

Board of Education Curriculum, Assessment & Professional Practices Committee Meeting

Thursday, May 5, 2022 7:00 PM

Board of Education Conference Room E, 1 School Street, PO Box 253, Bethel, CT 06801

1. **Applied Studies Curricula- Child Development I and Graphics II**

2. **Science Curricula- K-2, Biology, and Chemistry**

3. **New Business**

4. **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.)

5. **Adjourn**

Career Technical Education

Career Technical Education

College and career readiness

- **Experiential learning**
- **Micro credentials**
- **Transference of core academic skills and knowledge into applied career content**
- **Learning platform**

Child Development 1



Miss Pierpaoli
Bethel High School





Education Pathway

- Child Development 1 ←
 - Child Development 2
 - Cadet Teaching
 - 30 hours of Community Service in an education setting
 - Course work in conjunction with Western Connecticut State University
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Unit Overview

Family and Consumer Science Transfer Goal : Health and safety

Unit 1: Working with Young Children

Transfer Goal : Analyze careers within the Early Childhood Education industry

Overview: Analyze the role and responsibilities of the teacher in an early childhood program and compare and contrast different types of early childhood programs.

Unit 2: Observing Children

Transfer Goal : Evaluate and demonstrate professional practice of early childhood teachers

Overview: Students will be given the opportunity to observe and interact with an early childhood education teacher. They will document quality teaching methods that evaluate both diverse learners and children with disabilities.

Unit 3: Understanding School Age Children

Transfer Goal : Analyze and demonstrate pedagogical approaches used in preschool and kindergarten classrooms

Overview: Focuses on pedagogy as a means for improving every child's ability to learn, and takes into consideration the policies put in place to accommodate and evaluate both diverse learners, and children with disabilities.

Unit 4: Creating a Safe and Healthful Environment

Transfer Goal : Evaluate a safe and healthy learning environment for preschool and kindergarten

Overview: Preparation and arrangement of a preschool and kindergarten learning environment

Unit 5: Learning Experiences for Children

Transfer Goal : Write and implement lesson plans to meet the developmental needs and interests of school aged children

Overview: Create lessons and assess content areas of school aged children



Performance Task

Unit 5: Learning Experiences for Children

Overview:

- Create lessons and assess content areas of school aged children
 - Lesson Web
 - Lesson Plan Template
 - Domains of Learning and Development

Students will create a lesson plan for various subject areas such as: Social Studies, Science, Music or Math. The lesson plan template is from the state of Connecticut so students are creating authentic lessons. They will also include a learning standard using the Connecticut domains of learning and development standards. Students will then present their lesson to their classmates during class time.

Sample lesson plan (hard copy)





Child Development 1 Course Information

- Course serves grades 9-12
- 1 semester in length
- Curriculum Map
 - Unit 1
 - Unit 2
 - Unit 3
 - Unit 4
 - Unit 5

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Graphic Design II

Career Technical Readiness Pathway

Students may choose to pursue careers in the graphic industry through the Career Technical Readiness Pathways. Students are required to take Graphics 1 prior to taking Graphics 2.

Graphic Design 2 is a class that can be taken through the pathway, then students may choose to complete an internship, CWE, or immersion hours with local graphic design businesses.

Units of Study

Technology Education Transfer Goal: Analyze and apply concepts of the design process

Unit 1: Careers & Ethics in Graphic Design

- Identify and evaluate careers within the graphics industry.
- Independently investigate global competencies within the career field.

Unit 2: Design Process

- Apply graphic design techniques to produce outcomes to customer specifications.

Unit 3: Designing for Digital Media

- Design and develop digital media artifacts.

Unit 4: Designing for Physical Media

- Design and develop physical media artifacts.

Unit 5: Designing for Marketing

- Plan and create digital and physical media artifacts to meet customer specifications.



Student Work

Student Work - Business Card

Unit 2: The Design Process

Overview:

- Create business card in order to market yourself as a professional graphic designer
 - Assignment Sheet

Students will create a business card to use as a marketing tool for themselves as a professional graphic designer. Multiple resources will be provided to the students to support the relevancy of this task as well as provide skills and knowledge to complete this design successfully. Students will create both a digital and physical product in this lesson.

