

Elementary Science



**Summer Packet
Going into 5th Grade**



Elementary Science



Table of Content

Practice of Science

- Review Vocabulary Terms Online at Quizlet.com, (<https://quizlet.com/MDCPSscience/folders>) review Big Idea 1 and 2.
- Test: Big Idea 1 and 2: The Practices of Science and the Characteristics of Scientific Knowledge
- Investigate Like a Scientist: Types of Scientific Study (Floridastudents.org Tutorial)
- Let's Investigate (Floridastudents.org Tutorial)
- Identifying the Control Group (Floridastudents.org Tutorial)
- Do You Need Me to Repeat That? (Floridastudents.org Tutorial)
- Test: Big Idea 1 and 2: The Practices of Science
- How Does Your Garden Grow? Virtual Lab

Earth in Space and Time Activities

- Review Vocabulary Terms online at Quizlet.com, review Big Idea 5 Earth in Space and Time.
- Quizlet – Relationship among Earth, Moon, Sun and Stars
- The Movement of the Earth – ReadWorks Questions
- The Ever-Changing Sky – ReadWorks Questions
- How Long Is One Day on Other Planets? – ReadWorks Question

Earth Structures Activities

- Review Vocabulary Terms online at Quizlet.com, review Big Idea 6 – Earth Structures
- Natural Changes to the Environment – ReadWorks Questions
- Quizlet – Big Idea 6 Earth Structures

Review Online

- Review Vocabulary Terms Online at Quizlet.com: <https://quizlet.com/MDCPSscience/folders>
- Science Games:
 - [Relationship Among Earth, Moon, and Stars](https://bit.ly/3vuCcr0)
<https://bit.ly/3vuCcr0>
 - [Flow of Energy/Food Chains](https://bit.ly/3t9fdR7)
<https://bit.ly/3t9fdR7>
 - [Flow of Energy/Food Chains 2](https://bit.ly/3nFFWUh)
<https://bit.ly/3nFFWUh>
 - [Major Life Cycles of Florida Plants](https://bit.ly/2QwvYII)
<https://bit.ly/2QwvYII>
 - [Major Life Cycles of Florida Plants 2](https://bit.ly/3eC4olg)
<https://bit.ly/3eC4olg>



Elementary Science



The Practice of Science



Big Idea 1 and 2: The practices of Science and the Characteristics of Scientific Knowledge

Study online at quizlet.com/_3apz87

1. **Conclusion** The final outcome based on the results from your experiment

2. **Constant**



Something that is kept the same throughout an experiment

3. **Control Group**



A group in a scientific experiment that serves as a reference for comparison to the experimental group; a group that is untreated by the factor being tested.

4. **Data Table**

| Plant Growth | | |
|--------------|---------------------------------|--|
| Plant Group | Amount of Light per Day (hours) | Average Growth in One Week (centimeters) |
| 1 | 4 | 1 |
| 2 | 6 | 4 |
| 3 | 8 | 6 |
| 4 | 10 | 3 |

A table or chart in which measurements or observations are collected and recorded from an experiment or investigation.

5. **Experiment**



A procedure that is carried out and repeated under controlled conditions in order to discover, demonstrate, or test a hypothesis.

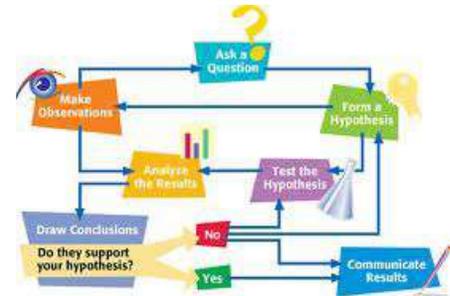
6. **Hypothesis** A guess about what you expect you will observe before you conduct your experiment

7. **Inference**



Educated guesses to explain what has been observed based on your prior knowledge and experiences.

8. **Inquiry**



The diverse ways in which scientists study the natural world and propose explanations based on the evidence they gather.

9. Investigation

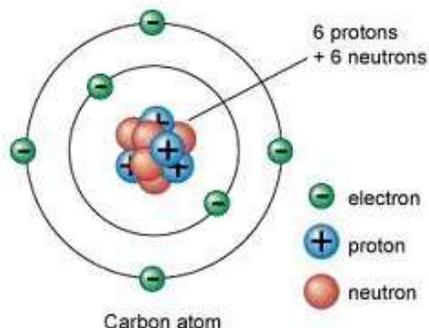


A systematic process that uses various types of data, logic, and reasoning to better understand something or answer a question.

10. Making Connections

Reflecting on how the activity or experiment we performed relates to our life personally; understanding why it's important to us.

11. Model



A recreation of an object or phenomenon to explain what or how something happens.

12. Observation



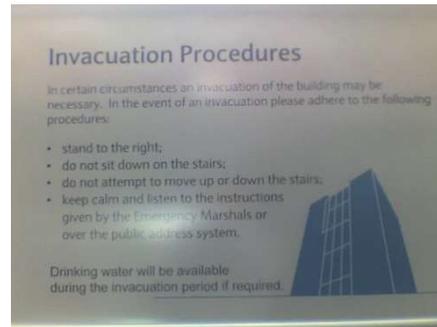
Use of the five senses or instruments to gather data or information.

13. Prediction



To tell what you think will happen in advance based on information you already know.

14. Procedure



The sequence of actions or instructions to be followed in solving a problem or accomplishing a task such as in an experiment

15. Reflection

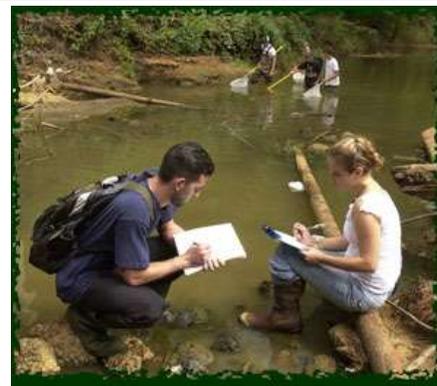
A process of thinking back on what we did as a way to improve things we do in the future

16. Repeated trials

A presentation slide titled 'Repeated Trials'. It features a blue header bar. The text includes: 'Doing an experiment more than once' (with 'more than once' in red), 'Necessary to check for accurate results', and 'Do we get the same results each time?'. An image of a test tube rack with several test tubes is on the right.

Multiple attempts to observe or record a measurement of a particular phenomenon to improve precision.

17. Science



A way of knowing, or a process for systematically investigating the natural world. This does not have to follow a rigidly defined method, but it does involve the use of observations and explanations must be linked with evidence.

18. **Variable**



An event, condition, or factor that can be changed or controlled to test a hypothesis in a scientific experiment

NAME _____

Written questions

1. Reflecting on how the activity or experiment we performed relates to our life personally; understanding why it's important to us.

2. The final outcome based on the results from your experiment.

3. Educated guesses to explain what has been observed based on your prior knowledge and experiences



4. To tell what you think will happen in advance based on information you already know.



5. The sequence of actions or instructions to be followed in solving a problem or accomplishing a task such as in an experiment.



Matching questions

1. Variable

2. Data Table

3. Control Group

4. Experiment

A. A group in a scientific experiment that serves as a reference for comparison to the experimental group; a group that is untreated by the factor being tested.



B. A table or chart in which measurements or observations are collected and recorded from an experiment or investigation.

| Plant Group | Amount of Light per Day (hours) | Average Growth in One Week (centimeters) |
|--|---------------------------------|--|
|  1 | 4 | 1 |
|  2 | 6 | 4 |
|  3 | 8 | 6 |
|  4 | 10 | 9 |

C. A systematic process that uses various types of data, logic, and reasoning to better understand something or answer a question.



D. An event, condition, or factor that can be changed or controlled to test a hypothesis in a scientific experiment.



5. Evaluation

E. A procedure that is carried out and repeated under controlled conditions in order to discover, demonstrate, or test a hypothesis.



Name: _____

Date: _____

SC.5.N.1.2

Floridastudents.org tutorial

Investigate Like a Scientist: Types of Scientific Study



Derived from <http://floridastudents.org/PreviewResource/StudentResource/174645>

Practice 1: What is Scientific Investigation? Check all that apply

- 1. Only discovered through an experiment
- 2. Searching for an answer to a question
- 3. Using a scientific process
- 4. Asking a question about the natural world

Practice 2: Match each term to the correct definition.

- | | |
|-----------------------------|---------------|
| A. Experiment | C. Hypothesis |
| B. Scientific Investigation | D. Variable |
- 5. A testable statement about the answer to a question that includes a scientific prediction
 - 6. Involves developing and then testing a hypothesis
 - 7. The parts of an experiment that the scientist can control or change
 - 8. Searching for an answer to a question about the natural world using a scientific process

Practice 3: Write down the correct experiment description for each variable.

9. Independent variable:

10. Dependent Variable

11. Control Variable:

Practice 4: Write **E** next to examples of experiments and **O** next to other scientific investigations.

- 12. Recording all the plant species present in a field
- 13. Relationship between heat added and temperature of water
- 14. Observing and describing river otter behavior in the field
- 15. Comparing water quality samples in two locations along a river
- 16. Independent variable: amount of light, Dependent variable: plant growth

Practice 5: What type of investigation is Laura's Study? Explain.



Name: _____

Date: _____

SC.5.N.2.1 Let's Investigate

Floridastudents.org Tutorial Response Form

Derived from <https://floridastudents.org/PreviewResource/StudentResource/119284>

Practice 1: Write **Yes** in front of any of the statements below that support your observations made about Image A and Image B footprints.

