7th Grade

Summer Work Packet

Name: _____


Welcome to
SOCIAL STUDIES

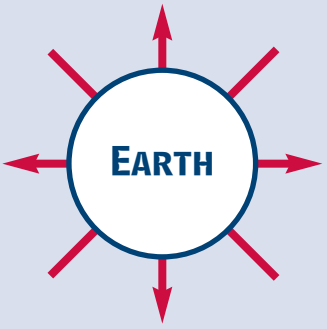
Lesson 1 Direction and Distance

What You Will Learn

To identify direction and distance information from maps

Reading Strategy

Create a diagram like the one below to list the cardinal and intermediate directions.



Terms to Know

compass rose, cardinal directions, intermediate directions, scale, scale bar

Have you ever drawn a map in the dirt to show someone where you live? Such drawings were some of the earliest maps. Other early maps were made of sticks tied together, or pieces of wood sewn to a piece of sealskin. People have used maps for thousands of years to show *where* places are, *how far* it is from one place to another, and the *direction* to travel to get from here to there.

Maps are important tools. Maps tell us where to catch a bus and where that bus will take us. Maps help us find a friend's house in a part of town that is new to us. Maps help us plan vacation trips. They help us learn about the town or state to which we are moving.

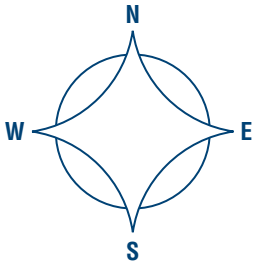
Direction

Direction is one of the most important things we can learn from a map. You use direction every day—left, right, forward, back, up, down. But these directions depend on where you are and which way you are facing. Maps use the directions north, south, east, and west. These directions do not change. North is always toward the North Pole of the earth. If you stand facing the North Pole, east will be to your right. West will be to your left. South will be behind you.

Usually, north will be at the top of a map. However, this is not always true. You must check to be sure. Mapmakers use a **compass rose** or a north arrow to show directions. If there is no compass rose, north arrow, or other symbol to indicate direction, you can assume that north is at the top of the map.

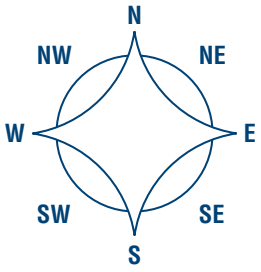
Look at the examples below. Find north, south, east, and west on Figure 1-1. These are the **cardinal directions.** Turn your book so that north on the compass rose points north (toward the North Pole). Face north yourself. Now east is to your right, west is to your left, and south is behind you.

Figure 1-1 Cardinal Directions



Look straight north. Hold your right hand straight out to the side. In what direction are you pointing? You are correct if you said *east.* Now turn your head just halfway toward your right arm. You are no longer looking north. But you are not looking east, either. You are looking *northeast.* Look at Figure 1-2. Find northeast, southeast, northwest, and southwest. These are known as **intermediate directions.**

FIGURE 1-2 **Cardinal and Intermediate Directions**



Notice that Figure 1-3 is just an arrow with its point labeled *N.* The *N* stands for north. The arrow points north. When you see a north arrow, remember that east is to the right, west is to the left, and south is in the opposite direction from north.

FIGURE 1-3 **North Arrow**

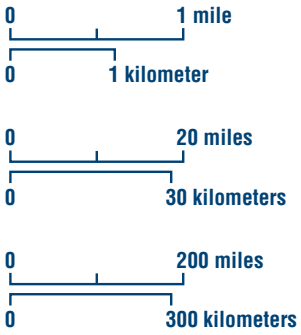
Distance

If you make a drawing of a person, you will probably not make the picture as large as the person. That would take a piece of paper the same size as the person. A map is a drawing of a part of the earth. A map as big as the earth would be too large to put in your pocket and carry with you across Africa! Maps are drawn so that a certain distance on the map represents a much larger distance on the earth. This is called **scale.** Scale makes it possible to show the whole earth on a piece of paper the size of this page.

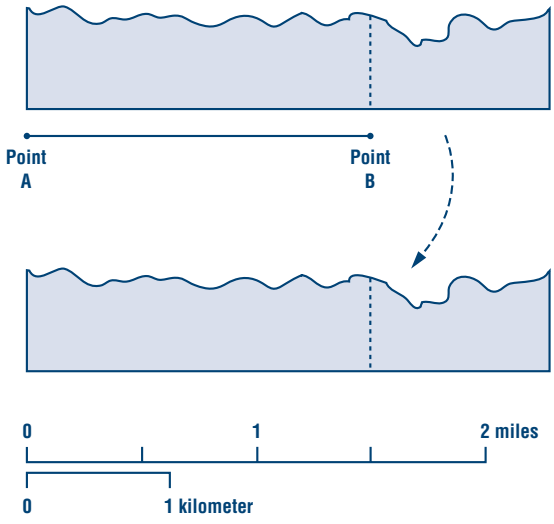
Not all maps are the size of this page, of course. Your classroom may have maps hanging on the wall. These maps are much larger than the ones in your book. But they both show the same earth. Maps have a **scale bar** to tell you what distance on the earth is represented by a certain distance on the map.

Using Map Scale Bars

Here are some examples of map scale bars. Notice that all lines are the same length, but that each line represents a different distance on the earth. Also notice that the same scale bar can represent distance in miles and kilometers on the map.



Using the scale bar to measure distances between places on a map is easy. Use a piece of paper. Put the edge of the paper between the two points you wish to measure. Make a mark on the paper at each point. Then put the piece of paper on the scale bar with one mark at zero. Note where the other point falls on the scale. This gives you the distance.



If the scale bar is not long enough, mark where it ends on the paper. Then slide the paper to the left to line up the new mark with zero. Do this as many times as necessary. Then multiply the number of spaces between marks by the distance each length of the scale bar represents. For example, if the scale bar represents 100 miles, and you marked off three spaces, then multiply 3 by 100. The distance between the two points on the map is 300 miles.

Using Your Skills

A Reviewing Key Terms

Place each phrase in the box under the correct heading.

helps you find directions on a map can be marked in miles	helps you find distances on a map may be marked N, S, E, W

Compass Rose

1. _____
2. _____

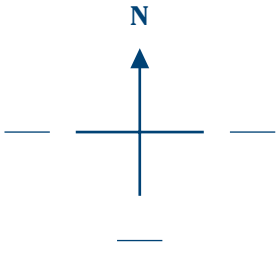
Scale

3. _____
4. _____

B Recalling Facts

Fill in the missing directions on these compass roses. Notice that north is not always in the same place.

1.



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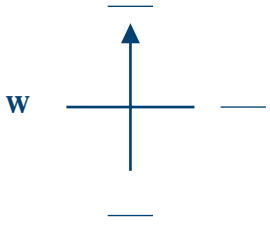
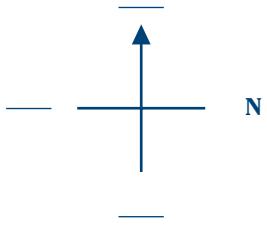
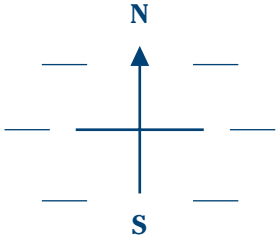


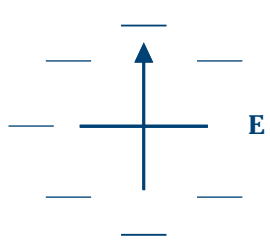
3.



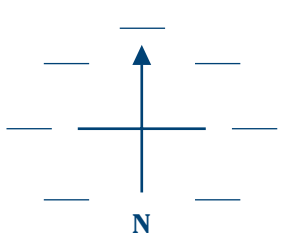
4.



5.



6.



C Practicing Map Skills

Use what you have learned about direction and distance to answer the questions about Map 1-1: The United States on page 12.