Physical copies of student work will be provided.

Student Work - Flyer

Unit 3: Designing for Digital Media

Overview:

- Create a flyer in order to market yourself as a professional graphic designer
 - Assignment Sheet

Students will create a flyer to use as a marketing tool for themselves as a professional graphic designer. Multiple resources will be provided to the students to support the relevancy of this task as well as provide skills and knowledge to complete this design successfully.

Physical copies of student work will be provided.

Problem Based Assessment - Coaster Problem

Unit 4: Designing for Physical Media

Overview:

- Given a problem, create digital and physical artifacts that meet the tasks being asked
 - [Assignment Sheet](#)

Students will solve a given problem by cycling through a customer driven process. At the end of this problem based lesson, students will deliver an industry level design brief, 4 inscribed coasters, and a promotional sign.

Physical copies of student work will be provided.



Curriculum Map

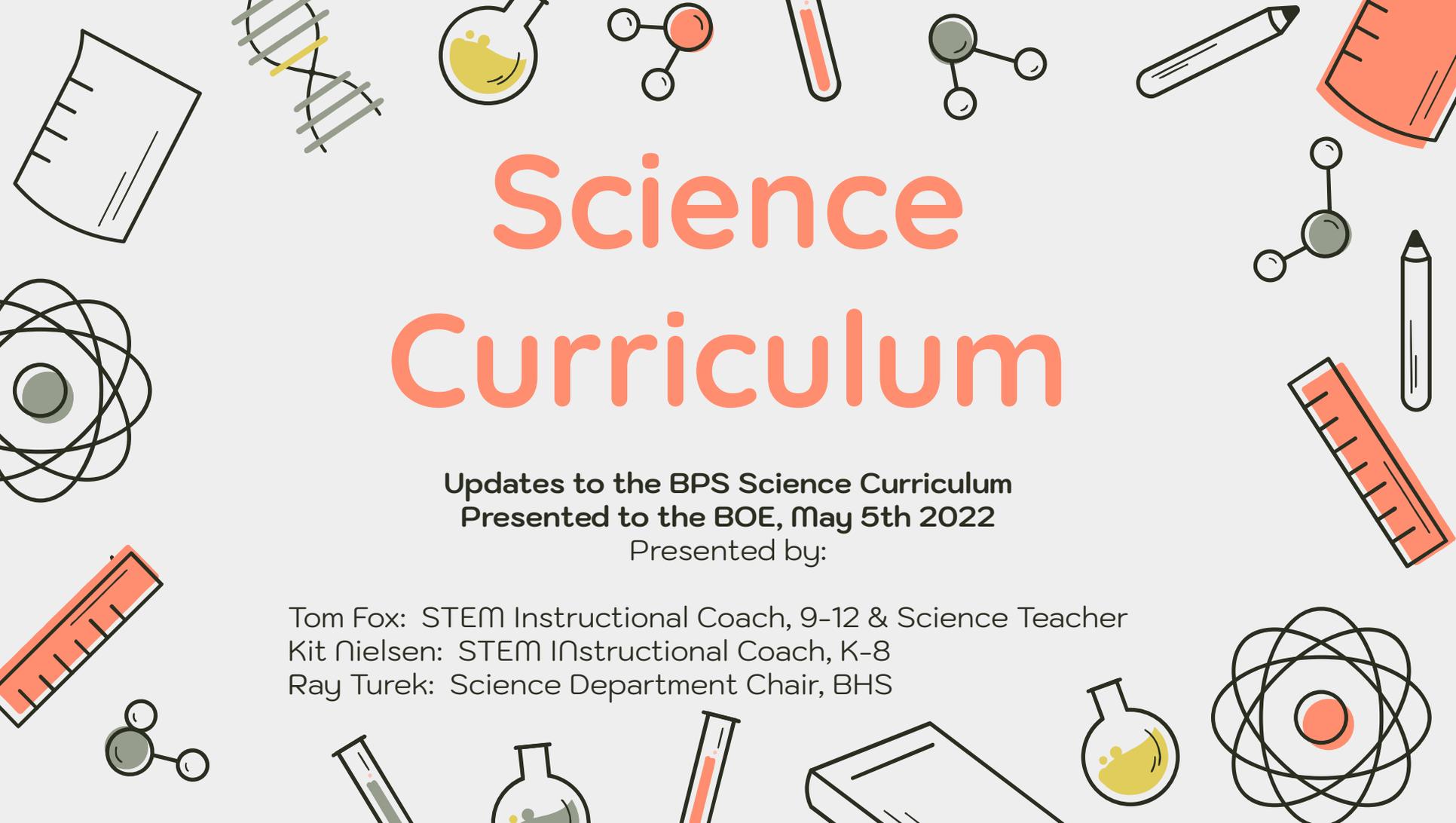
Unit 1

Unit 2

Unit 3

Unit 4

Unit 5



Science Curriculum

Updates to the BPS Science Curriculum
Presented to the BOE, May 5th 2022
Presented by:

Tom Fox: STEM Instructional Coach, 9-12 & Science Teacher
Kit Nielsen: STEM Instructional Coach, K-8
Ray Turek: Science Department Chair, BHS

Presentation Overview

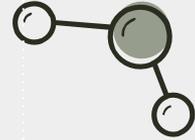


1. The Next Generation Science Standards (Tom, Kit, and Ray)
 - a. Shifts in Teaching and Learning; Global Competencies
2. Coherence in Curriculum
3. Secondary Updates: Grades 9-10 (Tom and Ray)
 - a. Curriculum Reference, Highlights, & Key Updates
4. Elementary Updates Grades K-2 (Kit)
 - a. Curriculum Reference, Highlights, & Key Updates
5. STEAM NIGHT 2022! (Tom, Kit, and Ray)
6. Looking Ahead: Self-Regulation & Reflection (Tom, Kit, and Ray)

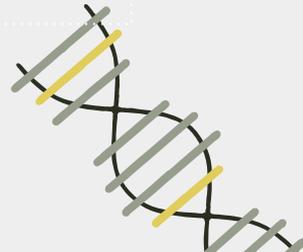
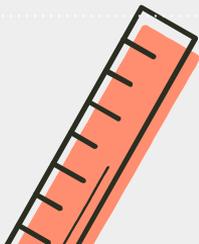


What are the NGSS?

- The NGSS represent a fundamental shift in science education and require a different approach to teaching science than has been done in the past. Looking ahead, teachers can use a range of strategies to engage students and create opportunities to demonstrate their thinking and learning
