaneous rates of change?
2. Is there a more practical way to determine a derivative than the formal limit process?
3. What does a derivative tell you about a curve?
4. Beyond mathematical analysis, how are derivatives used?
5. How do you approximate a function value using derivatives?

Essential Question	Learning Objectives The students will be able to:	Instructional Strategies Based on our department philosophy for student learning, mathematics teachers will:	Assessments/Common Learning Experiences Through these assessments/experiences, students will demonstrate mastery of the learning objectives. Teachers will assess and provide feedback to students about the following:
How can you calculate instantaneous rates of change?	a. Understand the derivative as the limit of the difference quotient	<p>Have students calculate the slope of secants as the denominator gets smaller. Demonstrate using dynamic software how the secant looks like a tangent as Δx gets really small, then discuss local linearity through zooming in. Use the Earth as an example.</p> <p>Discuss the relationship between continuity and differentiability.</p> <p>Investigate graphs where functions are not differentiable.</p> <p>Give students AP practice questions related to the definition of a derivative.</p>	<p>Explain the formal definition of the derivative</p> <p>Calculate the derivative at a point using the definition of the derivative</p> <p>AP questions related to the definition of the derivative</p> <p>Formative assessments to determine student understanding, (e.g., homework, journal prompts, exit tickets, AP practice)</p>

Unit 2 - Derivatives			
Is there a more practical way to determine a derivative than the formal limit process?	b. Calculate derivatives using the rules of differentiation.	Demonstrate how the rules are grounded in the definition of the derivative.	Solve a wide variety of problems that cover all differentiation methods, including: <ul style="list-style-type: none"> • Algebraic • Trigonometric • Exponential • Logarithmic • Inverse • Product and quotient rules • Chain rule • Implicit • Higher order derivatives
Is there a more practical way to determine a derivative than the formal limit process?	c. Find the instantaneous slope at a point using the rules.	Model the use of the rules to find derivative of various functions. Cycle through the various methods/problem types throughout the year.	
Is there a more practical way to determine a derivative than the formal limit process?	d. Find the equation of a tangent line.	Stress that the derivative is the slope at the given point.	
How can you calculate instantaneous rates of change?	e. Approximate rate of change from graphs and tables of values.	Use a sketch to show how the slope of the nearest secant approximates the slope of the tangent.	
What does a derivative tell you about a curve?	f. Use derivatives to calculate and graph slope and concavity of curves.	Model how to sketch a function from the graph of the derivative and vice versa and how to sketch a curve from information about f , f' and f'' .	
What does a derivative tell you about a curve?	g. Analyze the geometric and practical consequences of the Mean Value Theorem	Use sketches to demonstrate how the MVT must hold true if differentiable, and show how it doesn't hold true if not differentiable.	Complete an AP-like assessment, having both a calculator active and non-calculator component.
What does a derivative tell you about a curve?	h. Find the local and global extrema of a function.	Give students a set of curves, and have them brainstorm to determine where global extrema may exist (endpoints, critical values).	

Unit 2 - Derivatives			
How do you approximate a function value using derivatives?	i. Use linear approximation to estimate the value of a function and explain if it is an over- or under-estimate.	Show students how to use f'' to determine if the value is an over- or under-estimate.	Design your own optimization problem (land vs. water, lifeguard rescue, pipe laying, etc.)** Calculate derivatives and interpret their meaning for polar and parametric curves.
Beyond mathematical analysis, how are derivatives used?	j. Model rates of change, including related rates, optimization, particle motion, etc.	Model problem solving strategies and how to recognize different types of problems.	
Beyond mathematical analysis, how are derivatives used?	k. Recognize, interpret and solve word problems involving rates of change		
How can you calculate instantaneous rates of change?	l. Analyze planar curves given in parametric form, polar form, and vector form, including velocity and acceleration vectors.*	Compare and stress the similarities between standard functions and parametric/polar curves. Draw polar curves by hand to enhance understanding.	

