Board of Education Curriculum, Assessment & Professional Practices Committee Meeting

Thursday, April 25, 2024 6:00 PM
Board of Education Conference Room E, Live Stream: http://devos2.bethel.k12.ct.us/show?video=763ff4de0370 Materials can be viewed at: https://meetings.boardbook.org/Public/Organization/2425 The opportunity for members of the public wishing to make comments can attend and comment in-person or may send public comments to the Board via email or letter and it will be included as part of the record of the meeting., 1 School Street, PO Box 253, Bethel, CT 06801

1. **Precalculus Textbook**
2. **Algebra II Curriculum**
3. **Science Curriculum:**
    1. **Environmental Science Curriculum**
    2. **Forensics Curriculum**
    3. **Physical Science Curriculum**
4. **AP Environmental Textbook**
5. **Korean Collaborative Program**
6. **New Business**
7. **Public Comment**
   (Please note: The Board welcomes Public Comment and asks that speakers please limit their comments to 2 minutes. Speakers may offer objective comments of school operations and programs that concern them. The Board will not permit any expression of personal complaints or defamatory comments about Board of Education personnel and students, nor against any person connected with the Bethel Public School System.)
8. **Adjourn**

Request for Precalculus Textbook And Approval of Algebra II Curriculum

Agenda

- Request for new Precalculus textbook and online resource
- Approval of Algebra II curriculum

Selection Process

- Formed a selection committee of our current Precalculus Teachers
- Each member reviewed the different textbooks and additional resource.
- Member of the Math Honors Society reviewed the books to get a student perspective
- Committee decided on a favorite book and piloted a unit with their classes
- Had a virtual meeting with the sales representative and a MyMathLab representative

Precalculus Graphing, Numerical, Algebraic

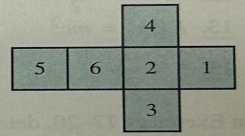
- AP Edition: Written in conjunction with College Board
- Well written, worked out examples are challenging and easy to follow
- Explorations, Group work, Challenge Problems
- Textbook follows a very similar order to our current curriculum
- Variety of challenging problems associated with a variety of different applications
- Worked out examples in the text directly related to practice problems
- Access to data sets
- MyMathLab

Sample Problem

CHAPTER CHALLENGE Part 2 of 5

Using a Polynomial to Model the Rolls of a Die

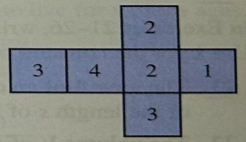
We can write a polynomial expression to represent a die—or other device, like a spinner or a coin, that produces random numbers. A **die** (singular of *dice*) is a polyhedral object with numbers on its faces. The die can be rolled to generate random numbers. The die is **fair** if each face (side) is equally likely to be rolled. We assume fair dice, spinners, and so on, unless otherwise stated. A standard 6-sided die is shown in Figure 10. A 4 has been rolled because a 4 is facing up.



We can represent this standard 6-sided die using a **net**. (This *net* is what we'd get if we could unfold the die onto a flat surface. Dots or numerals can be used for the numbers.)

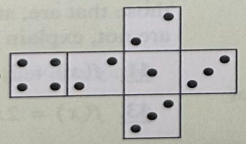
To model the possible *outcomes* of rolling this standard 6-sided die, we use the **outcome polynomial** $1x^6 + 1x^5 + 1x^4 + 1x^3 + 1x^2 + 1x^1$. For each term in this polynomial, the *exponents* (powers of x) represent the numbers (1–6) on the faces of the die. The *coefficient* of each term tells us how many faces have that number on them. Therefore, the sum of the coefficients must equal the number of faces on the die.

Now consider the *nonstandard* 6-sided die given by the net at right. The polynomial that represents this unusual die is $1x^4 + 2x^3 + 2x^2 + 1x^1$. Remember, for each term in the polynomial, the exponent gives the number on the face, and the coefficient tells us how many faces have that number.

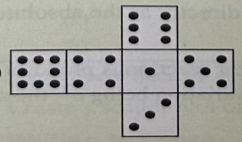


1. The outcome polynomial $2x^5 + 3x^4 + x^3 + 4x^2 + 2$ models a particular die. Describe the die, including the number of sides on the die and how many faces have each number. [*Hint:* Think of the last term as $2x^0$.]
2. Below are nets for two different dice. Write an outcome polynomial for each die.

(a)



(b)



3. For the pair of dice in part 2, how many ways can a sum of 6 be rolled?
4. How many ways can doubles occur when these two dice are rolled?

MyMathLab

- Online access to the entire textbook
- Teachers can create homework assignments from the Publisher's entire library (1 problem from book and the rest can be from any other)
- Videos, additional instructional tools, extra practice, and other helpful tools to assist students in learning the material
- Customizable Homework
    - Teacher creates an assignment
    - Student gets the assignment
    - Same concept for everyone but all have different numbers and variables
    - Students can help each other but will not be able to copy each other

Cost Estimate

Description	Unit Cost	Quantity	Subtotal
Precalculus Student ed with MyMathLab	$238.47	60	$14,308.20
Teacher’s Edition	$148.47	4	$593.88
MyMathLab	$127.47	90	$11,472.30
Shipping	$1,266.68	1	$1,266.68
Total			$27,641.06

Professional Learning

Curriculum Writing

- Summer curriculum time
- Current and Future Precalculus teachers
- Ensure all curriculum documents are created using the UBD process and aligned to the new textbook

Publisher workshops

- Virtual asynchronous activation session (complimentary)
- Two-hour virtual live activation session (cost)

Algebra II Curriculum

Algebra II is one of our most important math courses at BHS. Algebra II takes students to the next level in their algebraic reasoning. The curriculum moves students from linear functions to quadratics and other more challenging functions. It provides students with the necessary skills to be successful in any STEM related course. Successful completion of the Algebra II curriculum gives students most of the necessary skills needed to see success on the PSAT/SAT.