- A major difference between the NGSS and previous science standards is “three-dimensional” learning.
- Through 3-D learning, the NGSS emphasize that science is not just a series of isolated facts. This awareness enables students to view science more as an **interrelated world** of inquiry and phenomena rather than a static set of science disciplines.



~<https://ngss.nsta.org/Documents/NGSS%20Overview%20for%20Principals.pdf>



How has science education changed with the NGSS?



Science education will involve less:

1. Learning of ideas disconnected from questions about phenomena
2. Teachers providing information to the whole class
3. Teachers posing questions with only one right answer
4. Student reading textbooks and answering questions at the end of each chapter
5. Worksheets
6. Oversimplification of activities for students who are perceived to be “less able” to do science and engineering

Science education will involve more:

1. Systems thinking and modeling to explain phenomena and to give a context for the ideas to be learned
2. Students conducting investigations, solving problems, and engaging in discussions with teacher guidance
3. Students discussing open-ended questions that focus on the strength of the evidence used to generate claims
4. Students reading multiple sources and developing summaries of information
5. Student writing of journals, reports, posters, and media presentations that offer explanations and arguments
6. Provision of supports so that *all* students can engage in sophisticated science and engineering practices



<i>Science & Engineering Practice</i>	<i>Cross-Cutting Concepts</i>
Asking Questions & Defining Problems	Patterns
Developing & Using Models	Cause & Effect
Planning and Carrying Out Investigation	Scale, Proportion, and Quantity
Analyzing and Interpreting	Systems and Systems Models
Using Mathematical and Computational-Thinking	Stability and Change
Constructing Explanation and Designing Explanation	Energy and Matter
Engaging in Argument from Evidence	Structure and Function
Obtaining, Evaluating, and Communicating Information	



