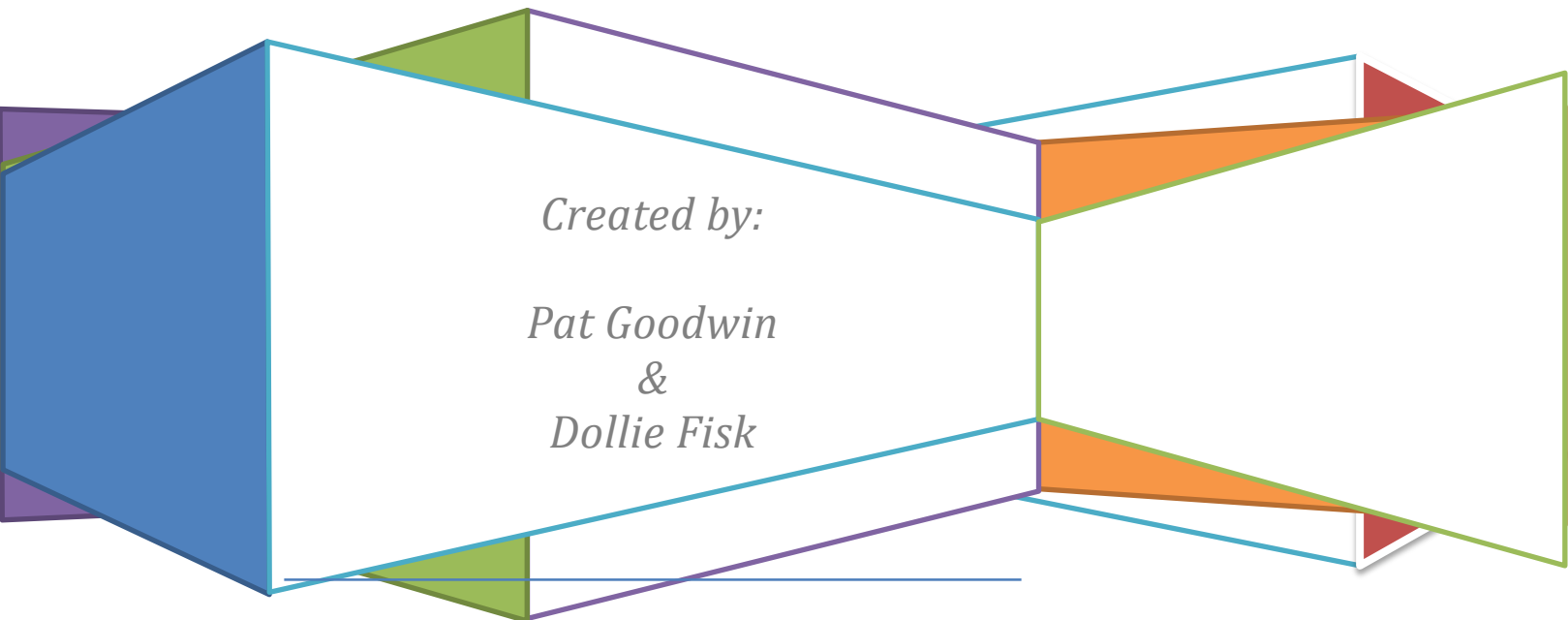




STAAR Coloring Book

State of Texas Assessments of Academic Readiness



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&
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5.1 A Demonstrate safe practices during field and laboratory investigations.

Draw a picture to show students demonstrating safe practices during a laboratory investigation during science class.

Vocabulary: Write the definition in your own words.

Demonstrate -

Investigation -

Lab Safety Questions:

Use the following scenario to answer questions 1 and 2.

Mary Ann and Pam entered the laboratory and observed that Mrs. G. had an experiment setup on the round table. They did not see Mrs. G anywhere. Pam wanted to wait until they were instructed to begin the experiment; however, Mary Ann encouraged her to begin the experiment before they had permission. They failed to read the directions. As a result, they mixed two chemicals together causing an explosion. Mary Ann started screaming because her long hair almost caught on fire. Pam's foot accidentally was cut because she had on open toes shoes.