Unit 3 – Integration

College Board Topics

II. Integrals

Interpretations and properties of definite integrals

- Definite integral as a limit of Riemann sums.
- Definite integral of the rate of change of a quantity over an interval.
- Basic properties of definite integrals (examples include additivity and linearity).

* **Applications of integrals.** Appropriate integrals are used in a variety of applications to model physical, biological or economic situations. Although only a sampling of applications can be included in any specific course, students should be able to adapt their knowledge and techniques to solve other similar application problems. Whatever applications are chosen, the emphasis is on using the method of setting up an approximating Riemann sum and representing its limit as a definite integral. To provide a common foundation, specific applications should include finding the area of a region (including a region bounded by polar curves), the volume of a solid with known cross sections, the average value of a function, the distance traveled by a particle along a line, the length of a curve (including a curve given in parametric form), and accumulated change from a rate of change.

Fundamental Theorem of Calculus

- Use of the Fundamental Theorem to evaluate definite integrals.
- Use of the Fundamental Theorem to represent a particular antiderivative, and the analytical and graphical analysis of functions so defined.

Techniques of antidifferentiation

- Antiderivatives following directly from derivatives of basic functions.
- + Antiderivatives by substitution of variables (including change of limits for definite integrals), parts, and simple partial fractions (nonrepeating linear factors only).
- + Improper integrals (as limits of definite integrals).

Applications of antidifferentiation

- Finding specific antiderivatives using initial conditions, including applications to motion along a line.
- Solving separable differential equations and using them in modeling (including the study of the equation $y' = ky$ and exponential growth).
- + Solving logistic differential equations and using them in modeling.

Numerical approximations to definite integrals.

Use of Riemannsums (using left, right and midpoint evaluation points) and trapezoidal sums to approximate definite integrals of functions represented algebraically, graphically and by tables of values.

*An * or + indicates additional topics beyond AP Calculus AB*

Unit 3 – Integration

Big Ideas

Student’s statements of enduring ideas

1. The area/volume can be approximated by summing areas of simple geometric shapes
2. The concept of the limit applied to Riemann sums produces an exact value
3. The integral and derivative and inverses of each other.
4. Given the rate of change of a function, you can integrate to find the original function.
5. Integration can be applied to solve problems where the accumulation of a quantity is involved.

Essential Questions

Teacher’s guiding questions

1. How can we approximate the area/volume bounded by a function (or two functions)?
2. How can an estimate of area/volume become an exact value using calculus?
3. What is the relationship between the integral and the derivative of a function?
4. How can you find the exact behavior of a function given the rate of change?
5. How can integration be applied?

Essential Question	Learning Objectives The students will be able to:	Instructional Strategies Based on our department philosophy for student learning, mathematics teachers will:	Assessments/Common Learning Experiences Through these assessments/experiences, students will demonstrate mastery of the learning objectives. Teachers will assess and provide feedback to students about the following:
How can we approximate the area/volume bounded by a function (or two functions)?	a. Estimate areas using rectangles and trapezoids	<p>Make connections to previous learning about finding the area of irregular shapes in geometry.</p> <p>Model use of left-hand, right-hand, midpoint and trapezoid methods.</p> <p>Create sketches of curves from tables of values, then have students draw the specified method (i.e. left hand rectangles).</p> <p>Ask how can we make this estimate better to lead students towards using smaller rectangles (Δx).</p>	<p>Solve AP-like problems.</p> <p>Formative assessments to determine student understanding, (e.g., homework, journal prompts, exit tickets, AP practice)</p>
How can an estimate of area/volume become an exact value using calculus?	b. Understand how the limit of the Riemann sums leads to better approximations and eventually the definite integral	Establish real world connections to experimental data that are discrete values and how most real world examples are not integrable.	Investigate measurable rate of change problems (i.e. velocity of a car over time)**
What is the	c. Explain how the	Show how the area underneath the rate of change of	