LOOKING FOR COHERENCE

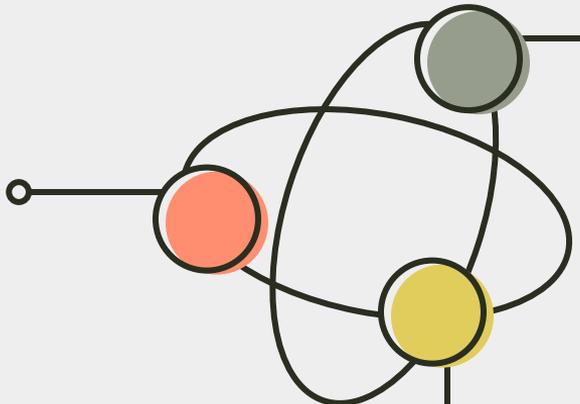
Instructional Rounds 2021-22



Vision For A Graduate

Global Competencies

- Critical Thinking
- Collaboration
- Creativity and Innovation



NGSS

Disciplinary Core Ideas
Cross Cutting Concepts
Science and Engineering Practices

Curriculum

Understanding by Design (UbD)
Science Transfer Goals



Reference Slide: Curriculum 9-10



Biology (Grade 9) Curriculum Links

Chemistry (Grade 10) Curriculum Links

Curriculum Map

Curriculum Map

Unit One: Structure & Function

Unit One: Introduction to Chemistry

Unit Two: Matter & Energy in Organisms & Ecosystem

Unit Two: Stars to Atoms

Unit Three: Inheritance and Variation in Traits

Unit Three: Materials Science

Unit Four: Natural Selection & Evolution

Unit Four: Chemical Reactions

Unit Five: Interdependent Relationships in Ecosystem

Unit Five: Earth's Systems & Climate

Unit Six: Human Impacts

Unit Six: Earth's Energy

Unit Seven: Carbon Chemistry

Unit Eight: Ocean & Solution Chemistry



Grade 9 Curriculum

Biology Curriculum Map

Biology Curriculum Highlights



Anchoring Phenomenon – Brazilian Family

Integration of 2-D Learning Outcomes

Example: I can **provide explanations and cite relevant evidence** on how the amount of carbon dioxide/sunlight will affect the amount of photosynthesis occurring.

Use of Science Phenomenon to Guide Units:

Example: Albinism, Genetics, and Culture

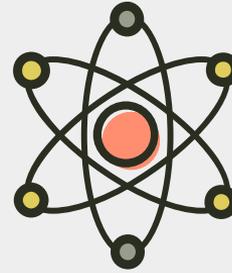
A Focus on the Global Competencies & Rigorous and Relevant Performance Tasks:

Example: Marathon Runner: Glucose Regulation Models
-Student work example

Example: Biodiversity and Interdependent Relationships



Grade 10 Curriculum



Chemistry Curriculum Map

Chemistry Curriculum Highlights

Integration of 2-D Learning Outcomes

Example: Students will **present a well-crafted product** in which they **synthesize and display** their understanding of atomic structure, nuclear chemistry, periodic trends, and the varying uses of elements in society.



Use of Science Phenomenon to Guide Units

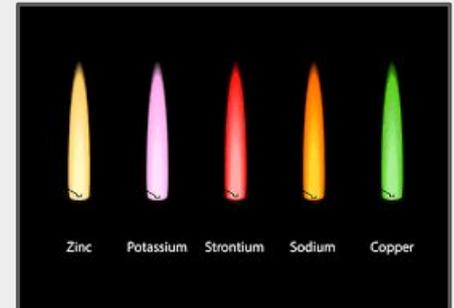
Example: The Flame Test

A Focus on the Global Competencies

Reasoning in Science

Rigorous and Relevant Performance Tasks

Example: The Density Column



Science Levels (Honors & Academic)



The science department believes that **there should be some flexibility** with regards to allowing students to **move between honors and academic courses**.