1. Which of the following best describe what the two girls should have done when they entered the classroom?
 - a. Read the instructions and then began the experiment.
 - b. Waited for Mrs. G to give them instructions.
 - c. They did the right thing; Mrs. G would have wanted them to learn by discovery.
 - d. They should have gotten snacks to eat while doing the experiment.
2. Which of the following rules did the girls break while conducting this experiment?
 - a. Open toed shoes in the lab, chewing gum, running
 - b. Failing to tie back long hair, eating in the lab, failing to wait for the teacher
 - c. Conducting an experiment without permission, long hair not tied back, open tied shoes
 - d. Mixing two chemicals together, loose fitting clothes, long hair

Use the following example to answer questions 3 and 4.

Billy is working on the last step to today's assignment. Mrs. F suddenly remembers that there is an assembly in ten minutes. She tells the class to stop what they are doing and clean up their lab stations. Most of the students have finished the lab and are working on writing their conclusions. However, since Billy is not finished he ignores Mrs. F's instructions. Instead of cleaning up his station, he continues the experiment. When he is finished he does not have time to clean out the beaker he is using. He quickly throws everything into the crate and sits it on the back counter. He does not notice that one of the jar lids was not on tight. He decided that he would skip washing his hands as well to save time.

3. Which of the following did Billy do wrong?
 - a. He cleaned up the lab completely and put everything in its proper place.
 - b. He washed the beaker he was using.
 - c. He did not wash his hands.
 - d. He stopped when Mrs. F told him to clean up and put everything away.
4. Which of the following should Billy do to be safe in the lab?
 - a. Run to get everything cleaned up quicker.
 - b. Eat during the experiment so he will not be hungry during the assembly.
 - c. Yell across the room for his friend Joe to help him clean up.
 - d.** Stop when told, clean all tools, carefully close all lids, and wash his hands.

5.2 (A) describe, plan, and implement simple experimental investigations testing one variable; (B) ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;

Create a drawing to show the scientific method being used during an experiment. Remember that it starts with a problem. Research on the topic is completed, before you form your hypothesis. Plan an experiment that will test your hypothesis collecting data while you perform the experiment. Finally, analyze the data and write your conclusion.

Write a hypothesis that might explain why the plant in the closet did not grow as much as the one that received direct sunlight.

Vocabulary: Write the definition in your own words.

Hypothesis -

Experiment -

Scientific Method Questions

Erick and Kory were walking through the rain forest with their class on the fieldtrip. They noticed many different types of animals as they explored. Ms. L had instructed them to not touch or collect any plants or animals as a way to maintain the natural habitat of the area. However, Kory noticed that some of the green and orange frogs did not have the same structure as the ones they had learned about from their books and videos. Erick decided to pick up one of the frogs. He put it in his pocket. Ms. L had the class stop in an open area and take out their lunch bags since it was time to eat. Erick, who had picked up the frog, failed to wash his hands before eating. Later that day Erick did not feel so well. Once they were back at school, he remembered the frog in his pocket. He showed it to Ms. L. She was appalled that he had disobeyed her instructions and taken the frog from the forest. She was also concerned that he was feeling sick after touching the frog. She quickly sent Erick to the nurse. Once she found the proper container and toughly washed her hands, she began to examine the frog. She noticed that it had an extra toe on side. Other students reported that they had observed similar frogs on the fieldtrip. They wondered what was causing frogs in that area of the rain forest to develop an extra toe.

The class began to conduct research to find out if other frogs had been found with an extra toe. They found that scientist had found others close by a factory that regularly released pollution into the environment. The students began to develop hypothesis as to why the frogs were growing extra toes. Since they did not have the resources or time to conduct their own experiment, Ms. L contacted the scientist who had found similar frogs for more information. She also called local authorities to determine if any similar pollutants had been released into the environment where Erick had picked up the frog. From Ms. L's research, the class was able to determine that the same pollutants had been released in both areas.

