Students are given 1 of the 4 metals in the table. It has a silvery color and a density of 8.9 g/cm^3. What is the metal?

A. iron
B. copper
C. silver
D. nickel

PROPERTIES OF METALS

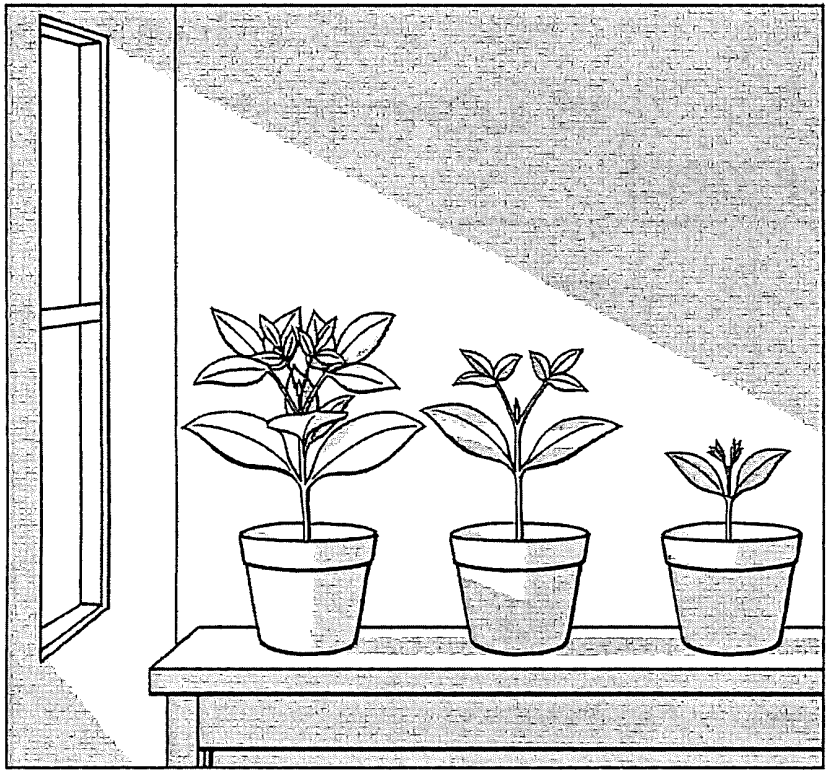
Metal	Melting Point	Density	Color
Iron	1,538°C	7.9 g/cm^3	silvery
Copper	1,357°C	8.9 g/cm^3	reddish
Silver	1,235°C	10.5 g/cm^3	silvery
Nickel	1,455°C	8.9 g/cm^3	silvery

- Answer: D nickel Nickel is the only metal that is silvery and has a density of 8.9 g/cm^3.
- Standards Covered: 3.2.4.A1, 3.2.7.A1
- Science Concept: Reading charts, physical properties
- Key Vocab: Properties of matter
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 4.
- Other?

Students planted 3 seeds from the same plant species and let them grow on a classroom window sill. Which of the following is **most likely** an inherited trait for these plants?

A. where it grows
B. leaf shape
C. when it is planted
D. number of leaves



- Answer: B leaf shape; Where it grows and when it is planted are controlled by the student. The number of leaves is dependent upon the amount of sunlight (acquired trait). Leaf shape is an inherited trait.

- Anchor Covered: 3.1.5.B1

- Science Concept: Inherited traits

- Key Vocab: Heredity

- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 5.
- Other?

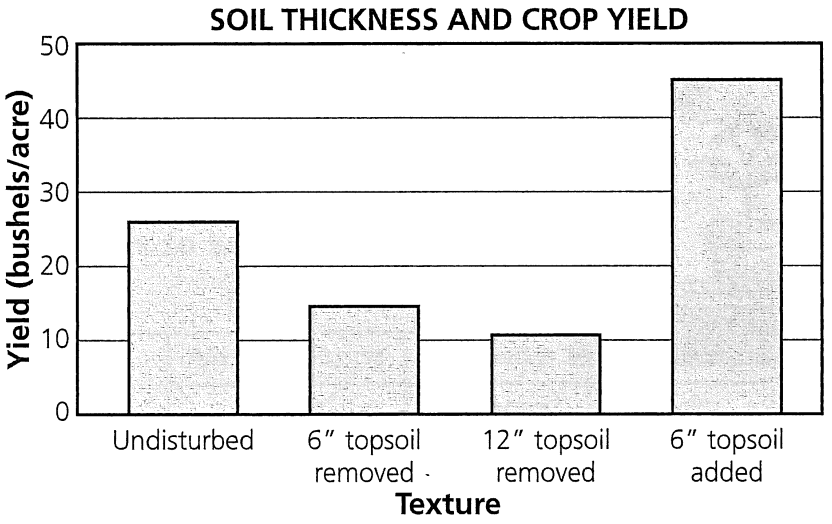
Which of the following is the **best** inference to draw from this table?

A. Crop yield depends on a water source deep underground.

B. Insects living underground are the main reason for low crop yield.

C. Crop yield can be improved if erosion is prevented.

D. Fertilizers are the least effective way to improve crop yield.

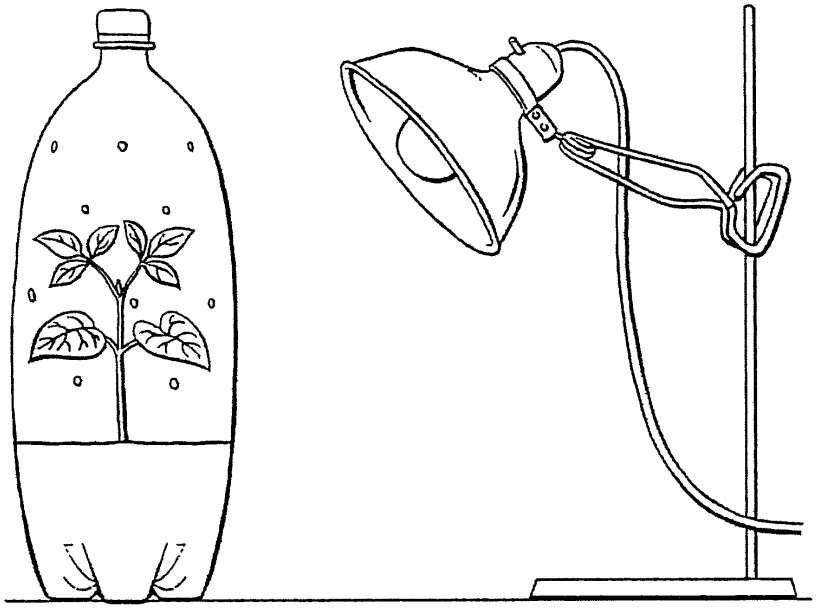


- Answer: C Crop yield can be improved if erosion is prevented. Based on the graph, as soil thickness increases, yield also increases.
- Standard Covered: 3.3.6.A2
- Science Concept: Earth's Resources/Materials
- Key Vocab: erosion, topsoil, crop yield
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 6.
- Other?

A student placed soil in a recycled bottle and planted a seed. She made holes in the bottle and placed it near light. She added water every day. Which part of this system cycles in a closed loop?

A. carbon dioxide
B. soil minerals
C. solar energy
D. fresh water



- Answer: B soil minerals. Any materials that are in a closed loop must remain in the bottle in a constant amount. Water and sunlight were added daily. CO_2 could exit and enter through the holed. Only the minerals remained constant.
- Standard Covered: 3.2.6.A3
- Science Concept: Matter and Energy
- Key Vocab: closed loop, system, cycle
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 7.
- Other?

Read the steps listed below.

1. Refine ore into metals.
2. Produce metal beams.
3. Mine ore from underground.
4. Assemble beams into a building.

Which of the following lists these steps in order from first to last?

A. 1, 3, 2, 4
B. 1, 2, 3, 4
C. 2, 4, 3, 1
D. 3, 1, 2, 4

- Answer: D. Ore must be mined before it can be refined into a usable metal. Then the metal can be made into metal beams which are used in buildings.
- Standard Covered: 3.3.6.A2
- Science Concept: Earth's Resources/Materials
- Key Vocab: ore, refine
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 7.
- Other?

Students mixed the substances shown in separate beakers. The table shows the temperature changes that resulted. Which of the following is the **most likely** final temperature for beaker 5?