_____ The animal in Image A has 4 toes on each paw.

_____ In image B, there are 5 toes on the larger paws and 4 toes on the smaller paws.

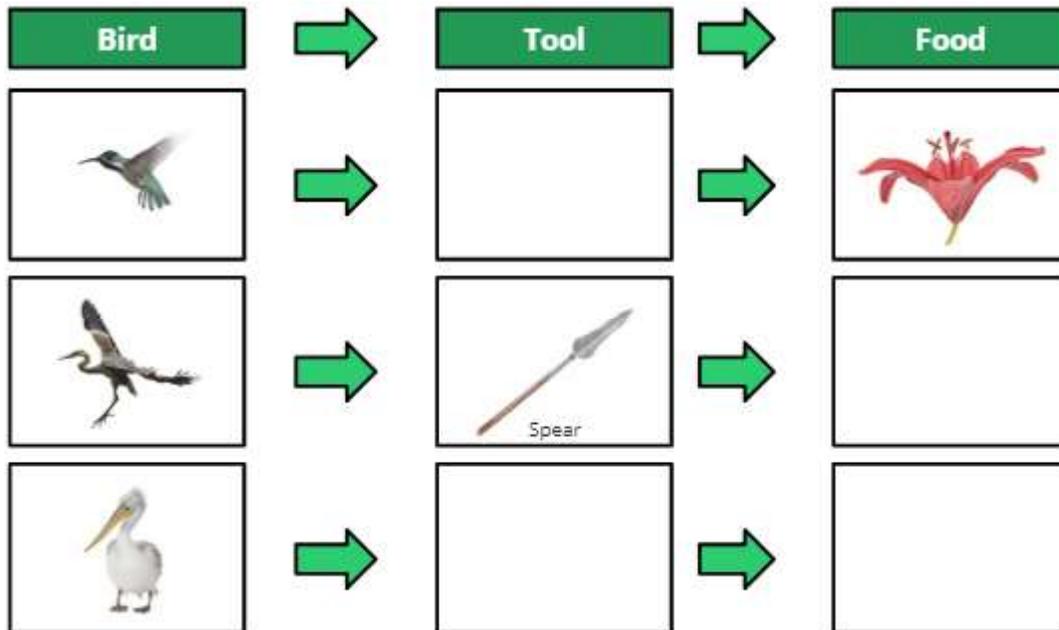
_____ Both animals may have claws on the end of each toe.

_____ Both animals have the same paw shape.

_____ Both images are from the same animal.

Practice 2: Use the Word Bank to write in the name of the Tool their beak is like and Food the bird eats to complete the Food Chain.

Word Bank: net straw snake fish



Practice 3: Check off the statements below about bird beaks that were observed as evidence from the video.

_____ Woodpeckers eat wood because it's in their name.

_____ Birds with spear-like beaks are able to quickly stab at their food.

_____ Ducks swallow everything in the water as food.

_____ Long, straw-like beaks are good for poking into things to find food.

_____ Short, hard beaks can break through seeds easily.

Name: _____

Date: _____

SC.5.N.1.4

Floridastudents.org tutorial

Identifying the Control Group



Derived from <http://www.floridastudents.org/PreviewResource/StudentResource/122091>

Practice 1: Experiment with a Control Group

1. Which option best represents an experiment with a control group? _____

Practice 2: Selecting the Control Group

2. Select the group that best represents the control in an experiment:
- Different species of butterflies
 - Red flowers
 - Yellow flowers
 - No flowers

Practice 3: Constant variables

3. Select all the answer choices that are examples of constant variables
- Light
 - Soil
 - Water
 - Flower Pot

Practice 4: Independent variable

4. If we wanted to determine how the amount of light affects the growth of a plant, what would be the **independent** variable?
- The amount of water
 - The amount of light
 - The type of soil
 - The type of container

Practice 5: Identify the variables

5. For the experiment: How does the surrounding temperature affect the number of cricket chirps in one minute? Match the variables in the experiment. Write **IV** for **independent** variable, **DV** for **dependent** variable and **C** for **constant** variable.
- _____ The temperature of the environment
 - _____ The number of chirps per minute
 - _____ The container used

Practice 6: Match the experiment terms to the definitions

- | | |
|-------------------------|-----------------------|
| A. Independent variable | C. Constant variable |
| B. Control group | D. Dependent variable |
- _____ 1. Conditions are the same for all groups in the experiment.
- _____ 2. Used as a baseline or starting point. Comparison group for the experiment.
- _____ 3. The results of the experiment that is being measured.
- _____ 4. What the experiment is trying to test.



Name: _____

Date: _____

SC.5.N.1.3

Floridastudents.org tutorial

Do You Need Me to Repeat That?

Derived from <http://floridastudents.org/PreviewResource/StudentResource/115137>



Practice 1:

1. Place a check next to the best example of a repeated trial.
 A. Observing through a microscope
 B. Growing multiple seedlings of the same plant
 C. Determining the volume of a container

Practice 2:

2. What is the best choice on how to proceed with this experiment?

Practice 3: Write the number that correctly completes the sentence below.

3. The outlier in the data set is _____ cm.

Practice 4: To determine the mean, add the ten measurements from the data set together

4. The sum of the data for the lighter ball trials is _____.

Practice 5: Find the mean of the lighter ball crater depths.

5. The mean of the data for the lighter ball trials is _____.

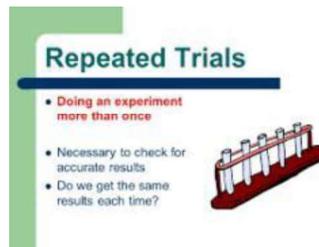
Final Practice: Check all the correct choices below for the reason why we use multiple trials to report on an experiment.

1. Multiple trials allow a researcher to test more than one variable during the experiment.
2. Multiple trials help the researcher create a good hypothesis.
3. We need to take the mean, median and mode of multiple trials to analyze data.
4. Multiple trials help increase the reliability and validity of the data.
5. Multiple trials can reduce the effect of outliers in the data set.
6. Multiple trials increase the chance of collecting a higher data point.



1. Multiple attempts to observe or record a measurement of a particular phenomenon to improve precision.

- A. Prediction
- B. Repeated trials
- C. Investigation
- D. Data Table



2. A guess about what you expect you will observe before you conduct your experiment

- A. Conclusion
- B. Hypothesis
- C. Prediction
- D. Reflection

3. A way of knowing, or a process for systematically investigating the natural world. This does not have to follow a rigidly defined method, but it does involve the use of observations and explanations must be linked with evidence.

- A. Inquiry
- B. Science
- C. Inference
- D. Experiment

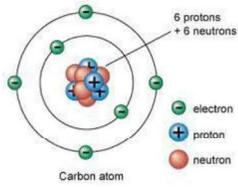


4. A process of thinking back on what we did as a way to improve things we do in the future

- A. Reflection
- B. Observation
- C. Prediction
- D. Experiment

4 True/False questions

1. A recreation of an object or phenomenon to explain what or how something happens.



→Model

- True
- False

2. The diverse ways in which scientists study the natural world and propose explanations based on the evidence they gather.



→Procedure

- True
- False

3. Something that is kept the same throughout an experiment.



→Constant

- True
- False

4. Use of the five senses or instruments to gather data or information.



→Observation

- True
- False



Elementary Science



VIRTUAL LAB

How Does Your Garden Grow?

<https://app.discoveryeducation.com/learn/player/9a392c14-83cb-4c3d-9907-f02df50b103b>

Click through the 4 pages but follow the directions on this page.

- Enter your name and select Level 1. Click on the orange X next to Directions and follow the steps below.

Question: How does the amount of water affect how tomato plants grow?

1. Form hypothesis: Do you think tomato seeds need water to grow? Explain why or why not.

2. Set up Experiment: Set up the pots like this:

Trial #1: Soil – Sand, Light – Medium, **Water – Little**

Click Go, when the simulation is done, observe the plants then click the arrow to start a new trial.

Trial #2: Soil – Sand, Light – Medium, **Water – Medium**

Click Go, when the simulation is done, observe the plants then click the arrow to start a new trial.

Trial #3: Soil – Sand, Light – Medium, **Water – Heavy**

3. Collect data: Click on the Results tab and fill in the data table below.

| Independent (Test) Variable | Tomatoes Per Plant | Tomato Size |
|-----------------------------|--------------------|-------------|
| Little Water | | |
| Medium Water | | |
| Heavy Water | | |

4. Draw conclusions: How did the amount of water affect the growth of the tomato plants?



Elementary Science



On the Results tab, click Clear Results and select OK.

➤ Click Start Over, choose level 1 then click on the orange X.

Question: How does the amount of light affect how tomato plants grow?

1. Form hypothesis: How do you think light affects the growth of tomato seeds? Explain your thinking.

2. Set up Experiment: Set up the pots like this:
Trial #1: Soil – Sand, **Light – Dim**, Water – Medium
Click Go, when the simulation is done, observe the plants then click the arrow to start a new trial.

Trial #2: Soil – Sand, **Light – Medium**, Water – Medium
Click Go, when the simulation is done, observe the plants then click the arrow to start a new trial.

Trial #3: Soil – Sand, **Light – Bright**, Water – Medium

3. Collect data: Click on the Results tab and fill in the data table below.

| Independent (Test) Variable | Tomatoes Per Plant | Tomato Size |
|-----------------------------|--------------------|-------------|
| Dim Light | | |
| Medium Light | | |
| Bright Light | | |

4. Draw conclusions: How did the amount of light affect the growth of the tomato plants?



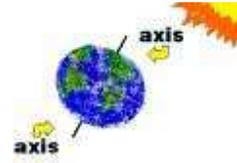
Elementary Science

Teacher Answer Key



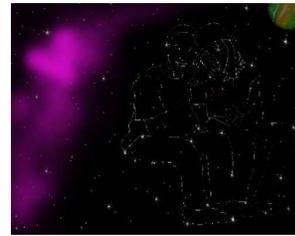
Earth in Space and Time

Axis



An imaginary line that an object spins around.

