Curriculum Map: Science 5 - Collaboration (Converted)

Course: Science 5*

Unit: properties of matter

Description:
matter
atoms and molecules
elements
solids liquids and gases
changing states of matter
melting and boiling points
mixtures and solutions
physical changes
chemical changes

Skills:
identify some physical properties of matter
define matter atoms and molecules
describe the 3 states of matter
explain density and how it relates to volume
compare mixtures and solutions
define chemical change
explain how matter is conserved

Benchmark Assessments:
Written Test
Other written assessments
Other written assessments
Other written assessments

Instructional Procedures:
Introducing New Content & Vocabulary
(word mappingsurvey text)
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act wordIntroducing New Content & Vocabulary
(word mappingsurvey text)
1. Use KWL, cues & other strategies so students recall important prior knowledge
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Resources:
textbook
video
hands on material

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.1.1.1 (Introduced)	Use physical properties (e.g., mass, shape, size, volume, color, texture, magnetic property, state (i.e., solid, liquid, gas), conductivity (i.e., electrical, heat) to describe matter.
S4.C.1.1.2 (Introduced)	Categorize/group objects using physical characteristics.

This Curriculum Map Unit has no Topics to display

Unit: Envi

This Curriculum Map Unit has no Topics to display

Unit: energy

Description:
kinetic and potential energy
energy transfer
solar energy
chemical and mechanical energy
electricity and sound
changing energy forms
heat and teperature

thermal energy transfer
nonrenewable energy resources
renewable energy resources
conservation

Skills:
define potential and kinetic energy
compare the kinetic energy of objects dropped from different heights
identify various forms of energy
explain how energy is changed from one form to another
define heat
describe how heat is transfered

Benchmark Assessments:
Other written assessments
Lab Assignment
Written Test
Written Test
teacher made test
Standardized Test
Other written assessments

Instructional Procedures:
Using Reading Strategies
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act word

Resources:
textbook
handouts
hands on material

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.2.1.1 (Introduced)	Identify energy forms and examples (e.g., light, heat, stored, motion, electrical).
S4.C.2.1.2 (Introduced)	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).
S4.C.3.1.1 (Introduced)	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).
S4.C.3.1.2 (Introduced)	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).

This Curriculum Map Unit has no Topics to display

Unit: electricity

Description:
electricity
magnetism
electric motors
static electricity
current electricity
conductors and insulators
series circuits
parallel cicuits
drawing circuits

Skills:
describe electricity and relate to magnestism
explain how electric motors work
explain what causes static electricity and current electricity
describe conductors and insulators
construct an electric circuit
compare how electric currents flows through circuits

Benchmark Assessments:
Lab Assignment
Written Test

Instructional Procedures:
Using Summary & Taking Notes
Using Reading Strategies
1. Use paired or cooperative reading
2. Students read aloud
3. Use key concept synthesisMaking Comparisons & Contrasts

Making Comparisons & Contrasts
1. Use similarities & differences with teacher-generated criteria.
2. Use similarities & differerences with student-generated criteria.
3. Use classification to extend student understanding
4. Use student created similes, metaphors & analogies to extend understanding
5. Provide students with explicit instruction on critical thinking skill(s)Using Cooperative Learning & Active Engagement
Using Cooperative Learning & Active Engagement
1. Use peer learning
2. Use cooperative groups
3. Use active learning strategies e.g. peer share, thumbs up/down, whip around the class
4. Give students explicit instruction on working cooperatively

Resources: textbook
handouts
orgnaizers
hands on material

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.2.1.1 (Introduced)	Identify energy forms and examples (e.g., light, heat, stored, motion, electrical).
S4.C.2.1.2 (Introduced)	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).
S4.C.2.1.3 (Introduced)	Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off- switches.