The decision to move between courses should be a **collaborative agreement** between parents, students, educators (past and present), school counselors, and administrators.

For this reason, the **unit sequence is the same** for both honors biology and academic biology as well as honors chemistry and academic chemistry. This allows for **ease of movement** for students and educators alike.



Honors science courses go into **more depth** and include **additional mathematical applications**.

For example, all biology students learn about genetic crossing, but honors biology students are expected to be able to complete dihybrid crosses.

In honors chemistry, students are expected to calculate both atomic mass as well as the relative abundances of all isotopes if given atomic mass.



Biology 12

Course Description: This college preparatory course is a survey of all the basic areas of biology required by the Next Generation Science Standards. Students will be expected to utilize the Science and Engineering Practices to learn the topics of cellular structure and function, matter and energy, inheritance and variation of traits, evolution and natural selection, and biodiversity and human impacts. Students will use labs along with hands-on activities to generate new learning. This course meets NCAA initial-eligibility certification.

Biology 11H

Course Description: This honors level course is a survey of all the basic areas of biology required by the Next Generation Science Standards. Students will be expected to utilize the Science and Engineering Practices to learn the topics of cellular structure and function, matter and energy, inheritance and variation of traits, evolution and natural selection, and biodiversity and human impacts. Students will use labs along with hands-on activities to generate new learning. ***This class is faster paced and will cover additional material beyond what is covered in Biology 12.*** This course meets NCAA initial-eligibility certification.

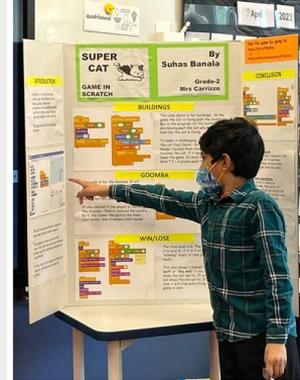


From the BHS Program of Studies, 2022

Grade K-2 Science Curriculum

Developing Conceptual Understanding and
Scientific Practices

Through
Student Centered Learning
Anchored In the Global Competencies



Developing Conceptual Understanding Through Student Centered Learning Anchored In the Global Competencies



Grade K Curriculum Map

Key Themes: Cause and Effect, Systems, Patterns

Key Practices: Developing & Using Models, out Investigations

Typical K Experiences

Reducing Human Impact

Cruising Discs



Developing Conceptual Understanding Through Student Centered Learning Anchored In the Global Competencies



Grade 1 Curriculum Map

Key Themes: Cause and Effect, Structure and Function

Key Practices: Constructing Scientific Explanations, Carrying out Investigations

Typical Grade 1 Experiences

Helpful Parts

Behavior Of Light



What Happens When Light Hits an Object?



Helpful Parts

Developing Conceptual Understanding Through Student Centered Learning Anchored In the Global Competencies