Constellations



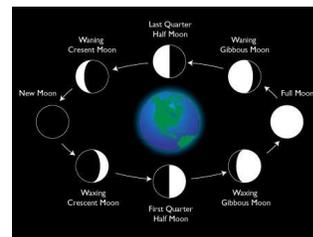
Patterns of stars that appears to shift across the sky nightly. Different stars can be seen in different seasons.

Milky Way



The name of our galaxy.

Moon phases

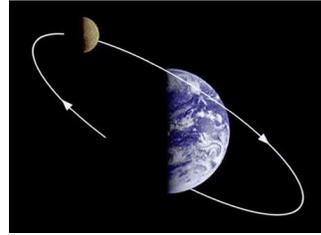


The changing appearances of the Moon as seen from Earth.

One Year

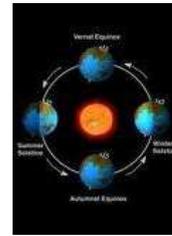
365 days or one complete revolution of Earth around the sun.

Orbit



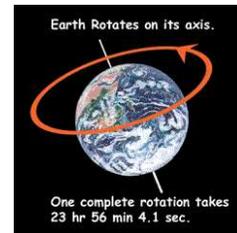
The path an object follows as it moves around another object.

Revolution



The movement of an object around another object.

Rotation



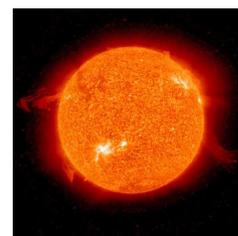
The spinning of Earth on its axis

Stars



Objects in space that produce their own heat and light. Stars come in different sizes

Sun

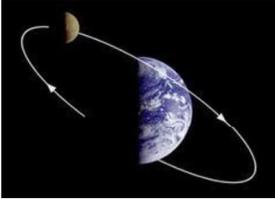


A star that emits energy. It appears as a big star because it is nearest to Earth.

NAME _____

Written questions

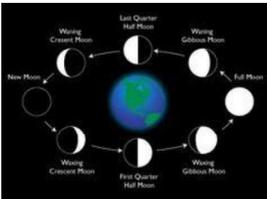
1. The path an object follows as it moves around another object.



2. The name of our galaxy.



3. The changing appearances of the Moon as seen from Earth.



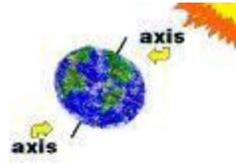
Matching questions

1. ___ Stars

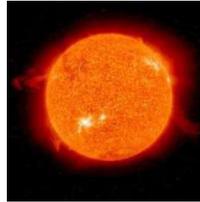
2. ___ Axis

3. ___ Sun

A. An imaginary line that an object spins around.



B. A star that emits energy. It appears as a big star because it is nearest to Earth.



C. Objects in space that produce their own heat and light. Stars come in different sizes



Multiple choice questions

1. 365 days or one complete revolution of Earth around the sun.

- A. One Year
- B. Orbit
- C. Moon phases
- D. Revolution

2. The spinning of Earth on its axis



- A. Moon phases
- B. Rotation
- C. Milky Way
- D. Orbit

True/False questions

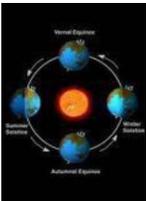
1. Patterns of stars that appears to shift across the sky nightly. Different stars can be seen in different seasons.



→Constellations

- True
- False

2. The movement of an object around another object.



→One Year

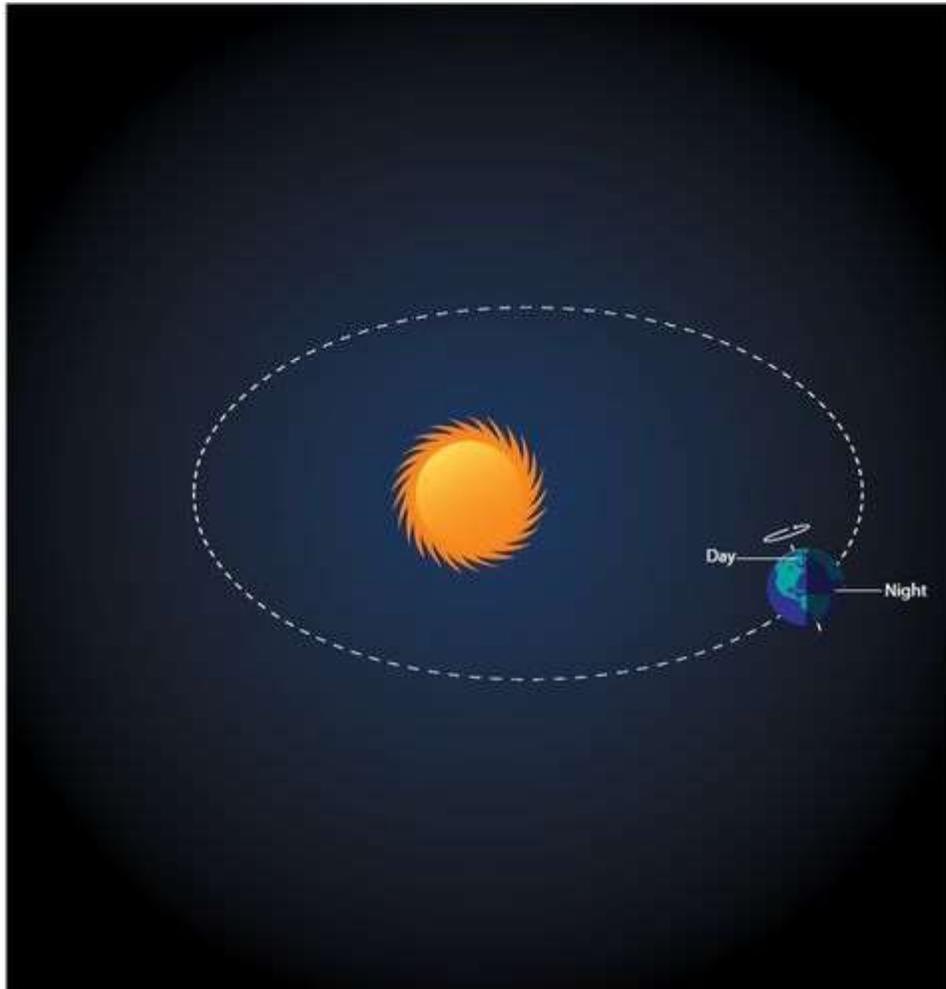
- True
- False

The Movement of the Earth

This text is adapted from an original work of the Core Knowledge Foundation.

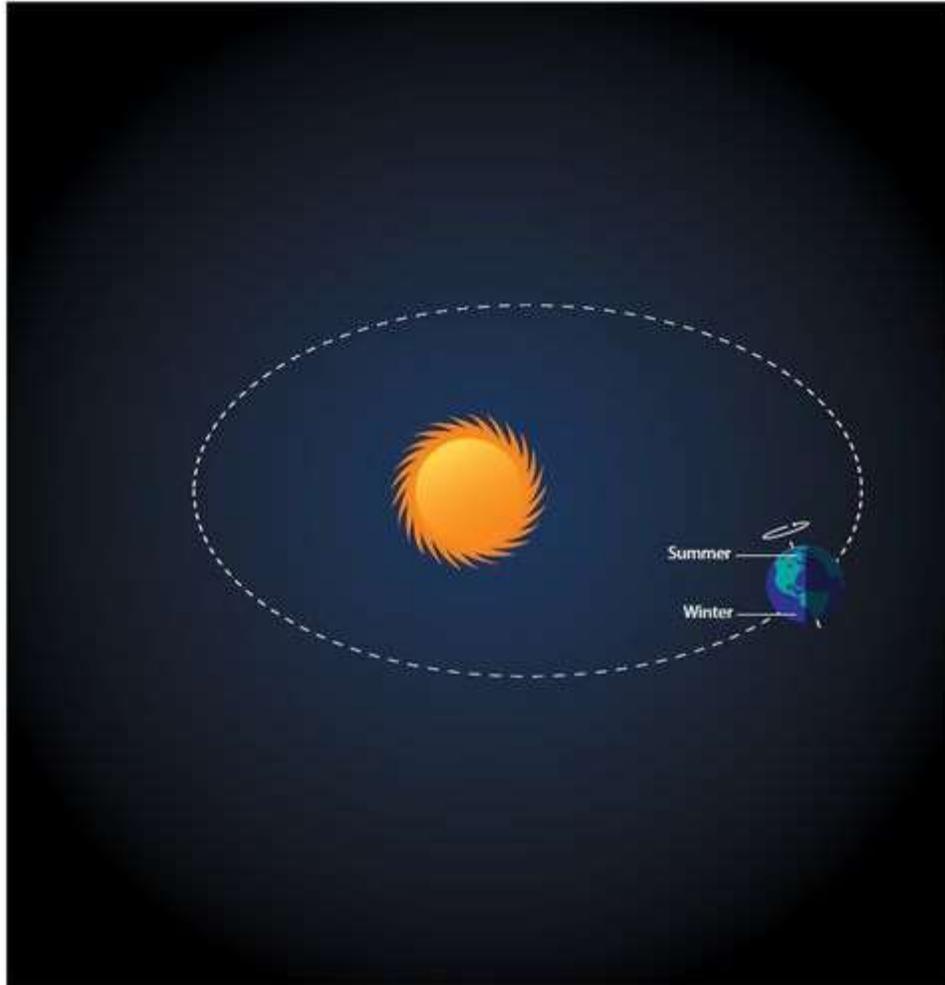
Our planet, Earth, moves in two ways. The Earth circles around the sun. It takes about 365 days, which is one year, for Earth to orbit the sun.