- 5. Which of the following would be a good hypothesis for the class?**
 - a. I believe that the frogs grew extra toes on both sides as a result of living in the rain forest.**
 - b. Why did the frog that Erick found in the rain forest have an extra toe?**
 - c. I believe that the company who released the pollutants should be sued.**
 - d. I think that the frogs grew extra toes on one side because they were exposed to pollutants in the environment.**
- 6. Which safety rule should Erick have followed before eating lunch?**
 - a. Stay close to your buddy when hiking.**
 - b. Wash your hands after touching live specimens.**
 - c. Wear safety boots when hiking.**
 - d. Clean up your lab after an experiment.**

5.2 (C) collect information by detailed observations and accurate measuring; (D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;

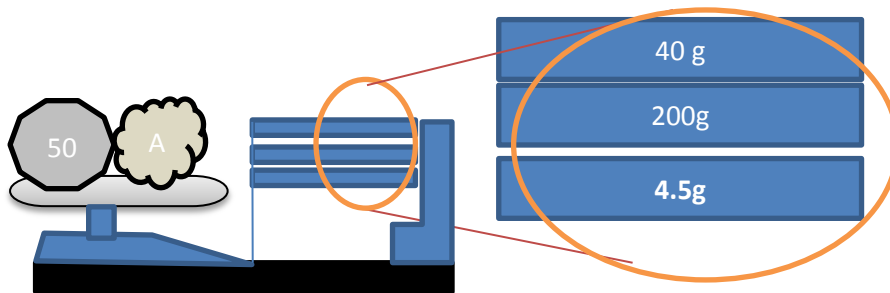
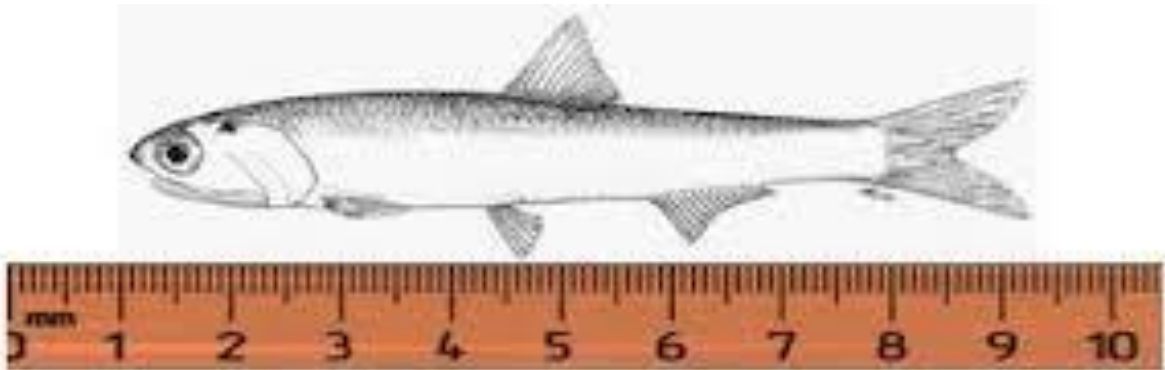
Draw and color a picture showing students accurately measuring length, volume, and mass.

Create a chart to show results from a measurement experiment.

Write a summary or conclusion based on the above information.

Measurement, Observation, and Conclusion Questions

7. Mike went fishing last week; he used a spring scale to measure the weight the fish he caught, using a purple worm. It weighed 2 pounds and 8 ounces. Can you help Mike found out how long his fish measures using the centimeter ruler below?
- a. 9.5 cm
 - b. 8.5 cm
 - c. 9.3 cm
 - d. 8.3 cm
8. What tool would Mike have to use if he wanted to find the mass of his fish?
- a. Thermometer
 - b. Triple Beam Balance
 - c. Meter Stick
 - d. Spring Scale



9. What is the mass of rock A?
- a. 244.5g
 - b. 154.5g
 - c. 194.5g
 - d. 2445g

5.2 (E) demonstrate that repeated investigations may increase the reliability of results; (F) communicate valid conclusions in [both] written [and verbal] form[s];

Choose an experiment that we have completed this year. Construct a colorful drawing to show that repeated investigations will increase the reliability of your results.

Write a valid conclusion based on the results from the experiment you choose. Use your science journal.

5.2 (G) construct appropriate simple graphs, tables, maps, and charts [using technology, including computers,] to organize, examine, and evaluate information.