Math Course Sequence Options

- Algebra I, Algebra II, Geometry, Precalculus and/or Statistics
- Algebra I, Algebra II, Geometry, Elementary Discrete Math, Data Science
- Algebra I, Algebra II, Geometry, College Algebra, Data Science
- Algebra I, Algebra II, College Algebra, Geometry
- Algebra II, Geometry, Precalculus, Calculus and/or Statistics
- Integrated Math I, Integrated Math II, Financial Algebra I, Financial Algebra II

Algebra II Links

Algebra II Curriculum Folder

Algebra II Curriculum Map

Algebra II Performance Task - Parabola Selfie

Units of Study

Unit 1 - Sequences and Function

Unit 2 - Introduction to Quadratics

Unit 3 - Quadratic Equations

Unit 4 - Polynomials and Rational Functions

Unit 5 - Complex Numbers and Rational Exponents

Unit 6 - Exponential Equations and Functions

Unit 7 - Transformations of Functions

Bethel Public School

Textbook or Instructional Resource Adoption Form

Please use as much space as needed to complete the questions. When the form is complete, please email it to Dr. Brooks and send one hard copy with signatures in the interoffice mail. If you need any assistance with any part of the form, please contact Dr. Brooks.

1. Title of **Currently Used** Textbook/Instructional Resource:
   Precalculus with Limits 3rd edition by Ron Larson

2. Title of **Proposed** Textbook/Instructional Resource:
   Precalculus Graphical, Numerical, Algebraic - AP Edition by Demana et al.

3. Subject Area:
   Mathematics

4. Course:
   Precalculus 31 & 42

5. Grade Level:
   High School

6. Author(s):
   Demana, Waits, Foley, Kennedy, Gorsuch, Phelps

7. Publisher:
   Pearson

8. Unit Cost of Textbook or Unit Cost of the Instructional Resource:
   Textbook with MyMathLab - $238.47
   Teacher's Edition - $148.47
   MyMathLab for School 6yr - Digital Delivery Access $127.47

9. Number of Textbooks/Instructional Resource Materials Needed:
   60 Textbooks and MyMathLab
   4 Teacher's Edition
   90 Additional MyMathLab

10. Total Cost (**including estimated shipping**):
    $27,641.06

11. What **specific selection criteria** were established by the **Selection Committee** for a new textbook or instructional material? (enumerate below)

The selection committee was looking for well written easy to follow text.
A variety of different problems covering a topic.
Worked out examples that were annotated and easy to follow.
Course progression that followed or closely matched our current curriculum.
Valuable online resources that can assist students, enhance content and access to the textbook.
Textbooks that are currently accepted by College Board and UConn for use in their Precalculus course.

12. List the names of the **Selection Committee** members:
    Michele Bradshaw, Kathleen Ciskowski, Jonathan DosSantos, Jason Gill, Dr. Reine Issa

13. Has the Selection Committee carefully vetted this textbook/instructional resource using the established criteria?
    Yes. Teachers had a Math Honors Society student review the textbook and create a list of pros and cons for each textbook. Representative from Savvas Learning presented to the group about MyMathLab. The presentation showed the extensive amount of resources and material available to teachers and students. Changed the minds of two teachers about MyMathLab's usefulness in our course. Textbook projects and activities were good examples of real world applications of the content.

14. Is there a digital component to this textbook that would collect student information (names, email, date of birth, address, etc.) or house student content?

    a. Did you review the status of the application or software program on our website to see if it has already been approved for use?
       Yes, it has not been approved yet.
    b. If not, did you go through the Bethel Public School's resource review process to have it approved?
       Submitted the application to have the resource evaluated for approval 3/13/24

15. What other textbooks or instructional resources were reviewed during the selection process? (list them below)
    Precalculus with Limits 8e A Graphing Approach Larson
    Precalculus Blitzer
    Precalculus Sullivan
    Precalculus Enhanced with Graphing Utilities Sullivan and Sullivan

16. Was **all or part** of the textbook or instructional resource **piloted** by teachers? (Describe the pilot procedure or explain why the textbook was not piloted.)

The Precalculus PLC used one of the units from the textbook with their classes. The unit of study coincided with the unit of study (Inverses and Composition of Functions) from the current Precalculus curriculum. Upon completion of the unit the teachers had the students provide feedback about the text, practice problems, worked out examples and flow of the unit. Mostly positive feedback from the students, teachers said the assessment data showed solid understanding of the material.

17. What other school districts in our area or in Connecticut use this textbook or instructional resource?
    Textbook has not been released yet so there are not any other schools using the textbook yet.
    Previous edition by the authors being used at UCONN
    MathLab is currently being used at Greenwich, Darien, Newtown, Stratford, Trumbull and Bridgeport.