Earth also moves by spinning, or rotating, on its axis. It is this spinning that makes day and night on Earth and the motion of the sun across the sky from sunrise to sunset. It takes one day for Earth to make one complete rotation on its axis. As Earth rotates and spins, different parts of it face the sun. When the part facing the sun gets sunlight, it is daytime on that side of Earth. The part that faces away from the sun gets no sunlight. So, on that side of Earth, it is nighttime. Did you know that when it is daytime where we live, it is nighttime on the other side of Earth?



Earth spins on its axis. On the side of Earth facing the sun, it is daytime. On the side facing away from the sun, it is nighttime.

When Earth rotates on its axis, it is tilted. At certain times of the year, one part of Earth is tilted toward the sun. The sunlight is more direct and it feels hotter. For people living on this part of Earth, it is summer. For people living on the part of Earth tilted away from the sun, there is less sunlight and it is winter. So, when it is summertime for us, there are people living on other parts of Earth where it is winter! So, the fact that Earth is tilted on its axis is what creates the seasons of the year.



When Earth is tilted on its axis towards the sun, it is spring and summer. When Earth is tilted on its axis away from the sun, it is fall and winter.

Name: _____ **Date:** _____

1. What are the two ways that Earth moves?

2. Think of the two ways that Earth moves. Which of those ways is responsible for Earth's seasons? Support your answer with evidence from the text.

3. How does earth's movement cause us to experience daytime and nighttime?

4. What is the main idea of this text?

The Ever-Changing Sky

by Megan McGibney



Look up at the sky on a clear day. You will see the sun. It is bright and shiny, warming much of what its light touches. Look up at the sky again at night. You may see the stars. They are also bright and shiny, glimmering in the dark sky. You may also see the moon. It looks bright and shiny, reflecting light from the sun. People have always looked up at the sky with wonder. Some have even studied the sun, moon, and stars. These people, called astronomers, have learned that those objects in the sky do not stay in the same place all the time.

The earth revolves around the sun and also rotates on its axis, which is an imaginary line that runs from the North Pole to the South Pole, through the earth's center. It takes just under 24 hours for the earth to complete one rotation on its axis - a day, that's right! And guess how long it takes the earth to revolve around the sun? A little over 365 days. That's a year, with an

extra quarter of a day.

Let's take a closer look at the moon. The earth does not revolve around the moon. Instead, the moon revolves around the earth. It takes the moon about four weeks to complete a revolution around the earth. The portion of the moon we, here on Earth, see changes over this period of about four weeks as the moon's position around the earth changes. The moonlight we see at night is the moon's reflection of sunlight onto Earth. The different ways the moon appears to us are known as the moon's phases. The moon's phases depend on the moon's position in relation to the earth and the sun.

The four-week period starts and ends with the new moon. The new moon cannot be seen because the side of the moon lit by the sun is facing away from the earth. This is because the moon is nearly between the sun and the earth at this time. After that comes the first quarter moon, which is when we see half of the side of the moon lit by the sun. Then comes the full moon, when we can see the entire side of the moon lit up by the sun. This is because the earth is nearly lined up between the sun and the moon, and the sunlit part of the moon is facing the earth. One of the last phases is called the last quarter moon. This is when we see the other half of the lit side of the moon.

Sometimes the way the sun, moon, and earth are positioned causes an event known as an eclipse. There are two types of eclipses. A lunar eclipse happens when the earth passes between the moon and the sun and when the earth blocks the moon from the sun. The earth's shadow may block the entire moon or just part of the moon from view. A solar eclipse happens when the moon passes directly between the earth and the sun. A solar eclipse can block part of the sun or the entire sun from the earth's view.

Because of the regular orbit of the moon around the earth and the regular orbit of the earth around the sun, astronomers can predict when an eclipse will happen even many years into the future.

Name: _____ Date: _____

1. What does the earth revolve around?

- A. the moon
- B. the sun
- C. the stars
- D. meteors

2. What does the author describe in the passage?

- A. how long it takes the sun to revolve around the earth
- B. when the next solar eclipse will occur
- C. how long it takes the earth to revolve around the sun
- D. the movement of other planets in our solar system

3. The phases of the moon are caused by the moon's orbit around the earth. Which details from the text support this conclusion?

- A. It takes 24 hours for the earth to complete one rotation on its axis.
- B. A lunar eclipse occurs when the earth passes between the moon and the sun and the earth blocks the moon from the sun.
- C. The direction the sunlit side of the moon facing the earth changes as the moon revolves around the earth.
- D. The moon changes from a new moon to a half moon to a full moon.

4. What blocks the sun during a solar eclipse?

- A. the moon
- B. the earth
- C. the earth's shadow
- D. a nearby meteor

5. What is this passage mostly about?

- A. solar and lunar eclipses
- B. the solar calendar
- C. phases of the moon
- D. the movement of the earth and the moon

6. Read the following sentences: "It takes just under 24 hours for the earth to complete one rotation on its axis - a day, **that's right!** And guess how long it takes the earth to revolve around the sun?"

Why does the author say "**that's right!**"?

- A. because the author thinks the reader has made the connection between the rotation of the earth around its axis and the length of a day
- B. because the author was talking to someone while writing the passage
- C. because the author wants to reassure the reader
- D. because the author is waiting for an answer from the reader

7. Choose the answer that best completes the sentence below.

The moon goes through different phases in a month, _____ full moon, half moon, and new moon.

- A. but
- B. including
- C. first
- D. as a result

8. When does a full moon occur?

9. Why can astronomers predict eclipses?

10. Give two examples of how the sky is ever-changing.

How Long Is One Day on Other Planets?

The text and images are from NASA Space Place.

One day is the time it takes a planet to spin around and make one full rotation. Here on Earth that takes 24 hours. How long are days on other planets in our solar system? And what is the best way to show the answer to this question?



Let's look at a few options.

Option 1: A Paragraph

We can write a paragraph about how long days last on other planets.

On Mercury a day lasts 1,408 hours, and on Venus it lasts 5,832 hours. On Earth and Mars it's very similar. Earth takes 24 hours to complete one spin, and Mars takes 25 hours. The gas giants rotate really fast. Jupiter takes just 10 hours to complete one rotation. Saturn takes 11 hours, Uranus takes 17 hours, and Neptune takes 16 hours.



Reading that paragraph took a while, and it's hard to find all the numbers. Let's see how it looks if we put it in a table.

Option 2: A Table

| Planet | Day Length |
|---------|-------------|
| Mercury | 1,408 hours |
| Venus | 5,832 hours |
| Earth | 24 hours |
| Mars | 25 hours |

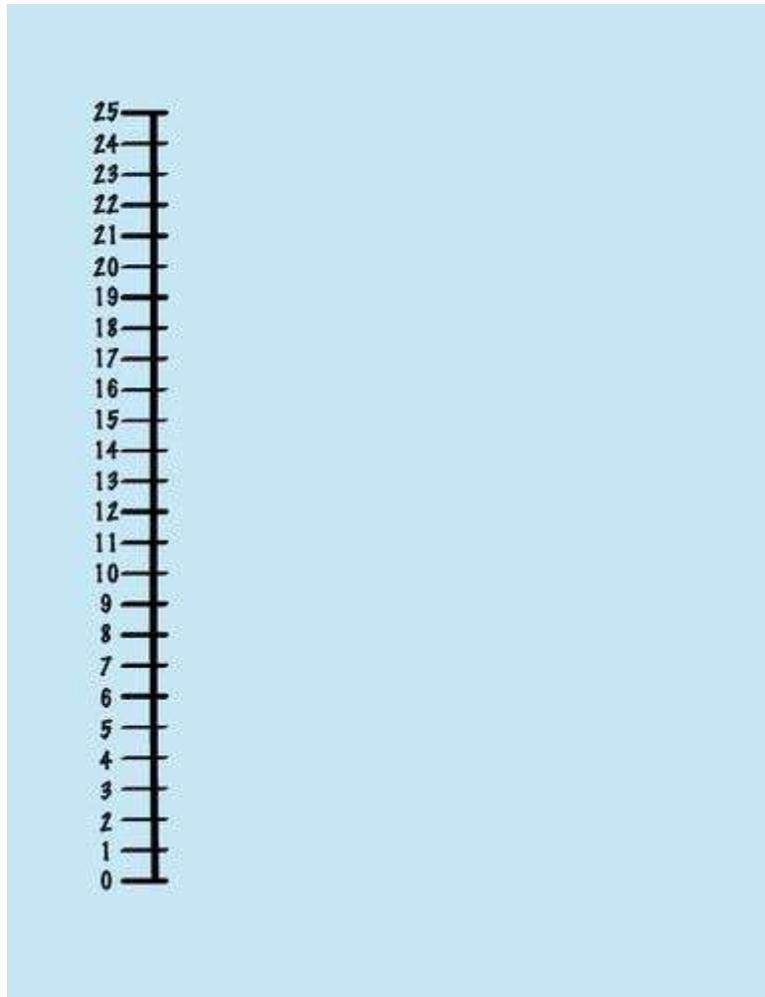
| | |
|---------|----------|
| Jupiter | 10 hours |
| Saturn | 11 hours |
| Uranus | 17 hours |
| Neptune | 16 hours |



That's a little bit better. We can look up and down at the numbers and can compare them more easily. But wouldn't it be nice if we could see how big those differences are?