Based on one of our experiments where we created a data table show that you can take that data and create a chart that depicts the information accurately. You should also show that you can examine and evaluate that information by writing a conclusion. The data table should be copied from your science journal. The graph needs to have all the necessary information. Use color.

Define: Write the definition in your own words.

Data –

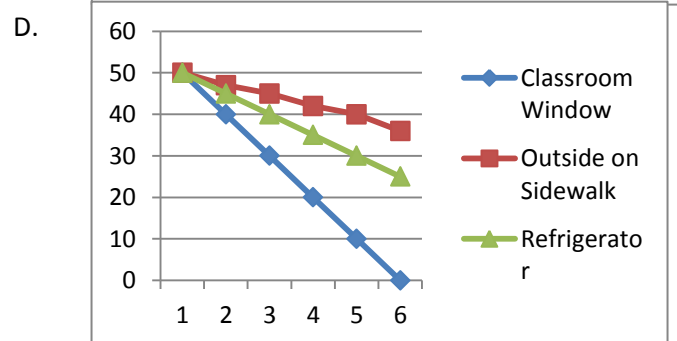
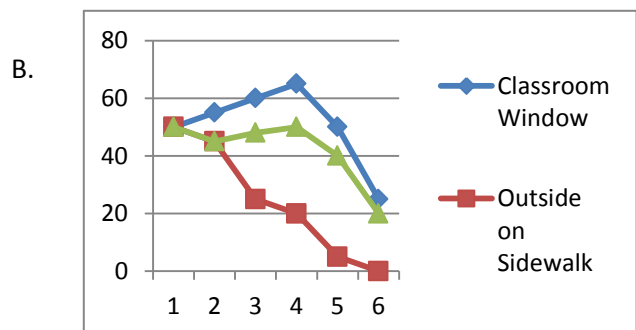
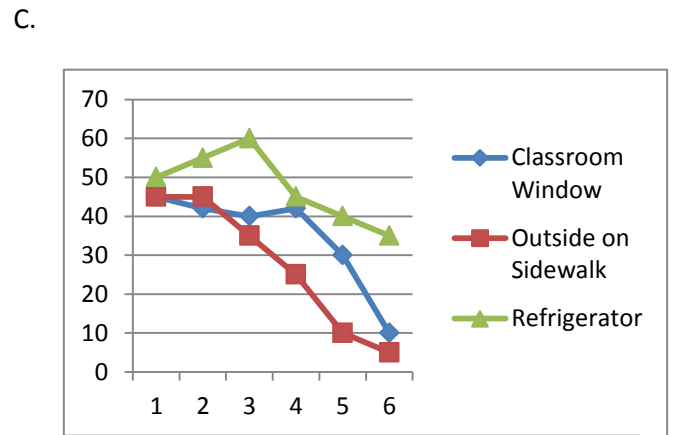
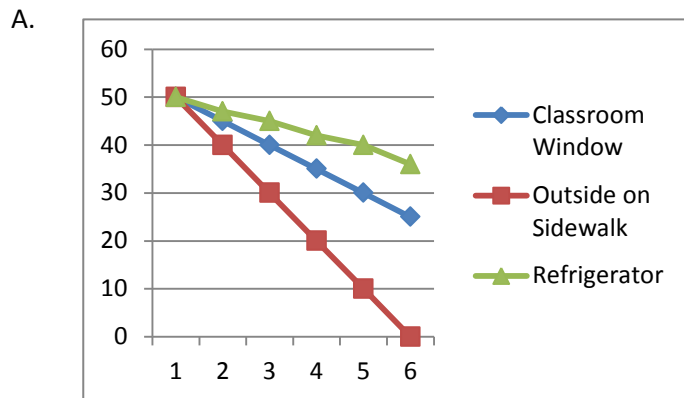
Appropriate –

Data Questions

Jake and Angelina conducted an experiment on how long it would take water to evaporate from three different locations. They collected the following information over five days. They used three identical beakers, filled each one to 500 ml of water, and place one on the window ledge in the classroom, one on the sidewalk outside, and one in the refrigerator. Each day at 9:30 they measure the amount of liquid in each beaker. They created the following data table.