1. What part of this map shows direction? _____

2. What part of this map shows distance? _____

3. If you were in Kansas, in which direction would you have to travel to reach each of the states listed below? Use intermediate directions when necessary.

   a. South Dakota _____

   b. Virginia _____

   c. Utah _____

   d. Texas _____

   e. Washington _____

   f. Florida _____

   g. New Mexico _____

   h. Michigan _____

4. How many miles does the full length of the scale bar on the map represent? _____

5. About how many miles is it from east to west across Colorado?

   _____

6. About how many miles is it from north to south across Texas at its widest point? _____

7. How would you measure a distance on the map that is longer than the scale bar?

   _____

   _____

   _____

   _____

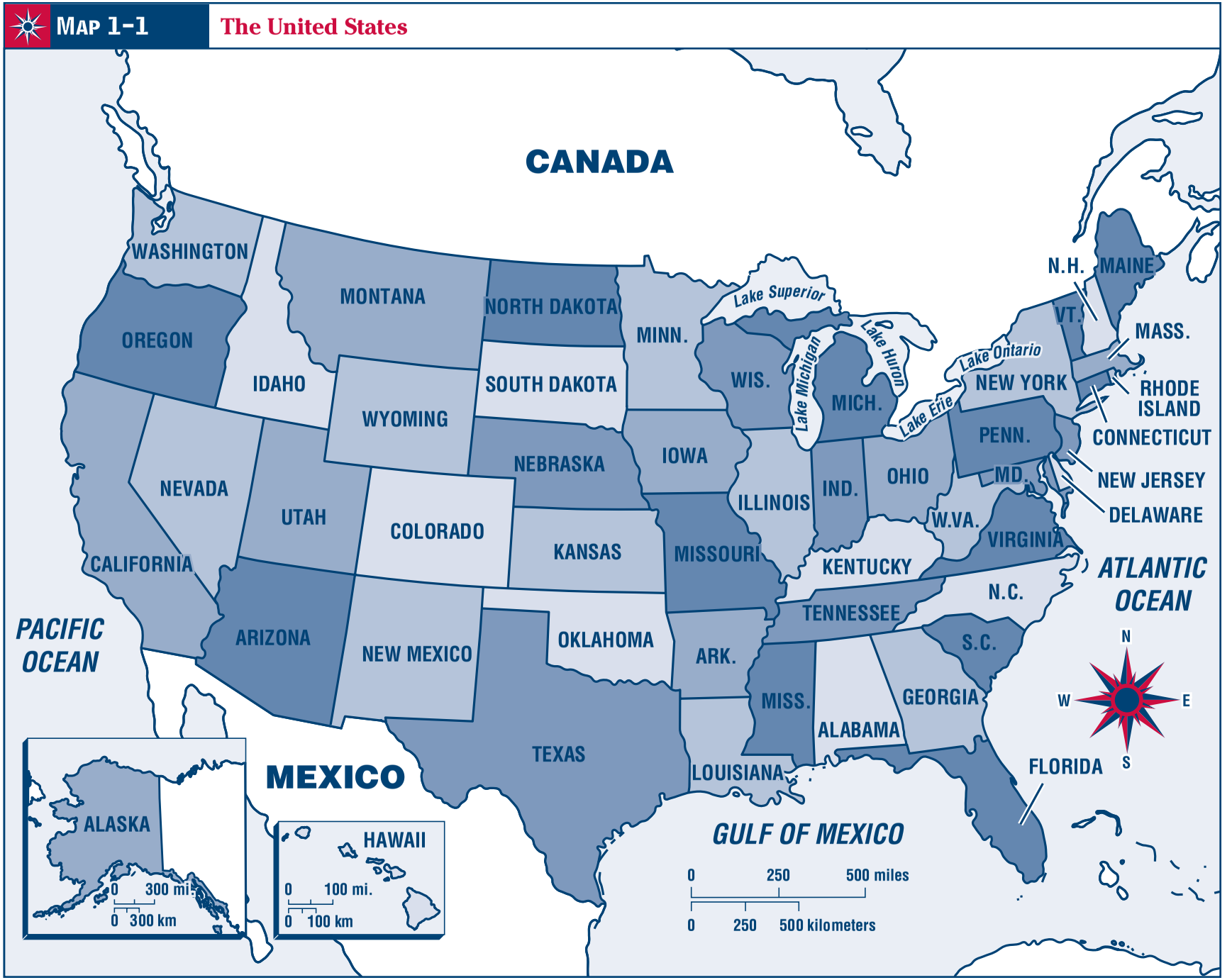
   _____

   _____

   _____

8. About how many miles is it from Ohio to Oklahoma when traveling southwest? _____

MAP 1-1 The United States



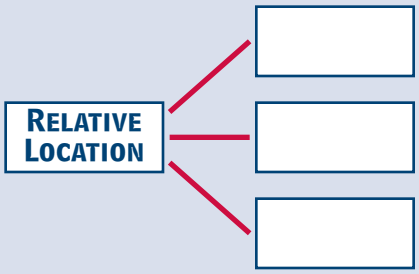
Lesson 2 Importance of Distance and Relative Location

What You Will Learn

How to describe locations in terms of relationships with other locations

Reading Strategy

Create a chart like the one below. List three examples of the importance of relative location in your life.



Terms to Know

relative location, interdependence

Have you ever been lost? Or have you just not been sure about how to get somewhere you wanted to go?

From the specific spot where you stand on the earth, you are different directions and distances from many other spots on the earth. You may be 22 miles south of your home. At the same time you may be 150 miles northeast of the capital of your state. You may also be three feet from the front door of your favorite pizza place. Your location can, in fact, be compared to the location of any other spot on Earth. This is called **relative location.**

Distance and location affect your life in many ways. If you live eight miles from school, you must wake up earlier each morning than someone who lives eight blocks away. If you live 2,500 miles from the nearest volcano, you will be much less concerned about its latest eruption than someone who lives in the valley below it.

The story of Houston, Texas, is an example of the importance of distance and relative location. One of the greatest oil strikes in history took place near Houston in 1901. The Spindletop Field was the first great oil discovery in Texas. Within a few years Houston, Texas, was an important center for the oil industry. Why? Because Houston's relative location was near the early oil fields. It was also located near the Gulf of Mexico. This made it possible to ship oil and equipment by water. Many oil companies built plants near Houston to make products from oil. These products were then shipped to other parts of the country, and around the world by water. As a result, Houston became one of the largest ports in the United States.

Global Interdependence

Distance and relative location are important because we depend on people in other places for things we need. Depending on other people is called **interdependence.** We depend on them for certain goods and services, and they depend on us for others.

Interdependence links us together in the larger global community in many ways. For example, the United States imports and buys from other countries much of the oil that runs its cars and factories. A great deal of this oil comes from countries in Southwest Asia. This is why the United States is so interested in wars and other events in the region. Because of the location of oil fields in Southwest Asia, a war there could cut off the supply of oil to the United States. This could result in oil shortages and economic changes in the United States.

Using Your Skills

A Practicing Map Skills

Use Map 1-2: Panama below to decide whether each statement about relative location is true or false. Write *T* if the statement is true. Write *F* if the statement is false.