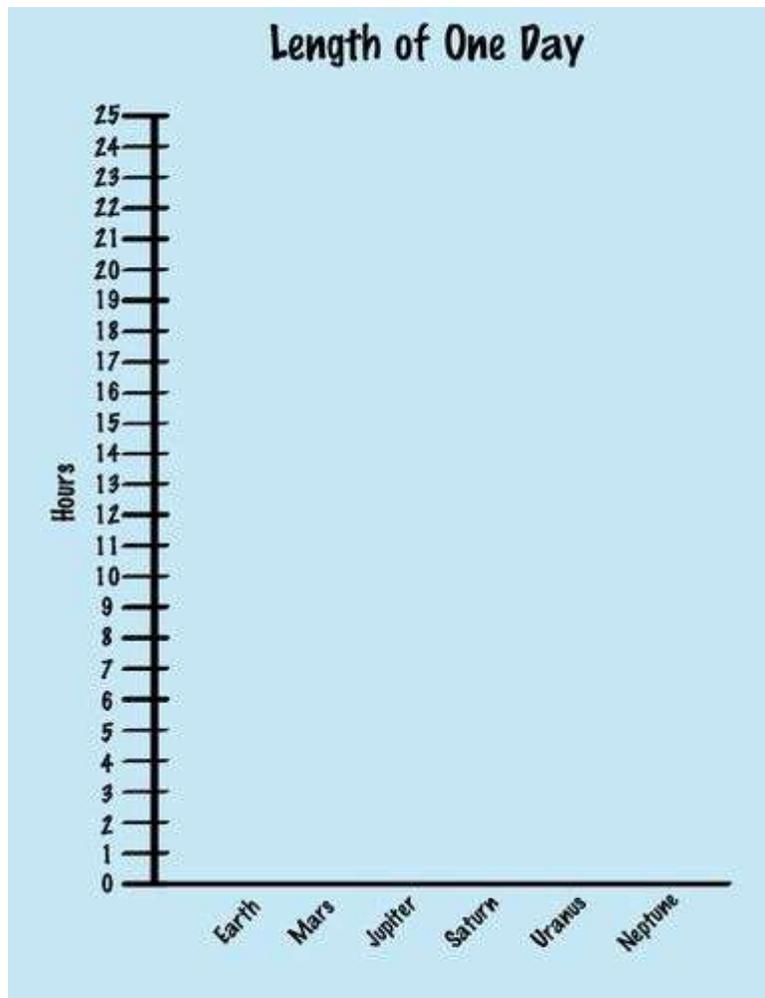
Let's make a graph with these numbers!

Option 3: A Graph



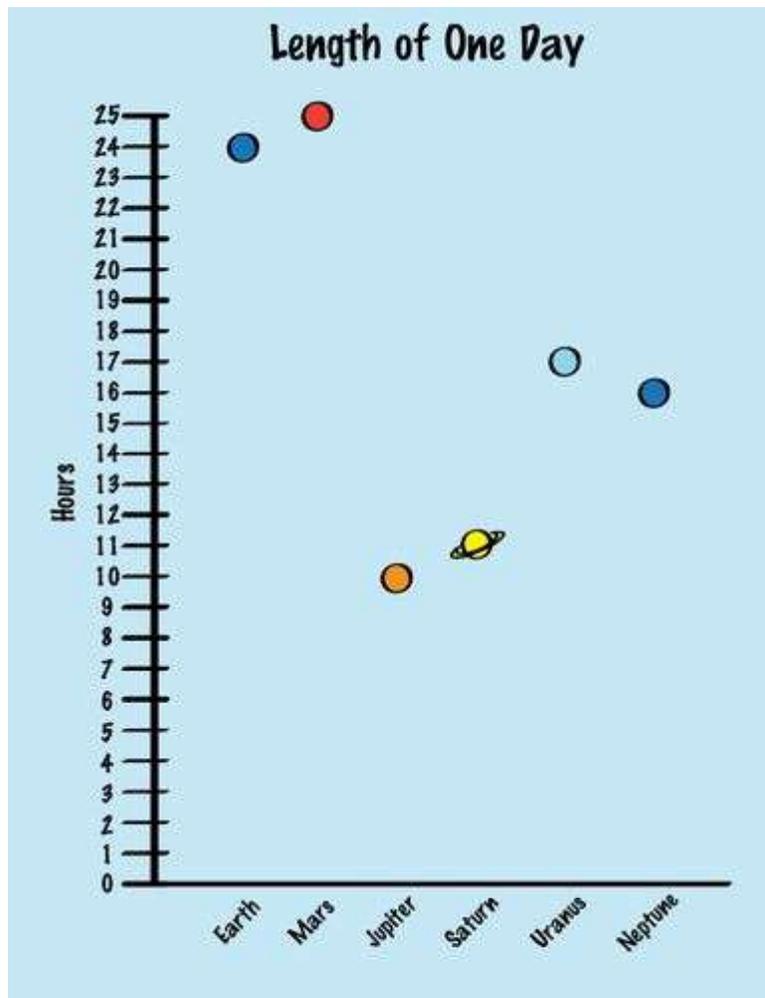
To start, make a number line that starts at 0 and goes to the highest number you need to include. This first graph will only have Earth, Mars, Jupiter, Saturn, Uranus, and Neptune on it. We'll save Mercury and Venus for later. You'll see why in a minute.

The longest day among those planets is 25 hours. That means our number line will go up to 25.



Label the number line so you remember it represents hours. And write what information the graph will have at the top.

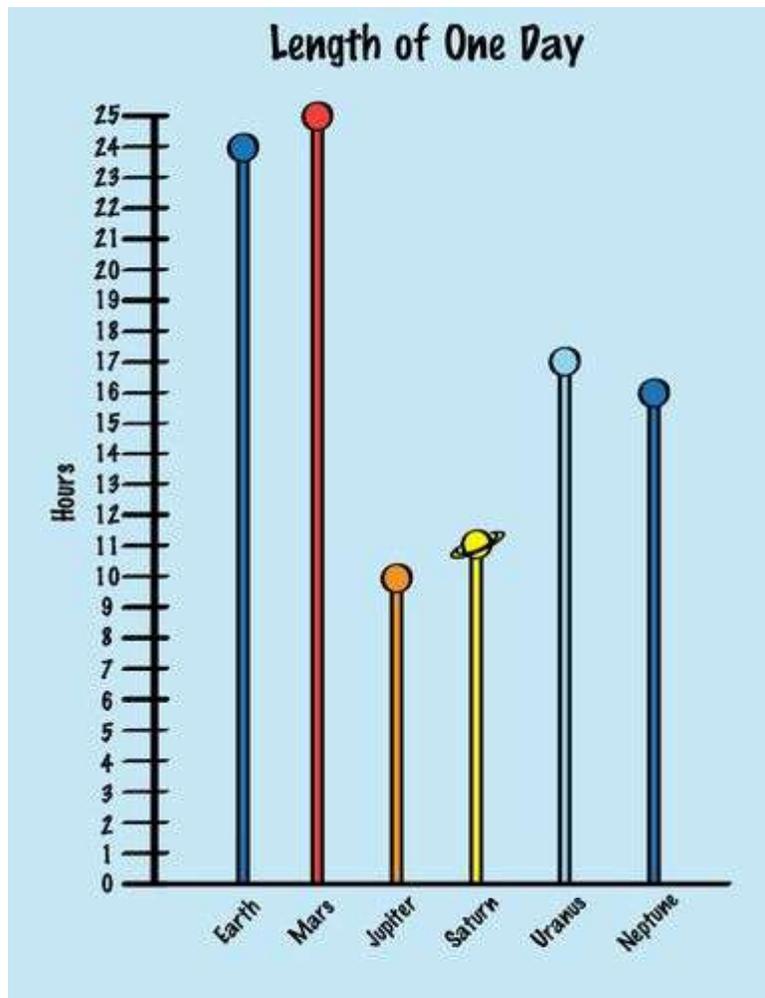
Along the bottom, write the names of the planets.



Make a dot above the name of the planet next to the number of hours its day takes.

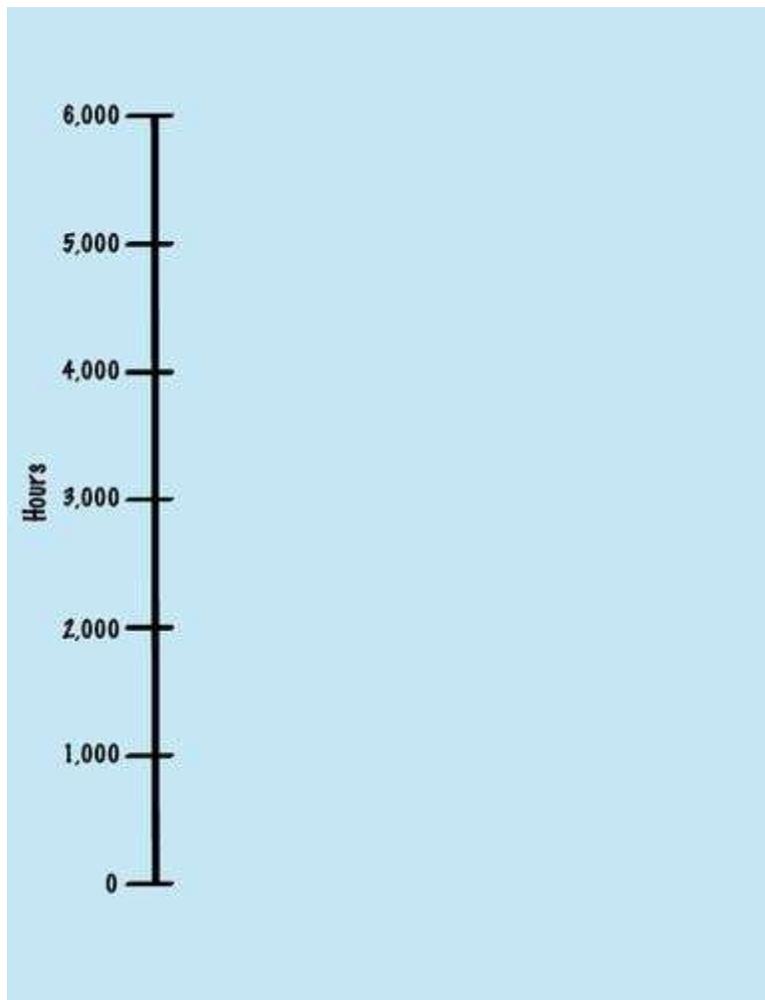
Our graph is coming together!