Unit 3 – Integration			
relationship between the integral and the derivative of a function?	Fundamental Theorem of Calculus links the rate of change and area accumulation.	a quantity is equal to the amount accumulated. Consider an example involving velocity and change in position. Investigate graphically how the rate of area accumulation is related to the height of the function. Stress the idea that integration and differentiation are inverse operations.	
What is the relationship between the integral and the derivative of a function?	d. Calculate anti-derivates and definite integrals.	Model the various integration approaches. Encourage students to check their integral answer by taking a derivative.	Solve a variety of problems that cover all integration, including: <ul style="list-style-type: none"> • Algebraic • Trigonometric • Exponential • Logarithmic • Inverse trigonometric functions • U-substitution • Partial fractions* • Parts* • Improper integrals*
How can you find the exact behavior of a function given the rate of change?	e. Interpret and solve problems involving differential equations.	Model how to produce slope fields and how to match solution curves to given differential equations. Establish connections between Euler's method and simple repeated use of tangent approximation.* Develop a logistic model for population growth	Solve AP-like problems. Set up and solve logistic growth problems**
How can integration be applied?	f. Interpret and solve word problems involving the integral as an accumulator function.	Model problem solving strategies and identifying types of problems. Stress identification of units, and interpretation of the practical meaning of values. Include problems involving length of a curve.	Solve AP-like problems.
How can integration be applied?	g. Find area bounded between two curves.	Model how to find an intersection and storing values on a graphing calculator. Show how to solve problems by hand and with a	Solve problems with and without calculators.

Unit 3 – Integration			
		<p>graphing calculator. Be sure to make adjustment in window dimensions to see the entire picture.</p> <p>Explain how to interpret typical phrasing “bounded above by...”</p> <p>Include problems involving polar coordinates.</p>	
How can integration be applied?	h. Determine the volume of a solid.	Use computer animations and models to visualize the shape of the solid and the shape of a cross section.	Investigate shapes (objects) determined from given curves and axis of rotation. **

Unit 4 – Series

Unit 4 – Series

College Board Topics

*IV. Polynomial Approximations and Series

* Concept of series.

A series is defined as a sequence of partial sums, and convergence is defined in terms of the limit of the sequence of partial sums.

Technology can be used to explore convergence and divergence.

* Series of constants

- + Motivating examples, including decimal expansion.
- + Geometric series with applications.
- + The harmonic series.
- + Alternating series with error bound.
- + Terms of series as areas of rectangles and their relationship to improper integrals, including the integral test and its use in testing the convergence of p -series.
- + The ratio test for convergence and divergence.
- + Comparing series to test for convergence or divergence.

* Taylor series

- + Taylor polynomial approximation with graphical demonstration of convergence (for example, viewing graphs of various Taylor polynomials of the sine function approximating the sine curve).
- + Maclaurin series and the general Taylor series centered at $x = a$.
- + Maclaurin series for the functions e^x , $\sin x$, $\cos x$, and $1/(1-x)$.
- + Formal manipulation of Taylor series and shortcuts to computing Taylor series, including substitution, differentiation, antidifferentiation and the formation of new series from known series.
- + Functions defined by power series.
- + Radius and interval of convergence of power series.
- + Lagrange error bound for Taylor polynomials.

*An * or + indicates additional topics beyond AP Calculus AB*

Big Ideas

Student's statements of enduring ideas

1. The convergence or divergence of an infinite series can be determined by considering the sequence of partial sums.
2. Any function can be represented as a polynomial or a power series.
3. Power series can be truncated to approximate functions within calculable error bounds.
4. It is difficult to evaluate most series in a closed form, yet convergence indicates a finite value exists.
5. A power series is only valid as a representation of a function within the interval of convergence.

Unit 4 – Series

Essential Questions
Teacher’s guiding questions

1. Why is knowledge of sequences important to the study of infinite series?
2. Why is the study of power series important in mathematics?
3. How are power series used?
4. Why is it important to determine the convergence/divergence of a series?
5. Why is it important to determine the interval of convergence?