_____ **1.** Panama has water to the north and south.

_____ **2.** The country of Colombia is located to the west of Panama.

_____ **3.** The Caribbean Sea is located to the north of Panama.

_____ **4.** The Canal Zone is located in the central part of Panama.

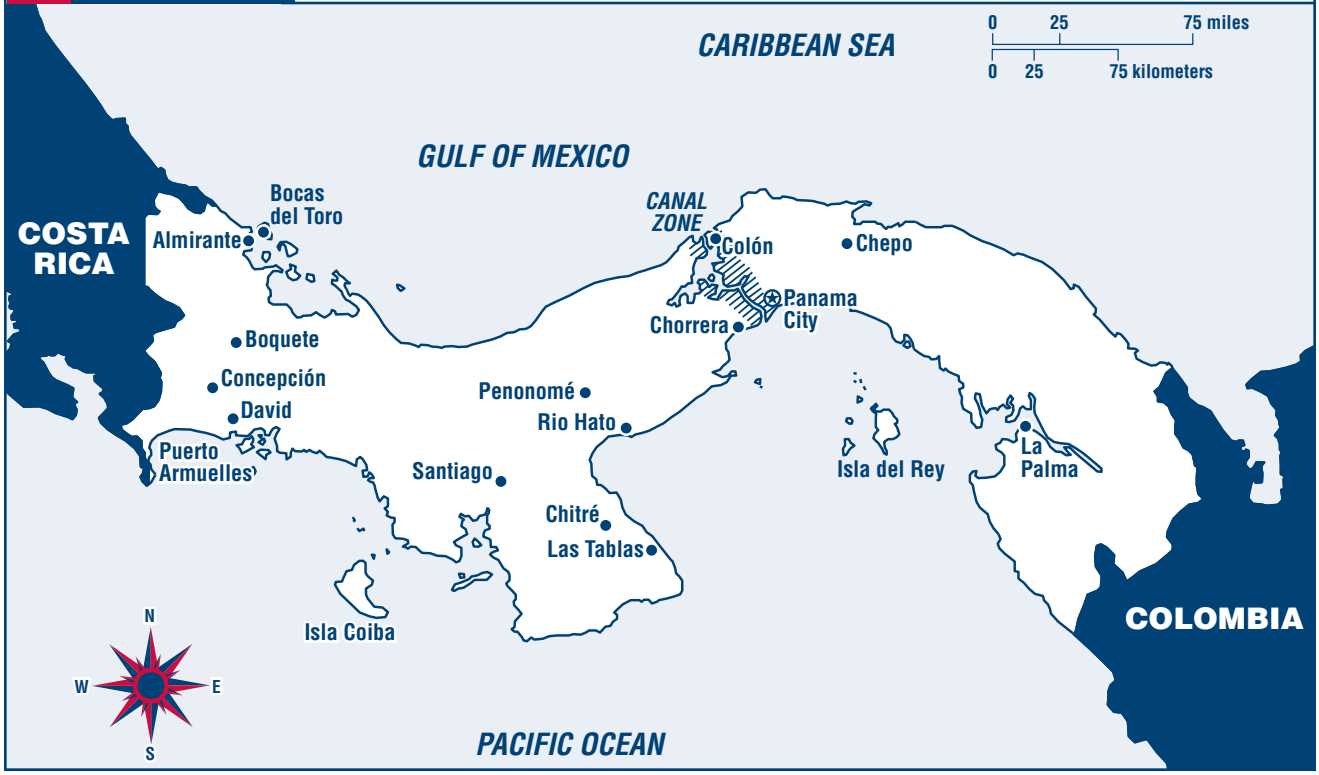
_____ **5.** When a ship enters the Panama Canal at Colón, it is northwest of the other end of the canal at Panama City.

_____ **6.** Costa Rica is located northwest of Panama.

_____ **7.** According to this map, all parts of the Caribbean Sea are east of the Pacific Ocean.

_____ **8.** The city of Rio Hato is about 300 kilometers west of La Palma.

Map 1-2 **Panama**



B Practicing Map Skills

Use Map 1-3: The World below to answer the questions about relative location. Use intermediate directions where necessary.

1. Where is the United States located on this map?

   _____

2. What country is to the north of the United States? _____

3. What country is to the south of the United States? _____

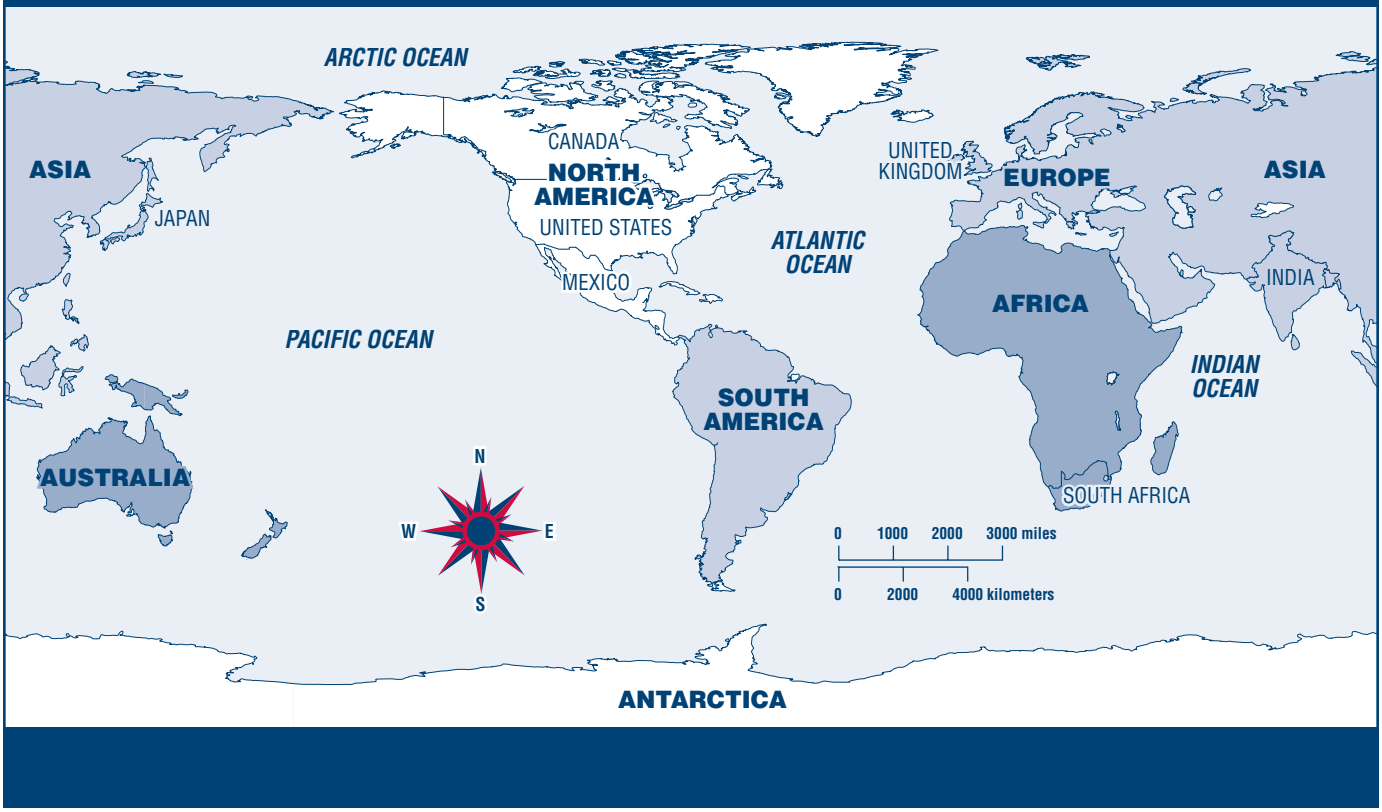
4. What direction is South Africa from the United States? _____

5. What direction is Australia from the United States? _____

6. In what direction would you travel to go from Japan to the United States? _____

7. In what direction would you travel to go from India to the United Kingdom? _____

Map 1-3 The World



Lesson 3 Locating Places Using a Grid

What You Will Learn

To locate places using grids

Reading Strategy

Use a table like the one below to list the major elements of a map grid.

Elements of Map Grids
•
•
•

Terms to Know

grid, cell, index

Imagine that you have just landed on this planet. You have been told to find the center of government for the place where you landed. Someone hands you a map, points out your current location, and identifies the city where the center of government is located. You have heard of maps, but you have never seen one. On your planet, you simply enter your destination into a tracking device in your vehicle and the course is automatically programmed.

As you examine the map, you notice that there are lines running vertically and horizontally on the map. You also notice many symbols, colors, and words on the map. You are fairly certain that the words tell the names of places, but you are not certain what all the labels and symbols mean. You need something that will tell you about where the center of government is located.

Using Map Grids

The something you need to help you find the center of government in this new place is called a **grid.** A grid is a set of vertical and horizontal lines used to identify locations on a map. An alpha-numeric grid uses letters and numbers around the edges of the map to label the areas marked off by the lines. Look at Figure 1-4 at the top of the next page for an example of an alpha-numeric grid.

Place your left index finger on the letter *B* on the left side of the grid. Place your right index finger on the number *3* at the bottom of the grid. Move your left finger straight across and your right finger straight up until they meet. There should be a star in the box at your fingertips.