Day	Classroom Window	Sidewalk Outside	Refrigerator
Start	50 ml	50 ml	50 ml
Day 1	45 ml	40 ml	47 ml
Day 2	40 ml	30 ml	45 ml
Day 3	35 ml	20 ml	42 ml
Day 4	30 ml	10 ml	40 ml
Day 5	25 ml	0 ml	36 ml

10. Which bar graph below best matches the information in the data table?



11. What could they do to make their experiment more reliable?
- Check the amount remaining in the cup every other day.
 - Repeat the experiment several times and compare results.
 - Use different containers.
 - Have different people to read the amount each day.
12. Which of the following is not a conclusion of the above investigation?
- The water in the classroom experienced the greatest amount of evaporation.
 - The water in the refrigerator experienced the same amount of evaporation as the water in the classroom.
 - The water outside did not evaporate as fast as the water in the classroom.
 - The water outside experienced the greatest amount of evaporation in the five days.
13. How would this experiment change during different seasons of the year?
- The experiment would not change.
 - The length of time it took for the water to evaporate would change based on temperature.
 - The number of day to conduct this experiment would change to allow all the water to evaporate.
 - It would take longer for the water to condense based on the temperature.

5.5(A) classify matter based on physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating), solubility in water, and the ability to conduct or insulate thermal energy or electric energy; 3. 5(C) predict, observe, and record changes in the state of matter caused by heating or cooling.

Draw a picture to show each of the physical properties of matter.

Mass	Magnetism
Physical State (Solid, Liquid, Gas)	Relative Density
Solubility	Conductor or Insulator

How does heating and cooling matter cause change in states? _____

5.5 (B) identify the boiling and freezing/melting points of water on the Celsius scale;

Draw and color pictures to show the boiling and freezing/melting points of water. Be sure to include the temperature at which each point occurs on the Celsius thermometer. Define the terms in your own words.

Boiling Point -

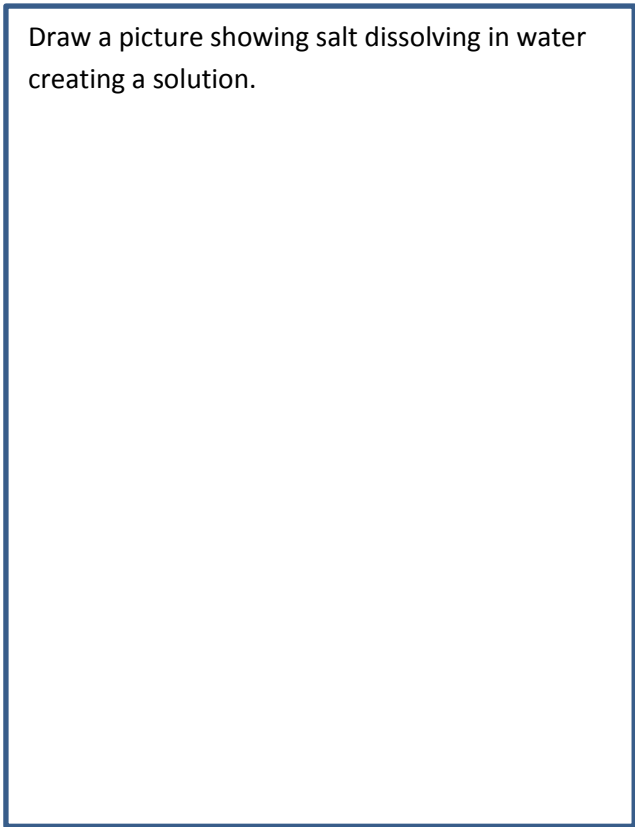
Freezing/Melting Point -

5.5(C) demonstrates that some mixtures maintain physical properties of their ingredients such as iron filings and sand;