18. Summarize the reasons why this textbook or instructional resource is being recommended to the Board of Education for adoption.

The textbook was a cooperative creation by the authors and College Board. While we are not currently offering AP Precalculus if we do decide to move forward with that course we would already have one of the approved textbooks available to our students. The textbook has a variety of activities and strategies that help present the material to the students in a comprehensive way. Approaching the course graphically, numerically and algebraically helps students to make connections to the complex material that will be long lasting.
MyMathLab is an exceptional resource available to our students. The website gives our students access to the textbook in an online format which has many benefits to our students and staff. Having online access helps keep the textbooks in excellent condition for a significant amount of time. Students can also access additional resources on the website like video lessons, practice problems, projects, homework, etc. The website also gives our teachers and students access to the entire Pearson Library of textbooks. When creating homework or practice teachers are able to use the entire catalog as long as one of the problems is from the textbook. Additionally, since our students can access the entire textbook online we do not need to buy a textbook for every student giving us a huge cost savings.

Signature: Jason Gill Date: 3/14/24
Proposal Originator

Signature: N. Pratt Date: 3/19/24
Building Administrator

Signature: Kristen Brooks Date: 3.19.24
District Administrator

Bethel High School

SAVVAS

Mr. Jason Gill
Mathematics Dept Chair
Bethel High School
300 Whittlesey Dr
Bethel, CT 06801-1549
United States

Quote Number: 261100-4
Quote Creation Date: 03-04-2024
Quote Expiration Date: 09-30-2024

Quote Release: 4

60x Demana, Precalculus: AP Edition 11e ©2024 + 150 MyMathLab Digital

Price Quote Summary

Solution	Base Amount	Total
Demana: Precalculus: Graphical,	$ 14,902.08	$ 14,902.08
MyMathLab	$ 11,472.30	$ 11,472.30
Solution Subtotal	**$ 26,374.38**	**$ 26,374.38**

Shipping & Handling	**$ 1,266.68**
Total	**$ 27,641.06**

Price Quote Detail

ISBN	Description	Price	Charged Qty	Total Charged
Demana: Precalculus: Graphical, Numerical Algebraic				
Demana, Precalculus: Graphical, Numerical, Algebraic AP Edition 11e ©2024				
9780138049263	PRECALCULUS: GRAPHICAL, NUMERICAL, ALGEBRAIC, STUDENT EDITION + 6YR MYMATHLAB FOR SCHOOL W/ETEXT -- PACKAGE	238.47	60	$14,308.20
9780138049355	PRECALCULUS: GRAPHICAL, NUMERICAL, ALGEBRAIC, ANNOTATED TEACHER EDITION	148.47	4	$593.88
	Demana, Precalculus: Graphical, Numerical, Algebraic AP Edition 11e ©2024 Subtotal			**$ 14,902.08**
	Demana: Precalculus: Graphical, Numerical Algebraic Subtotal			**$ 14,902.08**
MyMathLab				
MyMathLab for School from Pearson				

Bethel High School

ISBN	Description	Price	Charged Qty	Total Charged
9780132962391	MyMathLab® for School 6yr - Digital Delivery Access	127.47	90	$11,472.30
	MyMathLab for School from Pearson Subtotal			**$ 11,472.30**
	MyMathLab Subtotal			**$ 11,472.30**
	Solution Subtotal			**$ 26,374.38**
		Shipping and Handling		**$ 1,266.68**
			Total	**$ 27,641.06**

Bethel High School

Savvas Learning Company LLC Terms and Conditions

To place your order please submit a copy of this price quote with your Purchase Order, include the Quote Number on your Purchase Order, and include any other required documentation. You may send the order documents using an electronic form **or** by mail. Please submit your PO and price quote via one of the following methods:

Online: https://support.savvas.com/support/s/customerserviceus
Mail: PO Box 6820, Chandler, AZ 85246

Savvas does not accept Credit Card information via postal mail, facsimile, or email. Credit Card information will only be accepted via phone, eCommerce, or OASIS. For questions regarding your order please call Customer Service: 1-800-848-9500.

Price quote: This is a price quote for the customer's convenience only, and not an offer to contract. All quotes are subject to review and final acceptance by an authorized representative of Savvas at its offices. Savvas reserves the right to correct typographical, computational or other errors. Savvas' standard payment terms are net 30 days unless otherwise specified. All pricing is in US Dollars unless otherwise specified. Pricing calculations use multiple decimal places to determine the most accurate extended pricing but are represented in standard currency format.

Shipping & handling charges (where applicable) are shown on the quote. S&H rates quoted are for standard ground transportation and may not reflect account contracted rates. If expedited shipping is requested, actual charges may be higher.For orders picked up at the Savvas warehouse by the customer or a third party carrier contracted by the customer, a 2% handling charge will be applied to shippable items. The 2% charge will appear on the customer proposal and invoice as a S&H charge.

Taxes: All pricing in this quote is exclusive of any applicable sales, use or other similar taxes or duties. The customer is responsible for any such taxes or duties that may apply; if the customer is tax exempt, evidence of such tax exemption must be provided. Estimated tax may be provided solely for customer convenience. The amount indicated is only an estimate and is intended to be helpful for budgeting purposes. The actual amount of sales tax assessed at the time of invoicing may be more or less.