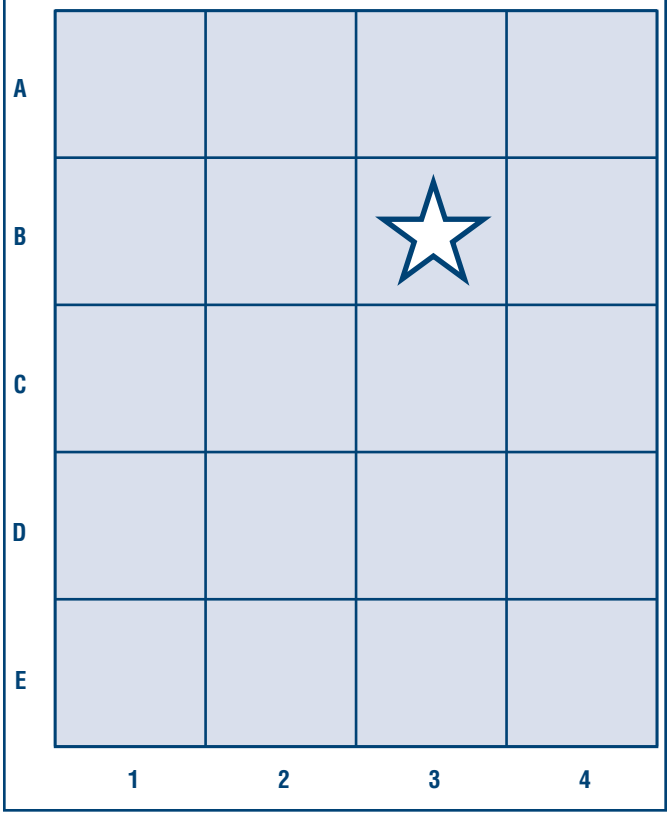
The four spaces to the right of the letter *B* form a *row.* We call this row B. The four spaces above the number *3* form a *column.* We call this column 3.

The area where a row and a column meet is called a **cell.** Notice that only one cell can be at the area where row B and column 3 meet. We call this cell B-3.

Practice using the grid in Figure 1-4. Which cell is closer to the top of the grid, cell A-1 or cell E-4? Now draw a star in cell C-2. Then draw a circle in cell A-4. Finally, write your name in cell D-1. You should be able to draw a straight line through all four cells on the grid that have something in them.

Many cities and towns are described as being built on a grid. This means that horizontal and vertical streets and roads cross

FIGURE 1–4 An Alpha-Numeric Grid



each other to form a grid. The names of the streets and roads are used to locate places in the city or town. For example, the high school may be located at the intersection of Main Street and Third Avenue. Or the post office is located on Sunset Boulevard between Fifth Avenue and Sixth Avenue. Is your town or city built on a grid?

Using a Grid Index

Mapmakers often use a grid to help us find places on maps. We use letters and numbers to identify cells on the map in which specific places are located. The grid is used with an **index.** The names of places on the map are listed in alphabetical order in the index. Following each name is the letter and number of the cell in which that place can be found.

Look at Map 1-4 and its index. Notice that the index is not complete. Use the map to help you fill in the name of the missing city for each cell number. Be sure you spell the name of each city correctly.

MAP 1–4 Kuwait

Index for Map 1-4

Using Your Skills

A Reviewing Key Terms

Match each term at left with its meaning.

_____	**1.**	cell	**a.**	an alphabetical list of places on a map, with cell numbers
_____	**2.**	row	**b.**	a set of lines used to identify locations on a map
_____	**3.**	column	**c.**	the space where a row and column meet
_____	**4.**	grid	**d.**	a set of spaces that goes across a map
_____	**5.**	index	**e.**	a set of spaces that goes up and down a map

B Practicing Map Skills

Use Map 1-5: London, England to answer these questions.

1. What is located in cell B-3?

_____

2. What is located in cell C-2?

_____

3. What is located in cells F-2, F-3, F-4, F-5, E-5, D-5, and C-5?

_____

4. What is located in cells B-3 and B-4?

_____

5. About how many miles is it from the London Zoo to the Planetarium?

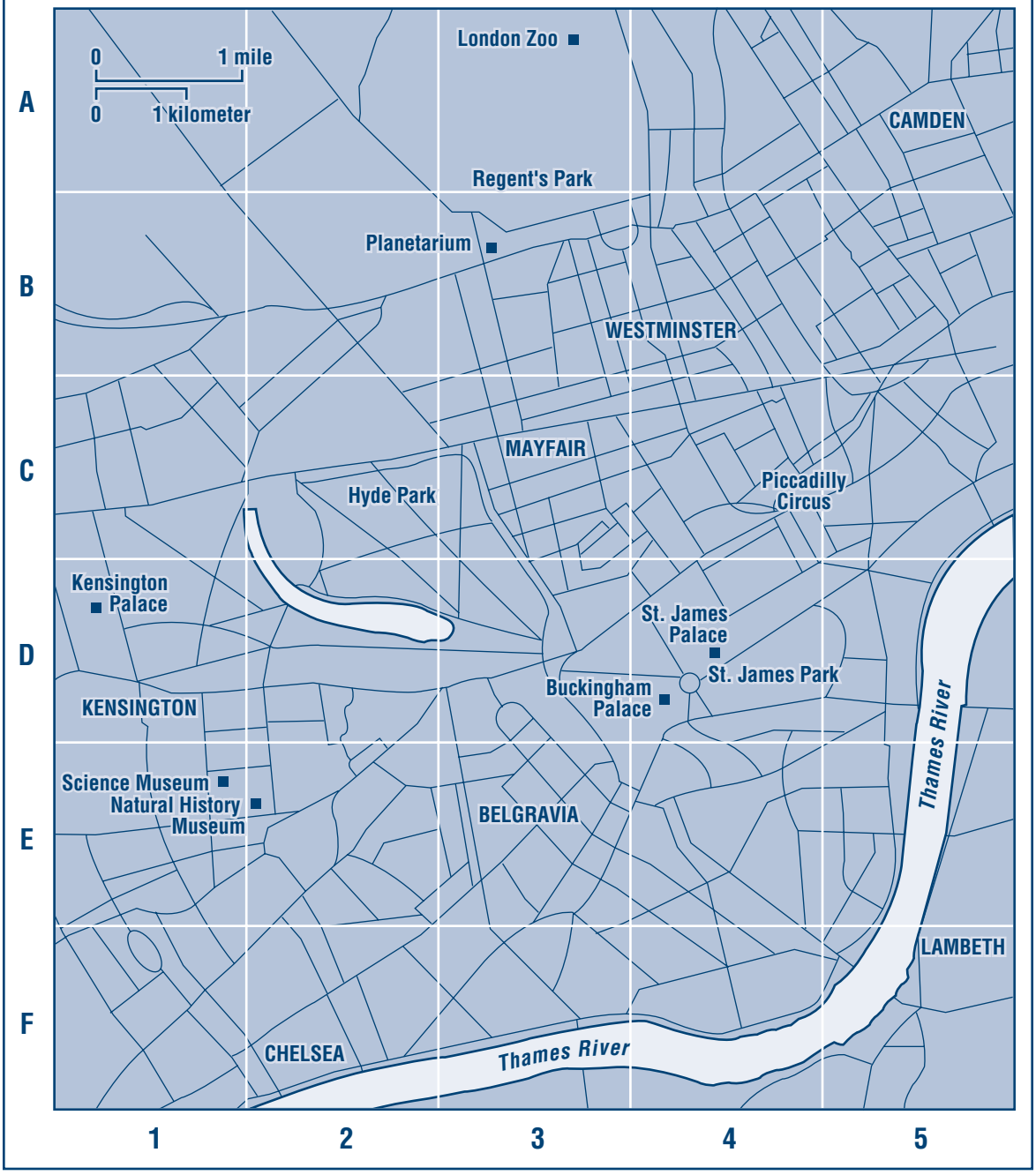
_____

6. About how many miles is it from Buckingham Palace to Kensington Palace?

_____

7. Complete the following index for the map of London. Remember that all names in an index are in alphabetical order. If there is more than one possible answer for a cell, see which answer will fit in alphabetical order.

Map 1-5 London, England



Index


Welcome to
SCIENCE

Deeper Than Teaching

Science Enrichment Packet

Contents:

The Scientific Method

The basic **scientific method** includes the steps scientists use and follow when trying to solve a problem or prove or disprove a theory. The methods are used by scientists all over the world. This is done so scientists can work together to solve some of the same problems.

There are usually five steps which are a part of the scientific method. The steps can occur in any order, but the first step is usually **observation**. An observation is the use of one or more of the five senses, which include seeing, hearing, feeling, smelling, and tasting. The five senses are used to learn about or identify an event or object the scientist wants to study. For example, while observing a spider a scientist may observe the pattern or size of the spider's web. Observations lead to questions.

The second step of the scientific method is the statement being researched, the **hypothesis**. A good hypothesis includes three things; the explanation for the observations, if it is able to be tested by other scientists, and it will usually predict new outcomes or conclusions. The scientist observing the spider building the web may have a question about the strength of the web. Usually a hypothesis is written as an "If…then…because" statement. An example of the hypothesis might be: If the spider is larger, then the web will be stronger because the silk is bigger. This hypothesis includes the explanation for the observation, it can be tested, and new conclusions may be reached.