This Curriculum Map Unit has no Topics to display

Unit: sound and light

Description: sound energy
sound waves
sound transmission
animals and sound
light energy
light waves
absorption,reflection, and refraction
lenses

Skills: investigate how changes in matter affect sound
recognize that sound travels in waves
understand that sound is transmitted by vibrations
observe how a mirror reflects light
explain what light is and how it travels
describe the effects of matter on light

Benchmark Assessments: Other written assessments
Student Portfolio
Lab Assignment
Lab Assignment
Lab Assignment

Instructional Procedures: Using Writing Strategies
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act wordProviding Practice
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Using Reading Strategies
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4. Use drama and personal stories to introduce learning goals
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Resources: textbook
hands on materials
reading and homework support handouts
graphic organizers

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.2.1.1 (Introduced)	Identify energy forms and examples (e.g., light, heat, stored, motion, electrical).
S4.C.2.1.2 (Introduced)	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).
S4.C.2.1.3 (Introduced)	Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off- switches.
S4.C.2.1.4 (Introduced)	Identify characteristics of sound (e.g., pitch, loudness, echoes).

This Curriculum Map Unit has no Topics to display

Unit: forces and motion

Description: froces, friction, gravity, and magnetic force
balanced and unbalanced forces
net and buoyant forces
machines and work
compound machines

Skills: observe that force is needed to move masses under different conditions
identify different kinds of forces
understand how friction, gravity, and magnetism affect the motion of an object
describe balanced and unbalanced forces
observe how forces interact to affect the motion of an object
observe that a lever makes it easier to do work
describe how machines make work easier

Benchmark Assessments: Written Test
Other written assessments
Narrative Writing Assignment
Lab Assignment
Lab Assignment

Instructional Procedures: Introducing New Content & Vocabulary
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act wordMaking Comparisons & Contrasts
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3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act word

Resources: textbook
reading support and homewoork handouts

hands on materials
graphic organizers

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.3.1.1 (Introduced)	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).
S4.C.3.1.2 (Introduced)	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).
S4.C.3.1.3 (Introduced)	Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).

This Curriculum Map Unit has no Topics to display

Unit: motion

Description:
forces, motion, speed, and velocity
accelerationand momentum
Newtons first Law of Motin
Newtons second Law of Motion
Newtons third Law of Motion
motion in space

Skills:
observe factors that affect motion
list factors that affect motion
define speed, velocity, acceleration, and momentum
observe how mass and velocity affect momentum
explain the laws of motion
compare the motionon earth and in space

Benchmark Assessments:
Narrative Writing Assignment
Standardized Test
Written Test

Instructional Procedures:
Your Choice
Summarizing
Generating & Testing Hypotheses
1. Use in problem-solving tasks.
2. Use in investigative tasks.
3. Use in scientific experiments.
Your Choice
Frayer Model
Your Choice
One Word Summary
Your Choice
Picture It
Your Choice
Known/Unknown
Your Choice
Picture Conversation
Your Choice
Word Splash

Resources:
Textbook, United Streaming, Science Lab equipment

STANDARDS

STATE: Pennsylvania State Anchors

S4.C.3.1.1 (Introduced)	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).
S4.C.3.1.2 (Introduced)	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).
S4.C.3.1.3 (Introduced)	Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).

This Curriculum Map Unit has no Topics to display

Unit: levers and pulleys

Description:
Investigation 1

Levers/simple machine
Advantantages for doing work
Effort and force needed to move a load
Fulcrum, where a lever pivots
Load/mass lifted by a lever

Investigation 2
Leverage
Identifying the 3 types of lever set-ups
Advantages in a gain in effort, distance, and location of the loads
Advantages in the change in direction of the force

Investigation 3
Pulleys
Single pulley system (moveable and fixed)
Advantages of moveable system
Identify changes in directions
Two-pulley system/ advantages in effort, distance, or direction

Skills:

Investigation 1
Setting up a Class 1 Lever
Measuring the effort to lift loads when;
load remains constant, effort changes
effort remains the same, load is moved
Organize data during observations
Identify relationships between parts of a lever

Investigation 2
Observation of the different kinds of levers
Comparing the effort to different types of levers
Diagraming levers in different systems
Analyzing tools and identify the type of lever

Benchmark Assessments:

Self Assessment
Notebook EntriesInvestigationsTeacher Designed Tests and quizesSelf assessmentClassroom observations

Instructional Procedures:

Providing Feedback
Your Choice
Generating & Testing Hypotheses
1. Use in problem-solving tasks.
2. Use in investigative tasks.
3. Use in scientific experiments.
Introducing New Content & Vocabulary
Generating & Testing Hypotheses
Using Summary & Taking Notes
Using Cooperative Learning & Active Engagement
Using Reading Strategies

Resources:

Teacher Edition, FOSS Full Option Science System

FOSS materials, 5 kits, consumable and nonconsumable materials

Student Reading, Science Stories Levers and Pulleys

FOSS website

Duplication hand-outs

Teacher designed worksheets

STANDARDS

STATE: Pennsylvania State Anchors

S8.C.3.1.3 (Introduced)	Explain that the mechanical advantages produced by simple machines helps to do work (physics) by either overcoming a force or changing the direction of the applied force.

This Curriculum Map Unit has no Topics to display

Unit: weather and water cycle

Description:
the atmosphere
heating and local winds
prevailling winds
water cycle, clouds and precipitation
factors that affect the water cycle
measuring weather
air masses and fronts
weather patterns and climates
landforms affect climate

Skills:
identify changes in states of water
describe the stages of the water cycle
explain how the water cycle affects to the weather
record weather data
recognize how meteorologists predict the weather
identify the causes of weather
describe the atmosphere
recognize how wind forms

Benchmark Assessments:
Written Test
Student Portfolio
Other written assessments
Lab Assignment
Dramatization

Instructional Procedures:
Making Comparisons & Contrasts
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act wordUsing Summary & Taking Notes
Using Writing Strategies
Using Reading Strategies
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act word

Resources:
textboob
reading and homework handouts
hands on materials
organizers

STANDARDS

STATE: Pennsylvania State Anchors

S4.D.2.1.1 (Introduced)	Identify basic clouds types (i.e., cirrus, cumulus, stratus, cumulonimbus) and make connections to basic elements of weather (e.g., changes in temperature and precipitation).
S4.D.2.1.2 (Introduced)	Identify weather patterns from data charts or graphs of the data (e.g., temperature, wind direction, wind speed, cloud types, precipitation).
S4.D.2.1.3 (Introduced)	Identify appropriate instruments (i.e., thermometer, rain gauge, weather vane, anemometer, barometer to study weather and what they measure.

This Curriculum Map Unit has no Topics to display

Unit: earth's oceans

Description:
ocean water and ocean floor
changes to the ocean floors
waves, currents, tides
shorelines and human activities affecting shores
mysteries of the oceans

Skills:
observe how salt influences the freezing temperature of water
recognizehow how water differs in different parts of the ocean
describe what the ocean floor looks like
observe that ocean waves are caused by wing
understand how ocean waves form
identify what causes currents and tides
observe how water erodes and deposits sand

explain how ocean waves and currents shape the shore

Benchmark Assessments:
Written Test
Written Test
Student Portfolio
Other written assessments
Lab Assignment

Instructional Procedures:
Introducing New Content & Vocabulary
Providing Practice
1. Use KWL, cues & other strategies so students recall important prior knowledge
2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act wordUsing Summary & Taking Notes
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2. Use higher level questions so students recall important prior knowledge
3. Use advance graphic organizers to show structure of the unit
4. Use drama and personal stories to introduce learning goals
5. Use various strategies to teach vocabulary - provide example, students stick draw & act word

Resources:
textbook
hands on materials
handouts,reading and homework support

STANDARDS

STATE: Pennsylvania State Anchors

S4.B.2.1.1 (Introduced)	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).
S4.B.3.1.1 (Introduced)	Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park or playground).
S4.B.3.1.2 (Introduced)	Describe interactions between living and nonliving components (e.g. plants – water, soil, sunlight, carbon dioxide, temperature; animals – food, water, shelter, oxygen, temperature) of a local ecosystem.