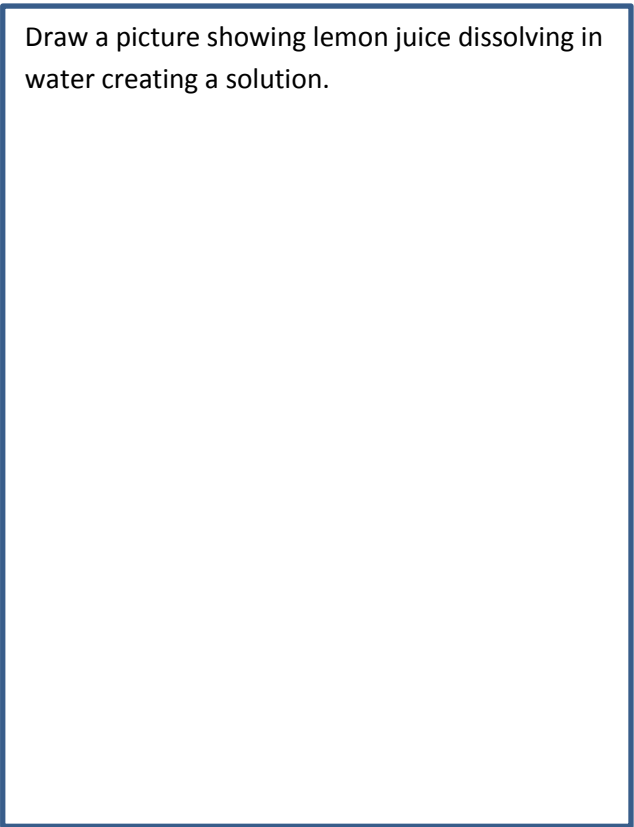
Draw a picture to show how you would best separate iron filings and sand.

5.5(D) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water.

Draw a picture showing salt dissolving in water creating a solution.



Draw a picture showing lemon juice dissolving in water creating a solution.



Explain what changes occur in the physical properties of the ingredients of solutions such as dissolving salt in water and adding lemon juice to water.

3.6(B) demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons.

Define force:

Draw a picture to show work being done in each of the following examples. Indicate where the force is coming from in the drawing.

Swing	Ball
Pulley	Wheel and axle

5.6(A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy

Define: Write the definition in your own words.

Energy:

Create a visual showing your understanding of the uses of energy, including mechanical, light, thermal, electrical, and sound energy.

Mechanical	Light
Thermal	Electrical
Sound	

5.6(B) demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound;

Create a drawing to demonstrate your understanding of how the flow of electricity requires a complete closed path or circuit through which an electric current can pass in order to produce light, heat, and sound. Your drawing must have color.

A student is making toast for breakfast before school. While the toast is heating, she decides to look inside the toaster. She notices that the coils give off a red glow. When she gets to school, she asks her teacher what types of energy the toaster is transforming electrical energy into as it toasts the bread.

- 14. Which of the following is the best answer to her questions?**
- a) Electrical energy is transformed into heat energy.**
 - b) Electrical energy is transformed into light energy.**
 - c) Electrical energy is transformed into sound energy.**
 - d) Electrical energy is transformed into light and heat energy.**


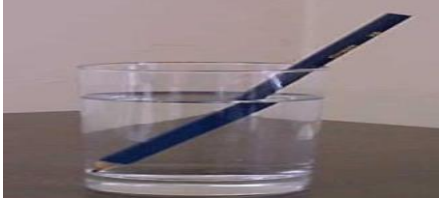



5.6(C) demonstrate that light travels in a straight line until it strikes an object or travels through one medium to another and demonstrate that light can be reflected such as the use of mirrors or other shiny surfaces and refracted such as the appearance of an object when observed through water

Construct a visual that compares reflection and refraction.

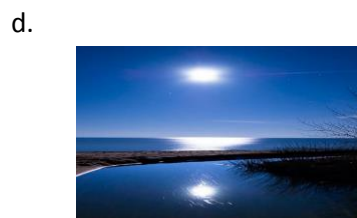
Define Reflection -

Define Refraction -

Light Energy Questions

Reflection	Refraction
	
	
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15. Which of these best completes the chart?



5.6(D) design an experiment that tests the effect of force on an object.

Use the scientific method to create an experiment that could test the effect of force on an object. (Balloon Car)

Explain what forces the car had to overcome in order to move.