The third step of the scientific method is the **experiment.** An experiment is a test which will either challenge or support the hypothesis. The hypothesis will then be true or false. Using the spider hypothesis, a scientist may experiment by measuring spider webs in relation to a spider's size.

Often, even when a hypothesis is disproved much can still be learned during the experiment. For example, while measuring the strength of spider webs the scientist may discover something new about them. It is important to test only one variable at a time. If we test several different things in an experiment it will be very difficult to understand which variable caused the change. We collect **data** during an experiment. Data can be recorded through written words, graphs, charts, and/or illustrations.

The final step in the scientific method is the **conclusion**. The conclusion will either clearly support the hypothesis or it will not. If the results (data) support the hypothesis, a conclusion can be written. If it does not support the hypothesis, the scientist may choose to change the hypothesis or write a new one based on what was learned during the experiment. In the example, if the scientist proves that larger spiders build stronger webs, then that is the conclusion. If it was not proven, the scientist may change the hypothesis to: The size of a spider has no bearing on the strength of its web.

The scientific method is used for simple experiments students may do in the classroom or very complex or difficult experiments being done all over the world. The spider experiment may be done by a scientist in Jacksonville, Washington D.C., or Brazil.

In summary, the **scientific method** includes the steps scientists use to solve a problem or to prove or disprove a theory. There are five basic steps involved with the scientific method. The usual steps include **observation, hypothesis, experiment, collecting data** and **making a conclusion.** The steps may not always be completed in the same order. Following the five steps, the results of the experiment will either support the hypothesis or will not support the hypothesis. Scientists are always free to change or write a new hypothesis and start the five steps all over again. The scientific method is used for simple experiments or for more difficult experiments.

Hypothesis Activity

The format for writing a hypothesis is…

If (describe specifically what you will do in the experiment) **then** (predict the outcome of the experiment based on your "if" statement.)

For each problem or question write a hypothesis.

Example: I wonder if chocolate may cause pimples?

If ___*I eat a chocolate candy bar*_____, then
_____*I will get pimples*_____.

1. Will plant growth may be affected by the color of the light?
If _____,
then _____.

2. Are there more bacteria on the toilet handle or on my science desk?
If _____,
then _____.

3. Which lunch will give me more energy, chicken sandwich or pizza?
If _____,
then _____.

4. Do birds with longer or shorter wings fly faster?
If _____,
then _____.

5. Does caterpillar poop weigh the same as the leaf it eats?
If _____,
then _____.

6. Bob wondered if giving detentions for missing homework would lower the amount of homework missed in his local middle school. He recorded the number of missed homework for 30 days, and then the school agreed to assign detentions for each missed homework assignment. He then compared the numbers to see if the policy had any effect.
If _____,
then _____.

7. Does T.V. time seem to affect the reading scores of fourth graders?
If _____,
then _____.

8. Does wing length affect the distance a plane flies?
If _____,
then _____.

9. Bob wants to see if different smells travel at the same speed. He sprays a can of hairspray, peppermint air freshener, and insect repellant at the same time. Six friends stand around him in a large circle, five feet from the center of the circle where Bob stood.
If _____,
then _____.

Scientific Method

For each experiment, fill in the correct step of the Scientific Method on the blank line above the description. Use the words below.

Question/Problem	Hypothesis	Experiment	Collect & Analyze data	Conclusion

Bean Plants

1. _____
Measure the growth of the bean plants and determine how the plants in both environments progressed over the course of the three weeks. Find an average between the two indoor plants to determine the "typical" indoor plant growth, doing the same for the two outdoor plants to calculate the "typical" outdoor plant growth.

2. _____
I want to know if a bean plant will grow more quickly outside or inside.

3. _____
Based on the data you collected, determine if a bean plant placed inside or outside will grow more quickly.

4. _____
If I plant bean plants outside, then they will grow more quickly than if I planted them inside.

5. _____
Plant four bean plants in identical pots using the same type of soil. Place two of these in an outdoor location and place the other two in an indoor location. Choose locations where the plants will get a similar amount of sunlight. Care for the plants in an identical way, like giving the same amount of water. Then, each day for the three-week experimental period, observe and measure plant growth. Carefully record the size of each plant in a notebook.

Sugar Water & Plants

1. _____
Look at the time it took for each container of water to freeze. Write down your observations in a table and then graph your results in a line graph. Did the water with sugar added take a significantly longer or shorter amount of time to freeze?

2. _____
If water has sugar added to it, then it will not freeze as fast as plain water.

3. _____
Fill two identical containers with the same amount of room temperature water. Add a measured amount of sugar to one of the containers. Place the two containers into the freezer. At regular intervals of 15 minutes, open the freezer and observe the status of the water in each container. Continue until both have completely frozen. Write down the time it took for each container of water to reach a fully frozen level.

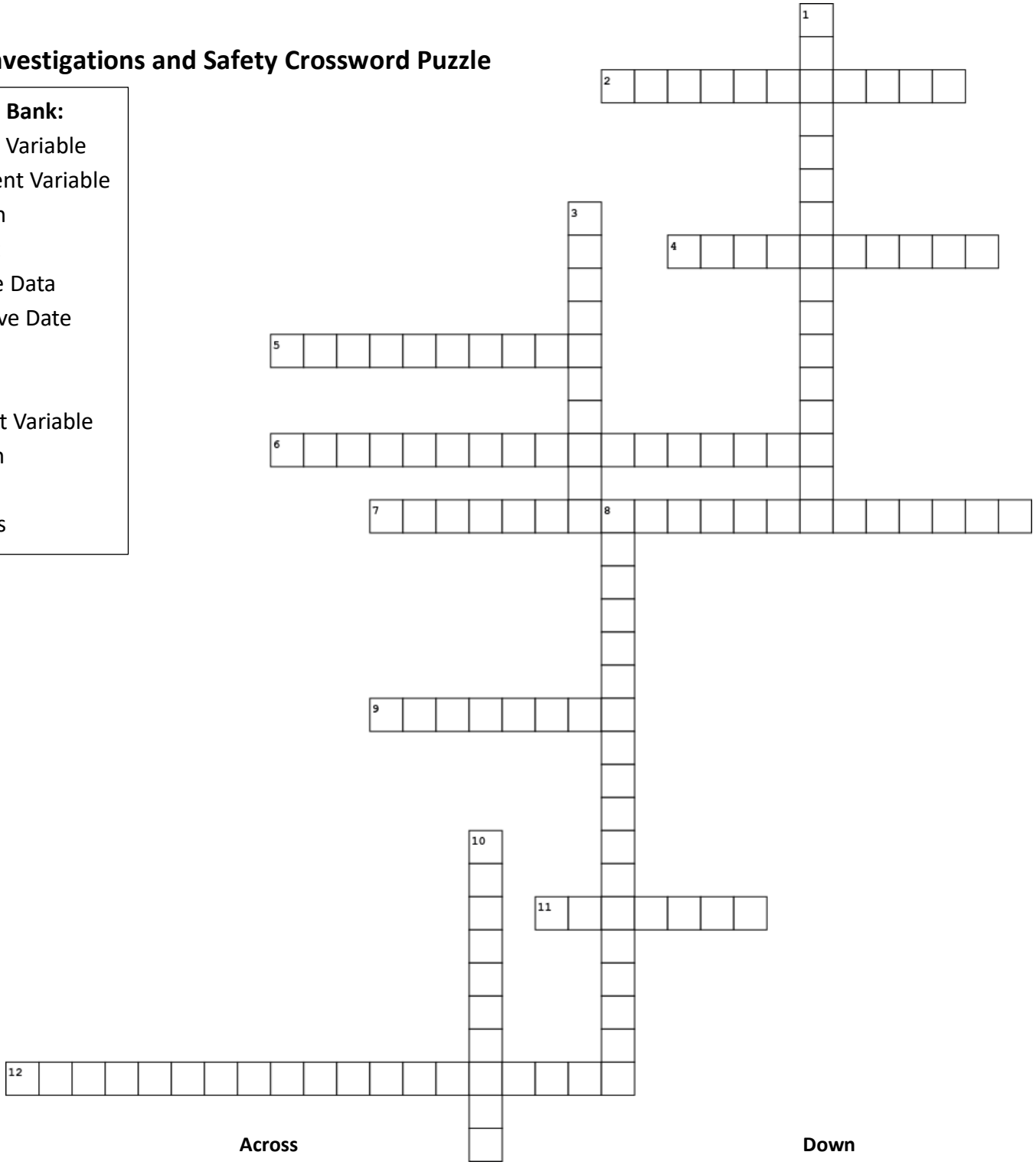
4. _____
Based on the results of your experiment, decide if water with sugar freezes faster, slower, or at the same rate as water without sugar added.