A. 38°C
B. 35°C
C. 33°C
D. 31°C

MIXING SUBSTANCES

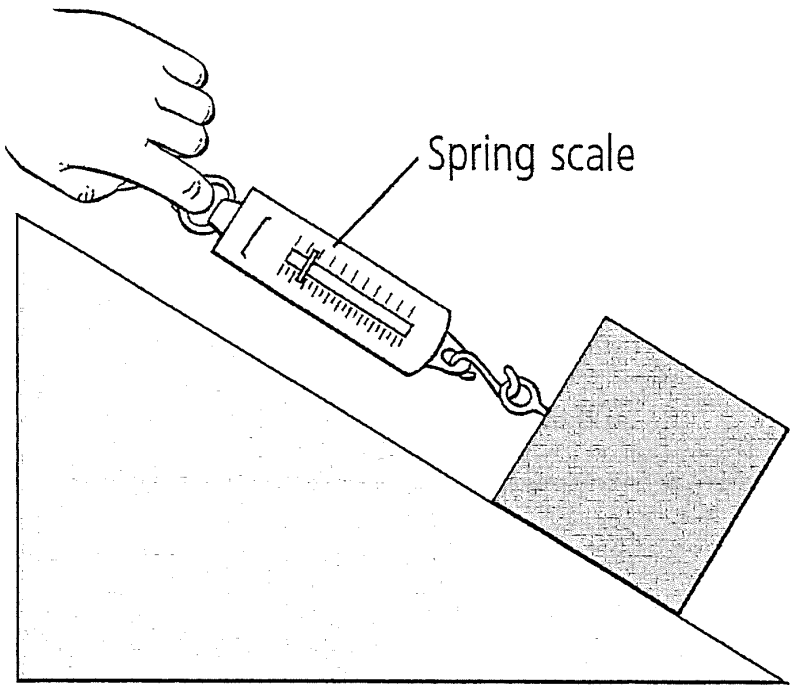
Beaker	Powder (g)	Liquid (mL)	Initial Temperature (°C)	Final Temperature (°C)
1	10	60	20	24
2	20	60	20	28
3	30	60	20	31
4	40	60	20	35
5	35	60	20	?

- Answer: C 33°C. 30 g of powder resulted in a final temp. of 31°C and 40 g resulted in a final temp. of 35°C. As the amount of power increased, the final temp increased. Therefore, 35 g of powder would produce a temperature between 31 and 35°C.
- Standard Covered: 3.2.8.A3
- Science Concept: Matter & Energy
- Key Vocab: none
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 10.
- Other?

Students use a spring scale to measure forces acting on a box on a ramp. When does the spring scale measure the forces of friction and gravity.

A. when the box is resting at the bottom of the ramp
B. when the box is sliding down the ramp
C. when the box is lifted straight up off the ramp
D. when the box is being pulled up the ramp



- Answer: D – when the box is being pulled up the ramp. Friction can only be measured when there is contact and movement between 2 materials. The gravity would be measured when the spring scale and box would be pulling in opposite directions. This only occurs when the box is being pulled up the ramp.

- Standard Covered: 3.2.6.B1
- Science Concept: Force & Motion of Particles and Rigid Bodies

- Key Vocab: spring scale, friction, gravity, forces

- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 12.
- Other?

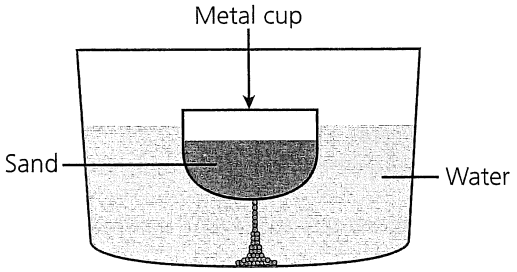
Use the figure below to answer the following question. A small metal cup holding sand floats in a large tub of water. There are holes in the bottom of the cup that are letting the sand run out. Which of the following describes the changes that are **most likely** to occur?

A. The cup will float higher until all the sand runs out. Then water will leak in and the cup will sink.

B. The cup will sink lower as the sand runs out. Finally, it will settle at the bottom of the tub.

C. The cup will float at its current level in the water no matter how much of the sand remains in the cup.

D. The cup will sink until water leaks in to take the place of the sand. With something to hold it up, the cup will float again.



Densities	
Water	1 g/cm^3
Sand	2 g/cm^3
Metal cup	5 g/cm^3

- Answer: A. The volume of the cup stays the same but the mass changes as the sand runs out. The density of the cup will decrease as long as the sand exits. Since it was floating originally, the density will continue to be lower than that of the water. Once the water enters the cup, the density will increase as the mass increases. When the density of the cup is greater than 1.0 g/cm^3 then the cup will sink.

- Standard Covered: 3.2.7.A1

- Science Concept: Properties of Matter

- Key Vocab: density

- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 16.
- Other?

Look at the chemical equation shown below.

$$2\ H_2 + O_2 \rightarrow 2H_2O$$

Which of the following lists all of the reactants in this reaction?

A. O_2

B. $2\ H_2O$

C. H_2

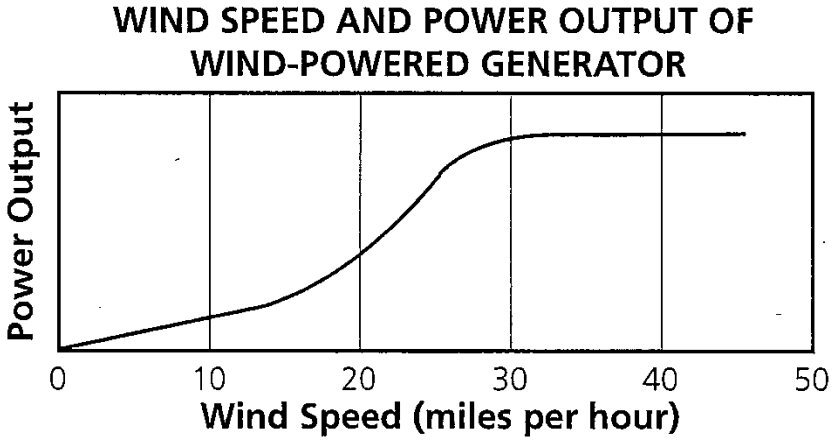
D. $2\ H_2 + O_2$

- Answer: D. All substances listed to the left of the arrow in a chemical equation are categorized as reactants.
- Standard Covered: 3.2.7.A4
- Science Concept: Reactions
- Key Vocab: reactant, reaction, chemical equation
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 22.
- Other?

A scientist tested a wind-powered generator to determine how effective it was. The graph shows his results. As wind speed increases, what happens to power output?

A. It increases at a steady rate.
B. It decreases for a while, then remains steady.
C. It remains steady.
D. It increases for a while, then remains steady



- Answer: D. This answer best describes the trend shown in the graph.
- Standard Covered: 3.2.7.B7
- Science Concept: Science as Inquiry (Physics)
- Key Vocab: generator, power output, rate
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 23.
- Other?

Use the table below to answer the following question. Based on the information in the table, which of the following statements is true?

A. Increasing both the salt content and temperature of ocean water will increase its density.

B. Increasing the temperature and decreasing the salt content of ocean water will increase its density.

C. Decreasing both the salt content and temperature of ocean water will decrease its density.

D. Decreasing the temperature and increasing the salt content of ocean water will increase its density.

FACTORS AFFECTING DENSITY OF OCEAN WATER

Density at 20°C		Density at 15°C	
Salt Content (g/L)	Density (mg/mL)	Salt Content (g/L)	Density (mg/mL)
5.0	1.002	5.0	1.003
10.0	1.006	10.0	1.007
15.0	1.010	15.0	1.011

- Answer: D. As temperature decreases, the density increases. As the salt content increases, density increases.
- Standard Covered: 3.2.7.A1
- Science Concept: Properties of Matter
- Key Vocab: density
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 28.
- Other?

A scientist studies a dragonfly species. She started with 2 parent dragonflies and has raised many generations. All have had 4 wings. In the most recent generation of dragonfly offspring, one dragonfly had 8 wings. Which of the following **best** explains the reason for this change?

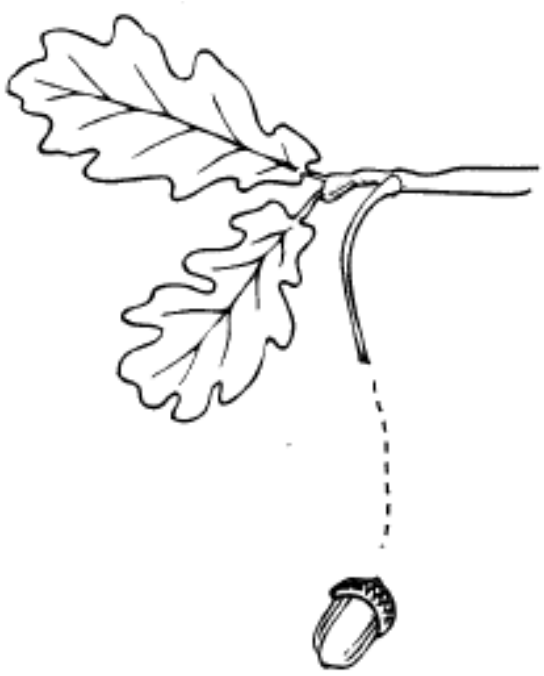
A. The offspring had a new trait as a result of a mutation of its genes.
B. Small changes in each generation led to an offspring with a new trait.
C. A change in the lab environment led to an offspring with a new trait.
D. The offspring needed more wings because it was larger than normal.

- Answer: A. Mutations can alter a gene and are the original source of new variations in a population.
- Standard Covered: 3.1.7.C2
- Science Concept: Adaptation
- Key Vocab: mutation, offspring, trait, generation
- Who typed this slide: Kim & Brenda

- PSSA Performance Indicator: Form A, pg 30.
- Other?