Grade 2 Curriculum Map

Key Themes: Cause and Effect, Structure and Function, Patterns

Key Practices: Developing & Using Models, Carrying out Investigations

Typical Grade 2 Experiences

Save the Beach House

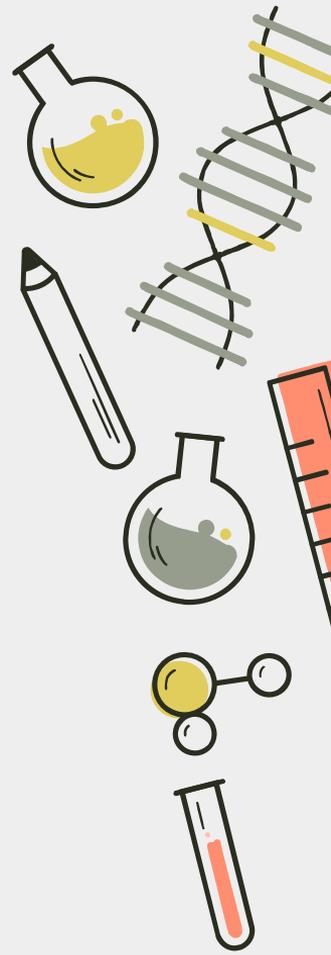
Properties of Matter



SAVE THE BEACH HOUSE



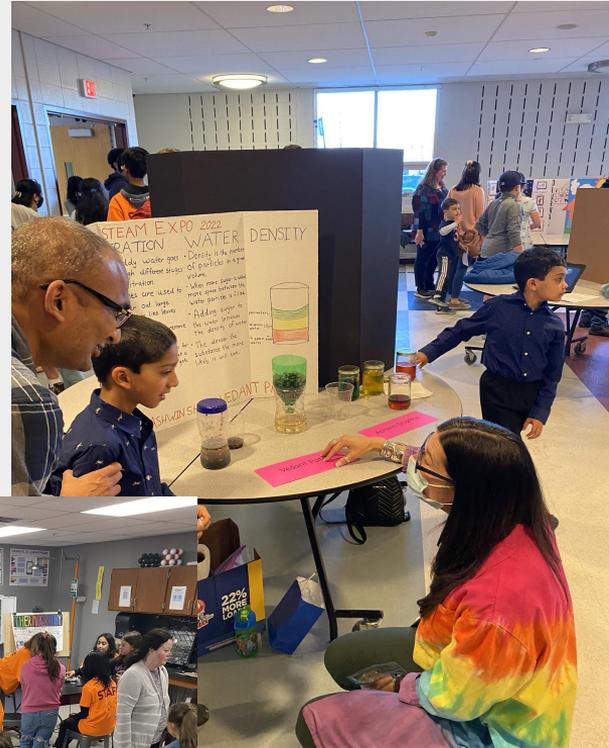
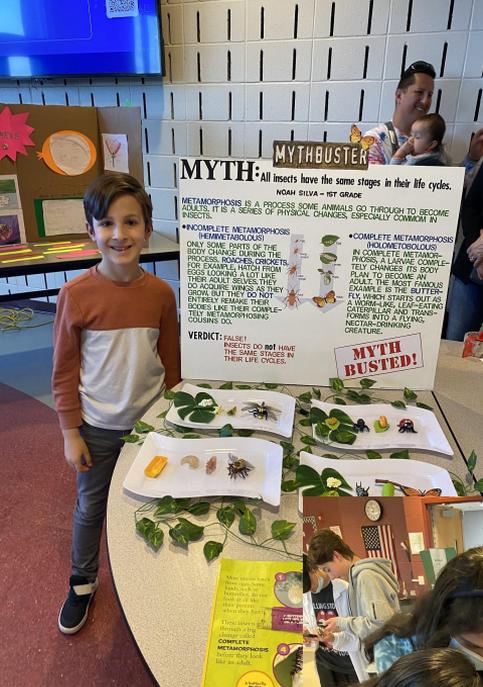
PROPERTIES OF MATTER



Reference Slide: Curriculum K-2

Kindergarten	First Grade	Second Grade
<u>Curriculum Map</u>	<u>Curriculum Map</u>	<u>Curriculum Map</u>
Unit One <u>Humans and the Needs of Organisms</u>	Unit One <u>Design from Nature</u>	Unit One: <u>Organisms – Needs and Interactions</u>
Unit Two <u>Living Things and Their Habitats</u>	Unit Two <u>Parents and Their Offspring</u>	Unit Two <u>Mapping Land and Water</u>
Unit Three <u>Using Force to Change Motion</u>	Unit Three <u>Patterns in the Sky</u>	Unit Three <u>Dealing with Changes to Earth</u>
Unit Four <u>Dealing with Weather</u>	Unit Four <u>Communicating with Light and Sound</u>	Unit Four <u>Matter and Its Interactions</u>

STEAM NIGHT 2022





Bethel Public Schools - Critical Thinking Global Competency Rubric

Critical thinking is the ability to look at problems in a new way and to link learning within and across disciplines. Students will reflect, analyze, and evaluate evidence, arguments, claims and beliefs to draw conclusions. Students are open to reconsider and revise thinking when presented with alternative points of view. Students make informed decisions and solve complex problems.