Platforms: Savvas, and any third party for which Savvas serves as the sales agent or distributor, reserve the right to change and/or update technology platforms, including possible edition updates to customers during the term of access. Customers will be notified of any change prior to the beginning of the new school year.

Damaged & Defective Products: If a print product, or the print component of a blended (print & digital) product, is received in damaged or defective condition, Savvas will issue a credit or replacement at no charge to the customer if the customer promptly (no later than 120 days) returns the damaged or defective product. Customers must report missing product immediately upon receipt.

Return Policy: Returns (other than damaged or defective products) are subject to the following conditions: (a) materials must be returned to Savvas at the customer's expense in new, unused condition, suitable for resale by Savvas (note that any barcoding, stickering, stamping or similar marking on any print materials renders them unsuitable for resale); (b) materials must be returned within six (6) months from the date of purchase; (c) the customer must obtain a Return Materials Authorization ("RMA") from Savvas prior to returning the materials, and must ship the materials back to Savvas within thirty days of receiving the RMA; (d) all materials sold in a set or package must be returned complete as originally sold; and (e) any materials provided by Savvas to the customer on a no-charge basis in consideration of the customer's purchase must be returned in proportion to the purchased materials that are being returned for a credit. A restocking fee of 3% may be applied to credits over $1,000. Savvas' return policy does not apply to science lab kits or trade publication novels, which are sold on a non-returnable basis.

Consumable Worktexts: Subsequent year consumable worktexts will ship each year on the anniversary of the original order date for the duration of their license. Worktexts will ship to the location listed on the original order. Quantities for each grade level and title will remain consistent each year. Changes to quantities of titles previously ordered, shipping location changes, or any other changes to consumable worktext shipments must be made 4 weeks prior to shipment date. (the anniversary of the original order date unless changed). Changes can be made on the Subscription Worktext Site: https://worktext-subscriptions.savvas.com

Annual subscriptions for iLit and Successmaker Only: Savvas' iLit and Successmaker products (and no others) automatically renew on the anniversary date of the original purchase and will be invoiced accordingly unless otherwise specified.

Technical support services are included with purchase of Savvas digital products.

online help: https://support.savvas.com/support/s/k12-curriculum-support-form
phone: 1-800-848-9500

Professional Services: Professional Services: All paid services must be delivered within twelve (12) months of the order date of those services. Any unused services expire at the end of such twelve (12) month period, unless otherwise specified in contract terms. Any cancellation made with less than 72 hours' notice will result in a cancellation fee equal to the full price of the event. MySavvasTraining is included with purchase of products (https://mysavvastraining.com).

Request for Precalculus Textbook And Approval of Algebra II Curriculum

Agenda

- Request for new Precalculus textbook and online resource
- Approval of Algebra II curriculum

Selection Process

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CHAPTER CHALLENGE Part 2 of 5

Using a Polynomial to Model the Rolls of a Die

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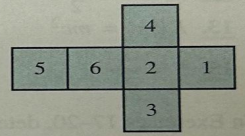
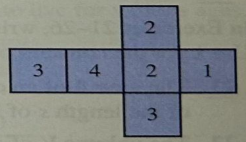


We can represent this standard 6-sided die using a **net**. (This *net* is what we'd get if we could unfold the die onto a flat surface. Dots or numerals can be used for the numbers.)

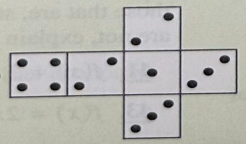
To model the possible *outcomes* of rolling this standard 6-sided die, we use the **outcome polynomial** $1x^6 + 1x^5 + 1x^4 + 1x^3 + 1x^2 + 1x^1$. For each term in this polynomial, the *exponents* (powers of x) represent the numbers (1–6) on the faces of the die. The *coefficient* of each term tells us how many faces have that number on them. Therefore, the sum of the coefficients must equal the number of faces on the die.

Now consider the *nonstandard* 6-sided die given by the net at right. The polynomial that represents this unusual die is $1x^4 + 2x^3 + 2x^2 + 1x^1$. Remember, for each term in the polynomial, the exponent gives the number on the face, and the coefficient tells us how many faces have that number.



1. The outcome polynomial $2x^5 + 3x^4 + x^3 + 4x^2 + 2$ models a particular die. Describe the die, including the number of sides on the die and how many faces have each number. [*Hint:* Think of the last term as $2x^0$.]
2. Below are nets for two different dice. Write an outcome polynomial for each die.

(a)



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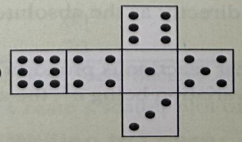

3. For the pair of dice in part 2, how many ways can a sum of 6 be rolled?
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- Integrated Math I, Integrated Math II, Financial Algebra I, Financial Algebra II

Algebra II Links

Algebra II Curriculum Folder

Algebra II Curriculum Map

Algebra II Performance Task - Parabola Selfie

Units of Study

Unit 1 - Sequences and Function

Unit 2 - Introduction to Quadratics

Unit 3 - Quadratic Equations

Unit 4 - Polynomials and Rational Functions

Unit 5 - Complex Numbers and Rational Exponents

Unit 6 - Exponential Equations and Functions

Unit 7 - Transformations of Functions

April 25, 2024
Board of Education

BHS Science
Ray Turek

Agenda

- Curricula:
  - Environmental Science
  - Forensic Science
  - Physical Science
- AP Environmental Science Textbook
- US-Korean Collaborative Program

Environmental Science Curriculum

Duration: 1 semester (.5 credits)
Level: College Prep
Grades: 11 & 12

This science elective addresses the global ecosystem and the ways local, federal, and international policies regulate how human beings use natural resources on Earth.