Which of the following **best** describes the acorn as it falls?

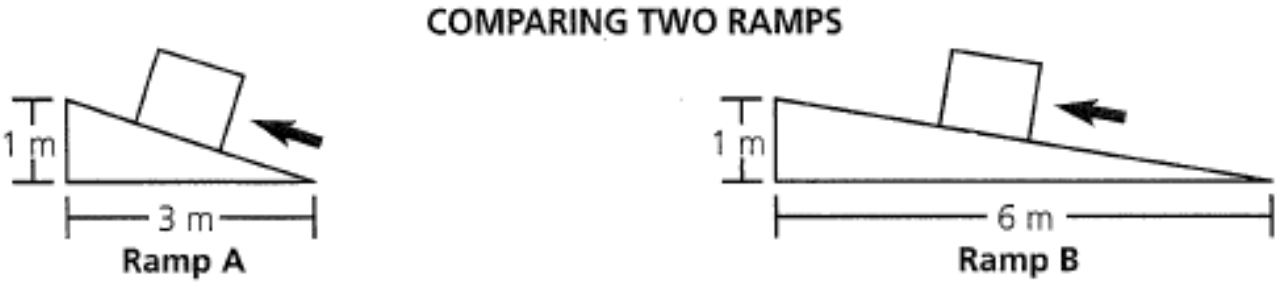
A. Its potential energy is increasing as its kinetic energy decreases.
B. Both its potential energy and kinetic energy are decreasing.
C. Its kinetic energy is increasing as its potential energy decreases.
D. Both kinetic energy and potential energy are increasing.



- Answer (why, why not?): *C) Its kinetic energy is increasing as its potential energy decreases.* While on the branch the kinetic energy (in motion) is zero and potential energy (at rest) is at its highest. Once the acorn is released from the branch it begins to fall due to gravity and the kinetic increases as the potential decreases.
- Standard Covered: 3.2.6.B2
- Science Concept: energy storage and transfer
- Key Vocab: potential energy, kinetic energy
- Who typed this slide: bs

- Form A – pg.34#54
- Other?

Two different ramps can be used to raise a box by one meter. The arrow shows the pushing force on the box. Which of the following **best** describes a difference between these two ramps?



A. Ramp A requires less force because it is shorter than ramp B.

B. Ramp B requires the same force as ramp A because both are being used to raise the same box.

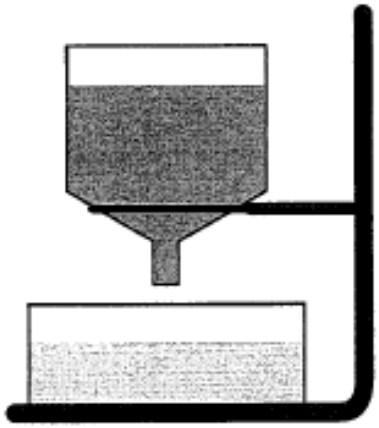
C. Ramp B requires less force because it is not as steep as ramp A.

D. Ramp A requires the same force as ramp B because both raise the box to the same height.

- Answer (why, why not?): *C) Ramp B requires less force because it is not as steep as ramp A.* In each ramp all factors are the same except for the ramp length. The longer ramp will result in requiring less force to raise the box 1 meter.
- Standard Covered: 3.2.7.B1
- Science Concept: forces and motion
- Key Vocab: force
- Who typed this slide: bs

- Form A – pg.35#57
- Other?

Students fill funnels with equal volumes of sand and silt. They add equal amounts of water to each and record the time for 50 mL of water to pass through and collect in the cups. They hypothesize that flow time is inversely related to particle size. Which result for a funnel filled with gravel would support their hypothesis?



MEASURING WATER FLOW

Material in Funnel	Particle Size (mm)	Time (s)
Sand	1.0	90
Silt	0.05	200
Gravel	5.0	?

A. 450 seconds

B. 200 seconds

C. 90 seconds

D. 15 seconds

- Answer (why, why not?): *D) 15 seconds*

  If the particle size of the materials where ordered from smallest to largest the data table would more clearly show a inversely proportional relationship. As particle size increases the flow time is decreasing.
- Standard Covered:
- Science Concept: scientific method/data analysis
- Key Vocab: volume, inversely related, hypothesize, flow time
- Who typed this slide: bs

- Form A – pg.37#60
- Other?

People in a community cut down trees in a forest so they could use the wood. They cut down many trees each year. After several years, a population of rabbits in a nearby field had become so large that the rabbits were causing problems for the community. What is the most likely explanation for the growth in the rabbit population?

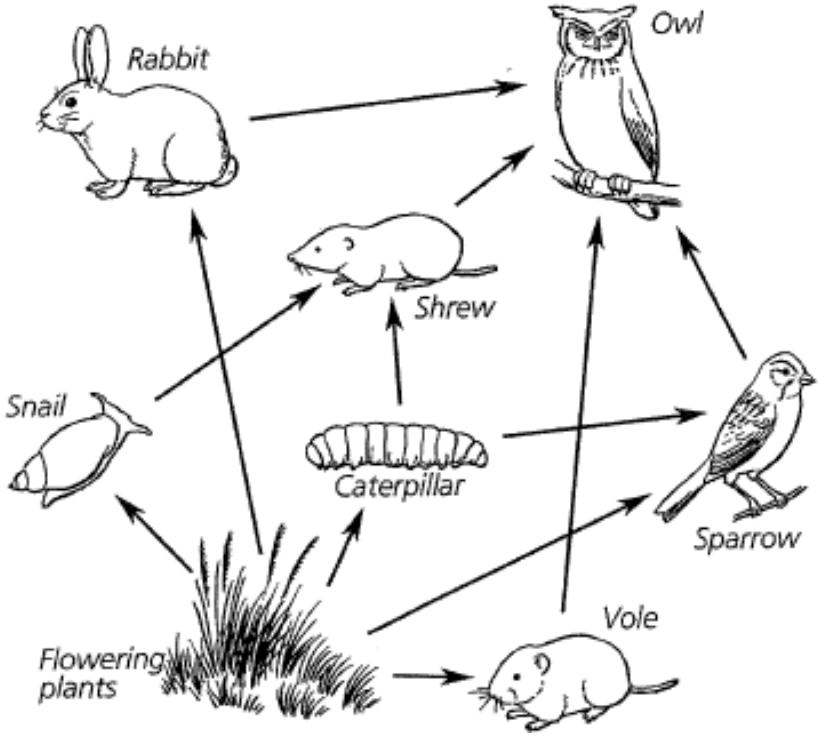
A. The removal of the trees allowed the population of the rabbits' predators to increase.
B. When the people cut down the trees, they killed off many of the plants the rabbits eat.
C. When the people cut down the trees, they destroyed the habitats of the rabbits' predators.
D. The removal of the trees encouraged mutations in the rabbits that allowed them to breed more quickly.

- Answer (why, why not?): *C. When the people cut down the trees, they destroyed the habitats of the rabbits' predators.* Options A, B and D will all lead to a decline in population. C is the only choice that provides a reason for the rabbits increase.
- Standard Covered:
- Science Concept: scientific method/ changing variables
- Key Vocab: predator, habitat, mutation
- Who typed this slide: bs

- PSSA – Finish line pg133 #1
- Other?

A disease kills all the rabbits in an ecosystem. Which two animals will <u>most likely</u> be able to fulfill the rabbits' role to maintain the ecosystem's function?

A. voles and sparrows
B. snails and caterpillars
C. owls and sparrows
D. shrews and voles



- Answer (why, why not?): *A. voles and sparrows.* Like the rabbit both voles and sparrows are primary consumers of flowing plants. They also provide food to the owl.
- Standard Covered: 3.1.6.A2
- Science Concept: energy flow/food chain
- Key Vocab: ecosystem
- Who typed this slide: bs

- Bibliography
- Other?

Which of the following shows an example of correctly ordered levels of organization in a body system?

A. muscle, cell, muscular system, dog
B. cell, lung, respiratory system, rabbit
C. kidneys, bladder, excretory system, human
D. mouth, stomach, intestines, cow

- Answer (why, why not?): *B. cell, lung, respiratory system, rabbit.* Option B organizes systems from smallest to largest. The rabbit contains the respiratory system, which contains the lung which is made of cells.
- Standard Covered: 3.1.7.A6
- Science Concept: organizing levels of organisms
- Key Vocab: levels of organization, body system
- Who typed this slide: bs

- PSSA – finish line pg134 #3
- Other?

CHANGES IN A SNAIL POPULATION

In a population of land snails in a forest, some snails have thicker shells than others. Within the biome where the snails live, a gradual decrease in rainfall occurs. Over time, the thick shell trait becomes more common in the population. What is the most likely advantage of the thick shell trait in this particular snail population?

A. Thick shells hold in more moisture than thin shells.
B. Thick shells make the snails more visible than thin shells.
C. Thick shells are harder for predators to break than thin shells.
D. Thick shells are heavier for the snails to carry than thin shells.