What do we do now? Color in the area below the dot to make a bar graph.

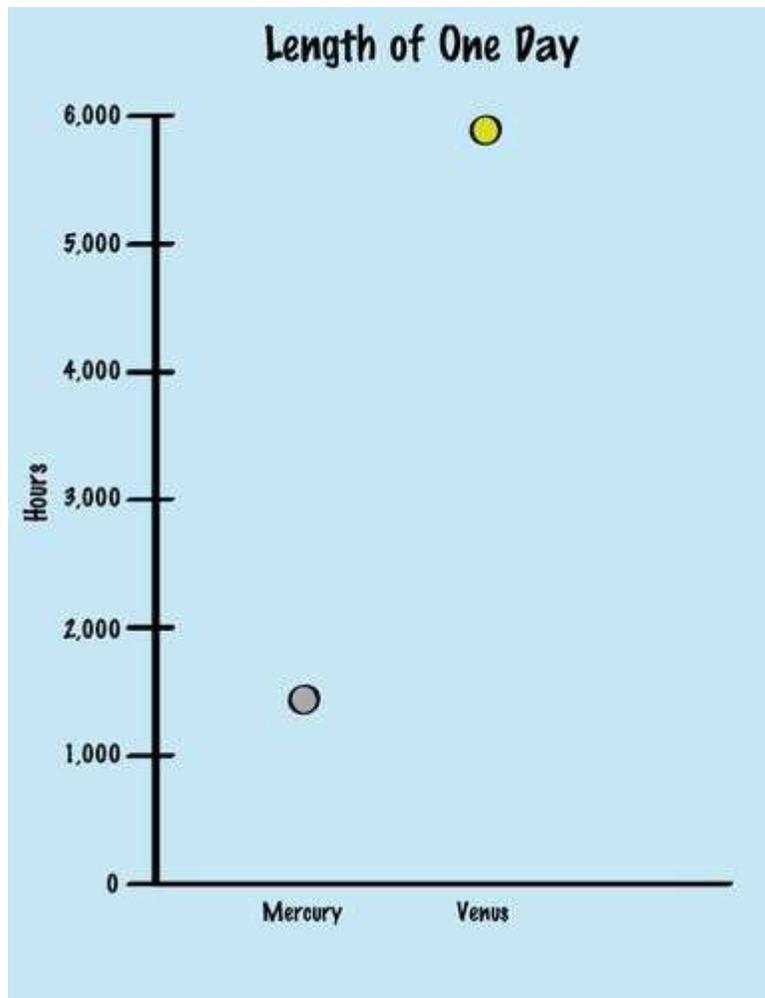


Now we can easily see which planet has the longest day, the shortest day, and everything in between. This is much easier than reading a list of numbers, don't you think?

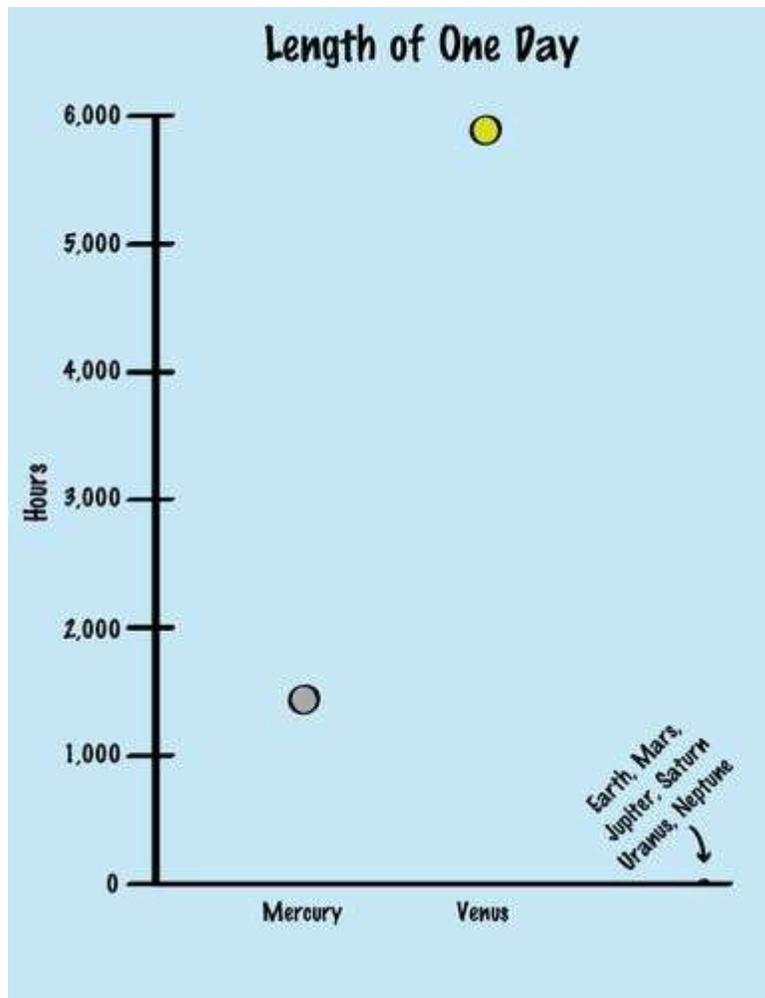
But what do we do about Mercury and Venus? Their days are *thousands* of hours long. How do we make a graph for those?



We make a number line, but instead of numbers 1, 2, 3 . . . we will use 1,000, 2,000, 3,000 . . .



Make a number line that goes all the way up to 6,000. Along the bottom, write Mercury and Venus. Above Mercury, mark a dot a little less than halfway between 1,000 and 2,000. It's not going to be perfect, but that's okay. Now make a dot a little under 6,000 for Venus.

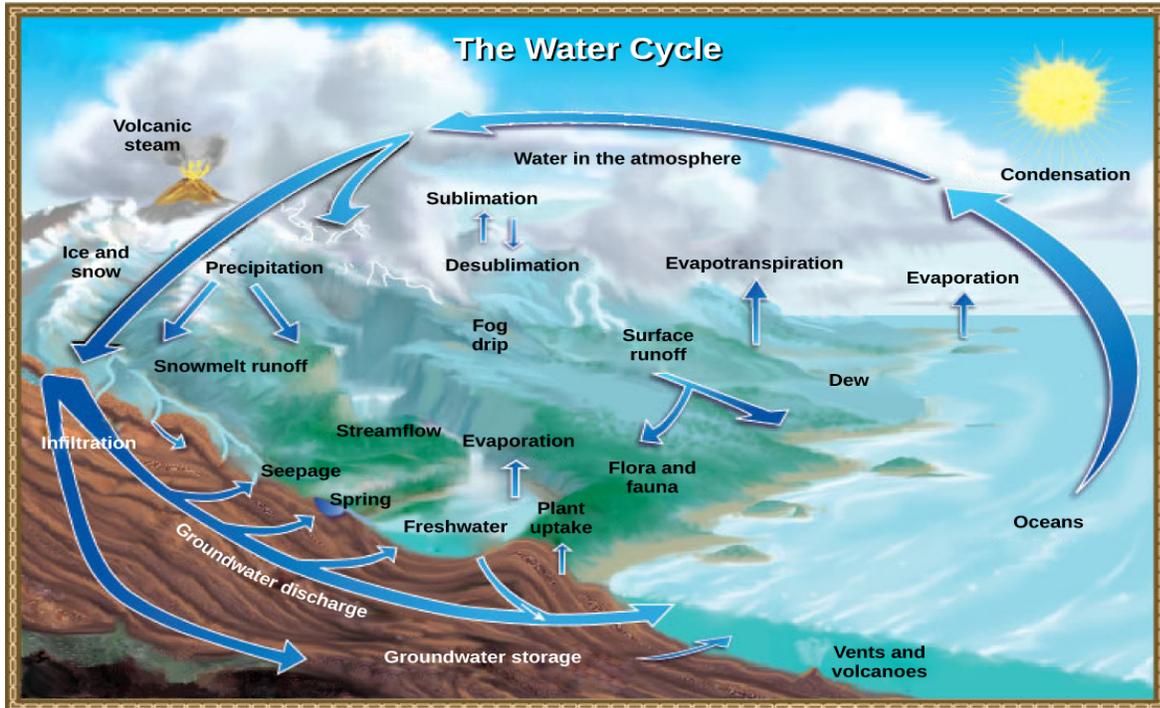


Do you think we can include Earth, Mars, Jupiter, Saturn, Uranus, and Neptune on here? Their dots would be so close to 0 it would be hard to tell the difference between them. Graphs work best when the numbers are similar in size, usually with the same number of digits.

Now that you know how to make a graph, you can show all kinds of information this way. You can graph the time it takes to get to school each day, the number of pieces of pizza your friends can eat, and how many people like the color blue or green. Go on and get graphing!