Environmental Science Curriculum Folder

Units of Study:

- Introduction to Environmental Science and Populations
- The Living World
- Agriculture and Its Impact on the Environment
- Waste, Energy, and Human Effects on the Environment.

A Deeper Look Into Unit 3: Agriculture

ESSENTIAL QUESTIONS

1. What concerns exist in regards to illnesses and toxins stemming from agriculture, and how are they spread?
2. What effects does agriculture have on nearby ecosystems, water supplies, and the environment?
3. How can we best prevent environmental problems from arising from agriculture?

Unit 3 Link

Forensic Science Curriculum

Duration: 1 semester (.5 credits)
Level: College Prep
Grades: 11 & 12

Forensic scientists are responsible for analyzing evidence collected at crime scenes by legal officials. Students will process and analyze evidence using techniques grounded in biology, chemistry, and physics.

Forensic Science Curriculum Folder

Units of Study:

- Introduction to Forensic Science through the Crime Scene.
- Estimating Post-mortem interval, Entomology, and Osteology
- Biological Evidence: Blood and blood stain patterns, DNA, fingerprinting.
- Non-Biological Evidence: Ballistics, glass, criminal profiling/psychology
- Forensic Toxicology and Chemistry

A Deeper Look Into Unit 2: Estimating post-mortem interval, Entomology, & Osteology

ESSENTIAL QUESTIONS

1. What are the ways in which forensic scientists determine the time of death of a victim?

2. How can bones be used to help in the identification of a victim?

Unit 2 Link

Physical Science Curriculum

Duration: 1 year (1.0 credits)
Level: College Prep
Grades: 10

This course is designed to be an alternative to the traditional high school chemistry course taken in the sophomore year. The course focuses on the conceptual components of chemistry as well as the Earth and Space Science standards required by the state.

Physical Science Curriculum Folder

Units of Study:

Semester 1:

- Introduction to the Scientific Method
- Atomic Structure
- Chemical Reactions

Semester 2:

- Carbon Chemistry
- Heat and Energy
- Earth Systems

A Deeper Look Into Unit 6: Earth Systems

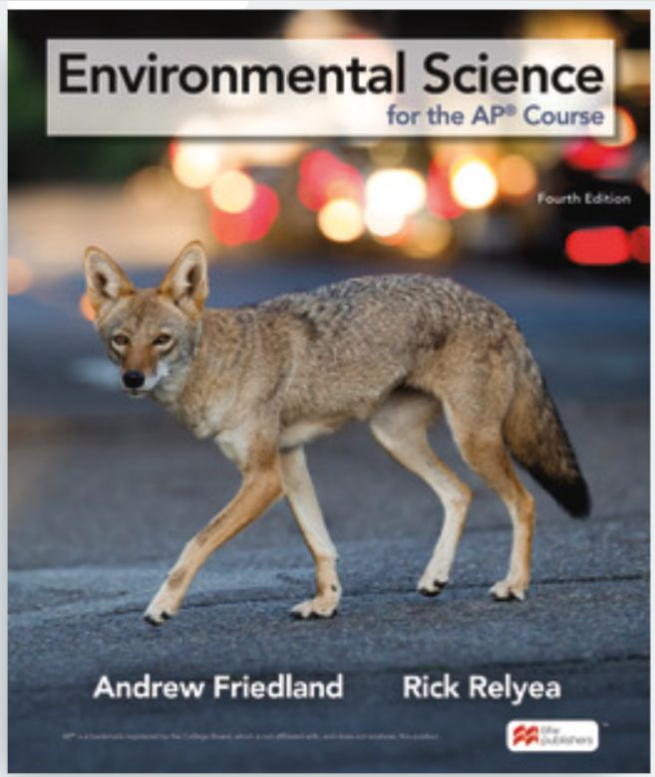
ESSENTIAL QUESTIONS

1. How can historical global climate evidence be used to make predictions about the future impacts of Earth's systems?

2. Can steps be taken to change Earth's climate?

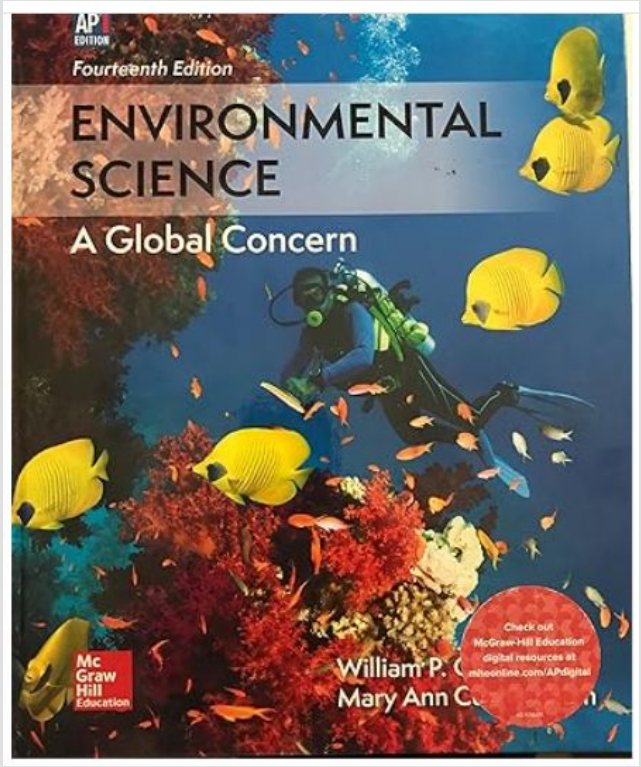
Unit 6 Link

AP Environmental Science Textbook



Environmental Science for the AP Course 4e by Andrew Friedland and Rick Relyea, 2023

Why the need?