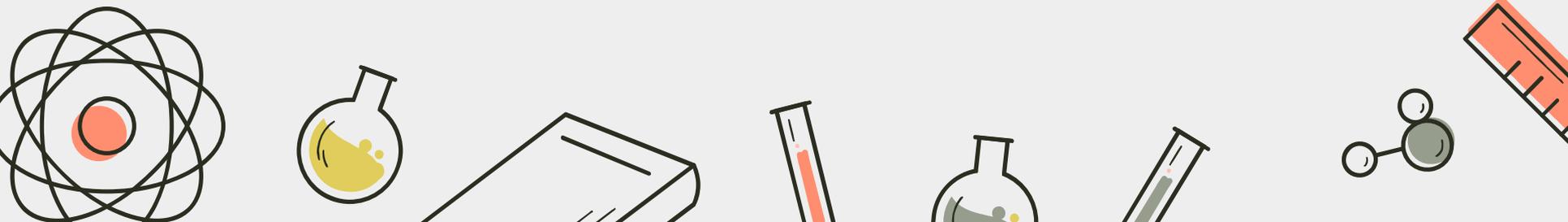
Key Skills	Level 1 - Emerging	Level 2 - Developing	Level 3 - Proficient	Level 4 - Exemplary
Information and Discovery	Identifies the problem, investigation, or challenge and uses provided information to answer questions. Formulates questions not specific to topic.	Uses information to answer general questions related to the topic. Seeks information to formulate general questions about the topic.	Explains the problem, investigation, or challenge. Formulates specific questions using information from multiple credible sources.	Clearly explains the problem, investigation, or challenge, providing details that exemplify the issue or situation. Develops, evaluates, refines, and prioritizes key questions directly related to the problem, investigation, or challenge. Selects information that is sufficient in terms of quantity, diversity, and relevance to inquiry questions.
Analysis and Interpretation	Identifies and lists different types of evidence. Identifies some components of an argument.	Compares and classifies evidence. Identifies and defines all components of a given argument.	Selects important and relevant evidence to support the argument, claim/conclusion. Identifies strengths and weaknesses of each component of an argument.	Organizes and prioritizes evidence to reveal important patterns, differences or similarities related to the focus. Evaluates the sources of evidence, the accuracy and relevance of information, and the strengths of arguments.
Reasoning	Identifies a conclusion from a provided set of potential conclusions. Identifies facts and details that support the conclusion.	Presents a claim/conclusion relevant to the topic or issue. Identifies evidence related to the problem, investigation, or challenge.	Presents relevant claims/conclusions that illustrate understanding of the concepts of the topic or issue. Provides explanations, citing relevant evidence for conclusions drawn.	Presents logical conclusions that illustrate understanding of the complexity of the topic or issue, including opposing viewpoints and identification of consequences and implications. Provides clear explanations, citing sufficient evidence for conclusions drawn.
Problem Solving and Solution Finding	Identifies and describes the provided problem, investigation, or challenge. Restates provided solutions and/or offers solutions not specific to the topic.	Clearly explains the provided problem, investigation, or challenge. Offers original solutions specific to the topic.	Engages in inquiry related to the provided problem, investigation, or challenge. Evaluates plausible solutions. Student selects and tests a possible solution.	Effectively synthesizes multiple resources directly related to the problem, investigation, or challenge. Critiques and revises original solution(s) to the problem. Student tests a variety of alternative solutions to the problem and selects the most effective.
Self-Regulation and Reflection	Demonstrates basic understanding of own thinking process with guidance and assistance. Has evidence of reflection on own thinking process with guidance and assistance.	Has limited understanding of own thinking process. Has limited evidence of reflection on own thinking process.	Selects and applies appropriate critical thinking strategies to new learning. Reflects on own strengths and weaknesses on critical thinking dispositions linked to previous learning.	Evaluates and revises critical thinking skills to perform in complex situations. Practices deep and sustained reflection on critical thinking related to specific concepts and processes in complex situations.





Thank You!

Questions?





BACK TO SCHOOL ICONS



ALTERNATIVE RESOURCES