- Answer (why, why not?): *A. Thick shells hold in more moisture than thin shells.* The thick shell trait allows for greater survival among species as the rainfall in the biome decrease. As time passes the thick shell species survive as the thin shell species die out.
- Standard Covered: 3.1.7C1
- Science Concept: natural selection
- Key Vocab: biome, trait
- Who typed this slide: bs

- PSSA – Finish line pg.136 #4
- Other?

In an estuary such as Chesapeake Bay, fresh water and salt water mix. Eelgrass thrives in the parts of the bay with higher salinities, or saltier water. Suppose a changing climate leads to larger amounts of precipitation falling into the bay. Which eelgrass individuals will have the best chance of survival in the bay?

A. those that can live on dry land
B. those that are adapted to very salty water
C. those that can tolerate lower salinities
D. those that are preferred by consumers

- Answer (why, why not?): *C. those that can tolerate lower salinities.* The increase in rainfall will result in more fresh water entering into the bay. This increase in fresh water will lower salinity levels create a favorable environment of eelgrass tolerant of low salinity levels.
- Standard Covered: 3.1.4.C1
- Science Concept: natural selection/ environmental change
- Key Vocab: thrive, salinity
- Who typed this slide: bs

- PSSA – finish line pg137 #9
- Other?

A student wants to do a scientific investigation to answer the question, “Does fertilizer in pond water affect how fast trout grow?” The student infers that fertilizer makes trout grow more quickly. Which of these observations best supports her inference?

A. After three weeks, most of the trout in the pond with fertilizer had died.
B. After three weeks, there were more female trout than male trout in a pond with fertilizer.
C. After three weeks, trout in a pond with fertilizer were larger than those in a pond without fertilizer.
D. After three weeks, trout in a pond with fertilizer were healthier than those in a pond without fertilizer.

- Answer (why, why not?): *C. After three weeks, trout in a pond with fertilizer were larger than those in a pond without fertilizer.* Choice C measures the size of the trout with and without fertilizer which provides data to verify the scientific question posed. The others choices do not provide data the aligns with the scientific question.
- Standard Covered:
- Science Concept: scientific method/ making inferences
- Key Vocab:
- Who typed this slide: bs

- PSSA – finish line pg13 #4
- Other?

Organization in Systems

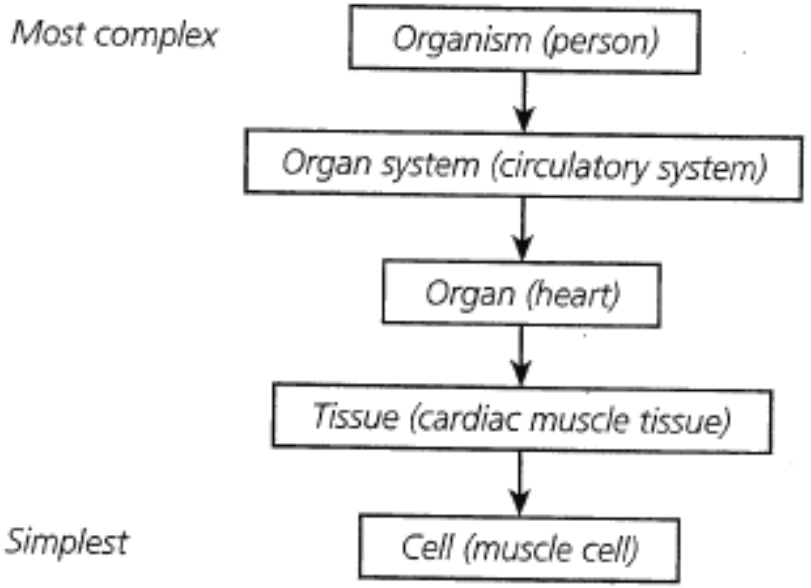
Most systems have some form or organization. Some systems are organized into steps. The steps happen in a specific order: first to last. Think a bout a person sending an e-mail on her computer, which turns her text into electrical signals. Then, wires carry the signals to another computer called a server. Next, the server sends the signal along wires to the second person's computer. Finally, the second person's computer changes the electrical signals back into text, and he reads the e-mail. Other systems are organized into levels. Each level is larger or more complex than the previous level. Your body, for example, has several levels of organization. The diagram below shows these levels. The simplest level is at the bottom. The most complex level is at the top. Which of these gives the levels of organization in the universe from smallest to largest?

A. galaxy, solar system, planet, universe

B. galaxy, universe, solar system, planet

C. planet, galaxy, universe, solar system

D. planet, solar system, galaxy, universe



- Answer (why, why not?): *D. planet, solar system, galaxy, universe.* The universe is larger than a galaxy. A galaxy is larger than a solar system. A solar system is larger than a planet.
- Standard Covered:
- Science Concept: levels of organization
- Key Vocab:
- Who typed this slide: bs

- PSSA – finish line pg16 example
- Other?

Which statement best describes a change shown in the tree data?

A. The percentage of trees that are red maples increased.
B. The percentage of white oaks in the forest decreased.
C. The percent of trees that are tulip poplars was greater in year 20.
D. The percent of white pines was greater than the percentage of what oaks in year 1.

CHANGE IN TREE SPECIES POPULATION IN 20 YEARS

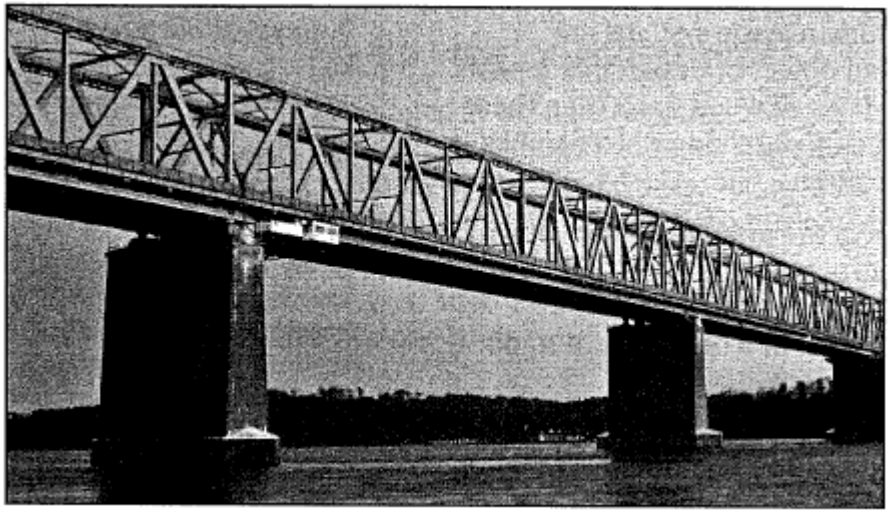
Year 1		Year 20	
Tree Species	**Number of Individuals**	**Tree Species**	**Number of Individuals**
White oak	2	White oak	15
White pine	13	White pine	3
Tulip poplar	15	Tulip poplar	13
Red maple	10	Red maple	14
Total	40	**Total**	45

- Answer (why, why not?): *A. The percentage of trees that are red maples increased.* Choices B increased, C decreased, and D compares 2 trees in year one and does not show a change over time.
- Standard Covered:
- Science Concept: scientific method/ data analysis
- Key Vocab:
- Who typed this slide: bs

- PSSA – finish line pg25 #1
- Other?

Which of these best explains how trusses can form a pattern?

A. They vary in size.
B. They are made of steel.
C. They support heavy loads.
D. They repeat within a structure.



The trusses in this bridge are a human-made physical pattern.

- Answer (why, why not?): *D. They repeat within a structure.* Trusses can vary in size, can be made of steel and can support heavy loads. However, these characteristics do not mean that trusses form patterns.
- Standard Covered:
- Science Concept: scientific method/ patterns
- Key Vocab: trusses, loads
- Who typed this slide: bs

- PSSA – finish line pg28 example
- Other?

Based on the data, what phase do you predict the scientist will observe in week 10?

A. Last Quarter
B. New
C. First Quarter
D. Full

MOON PHASES

Week	Moon Phase
1	last quarter
2	new
3	first quarter
4	full
5	last quarter
6	new
7	first quarter

- Answer: B. New Moon
  - A first quarter moon is followed by a full moon, a last quarter moon, and a new moon.
    - A person would observe a full moon is week 8
    - A last quarter moon in week 9
    - A new moon in week 10
- Standard Covered: 3.3.3.B1 Grade 3
  3.3.4.B2 Grade 4
- Anchor & Eligible Content: S8.A.3.3.1, 2
- Science Concept: Moon Phases/Patterns
- Key Vocab: moon phase
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 30
- Other?

Based on the graph, which of these statements correctly describes the pattern in sunrise times?

A. It is an hourly periodic pattern

B. It is a daily periodic pattern

C. It is a monthly periodic pattern

D. It is an annual periodic pattern

- Answer: D. It is an annual periodic pattern
  - The graph shows sunrise times in Philadelphia for the years 2004 and 2005.
    - Even though the data is broken down by month, the pattern repeats itself annually
- Standard Covered: 3.3.5.B1 Grade 5

  3.3.4.B2 Grade 4
- Anchor & Eligible Content: S8.A.3.3.1, 2
- Science Concept: Sunrise/Patterns
- Key Vocab: periodic
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 31
- Other?