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Unit	Topic	Exam Weighting
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3	Populations	10–15%
4	Earth Systems and Resources	10–15%
5	Land and Water Use	10–15%
6	Energy Resources and Consumption	10-15%
7	Atmospheric Pollution	7-10%
8	Aquatic and Terrestrial Pollution	7-10%
9	Global Change	15-20%

Why Mr. Cox Really Loves This Book:

- The new proposed textbook aligns 100% with the AP Environmental Science Course and Exam Description (CED). There is no extra information. There is no missing information.
- The textbook asks students to engage in the The AP Environmental Science framework practices which include: Concept Explanation, Visual Representations, Text Analysis, Data Analysis, Mathematical Routines, and Environmental Solutions.
- A full complement of teacher focused resources are provided.

Cost

Itemized Products

ISBN	EAN	Product	Edition	Author	Sales Price	Quantity	Total Price
1319409288	9781319409289	Environmental Science for the AP® Course	4	Andrew Friedland; Rick Relyea	USD 153.98	40.00	USD 6,159.20

Itemized Product Total: USD 6,159.20

40 books @ $153.93 each
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US-South Korea Science Collaborative Research and Education Project

2023 Timeline

aces International

LOCAL-TO-GLOBAL & GLOBAL-TO-LOCAL

AESA
ASSOCIATION OF EDUCATIONAL SERVICE AGENCIES

The US-Korea Science Research and Education Project

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  - 12 students
  - Experimentation based research
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Collaboration

- Both groups met with a paired S. Korea private science school via Zoom on two different occasions.
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SCIENCE "CELL-FIES"
EMERGENCY SHOWER

Meeting Presentation

ACES International, NSFG, KOFAC, Bethel High School and Busanil Science High School

Mathematical Modeling for the Analysis of Desalination

INTRODUCTION

Why Desalination?

Positives of Solar

Negatives of Solar

Positives of Rolling

Negatives of Rolling

SOLAR

Rolling

CONCLUSION

Conclusion from Solar Investigations

Conclusion from Investigation by Rolling

Action Plan

What would we do differently in the future?

Final Notes

Works Cited

Plan for 2024

- We have already committed to two teams for the 2024 school year.
  - We will have input into our topic.
  - Timeline will be moved up and students will start earlier.
- We currently have no plans to travel to S. Korea however perhaps down the road it may be something we would like to consider.

BETHEL BOARD OF EDUCATION
Briefing Summary

Date of Briefing to the Board:
4.25.24

Topic:
BHS Science Curriculum

Summary of the Briefing:
We are bringing forward the Environmental Science Curriculum.
This course addresses the global ecosystem and the ways local, federal, and international policies regulate how human beings use natural resources on Earth. This class emphasizes environmental issues and some of the potential ways to address them. Multimedia resources, fieldwork, laboratories, and case studies will be used to investigate environmental issues.

We are bringing forward the Forensics Curriculum.
This elective course is designed for students with an interest in the field of forensics. Students taking the course should have a strong understanding of biological concepts (e.g., the structure of DNA). Forensic scientists are responsible for analyzing evidence collected at crime scenes by legal officials. Students will process and analyze evidence using techniques grounded in biology, chemistry, and physics. The course will include famous crimes throughout history, how science has been used to solve these crimes, and ethical and legal issues involved within the discipline.

We are bringing forward the Physical Science Curriculum.
This course is designed to be an alternative to the traditional high school chemistry course. Students taking the course will be asked to use the NGSS Science and Engineering Practices to learn about the Scientific Method, Atomic Structure, Chemical Reactions, Carbon Chemistry, Heat and Energy, and Earth Systems.

We are bringing forward a new AP Environmental Science textbook.
Environmental Science for the AP Course 4e by Friedland and Relyea

- AP Environmental Science (APES) students are currently using a textbook that was purchased at a time when the APES curriculum was substantially different from the current curriculum.
- In 2019 the APES underwent extensive changes to both the topics covered and the end of year AP exam.

Pre- 2019

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Earth Systems and Resources	10–15%
The Living World	10–15%
Population	10–15%
Land and Water use	10–15%
Energy Resources and Consumption	10–15%
Pollution	25–30%
Global Change	10–15%

Current

Unit	Topic	Exam Weighting
1	The Living World: Ecosystems	6-8%
2	The Living World: Biodiversity	6-8%
3	Populations	10–15%
4	Earth Systems and Resources	10–15%
5	Land and Water Use	10–15%
6	Energy Resources and Consumption	10-15%
7	Atmospheric Pollution	7-10%
8	Aquatic and Terrestrial Pollution	7-10%
9	Global Change	15-20%

- The new proposed textbook aligns 100% with the AP Environmental Science Course and Exam Description (CED). There is no extra information. There is no missing information.
- The textbook asks students to engage in the The AP Environmental Science framework practices which include: Concept Explanation, Visual Representations, Text Analysis, Data Analysis, Mathematical Routines, and Environmental Solutions.
- A full complement of teacher focused resources are provided.
- The book offers an array of additional benefits:
    - The book contains Unit-Opening Case Studies designed to spark discussion.
    - The book emphasizes the interconnectedness of topics across the various units.
    - The book provides numerous opportunities for both unit level and cumulative practice for the AP exam.