5. _____
I have noticed that popsicles that have lots of sugar don't seem to freeze as fast plain ice cubes. I wonder if the amount of sugar has an effect on freezing time.

Science Investigations and Safety Crossword Puzzle

Word Bank:

Controlled Variable
Independent Variable
Replication
Consistent
Qualitative Data
Quantitative Date
Repetition
Evidence
Dependent Variable
Conclusion
Durable
Hypothesis



Across

2. repeating another scientist's experiment to test its validity

4. testable idea or explanation that leads to a scientific investigation

5. the same throughout and easy to reproduce

6. observations that are made in number form - usually from timing, counting, or measuring

7. factor that is deliberately changed

9. all the measurements and data scientists gather in support of a scientific explanation

11. very long lasting

12. the part of an experiment that is kept the same.

Down

1. observations in the written form that are usually descriptions of features like color, texture, smell, taste.

3. doing an experiment many times to increase its validity

8. the factor being measured or observed

10. a decision arrived at by logical reasoning

Graphing Practice (page 1 of 2)

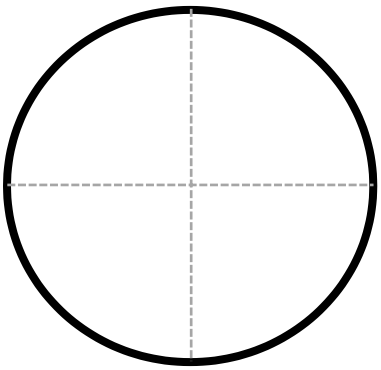
Watch the following StudyJams: Bar Graphs, Circle Graphs, and Choosing the Correct Graph. Follow the instructions below for each of the sections.

Construct a Pie Chart A pie chart is useful when you want to show data for parts of a whole (for example, groups of students within a class). The following data table shows the results from a survey done from a class of 30 students.

Favorite App	Percentage of Class
Facebook	10%
Instagram	20%
SnapChat	30%
TikTok	40%

Directions:

- Use the data table to the right to construct a pie chart
- Include a title and key
- The dotted lines have divided the chart into 25% sections, so use these lines to help you estimate where to draw lines. **Your chart does not have to use these lines.**



Key:

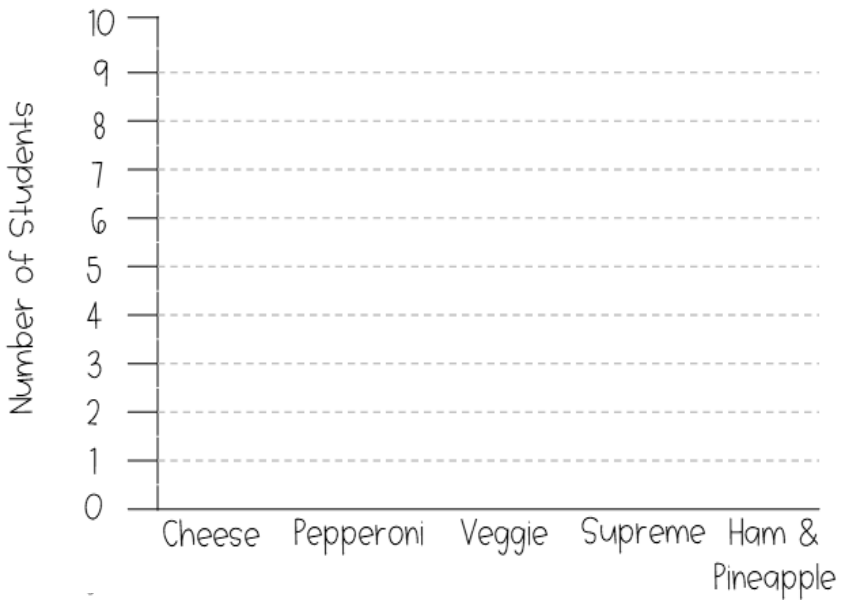
- ☐ Facebook
- ☐ Instagram
- ☐ SnapChat
- ☐ TikTok

Construct a Bar Chart Bar charts are useful when you want to show comparison between groups, such as comparing how many students like different kinds of pizza. The following data table shows the results of a survey done from a class of 30 students.

Favorite Pizza Topping	Number of Students
Cheese	9
Pepperoni	10
Veggie	3
Supreme	6
Ham & Pineapple	2

Directions:

- Use the data table to the right to construct a bar chart
- Include a title



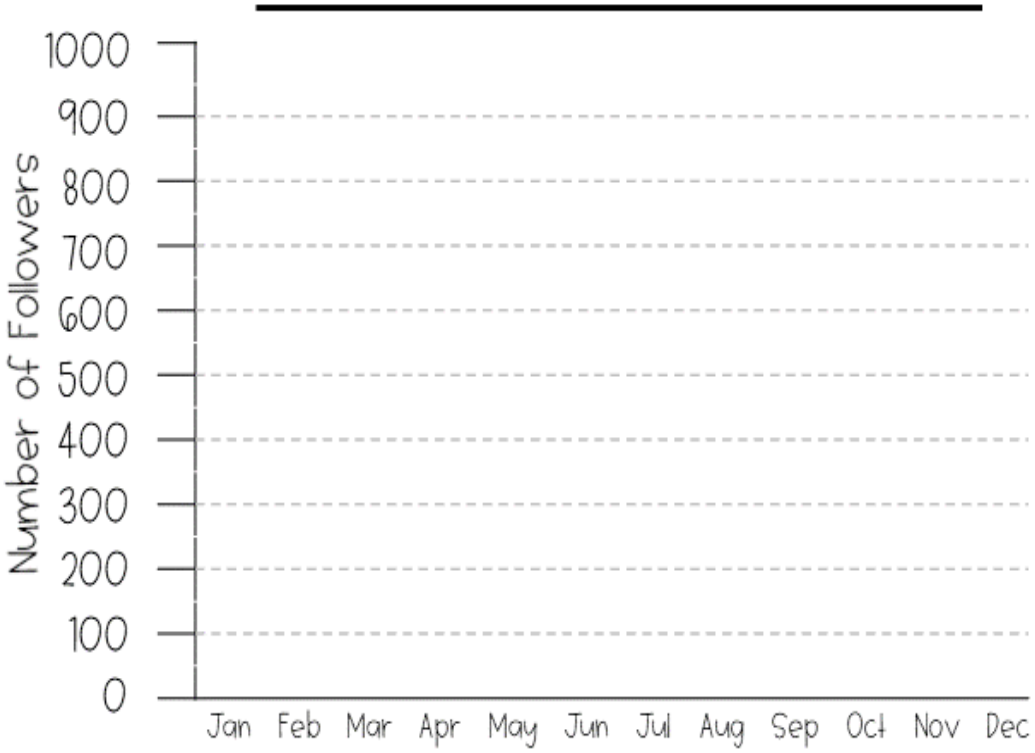
Graphing Practice (page 2 of 2)

Construct a Line Graph Line graphs are useful when you want to show change in data over time, such as showing how the number of followers you have on social media changes over time.

Directions:

- Use the data table on the right to construct a line graph
- Include a title

Month	Number of Followers
January	65
February	100
March	120
April	250
May	600
June	750
July	650
August	800
September	950
October	900
November	850
December	1,000



Scientific Method Practice The scientific method is a process that scientists follow in order to determine the answer to a problem. You are probably familiar with learning the scientific method as a process with a fixed number of steps, but the actual steps a scientist takes may change depending on the type of experiment that they are performing. The scientific method can be flexible, but usually follows the same basic order.

Directions: Put the steps of the scientific method in order from 1 to 8.

_____Do Research

_____ Design an experiment

_____Modify of repeat experiments

_____ State the problem

_____Determine if the hypothesis is rejected or accepted

_____ Analyze data

_____ Form a hypothesis

_____ Perform Experiment

Using your knowledge of the scientific method, match the steps to the parts of the scenario below.