What do these two types of technology have in common?

A. The help scientists make more precise measurements.
B. They help scientists observe things they otherwise could not.
C. They help scientists lift and move heavy loads with ease.
D. They help observe things that are very far away.

- Answer: B. They help scientists observe things they otherwise could not.
  - Both are technological tools scientists use to make better observations, but the tool on the left (telescope) is used to see things that are distant where as the tool on the right (microscope) is used to see things very small.
- Standard Covered: 3.3.4.B2 Grade 4 & 3.1.6.A8 Grade 6
- Anchor & Eligible Content: S8.A.2.2.1-3
- Science Concept: Tools in Science
- Key Vocab: technology
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 43
- Other?

What is the best way to find out which part of a bicycle is squeaking?

A. Oil all parts of the bicycle.

B. Oil one part of the bicycle at a time.

C. Ride the bicycle until the squeaking stops.

D. Take the bicycle apart and put it back together.

- Answer: B. Oil one part of the bicycle at a time.
  - In order to solve the problem of the squeaking bicycle, its best to use the scientific method by testing one part of the bicycle at a time. This will ensure you identify the part that is doing the squeaking.
- Standard Covered: ????
- Anchor & Eligible Content: S8.A.2.1.2, 3
- Science Concept: Experimental Design
- Key Vocab: Controlled experiment
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 44
- Other?

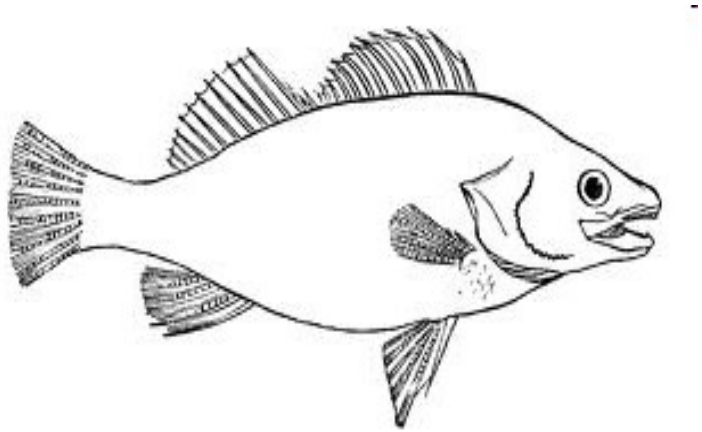
A scientist is designing an experiment to test the effects of water pollution from a factory on the growth of native fish. How will the scientist most likely choose to evaluate the effect of the pollution?

A. By describing how healthy the fish in experimental groups exposed to pollution are

B. By counting the relative numbers of males and females in wild and native populations

C. By comparing the numbers of dead fish in the wild to those in a laboratory control group

D. By comparing the average length of fish in experimental groups to pollution to that of fish in a control group



- Answer: D. By comparing the average length of fish in experimental groups to pollution to that of fish in a control group
  - In experimental design, it is important to change only one variable and have a control group to compare the results of the experiment to in order to see how much the variable effected the results.
- Standard Covered: ????
- Anchor & Eligible Content: S8.A.2.1.2, 3
- Science Concept: Experimental Design
- Key Vocab: Control group, controlled experiment
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 49
- Other?

People have used a chemical called DDT to control pests that harm crops and to kill disease-carrying mosquitoes. However, DDT also accumulates in the tissues of birds. It causes birds to lay eggs with fragile shells. Which of these is most likely a long-term effect of DDT usage?

A. More diseases
B. Fewer birds
C. More insects
D. Fewer crops

- Answer: B. Fewer birds
  - You can infer from the information about DDT that more fragile shells may result in less birds being able to survive until birth.

- Standard Covered: 3.4.4.B2 Grade 4
- Anchor & Eligible Content: S8.A.1.2.1-4; S8.A.2.1.6
- Science Concept: Technology & the Environment
- Key Vocab: DDT, accumulates
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 63
- Other?

A scientist studied the fossils in several layers of sediment to learn about the environment in an area long ago. The table shows his observations. Based on the information in the table, which is these descriptions of the ancient environment is most likely true?

A. Between 6 million and 10 million years ago, the area was a cliff.

B. Between 10 million and 12 million years ago, the area was a desert.

C. Between 3 million and 6 million years ago, the area was an ocean beach.

D. Between 1 million and 3 million years ago, the area was deep underwater.

TYPES OF FOSSILS FOUND IN DIFFERENT SEDIMENT LAYERS

Layer	Age of Layer	Type of Sediment	Type of Fossil
1	1 million to 3 million years	coarse, light-colored sand	seagull bones
2	3 million to 6 million years	fine, light-colored sand	crab shells, clam shells
3	6 million to 10 million years	very fine, dark-colored silt	sea urchin shells
4	10 million to 12 million years	extremely fine, dark-colored clay	fish bones

- Answer: C. Between 3 million and 6 million years ago, the area was an ocean beach.
  - Fossils of crab and clam shells can only be found in an area that was once underwater.
- Standard Covered: 3.3.4.A Grade 4
- Anchor & Eligible Content: ????
- Science Concept: Earth History
- Key Vocab: Fossil, Sediment
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 66
- Other?

Beach Erosion

Beach erosion occurs along most shorelines. During this process, waves carry sand and other sediment down the shore. Areas upstream lose sand, and areas downstream gain sand. Over time, in beaches upstream areas can shrink, and those downstream can become wider. In many communities beach erosion threatens homes and recreation areas.

A community builds structures to stop beach erosion in their area. What will <u>most likely</u> happen?

A. Beaches upstream will begin to shrink.

B. Beaches downstream will begin to grow wider.

C. Organisms that live in the ocean will have more food.

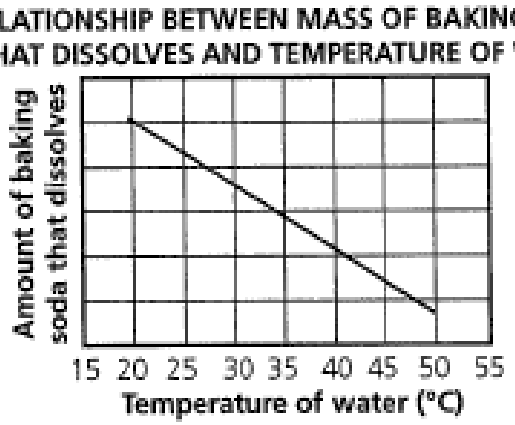
D. Organisms that live on downstream beaches will have less shelter.

- Answer: D. Organisms that live on downstream beaches will have less shelter.
  - Building structures on beaches stops the sand from moving down the beach which will mean that the beaches will become more narrow and organisms living on those beaches will become affected.
- Standard Covered: 3.4.5.B1 Grade 5
- Anchor & Eligible Content: ????
- Science Concept: Effects of Technology
- Key Vocab: Shoreline, Erosion, Sediment, Upstream, Downstream
- Who typed this slide: Ken

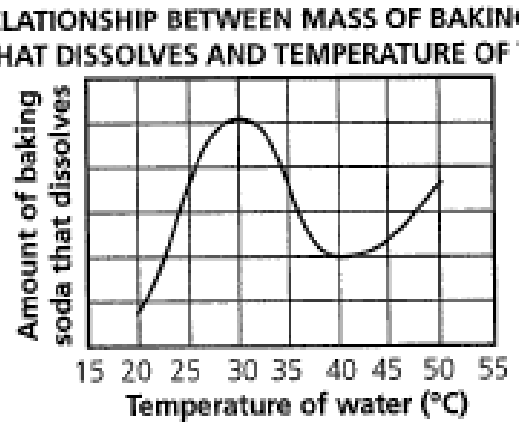
- PSSA Finish Line Science Grade 8, page 68
- Other?

Which of these is a correct model of the relationship between the temperature of the water and the amount of baking soda that will dissolve in it?

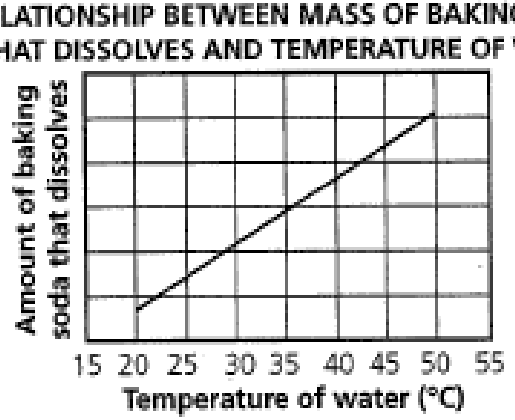
A



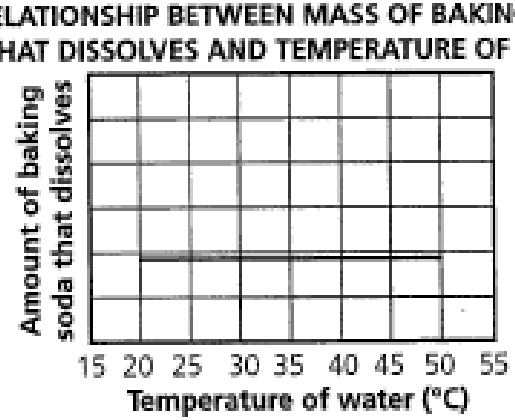
B



C



D



- Answer: C.
  - Based on the information displayed in the data table, as the temperature of water increased the amount of baking soda dissolved also increased (positive correlation). The graph shows the same trend.
- Standard Covered: ????
- Anchor & Eligible Content: ?????
- Science Concept: Graphing Trends/Patterns
- Key Vocab: Model, Dissolve
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 74-75
- Other?