Textbook Cost

Itemized Products

ISBN	EAN	Product	Edition	Author	Sales Price	Quantity	Total Price
1319409288	9781319409289	Environmental Science for the AP® Course	4	Andrew Friedland; Rick Relyea	USD 153.98	40.00	USD 6,159.20

Itemized Product Total: USD 6,159.20

Recommended Motions:
Motion to bring the Environmental Science, Forensics, and Physical Science curricula to the full Board of Education for approval.

Motion to bring the AP Environmental Science textbook, *Environmental Science for the AP Course 4e by Friedland and Relyea*, to the full Board of Education for approval.

Bethel Public School

Textbook or Instructional Resource Adoption Form

Please use as much space as needed to complete the questions. When the form is complete, please email it to Dr. Brooks and send one hard copy with signatures in the interoffice mail. If you need any assistance with any part of the form, please contact Dr. Brooks.

1. Title of **Currently Used** Textbook/Instructional Resource:
   Environmental Science: A Global Concern 14th Edition by William P. Cunningham

2. Title of **Proposed** Textbook/Instructional Resource:
   Environmental Science for the AP Course 4e

3. Subject Area: High School Science

4. Course: AP Environmental Science

5. Grade Level: 11,12

6. Author(s): Andrew Friedland and Rick Relyea

7. Publisher: Bedford, Freeman and Worth

8. Unit Cost of Textbook or Unit Cost of the Instructional Resource:
   $153.98/ textbook

9. Number of Textbooks/Instructional Resource Materials Needed:
   60
10. Total Cost (**including estimated shipping**):
    $9,238.80

11. What **specific selection criteria** were established by the **Selection Committee** for a new textbook or instructional material?
    1. The textbook should completely align with the AP Environmental Science Course and Exam Description.
    2. The textbook should provide students with opportunities to practice AP Exam-like questions within units and as a whole.
    3. The textbook should allow students to interact with the The AP Environmental Science framework practices which include: Concept Explanation, Visual Representations, Text Analysis, Data Analysis, Mathematical Routines, and Environmental Solutions.
    4. The textbook should include resources for teachers.

12. List the names of the **Selection Committee** members:
    Ray Turek, Grant Cox, Kateri Kenney

13. Has the Selection Committee carefully vetted this textbook/instructional resource using the established criteria?
    Yes

14. Is there a digital component to this textbook that would collect student information (names, email, date of birth, address, etc.) or house student content?
    We are not opting to purchase the digital component which accompanies the textbook.

15. What other textbooks or instructional resources were reviewed during the selection process?
    - Miller, G. Tyler and Scott Spoolman. *Exploring Environmental Science for AP*. 1st ed., Boston, MA: Cengage Learning, 2021.
    - Cunningham, William and Mary Cunningham. *Environmental Science: A Global Concern*. 16th ed., New York, NY: McGraw-Hill Higher Education, 2024
    - Withgott, Jay H. and Matthew Laposata. *Environment: The Science Behind the Stories, AP Edition.* 7th ed., San Francisco, CA: Pearson Education, 2021

16. Was **all or part** of the textbook or instructional resource **piloted** by teachers? (Describe the pilot procedure or explain why the textbook was not piloted.)
    The textbook was not piloted. The cost of the textbook makes this impractical.

17. What other school districts in our area or in Connecticut use this textbook or instructional resource?
    Avon
    Brookfield
    East Haven
    Granby
    Greenwich Academy
    Greenwich Country Day School
    Hopkins School
    Lyman Memorial High School (Lebanon)
    Southington

18. Summarize the reasons why this textbook or instructional resource is being recommended to the Board of Education for adoption.
    This book meets all of the selection criteria that were established by the Selection Committee for a new textbook. This book has become the choice for the majority of school districts that are looking for a new APES textbook.

Signature: _____ Date:_____
Proposal Originator

Signature: _____ Date: _____
Building Administrator

Signature: _____ Date: _____
District Administrator

April 25, 2024
Board of Education

BHS Science
Ray Turek

Agenda

- Curricula:
  - Environmental Science
  - Forensic Science
  - Physical Science
- AP Environmental Science Textbook
- US-Korean Collaborative Program

Environmental Science Curriculum

Duration: 1 semester (.5 credits)
Level: College Prep
Grades: 11 & 12

This science elective addresses the global ecosystem and the ways local, federal, and international policies regulate how human beings use natural resources on Earth.

Environmental Science Curriculum Folder

Units of Study:

- Introduction to Environmental Science and Populations
- The Living World
- Agriculture and Its Impact on the Environment
- Waste, Energy, and Human Effects on the Environment.