Elementary Science

Teacher Answer Key



Earth Structures

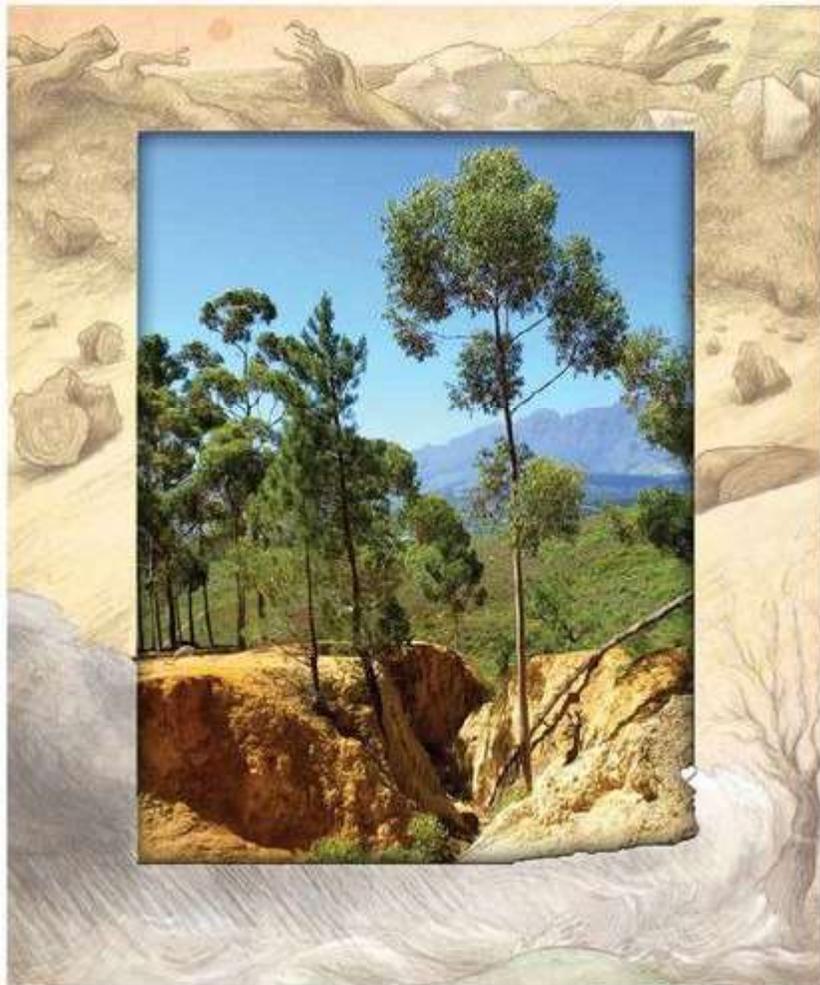
Natural Changes to the Environment

This text is excerpted from an original work of the Core Knowledge Foundation.

Ecosystems can be fragile. It doesn't take much to cause big changes in the environment. Sometimes the ecosystem can recover from a change. Sometimes the change is forever.

Erosion is one common force of nature. Over time, the land on either side of a stream can erode. When it rains really hard a little stream can fill with water and flood. A flood may last for an hour. It may last for a few days.

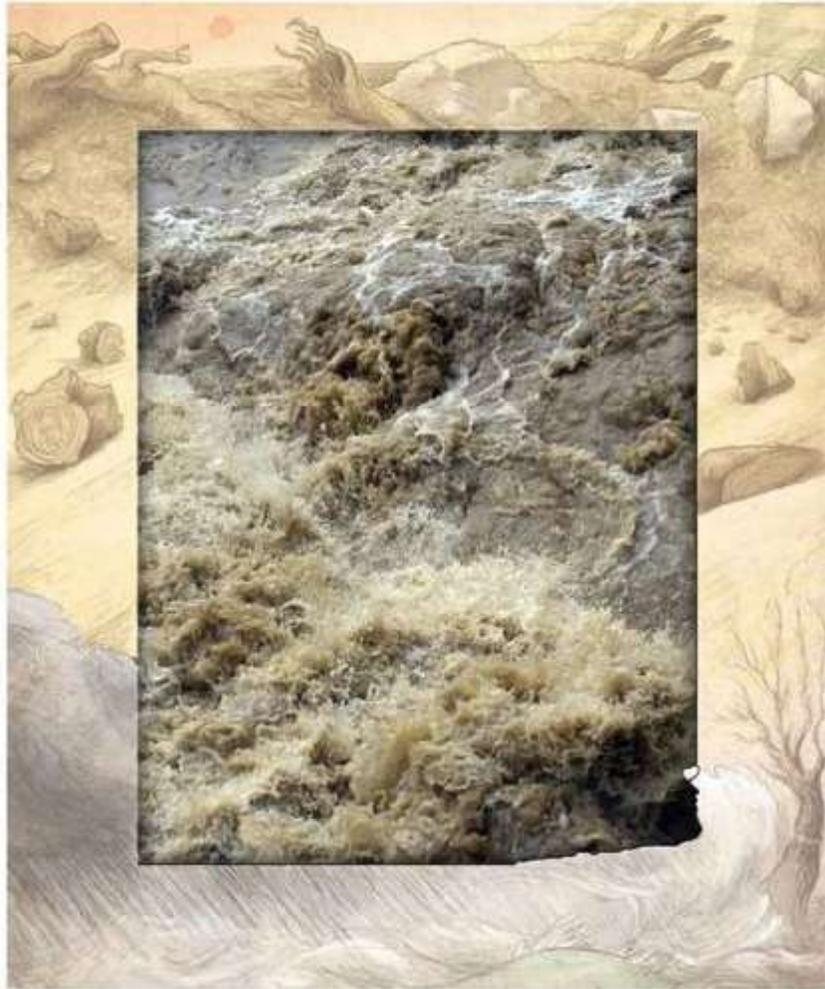
The plants on a hillside have roots that reach deep into the soil. The roots hold the soil together. When it rains, or when the wind blows really hard, the plant roots hold the soil in place. Without plants, the soil starts to erode.



Without plants, the soil starts to erode.

Water is one of nature's most powerful forces. During a big flood, the entire landscape can be changed. A flooded river can tear apart plants, trees, and soil.

First, the topsoil is removed. This is the richest soil, where you find most of the nutrients and decaying matter. Once the topsoil is washed away, the forces of nature slowly eat away at the clay and rock underneath.



Water is one of nature's most powerful forces.

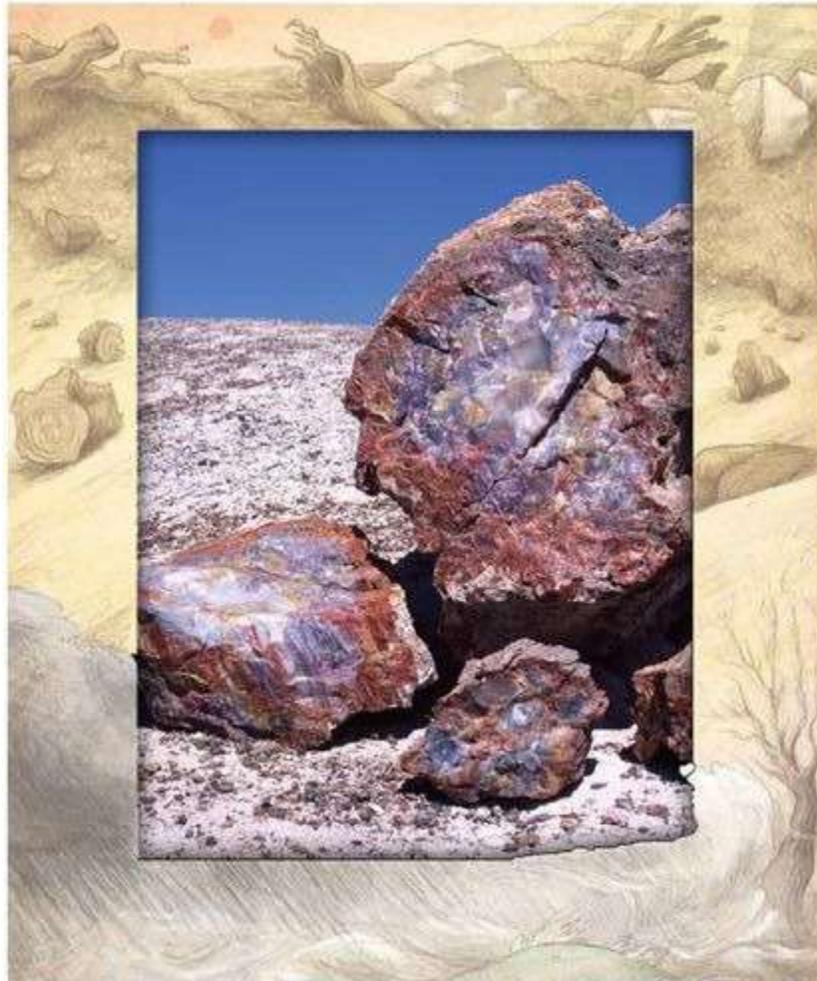
This is from Petrified Forest National Park in Arizona. Throughout the park, there are ancient trees that have turned to stone. The trees have been petrified!

These may look like normal rocks but they're not! There was a forest ecosystem here about 200 million years ago, when some of the first dinosaurs roamed the earth. These rocks are actually pieces of prehistoric trees!

Back then, there were producers, consumers, and decomposers, too! Fossils found in the

Petrified Forest show that there were swamp plants, like ferns. There were also dinosaurs that looked sort of like crocodiles.

At some point, the area was flooded by huge amounts of water and mud. The trees were covered. The entire forest was destroyed, along with the food chain. All that mud covering the trees dried. Over millions of years, the mud turned to rock. Instead of rotting, the trees turned to rock, too!