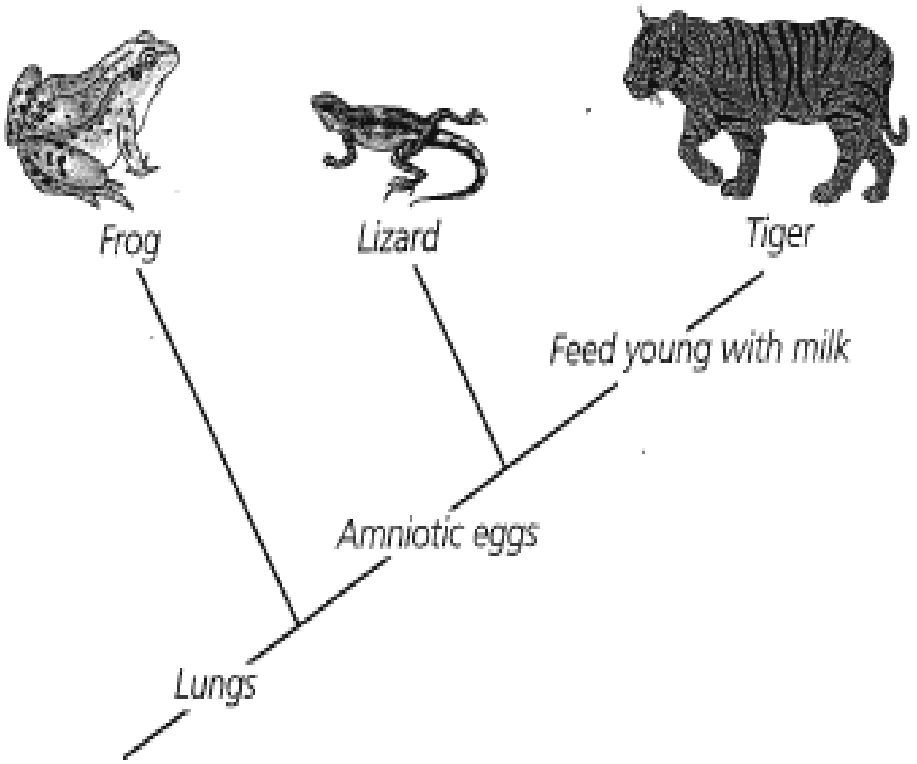
Based on the diagram, which of the following statements is <u>true</u>?

A. All the organisms feed their young with milk.

B. Both the frog and the lizard produce amniotic eggs.

C. Frogs and tigers are more closely related than lizards and tigers.

D. Lizards and tigers are more closely related than tigers and frogs.



- Answer: D. Lizards and tigers are more closely related than tigers and frogs.
  - By examining the graphic, it shows that lizards and tigers are more closely related.
- Standard Covered: 3.1.4 B5 Grade 4
- Anchor & Eligible Content: S8.B.1.1.2, 3
- Science Concept: Classification of Organisms
- Key Vocab: Amniotic
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 82
- Other?

Based on the information in the table, which of these statements is most likely true?

A. Organism X could be a fern; organism Y could be a fly.

B. Organism Y could be a crab; organism Z could be a bird.

C. Organism Y could be moss, organism Z could be a fly.

D. Organism X could be a bacterium, organism Z could be a crab.

CHARACTERISTICS OF THREE ORGANISMS

Organism	Characteristics
X	makes its own food, no vascular tissue
Y	has an exoskeleton, no backbone
Z	has a backbone, bilateral symmetry

- Answer: B. Organism Y could be a crab; organism Z could be a bird.
  - Organism Y could be a crab because it has a characteristic of an exoskeleton and no backbone. Organism Z could be a bird because birds have backbones and are symmetrical.
- Standard Covered: 3.1.6.A1 Grade 6
- Anchor & Eligible Content: ????
- Science Concept: Characteristics/Classifying Organisms
- Key Vocab: exoskeleton, bilateral symmetry, vascular tissue
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 92
- Other?

Height in Pea Plants

In pea plants, the stem height trait is controlled by a gene with two alleles. The allele for tall stems, *T*, is dominant. The allele for short stems, *t*, is recessive. A scientist wants to cross a *TT* plant and a *tt* plant. He makes a Punnett square to determine the allele combinations that the offspring of these plants can have.

What is the probability that the offspring of this cross will have short stems?

A. 100%
B. 50%
C. 25%
D. 0%

- Answer: D. 0%
  - Because tall stems are dominant over short stems, no offspring will have short stems since they are all heterogeous when mated.
- Standard Covered: 3.1.7.B1 Grade 7
- Anchor & Eligible Content: ????
- Science Concept: Genetics - Heredity
- Key Vocab: Alleles, dominant, recessive, Punnett square
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 99
- Other?

Biodiesel is a fuel made from organisms such as plants. What will be the most likely effect of relying on biodiesel rather than on fossil fuels for energy?

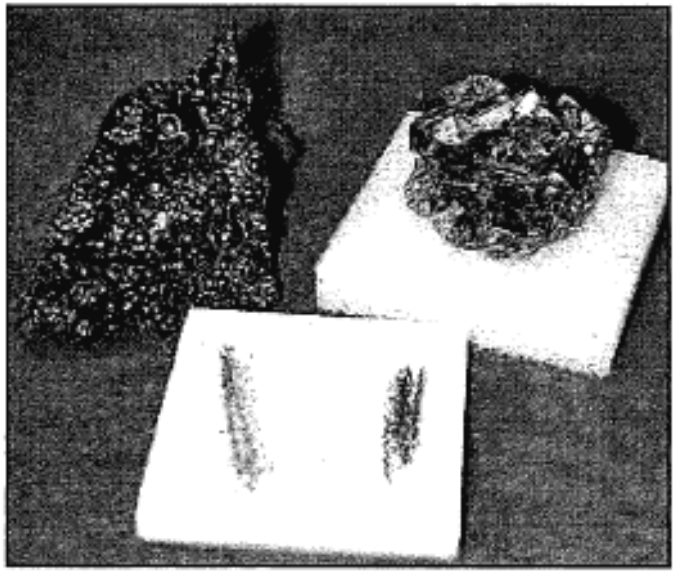
A. Increased soil fertility
B. Decreased use of irrigation
C. Decreased land available for food crops
D. Increased need for nonrenewable resources

- *Answer: C. decreased land available for food crops.* – Planting more crops to meet the fuel need would strain the fertile soil resources, cause an increase in the amount of water needed to irrigate, and decrease the need for nonrenewable resources. Since more plants will be used for biodiesel there will be less land available for food crops.
- Anchor & Eligible Content: ???
- Science Concept:
- Key Vocab: biodiesel, renewable resources
- Who typed this slide: Ken

- PSSA Finish Line Science Grade 8, page 99
- Other?

A student has 2 samples of iron. The samples have different masses. Which physical property will be <u>different</u> between the 2 samples?

A. density
B. melting point
C. solubility
D. volume



A population of plants that live in a field. The plants lose water through their leaves. Their stems store water. What will most likely happen if the environment becomes drier.

A. Each plant will evolve thicker stems and smaller leaves.
B. After one generation, most of the plants will have very thin stems.
C. Plants with longer leaves will be more likely to pass on their traits to their offspring.
D. After several generations, most of the plants will have thicker stems and smaller leaves.

- Answer (why, why not?): Choice D is correct. Adaptations of thicker stems and smaller leaves will most likely be passed onto future generations.
- Standard Covered: 3. 1.8.A8.
- Science Concept: Natural selection
- Key Vocab: Generation
- Who typed this slide: Mike

- Bibliography : PSSA Finish Line (page 107)
- Other?