A Deeper Look Into Unit 3: Agriculture

ESSENTIAL QUESTIONS

1. What concerns exist in regards to illnesses and toxins stemming from agriculture, and how are they spread?
2. What effects does agriculture have on nearby ecosystems, water supplies, and the environment?
3. How can we best prevent environmental problems from arising from agriculture?

Unit 3 Link

Forensic Science Curriculum

Duration: 1 semester (.5 credits)
Level: College Prep
Grades: 11 & 12

Forensic scientists are responsible for analyzing evidence collected at crime scenes by legal officials. Students will process and analyze evidence using techniques grounded in biology, chemistry, and physics.

Forensic Science Curriculum Folder

Units of Study:

- Introduction to Forensic Science through the Crime Scene.
- Estimating Post-mortem interval, Entomology, and Osteology
- Biological Evidence: Blood and blood stain patterns, DNA, fingerprinting.
- Non-Biological Evidence: Ballistics, glass, criminal profiling/psychology
- Forensic Toxicology and Chemistry

A Deeper Look Into Unit 2: Estimating post-mortem interval, Entomology, & Osteology

ESSENTIAL QUESTIONS

1. What are the ways in which forensic scientists determine the time of death of a victim?

2. How can bones be used to help in the identification of a victim?

Unit 2 Link

Physical Science Curriculum

Duration: 1 year (1.0 credits)
Level: College Prep
Grades: 10

This course is designed to be an alternative to the traditional high school chemistry course taken in the sophomore year. The course focuses on the conceptual components of chemistry as well as the Earth and Space Science standards required by the state.

Physical Science Curriculum Folder

Units of Study:

Semester 1:

- Introduction to the Scientific Method
- Atomic Structure
- Chemical Reactions

Semester 2:

- Carbon Chemistry
- Heat and Energy
- Earth Systems

A Deeper Look Into Unit 6: Earth Systems

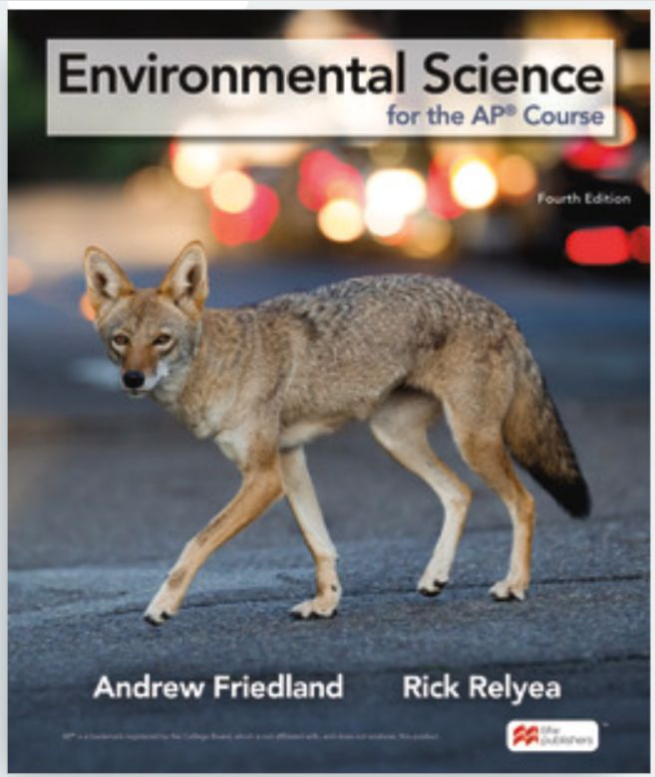
ESSENTIAL QUESTIONS

1. How can historical global climate evidence be used to make predictions about the future impacts of Earth's systems?

2. Can steps be taken to change Earth's climate?

Unit 6 Link

AP Environmental Science Textbook



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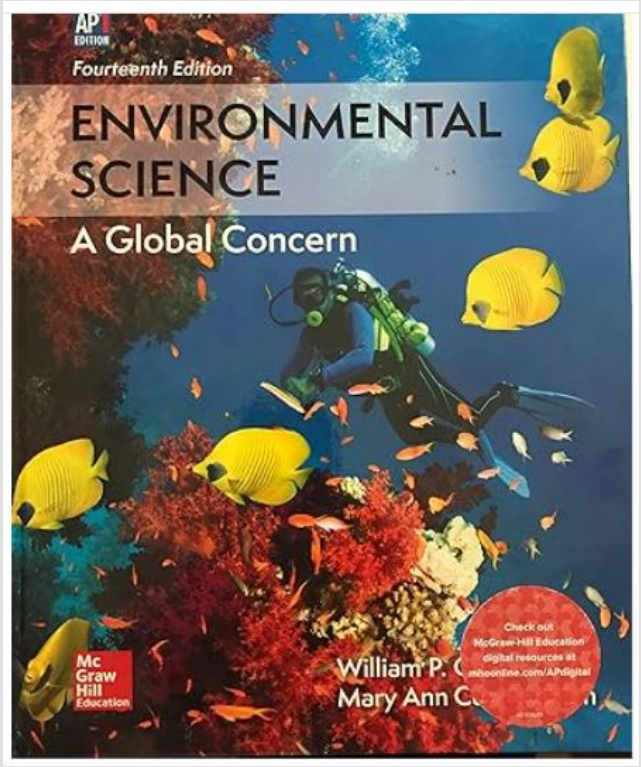

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