Essential Question	Learning Objectives The students will be able to:	Instructional Strategies Based on our department philosophy for student learning, mathematics teachers will:	Assessments/Common Learning Experiences Through these assessments/experiences, students will demonstrate mastery of the learning objectives. Teachers will assess and provide feedback to students about the following:
Why is knowledge of sequences important to the study of infinite series?	Interpret and write sequence and series notation.	Practice writing the general term given a sequence or vice versa. Model strategies to determine convergence of sequences. Make connections to infinite limits.	Given the sequence, write the general term. Given the general term, write out the sequence.
Why is it important to determine the convergence/divergence of a series?	Understand the concept of a series as a sequence of partial sums.	Have students write partial sums by hand.	Given a variety of series in random, apply the convergence tests to determine convergence/divergence of the series.
	Recognize and evaluate Geometric, harmonic, and telescoping series.	Stress the two important skills separately: recognize the type of series and evaluate the series using the appropriate algorithm.	
	Test for convergence of series.	Give a variety of questions in random order that assess the ability to both (a) recognize and (b) perform the following tests: <ul style="list-style-type: none"> • Nth term test • Ratio test • Integral test • Comparison test • Limit comparison test Teach students the relative growth rates of exponents and factorials to enable an educated guess about the convergence.	

Unit 4 – Series			
How are power series used?	Write a power series to represent a function.	Turn the geometric series around to show that a function can be represented by a power series.	
Why is it important to determine the interval of convergence?	Determine the radius and interval of convergence of a power series.	Model writing general terms of series and applying the ratio test to determine convergence. Stress testing endpoints.	Apply the ratio test and consider the endpoints to determine the interval of convergence of a power series.
Why is the study of power series important in mathematics?	Write Taylor/Maclaurin series from a given function.	Walk through the creation of one Taylor series. Consider centering at both zero and a . (see Hughes/Hallet demonstration).	Use AP-like assessments.
How are power series used?	Create complex series through the manipulation of common/simple Taylor series.	Stress that students should know the Maclaurin series for the functions e^x , $\sin x$, $\cos x$, and $1/(1-x)$. Model the formal manipulation of Taylor series and shortcuts to computing Taylor series, including substitution, differentiation, antidifferentiation, and the formation of new series from known series	
How are power series used?	Determine Lagrange error bound for Taylor polynomials.	Model calculating Lagrange error bounds.	Use AP-like assessments.
How are limits, derivatives and integrals related? (from Unit 1)	Create a culminating experience involving calculus.	Have students select from indicated assessments (**), investigate other real world problems involving calculus or develop a creative presentation of key concepts in calculus. See http://www.youtube.com/watch?v=uqwC41RDPyg as a potential example.	Capstone Project

Presentation of AP Calculus AB/BC Curriculum

Overview:

The AP Calculus AB/BC curriculum is being brought forward for Board approval as part of our focus to increase AP course offerings at the high school. The curriculum presented is aligned with the goals, topic and methodologies required by the College Board to ensure course approval.

This curriculum follows Bristol's guidelines and includes:

- Course and Course Description and Goals;
- Department Philosophy and Goals;
- Philosophy of Instruction and Assessment;
- Common Core State Standards in Connecticut;
- College Board Topics;
- Big Ideas and Essential Questions;
- Learning Objectives;
- Instructional Strategies; and
- Assessment and Common Learning Experiences.

Rationale:

The reason for creating an AP Calculus AB/BC curriculum is to provide consistent district-wide implementation of the BOE approved curriculum as we increase the availability of AP Calculus AB/BC. In previous years, this course has been offered to a couple of students as an independent study. We now have enough students to run at least one section in Bristol. As a result, a plan was made to create an up-to-date, high-quality mathematics curriculum for this course.

Alignment to Connecticut Standards and Assessments:

This curriculum is aligned to the College Board guidelines to ensure student access to the AP exam and course credit. Current state and national standards are not provided for this level of mathematics.

Required Resources:

Continued support for teachers to be trained in the AP methodologies is imperative to provide students with successful experiences before and during AP course taking. Additionally, teachers need electronic resources to bring this curriculum to life including, but not limited to graphing technologies, smart boards and discipline specific software such as Geometer's Sketchpad and Maple.

Submitted by:

Marlene M. Lovanio
K-12 Supervisor of Mathematics
Office of Teaching and Learning
Bristol Board of Education