Force and Motion Questions

- 16. Mrs. Reed's class was conducting an experiment to determine which type of surface allowed a toy car to roll further with equal amounts of pressure. The students constructed three ramps for their test. Each ramp was covered with a different material. One ramp was covered with aluminum foil, another with sand paper, and the third with carpet. Each ramp was elevated to 15 cm. What force were the students testing?**
- a. Mass**
 - b. Friction**
 - c. Density**
 - d. Inertia**
- 17. Jody noticed that every time she tosses the ball up, it always falls back to Earth. She asked Mary to explain why this happened. Which of the following is not a good answer to her questions?**
- e. Mary tells her that the ball falls back to the ground because of the force of gravity.**
 - f. Mary tells her that the ball will eventually burn up due the heat created by friction as it falls to the grand.**
 - g. Mary tells Jody that gravity is the pull between two objects.**
 - h. Mary tells her that the ball loses velocity and can no longer stay in the air due to gravity.**

3.7(B) investigates rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides.

Illustrate and color pictures that depict rapid changes in Earth's surface.

Volcanic Eruptions	Earthquakes
Landslides	

4.7(A) examines properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;

Create a picture to show your understanding of how soil properties are tested to determine its ability to retain water and support plant growth. Think about our labs this year.

4.7(C) identify and classify Earth’s renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.

Create a graphic organizer that identifies and classifies Earth’s natural resources as renewable and nonrenewable. This could be a T-chart (refer to your science journal).

Define:

Renewable resources:

Non-renewable resources:

5.7(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, and ice

Construct a graphic representation to show you recognize how the forces of wind, water, and ice change the Earth's surface to create landforms such as deltas, canyons, and sand dunes.

5.7(C) identify alternative energy resources such as wind, solar, hydroelectric, geothermal, and biofuels

Describe how the alternative energy resources mentioned above are obtained and how they benefit people living on Earth.

Wind:

Solar:

Hydroelectric:

Geothermal:

Biofuels:

3.8(D) identify the planets in Earth's solar system and their position in relation to the Sun.

Construct a diagram showing the positions in our solar system as they relate to the Sun. Make sure you show where the sun is in relationship to the planets.

4.8(C) collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time. Construct colorful drawings to show the following concepts.

Shadows	Tides
Seasons	Moon

5.8(A) differentiate between weather and climate; 4.8(A) measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key;

Use your knowledge and science journal to create a colorful drawing differentiating between weather and climate.

Produce a map key to show different weather symbols that would help someone learn about reading a weather map.

5.8(B) explain how the Sun and the ocean interact in the water cycle;
4.8(B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process;

Construct a graphic representation to teach someone how the Sun and the ocean interact in the water cycle.