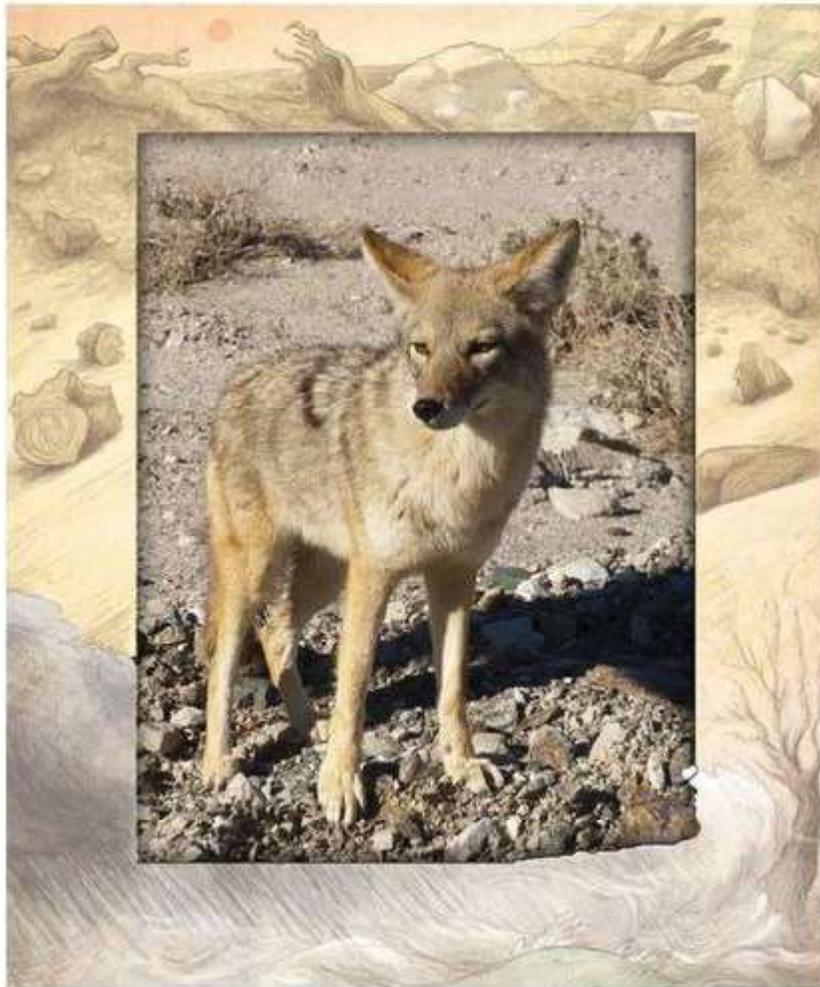
These rocks are actually pieces of prehistoric trees.

Millions of years and countless floods later, the land in Petrified Forest National Park has eroded. We are left with this strange landscape. It is still called a forest, but many of the trees are really rocks.

The land is almost like a desert. However, the Petrified Forest does get some rain. There is actually a lot happening in this ecosystem, even though it looks like a dry, sandy place. There

are 500 different species of plants in Petrified Forest National Park. There are no dinosaurs, but there are little lizards. There are also toads, snakes, birds, and jackrabbits. Coyotes are near the top of the food chain. They eat just about anything, meat and plant alike.

The Petrified Forest is interesting because it shows how nature's forces can change the landscape. When the land changes, the ecology changes. There were once forests and swamps here. Now, it is a rocky desert. The hills have eroded. Much of the rich soil has been washed away, leaving mostly sand and rocks. But it is still an ecosystem! Through all the changes, there has always been life here. Living things find a way to adapt and survive.



Coyotes are near the top of the food chain in the Petrified Forest.

Name: _____ **Date:** _____

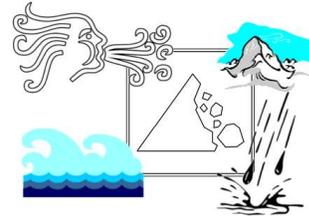
1. What is one powerful force of nature?

2. Give one example of how water can cause changes in a landscape.

3. Describe how the Petrified Forest came to be. Support your description with details from the text.

4. What is the main idea of this text?

Agents of erosion



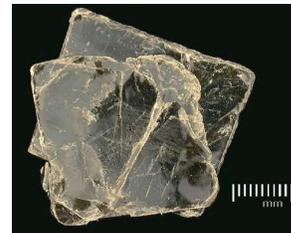
Wind, water, ice, gravity

Agents of weathering



Ice, wind, water, gravity, plant root, and temperature change

cleavage



The tendency of a mineral to break along flat surfaces.

erosion



Process by which wind, water, ice, or gravity transports soil and sediment from one location to another

Florida's natural resources



water, solar energy, climate, limestone, phosphate, oranges,

hardness



A measure of how easily a mineral can be scratched. A mineral can be very soft, hard and somewhere inbetween.

igneous



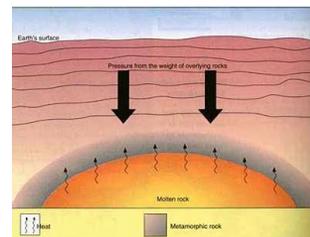
Rock formed from cooled magma or lava.

luster



The way a mineral reflects light. It can be describes as shiny, dull, glassy, metallic, and pearly.

metamorphic



Rock formed when exposed to extreme heat and pressure under ground.

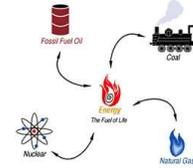
minerals



Solid non living material formed by nature that has a crystal form with its own set of properties.

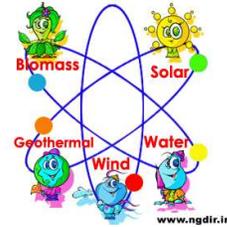
nonrenewable resources

Non-Renewable Energy



A resource that cannot be reused or replaced in a short period of time; metals, minerals, petroleum, fossil fuels

renewable resources



Energy resources that can be used and replaced in nature over a relatively short period of time; sun, wind, water, plants, animals

rocks



Solid earth materials made of minerals

sedimentary



Rock that is formed from layers of sediments (may contain fossils) that are pressed and squeezed together until it hardens.

streak



The red-brown streak of the mineral hematite.

The color of a mineral in powdered form when it is scratched on a white tile.

weathering

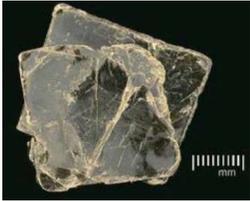


Process that breaks down rock into smaller pieces called sediment

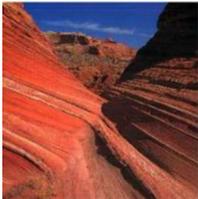
NAME _____

4 Written questions

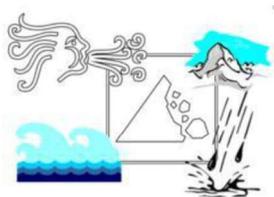
1. The tendency of a mineral to break along flat surfaces.



2. Rock that is formed from layers of sediments (may contain fossils) that are pressed and squeezed together until it hardens.



3. Wind, water, ice, gravity



4. Solid earth materials made of minerals



Matching questions

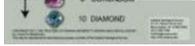
1. _____ erosion

2. _____ Hardness

3. _____ Luster

4. _____ Weathering

A



B



C



D



Multiple choice questions

1. Rock formed from cooled magma or lava.



A. metamorphic

B. minerals

C. rocks

D. igneous

2. Ice, wind, water, gravity, plant root, and temperature change



A. Florida's natural resources

B. Agents of erosion

C. metamorphic

D. Agents of weathering

3. Solid non living material formed by nature that has a crystal form with its own set of properties.



A. sedimentary

B. hardness

C. minerals

D. luster

4. Energy resources that can be used and replaced in nature over a relatively short period of time; sun, wind, water, plants, animals

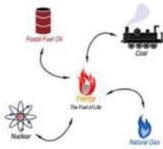


- A. Agents of weathering
- B. nonrenewable resources
- C. hardness
- D. renewable resources

True/False questions

1. A resource that cannot be reused or replaced in a short period of time; metals, minerals, petroleum, fossil fuels

Non-Renewable Energy



→renewable resources

- True
- False

2. The color of a mineral in powdered form when it is scratched on a white tile.

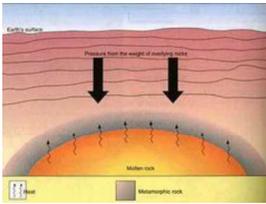


The red-brown streak of the mineral hematite.

→luster

- True
- False

3. Rock formed when exposed to extreme heat and pressure under ground.



→metamorphic

- True
- False

4. water, solar energy, climate, limestone, phosphate, oranges,



→Agents of weathering

- True
- False



Elementary Science



Links

Quizlet.com <https://quizlet.com/MDCPSscience/folders>

Science Games

- Relationship Among Earth, Moon, and Stars
 - <https://mdcps.classflow.com/classflow/#!/activity-stand-alone-player/5a7c02ddc6bf4322986294cf17906d30>
- Flow of Energy/Food Chains
 - <https://mdcps.classflow.com/classflow/#!/activity-stand-alone-player/283b3499ec934e8abc9455026c8c9a8f>
- Flow of Energy/Food Chains 2
 - <https://mdcps.classflow.com/classflow/#!/activity-stand-alone-player/75c490395b2d45e797a0f01d4ce74c8b>
- Major Lifecycles of Florida Plants
 - <https://mdcps.classflow.com/classflow/#!/activity-stand-alone-player/00d6b30983744ff0be2c357b39fb73b8>
- Major Lifecycles of Florida Plants2
 - <https://mdcps.classflow.com/classflow/#!/activity-stand-alone-player/57ed46e99dc64b0cbddb954e584e6db1>