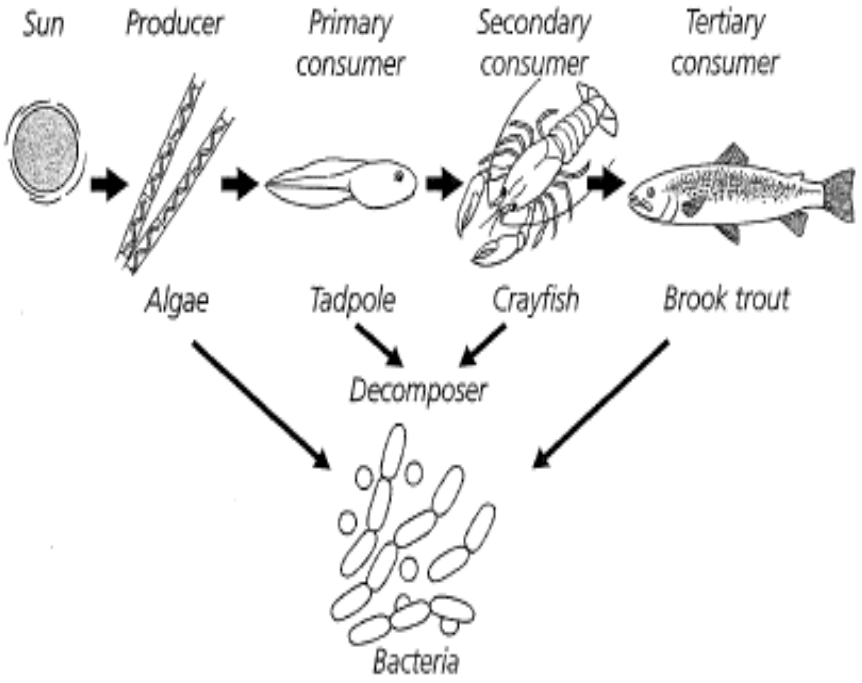
Which of the following best describes the role of producers in an ecosystem?

A. to break down organic matter.

B. to recycle energy for other organisms.

C. to convert light energy to unstable energy.

D. to prevent light energy from reaching decomposers.



- Answer : The correct choice is C. Producers are consumed by other organisms.
- Standard Covered: 3.1.7A7.
- Science Concept: Ecosystems
- Key Vocab: ecosystem, consumer, decomposers
- Who typed this slide: Mike

- Bibliography : PSSA Finish Line (page 107
- Other?

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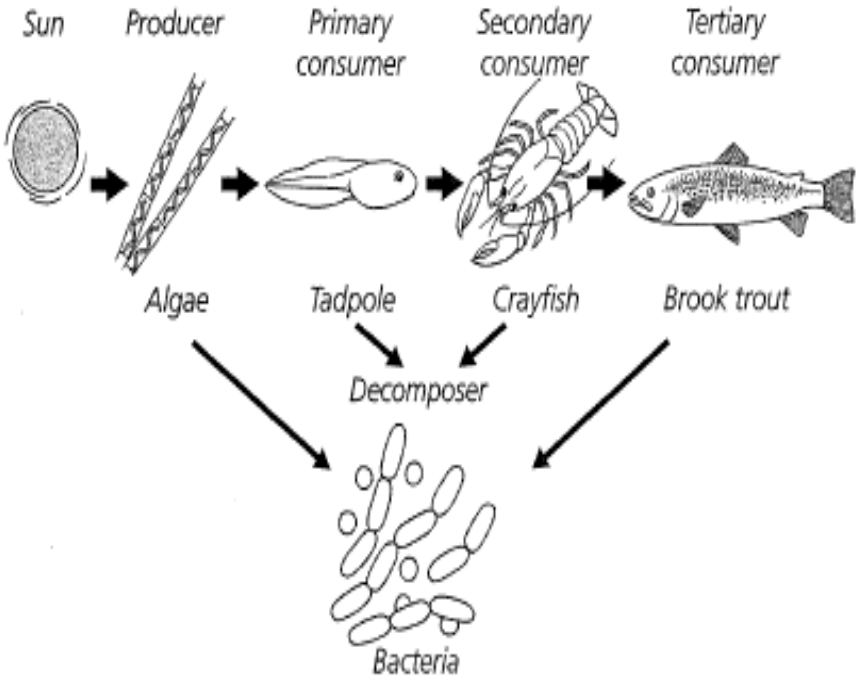

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- Standard Covered: 3.1.7A7.
- Science Concept: Ecosystems
- Key Vocab: ecosystem, consumer, decomposers
- Who typed this slide: Mike

- Bibliography : PSSA Finish Line (page 107
- Other?

- Answer: D. Density, melting point and solubility do not depend on how much of a substance you have. Choices A, B and C are incorrect. The volume of a substance does depend on how much of the substance you have.
- Standard Covered: 3.2.4.A1
- Science Concept: Properties of Matter
- Key Vocab: density, melting point, solubility, volume
- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 147.
- Other?

Use the table to answer the following question.
Which of the following substances is a compound?

A. solid gold (Au)
B. nitrogen gas (N_2)
C. liquid water (H_2O)
D. hydrogen gas (H_2)

SOME COMMON ELEMENTS AND COMPOUNDS

Substance	Element or Compound?
Helium (He)	Element
Oxygen (O_2)	Element
Iron (Fe)	Element
Carbon dioxide (CO_2)	Compound
Table sugar ($C_{12}H_{22}O_{11}$)	Compound
Potassium bromide (KBr)	Compound
Table salt (NaCl)	Compound

- Answer: C. A compound is made of two or more different elements. Gold, nitrogen and hydrogen are each made of only one kind of element. Water is made of two elements: hydrogen and oxygen.
- Standard Covered: 3.2.7.A1
- Science Concept: Properties of Matter
- Key Vocab: compound, element
- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 151.
- Other?

Use the table to answer the following question. Which two combinations **most likely** produced mixtures?

PROPERTIES OF SOME SUBSTANCES AND THEIR COMBINATIONS

Combination	Properties of Substance 1	Properties of Substance 2	What Happened When the Substances Were Combined?
1	clear liquid	yellow liquid	A red solid formed.
2	silver metal, reacts with water	yellow liquid, can burn skin	A white solid formed.
3	black metal	clear liquid	The metal sank to the bottom of the liquid.
4	soft, white solid	brown liquid	The solid floated in the liquid.

A. 1 and 2

B. 1 and 3

C. 2 and 3

D. 3 and 4

- Answer: D. Both 3 and 4 describe two materials mixed together rather than one new material.
- Standard Covered: 3.2.7.A1
- Science Concept: Properties of Matter
- Key Vocab: mixture
- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 154.
- Other?

In a certain chemical reaction, hydrochloric acid (HCl) reacts with sodium hydroxide (NaOH) to produce water (H_2O) and sodium chloride (NaCl). Which of these chemical equations correctly represents this chemical reaction?

A. $NaCl + H_2O \rightarrow HCl + NaOH$

B. $NaOH + NaCl \rightarrow HCl + H_2O$

C. $NaOH + HCl \rightarrow NaCl + H_2O$

D. $NaCl + HCl \rightarrow NaOH + H_2O$

- Answer: C. HCl and NaOH are the reactants in this reaction. NaCl and H_2O are the products. Choices A, B and D include NaCl as a reactant, so they are all incorrect. Choice C shows NaOH and HCl reacting to produce NaCl and H_2O.

- Standard Covered: 3.2.4.B2

- Science Concept: Energy Storage and Transformations: Conservation Laws

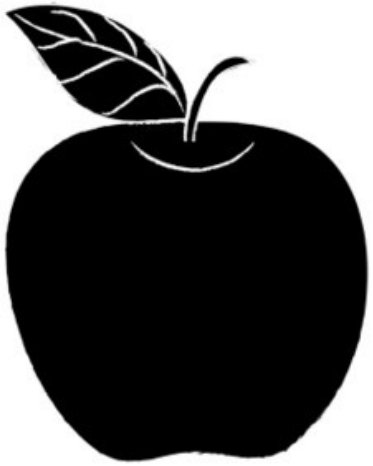
- Key Vocab: energy, chemical energy, kinetic energy

- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 156.
- Other?

An apple and a battery are sitting on a table. What form of energy do both the apple and the battery have.

A. Chemical energy
B. Electrical energy
C. Kinetic energy
D. Sound energy



- Answer: A. The apple contains stored chemical energy in the form of sugar. The battery also contains stored chemical energy.
- Standard Covered: 3.2.7.A4
- Science Concept: Reactions
- Key Vocab: chemical reaction, chemical equation, reactant, product
- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 166.
- Other?

A student used litmus paper to test 3 clear liquids. His result are in the table below. What can the student conclude from his data.

A. Liquid A is denser than B and C.
B. Liquid B is more acidic than A and C.
C. Liquid B is a base, and liquid C and A are not.
D. Liquid C is more likely than the others to be water.

EFFECT ON LITMUS PAPER OF THREE LIQUIDS

Liquid	Effect
A	none
B	turns red litmus paper blue
C	turns blue litmus paper red

- Answer: C. Litmus paper is red when exposed to an acid and blue when exposed to a base. Therefore, liquid B is a base and liquid C is an acid. Liquid A had no effect, therefore is neutral.
- Standard Covered: 3.2.4.A1
- Science Concept: Properties of matter
- Key Vocab: litmus paper, acid, base
- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 196.
- Other?

Which of these describes chemical weathering but not physical weathering?

A. Producing smaller pieces of rock
B. Changing the appearance of a rock
C. Causing new minerals in a rock
D. Moving a rock from one place to another

- Answer: C. Physical weathering can break rock into smaller pieces, so choice A is incorrect. Both physical and chemical weathering change what a rock looks like, so choice B is incorrect. Neither physical nor chemical weathering involves moving rocks, so choice D is incorrect. New substances form through chemical changes but not through physical changes. So, the correct answer is C.