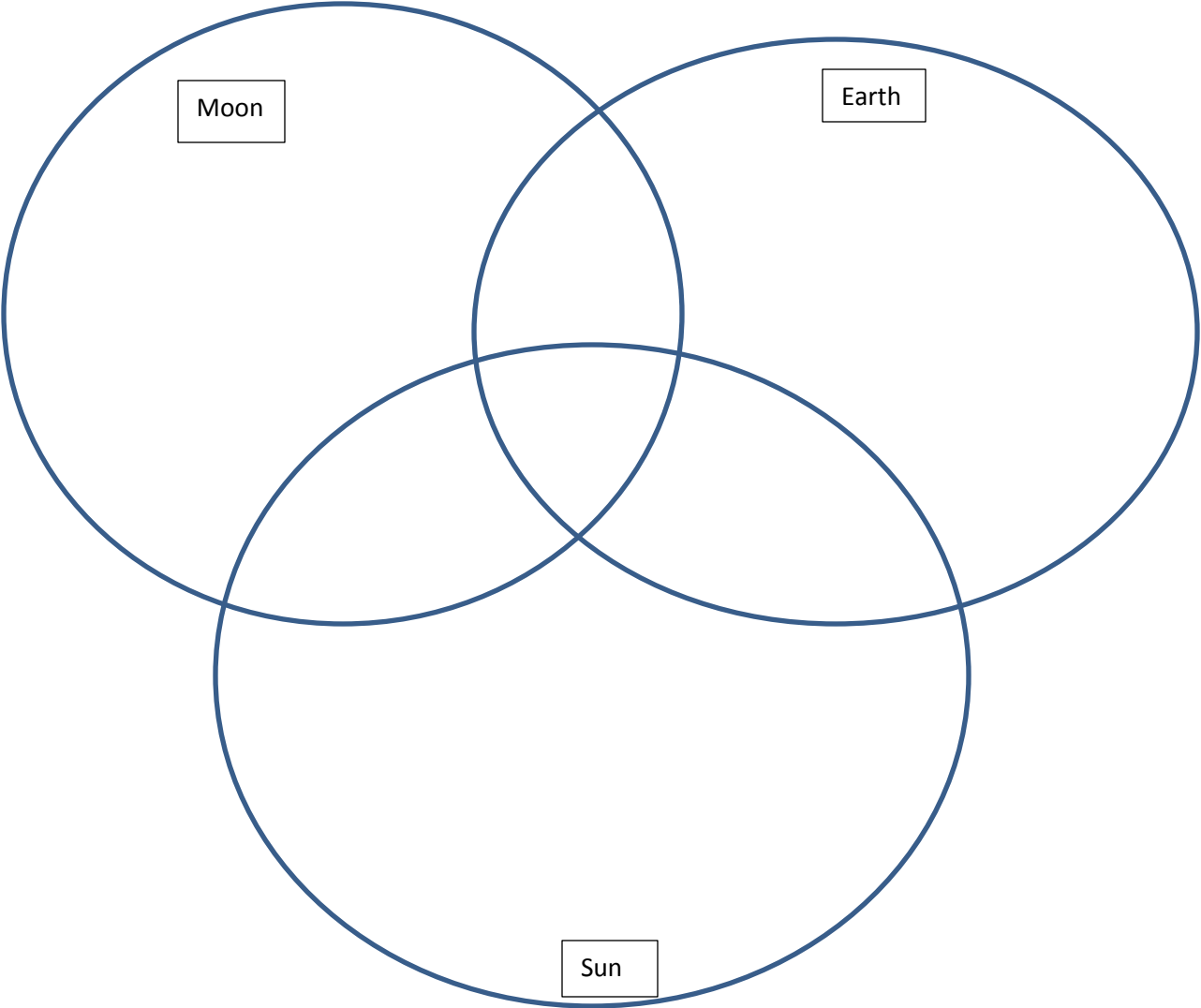
Create a colorful drawing of the water cycle. Be sure to include labels.

5.8(C) demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky

Create a colorful demonstration depicting Earths movement that creates the day and night cycle.

5.8(D) identify and compare the physical characteristics of the Sun, Earth, and Moon.

Create a triple Venn diagram showing the physical characteristics of the Sun, Earth, and Moon.



3.9(A) observes and describes the physical characteristics of environments and how they support populations and communities within an ecosystem.

Generate a colorful drawing showing how the physical characteristics in an environment support the plants and animals that live within an ecosystem.

Define in your own words the following vocabulary.

Individual: _____

Population: _____

Community: _____

5.9(A) observe the way organisms live and survive in their ecosystem by interacting with the living and non-living elements

Depict a colorful diagram that shows how organisms live and survive in their ecosystem by interacting with both the biotic and abiotic elements.

5.9(B) describe how the flow of energy derived from the Sun, used by producers to create their own food, is transferred through a food chain and food web to consumers and decomposers

Design a document that summarizes how energy derived from the Sun flows through food webs. Be sure to include producers, consumers, and decomposers.

5.9(D) identify the significance of the carbon dioxide-oxygen cycle to the survival of plants and animals.

Draw a picture showing the carbon dioxide-oxygen cycle.

Formulate an opinion to explain the effect on the environment if developers clear a forest to build a shopping center. Justify your answer.

Divulge how burning fossil fuels in factories or cars affect the carbon dioxide - oxygen cycle. Expound on how this damages the environment.

5.10 (B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle

Generate a colorful graphic to differentiate between inherited traits of plants and animals and learned behaviors of animals.