This Curriculum Map Unit has no Topics to display

Unit: Environments

Description:
Students gain experience with living and nonliving environmental factors in terrestrial and aquatic systems. Organisms maintained in the classroom are used to develop the concepts of environmental factor, range of tolerance, and optimum conditions for survival of populations. Students observe how organisms respond to environmental conditions and how they change their environment.

Skills:
Relating, Organizing, Comparing, Communicating, Observing

Benchmark Assessments:
Other written assessments
Lab Assignment
Other Visual Assessments
Other written assessments
Self Assessment
Written Test

Instructional Procedures:
Generating & Testing Hypotheses
Introducing New Content & Vocabulary
Making Comparisons & Contrasts
Providing Feedback
Using Cooperative Learning & Active Engagement
Using Reading Strategies
Using Summary & Taking Notes

Resources:
Teachers Edition, FOSS Full Option Science System

FOSS Materials, Kits, Consumable and Nonconsumable Materials

Student Reading, Science Stories, Environments

Google

Library

STANDARDS

STATE: Pennsylvania State Standards

3.3.4.A (Introduced)	Know the similarities and differences of living things.		
	S4.B.1.1	Pennsylvania Science Anchors to Standards Alignment	Identify and describe similarities and differences between living things and their life processes.
3.3.4.B (Introduced)	Know that living things are made up of parts that have specific functions.		
	S4.B.1.1	Pennsylvania Science Anchors to Standards Alignment	Identify and describe similarities and differences between living things and their life processes.
3.3.4.C (Introduced)	Know that characteristics are inherited and, thus, offspring closely resemble their parents.		
	S4.B.2.2	Pennsylvania Science Anchors to Standards Alignment	Identify that characteristics are inherited and, thus, offspring closely resemble their parents.
3.3.4.D (Introduced)	Identify changes in living things over time.		

This Curriculum Map Unit has no Topics to display

Unit: the rock cycle

Description:
mineral properties
rock formation
identifying rocks
changes in rock
rock cycle
soil formation

Skills:
classify minerals based on their properties
understand what a mineral is
identify different mineral properties
identify properties of rock
recognize the different types of rocks
identify the different stages of the rock cycle
recognize different ways rocks and landforms are weathered
identify the byproducts of ersion

Benchmark Assessments:
Standardized Test
Written Test
Standardized Test
Visual Arts Project

Instructional Procedures:
Introducing New Content & Vocabulary
Making Comparisons & Contrasts
Providing Practice
Using Classroom Organisation
Using Cooperative Learning & Active Engagement
Using Summary & Taking Notes

Resources:
testbook
handouts for reading support
minerals
video

STANDARDS

STATE: Pennsylvania State Anchors

S8.D.1.1.1 (Introduced)	Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, obsidian, pumice, ; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss).
S8.D.1.1.2 (Introduced)	Compare and contrast (i.e., geological processes, length of time over which change occurs, factors affecting the rate of change) different types of changes in Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, edimentation, soil formation).

This Curriculum Map Unit has no Topics to display

Unit: fossils

Description:
earth's history
fossil formation
fossils and modern animals
fossils and modern plants
unique fossils

Skills:
understand how fossils form
recognize ways that fossils help date rock layers
classify fossils
compare animal fossils to animals living today
compare plant fossils to plants living today

Benchmark Assessments:
Written Test
Standardized Test
Other written assessments
Lab Assignment
Lab Assignment

Instructional Procedures:
Introducing New Content & Vocabulary
Making Comparisons & Contrasts
Using Reading Strategies
Using Summary & Taking Notes
Using Summary & Taking Notes

Resources:
textbook
reading supportand practice handouts
hands-on material

STANDARDS

STATE: Pennsylvania State Anchors

S8.D.1.1.2 (Introduced)	Compare and contrast (i.e., geological processes, length of time over which change occurs, factors affecting the rate of change) different types of changes in Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, edimentation, soil formation).
S8.D.1.1.4 (Introduced)	Explain how fossils provide evidence about plants and animals that lived long ago throughout Pennsylvania's history (e.g., fossils provide evidence of different environments).

This Curriculum Map Unit has no Topics to display