- Standard Covered: 3.3.8.A1

- Science Concept: Earth Features and the Processes that Change It.

- Key Vocab: physical weathering, chemical weathering

- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 202.
- Other?

Geologists have found fossils of an extinct form of coral in some parts of Pennsylvania. The fossils are about 400 million years old. Which of these statements about Pennsylvania's past do these fossils **best** support?

A. More plants lived in Pennsylvania 400 million years ago than live here today.
B. About 400 million years ago, parts of Pennsylvania were beneath a shallow ocean.
C. The same kinds of organisms live in Pennsylvania today as lived here 400 million years ago.
D. Pennsylvania was mostly covered in forests and fields 400 million years ago, just as it is today.

- Answer: B. Corals are animals, so you cannot draw a conclusion about the number of plants in Pennsylvania using their fossils. Choice A is incorrect. The fossils are of extinct corals, so they show that different animals lived in Pennsylvania 400 million years ago than live here today. Choice C is incorrect. Corals live in shallow ocean water, not forests and fields. Choice D is incorrect.

- Standard Covered: 3.3.4.A3

- Science Concept: Earth's history

- Key Vocab: coral, extinct, fossils

- Who typed this slide: Kim & Brenda

- PSSA Finish Line, page 209.
- Other?

A student compared the soil near her school to the soil in a nearby park. The table shows her notes. Based on this information, which of these statements about the soils is most likely true?

CHARACTERISTICS OF SOILS

Location	Texture	Color	Thickness
School	very fine-grained, clayey	light gray and light brown	thin
Park	equal mix of grain sizes, loamy	dark brown to black	thick

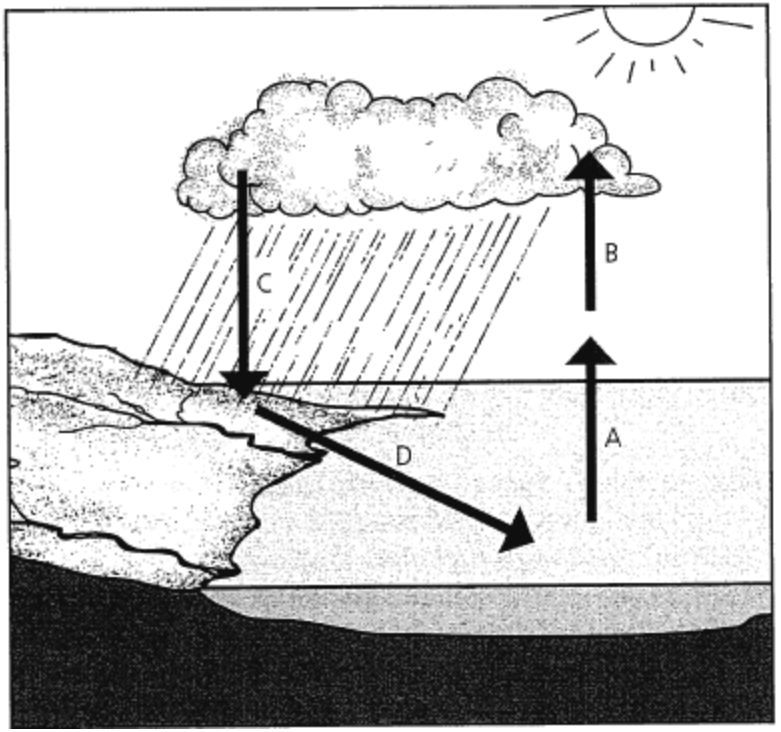
A. The soil in the park has a higher porosity than the soil near the school.
B. More plants grow in the soil near the school than in the soil in the park.
C. There is more humus in the soil near the school than in the soil in the park.
D. The soil in the park has a higher permeability than the soil near the school.

- Answer (why, why not?): Correct D – because an equal mix of grain size will result in higher porosity. A – no, because fine grain is low porosity. B,C – no, because not mentioned in chart.
- Standard Covered: 3.3.A – Earth's Resources
- Science Concept: Porosity
- Key Vocab: Porosity, humus, permeability,
- Who typed this slide: Mike

- Bibliography: PSSA Finish Line – 8 – page 218
- Other?

How does water change in the arrow labeled B?

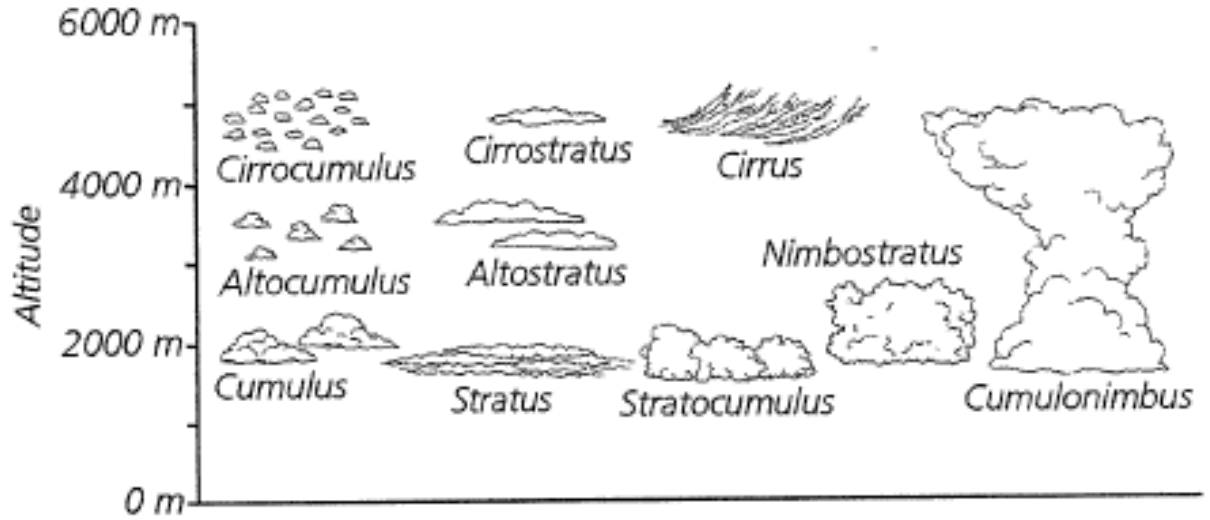
A. from ice to water vapor
B. from water droplets to ice
C. from water vapor to water droplets
D. from water droplets to water vapor



- Answer (why, why not?): Answer – C: condensation forms a cloud. Not accurate in other options.
- Standard Covered: 3.3.A.A5
- Science Concept: Water cycle
- Key Vocab: vapor, droplet
- Who typed this slide: Mike

- PSSA Finish Line – 8 – page 225
- Other?

A meteorologist predicts that it will be overcast and rainy tomorrow. What type of cloud will <u>most likely</u> be in the sky tomorrow?

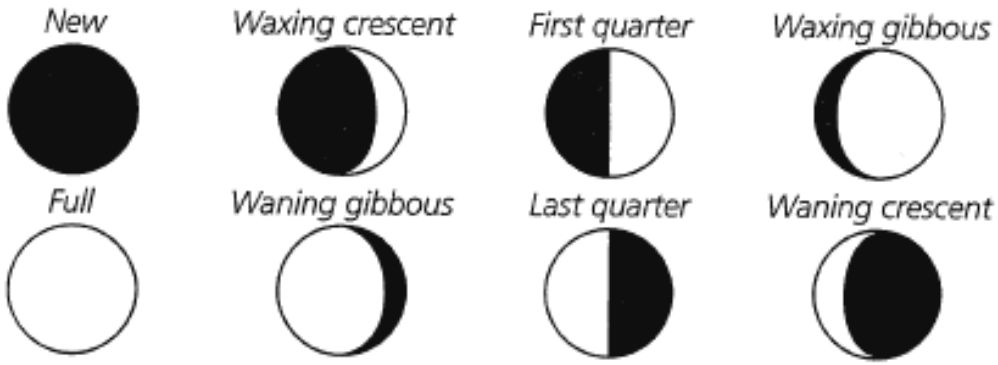


A. cirrus
B. cumulus
C. nimbostratus
D. cirrocumulus

- Answer (why, why not?): C – correct – nimbo refers to rain. Other don't have nimbo.
- Standard Covered: 3.3.8.A5
- Science Concept: cloud type
- Key Vocab: various cloud types. Overcast?
- Who typed this slide: Mike

- Bibliography: PSSA Finish Line – 8 – page 237
- Other?

Over the course of fourteen days, a student notices that the moon appears to be getting smaller and smaller in the sky. Which lunar phase will the student <u>most likely</u> observe on the fifteenth day?



The phases of the moon are named for the shape of the moon in the sky and whether the visible light is increasing or decreasing each day.

A. Full moon
B. Waxing gibbous
C. First quarter
D. New moon

- Answer (why, why not?): Correct – D – new moon is after waning crescent
- Standard Covered: 3.3.3.B1
- Science Concept: moon phases
- Key Vocab: names of moon phases
- Who typed this slide: Mike

- Bibliography: PSSA Finish Line – 8 – page 246
- Other?