A. State the problem

B. Do research

C. Form a hypothesis

D. Design an experiment

E. Perform experiment

F. Analyze data

G. Determine if hypothesis is rejected or accepted

H. Modify or repeat experiment

_____1. Katie makes a bar graph showing the number of times her brother eats all, part of, or none of each category of snack.

_____2. Katie is a nice sister who always fixes a snack for her little brother after school. One day, he does not want to eat the snack that she prepared. She wonders why.

_____ 3. Katie plans a menu for the next two weeks, dividing each snack two categories: “sweet” or “salty”. She prepares a data table, where she will mark if he eats all, part, or none of his snack.

_____4. Looking over her data, Katie sees that there is no clear trend as to whether her brother prefers sweet or salty snacks. She decides that she was wrong.

_____5. After determining that her original hypothesis was wrong, Katie decides that she will next measure how her brother eats after days he has gym class. Perhaps he is hungrier after gym class. She plans a new menu and makes a new data table to fill out.

_____6. Katie looks in the kitchen cabinets at home to see what food is available. She makes a list of all the snacks that she has prepared for her brother over the last month.

_____7. She hypothesizes that her brother prefers salty snacks.

_____8. Katie follows the menu for two weeks and makes observations after her brother finishes eating. She marks on her data table whether he eats all, part, or none of his snack.

Scientific Variables Read the paragraph below, then identify the variables in each experiment.

Being able to identify the scientific variables in an experiment is an important skill for any scientist. When designing an experiment, it is important that you only test one variable at a time. The variable that you are testing is known as the independent variable, or IV. The part of the experiment that responds to the IV is known as the dependent variable, or DV. The dependent variable is usually the part of the experiment that you measure to see if your hypothesis worked or not.

Independent variable – part of the experiment that is tested or changed by the scientist (starts with the letter 'i'; "I change") Dependent variable – part of the experiment that responds to changes in the independent variable; is measured for results

1. You decide to test whether charcoal helps purify water or not. You design a filter that contains charcoal and run water from a nearby stream through the filter. Afterward, you test the water for contaminants.

   Independent variable: _____

   Dependent variable: _____

2. You decide to test whether an insect repellant is effective or not. You apply insect repellant to your right arm and count how many insects land on your arm over an hour.

   Independent variable: _____

   Dependent variable: _____

Scientific Variables (Part 2) Identify the variables in the experiment.

You decide to test whether plants help prevent erosion of soil or not. You take two samples of soil, and plant grass in one of the samples. Once the grass has taken root, you pour water through both soil samples and measure how much soil is removed from each sample.

1. If you were to perform this experiment, what would your hypothesis be?

   _____

   _____

2. Independent Variable:

   _____

3. Dependent Variable:

   _____

4. Control: _____

5. Constants: _____

Definitions:
Independent variable – part of the experiment that is tested or changed by the scientist (starts with the letter 'i'; "I change")
Dependent variable – part of the experiment that responds to changes in the independent variable; is measured for results
Control– part of the experiment that is used for comparison (does not interact with the independent variable).
Constant– part of the experiment that must remain the same

Different Types of Data

Read the paragraph below, then identify each data set as quantitative (write the letter N) or qualitative (write the letter L).

In an experiment, a scientist can collect different kinds of data. Sometimes data is measured with a tool like a thermometer or ruler. This kind of data is called quantitative data. Some examples of quantitative data include the number of leaves on a plant or the temperature of a liquid. Sometimes data consists of observations that cannot be measured. This kind of data is called qualitative data. Some examples of qualitative data include the color of a leaf or smell of a mineral.

_____1. Length of a piece of rope

_____2. Amount of food a dog eats

_____3. Color of a mineral

_____4. Number of insects attracted to a location

_____5. Density of a liquid

_____6. Shape of a cloud

_____7. Temperature of a substance

_____8. How a student feels after taking a test

_____9. Scent of a leaf

_____10. How many students like each type of pizza topping

_____11. If an animal's fur is soft or spiky

_____12. Mass of a rock

Making Inferences

Read the paragraph below, then write an inference based on each observation.

Sometimes scientists must consider facts and draw conclusions based on those facts. When a scientist does this, a scientist is making an inference. For example, you might walk into your classroom and see an empty candy wrapper on your teacher's desk. You observe the candy wrapper and infer that your teacher just ate a candy bar, even though you didn't see it.

Write inferences based on the observations below.

1. Looking at your desk, there is a ring of liquid on the desk.

   _____

2. When you walk into your classroom, you see a person that you don't recognize at the teacher's desk.

   _____

3. When you leave school, the sidewalk and roads are wet.

   _____

4. When you get home from school, the house smells like tacos.

   _____

5. You hear someone honking their car horn in the parking lot.

   _____

6. When you get to gym class, you see basketballs on the floor.

   _____

7. You see cat hair on someone's shirt.

   _____

Nature of Science Reading and Activity (Page 1 of 2)

Read the passage below and then answer the questions.

What is the NATURE OF SCIENCE?

When you hear someone talk about the Nature of Science, just what do they mean? That is a very good question. The Nature of Science is all about how science works and why is it important. The Nature of Science helps us to understand who scientists are and what scientists do. The Nature of Science is the background information that will help us to understand where scientific knowledge comes from. As you can probably tell, the Nature of Science means a lot of different things.

What is SCIENCE?

Science is what we call it when people use evidence (observations) to answer questions. Sometimes these questions are big questions and sometimes they are small questions. An example of a big science question is: How do living things change over time from generation to generation. An example of a small science question is: What kinds of vegetables grow well in Bend, Oregon during the summer? Gathering data or making observations can answer both of these questions.

Why is SCIENCE important?

Science is important because it is one of the most powerful ways that we can learn things about our World. By gathering evidence and using it to answer questions, science helps us to create knowledge. This knowledge can help us to do many new things, such as creating new medicines, discovering other planets, travel into space, understand why people get sick, and create new technology and many other things! Without science, we would not have cell phones, computers, electricity, light bulbs and many other things we use every day.

What are the BACKGROUND rules of science?

In order to better understand the things we learn from science, you should know that there are a few important rules of science.

1. When doing science, you need to use plenty of IMAGINATION and CREATIVITY. These two important skills help us to see things differently and come up with better inferences. By the way, an inference is when you put all of the clues together to make an explanation.
2. What we learn from science can change over time – our understanding grows! As we discover new ideas and technology we are able to get more evidence that can help us to make better inferences. An example is Pluto. Scientists used to call Pluto a planet, and then they got more evidence that helped them to decide that it really did not deserve to be called a planet.

3. Because we all have different backgrounds, we all see things a little bit differently. No two scientists think the exact same way. This is important because as a team, we can come together and share our ideas to come up with the best possible explanation

4. There is no such thing as the Scientific Method. What this means is that there are many different steps that are used when you do science. You don't always have to do those steps in a particular order to do science.

5. Science has nothing to do with believing. Science is based on evidence, not the supernatural. Scientists must use data and evidence to support their conclusions.

6. The more evidence you have, the stronger your explanation will be.

7. A scientific theory is not just a guess. Scientific theories are strong inferences that are based on multiple lines of evidence. Examples of scientific theories include evolution, gravity, and atomic theory.

Nature of Science Reading and Activity (Page 2 of 2)

Who are SCIENTISTS?

There are many different kinds of scientists in the world. Scientists are people who work in their own special area of science, based on years of college training. Most scientists finish high school and then go to college from four to ten years in order to get trained to become scientists. Scientists are problem solvers who love to answer questions that help us better understand things. Here are just a few different types of scientists:

- Astronomers - study space
- Archaeologists -study ancient cultures
- Biologists -study living things
- Ecologists -study living things and the environment
- Geneticists –study genetics
- Herpetologists -study reptiles
- Lepidopterists -study butterflies
- Marine Biologists -study life in the sea
- Paleontologists -study ancient life and fossils
- Chemists -study atoms, elements, and chemistry
- Geologists - study what the Earth is made of and how it changes over time.
- Oceanographers -study the ocean and its currents
- Computer Scientists –study computers
- Physicists –study forces, motion, and really small things like atoms.
- Criminologists –study crime
- Zoologists – study animals

Reading Comprehension Questions

1. When you hear someone say, "The Nature of Science", what are they talking about?

   _____
   _____
   _____
   _____

2. What do scientists use to answer questions?

   _____

3. What is an inference?

   _____
   _____

4. Does scientific knowledge ever change? (circle one) Yes No
5. Give an example to support your last answer:

   _____
   _____

6. Do scientists use their imaginations (circle one) Yes No
7. What is the difference between a scientific theory and a guess?

   _____
   _____

8. List four different names of scientists that you have never heard of before. Also, write down what it is that they study.

   _____
   _____
   _____
   _____

The Scientific Method Reading with Questions (Page 1 of 2)

Read the passage and then answer the questions.

You may not realize it, but you are a scientist. Even though you do not have college or university training, you practice scientific skills everyday of your life. Every time you wonder how to fix or repair something, you are being a scientist.

Observations are a large part of science, but there is more to science than observation. The word science is from the Latin word "scire," which means "to know." Scientists attempt to know things. They want answers to questions.

After facts are studied, observations taken, and experiments done, a theory is developed. A theory is the most logical explanation of events that occur in nature. A theory must be tested over and over again. When a theory has been tested many times and is accepted as true, it is called a law. Sometimes theories have to be changed, based on new evidence from observation and experimentation. But this is the heart of science: Allow questions to be asked and new scientific explanations to be developed. When scientists try to solve a problem they do it in an orderly and systematic way. The method the use is called the scientific method. The steps are described in the paragraphs below.

Suppose you tried to start your car on a cold morning. The car will not start and you notice ice frozen on the pavement underneath the car. You realize that you forgot to put anti-freeze in the car.

Step one: Stating a problem or question clearly. Why does anti-freeze mixed with water in the engines cooling system keep the water from freezing and cracking the block of the car? This is the type of questions that a scientist would ask.

Step two: Research your problem. Use the library, the Internet, and interview people. You may have an answer without testing.

Step three: Form a hypothesis. Once the problem has been stated and researched, a hypothesis is formed. A hypothesis is an educated guess to a possible solution to the question or problem being studied. It should be in the form "I think _____, because _____." For example, your hypothesis could be: "I think that anti-freeze keeps the water from freezing and cracking the block, because the chemicals create a chemical reaction causing heat."

Step four: Design and perform experiments. Next, a scientist will test the hypothesis by performing one or more experiments. In the experiment, a scientist attempts to test only one variable at a time. This is called the INDEPENDENT VARIABLE – it is the only variable that you change in an experiment. The DEPENDENT variable is the variable that you measure in the experiment. It is important to keep EVRYTHING ELSE THE SAME IN AN EXPERIMENT. These are called "control" or "control variables" which is the part of the experiment that is not changed) This is done so that any results can be attributed to the one and only variable – the independent variable. The also experiment consists of a complete materials list and a set of detailed, step by step procedures which allow scientists to carry out the experiment.

Step five: Recording and analyzing data and results. In any experiment, the scientist observes and records data. (Use the rules you have learned about making data tables and graphs) Charts and graphs might be used. Computers are helpful when there is a large amount of data to be recorded. The scientist would then study the data in order to make a conclusion.

The Scientific Method Reading with Questions (Page 2 of 2)

Step Six: Stating a conclusion. A scientist will run an experiment over and over again. When the data seem to be accurate, a conclusion can be reached. A conclusion states whether or not the hypothesis was correct. A conclusion also includes an analysis of errors which occurred during the experiment. After a conclusion has been reached, there are usually other questions that arise. And the scientific method is used again to answer these new questions.

Questions:

1. What is a theory that is accepted as true called? _____

2. What is the name of the process that scientists use to solve problems?

_____

3. What is a hypothesis? _____

4. Provide an example of a hypothesis about anything. _____

_____

5. What is the independent variable? _____

6. Why should there be only one independent variable in an experiment? _____

_____

7. What is the dependent variable? _____

8. "What are controls" or "control variables"? _____

_____

9. Why is it so important to have control variables? _____

_____

10. When can a conclusion be made? _____

_____

11-15. List the steps of the scientific method in order.

11. _____ 12. _____

13._____ 14. _____

15._____

Exploring the Scientific Method (page 1 of 2) Read the passage and answer the questions about the Scientific Method.

The ***scientific method*** is a process that scientists use to better understand the world around them. It includes making observations and asking a question, forming a hypothesis, designing an experiment, collecting and analyzing data, and drawing a conclusion. This, is sometimes also referred to as scientific inquiry. A ***hypothesis*** is a possible explanation for an observation. A good scientist will design a controlled experiment to test their hypothesis. In a ***controlled experiment***, only one variable is tested at a time. It is called the manipulated or ***independent variable***. The experimental group will test the independent variable. The ***control group*** will be left alone, so you have something to compare your results to. The variable that determines the data is the responding, or ***dependent variable***. It responds to the manipulated variable. All other variables in the experiment should remain the same, because if you change more than one variable, you will not know which variable explained your results. Once something has been tested many different times by many different scientists, it can become a ***scientific theory***. It is different from a ***scientific law***, which describes what will happen every time under a particular set of conditions.

Questions:

True or False If the answer is true, write "true" on the line. If the answer is false, replace the underlined word or phrase with one that will make the sentence correct. Write the new words on the line.

1. _____ *Forming a hypothesis* is the first step of the scientific method
2. _____ A scientific law is different from a *scientific theory* because it describes something in nature without attempting to explain it.
3. _____ In order for a *hypothesis* to be testable, scientists need to be able carry out investigations that will either support or disprove it
4. _____ The *experimental group* is the group that is left alone during the experiment
5. _____ The *manipulated variable* is the same thing as the independent variable.

Matching Match the word to the definition. Write the letter on the line.

6._____Scientific inquiry

7. _____ Hypothesis

8. _____Control Group

9. _____Experimental Group

10. _____ Independent Variable

11. _____ Dependent Variable

12. _____Scientific Theory

13. _____Scientific Law

A. This group shows the effect of the variable being tested

B. This is the one variable that is changed

C. A well tested explanation for experimental results

D. The many ways in which scientists study the natural world

E. A possible answer to a scientific question

F. This describes an observed pattern in nature

G. This group is left alone and not experimented on

H. This is the variable that gets measured

Exploring the Scientific Method (page 2 of 2)

Identifying Read through the following scenarios. Identify the control group, the experimental group, the independent variable, and the dependent variable.

Scenario	Independent Variable	Dependent Variable	Experimental Group	Control Group
A company wants to test a new dog food that is supposed to help overweight dogs lose weight. 50 dogs are chosen to get the new food, and 50 more continue their normal diets. After one month, the dogs are checked to see if they lost any weight.	14.	15.	16.	17.
A new sunscreen has been developed that is supposed to be more effective at preventing sunburn. 30 participants spray one arm with the new formula, and spray the other arm with the leading formula. After 4 hours in the sun, their skin is evaluated for any redness.	18.	19.	20.	21.
A student wants to study the effect of sunlight on plant growth. In his experiment, 12 plants receive normal amounts of sunlight, but half of them are kept under bright sun lamps all night long. After 6 weeks, the plants' heights are measured.	22.	23.	24.	25.


Welcome to
ENGLISH

COMMONLIT

Name: _____ Class: _____

The Ravine

By Graham Salisbury
2000

Graham Salisbury (b. 1944) is an American author. He was born in Pennsylvania but grew up in Hawaii, where the following story takes place. As you read, take notes on how Vinny is affected by the presumed death of the missing boy.

[1] When Vinny and three others dropped down into the ravine,[1] they entered a jungle thick with tangled trees and rumors of what might have happened to the dead boy's body.

"Untitled" by Seth Cottle is licensed under CC0.

The muddy trail was slick and, in places where it had fallen away, flat-out dangerous. The cool breeze that swept the Hawaiian hillside pastures above died early in the descent.

There were four of them — Vinny; his best friend, Joe-Boy; Mo, who was afraid of nothing; and Joe-Boy's *haole*[2] girlfriend, Starlene — all fifteen. It was a Tuesday in July, two weeks and a day after the boy had drowned. If, in fact, that's what had happened to him.

Vinny slipped, and dropped his towel in the mud. He picked it up and tried to brush it off, but instead smeared the mud spot around until the towel resembled something someone's dog had slept on. "Tst," he said.

[5] Joe-Boy, hiking down just behind him, laughed. "Hey, Vinny, just think, that kid walked where you walking."

"Shuddup," Vinny said.

"You prob'ly stepping right where his foot was."

Vinny moved to the edge of the trail, where the ravine fell through a twisted jungle of gnarly[3]

1. **Ravine** ***(noun)*** a deep, narrow gorge with steep sides
2. In Hawaii, the word haole refers to a white person or a non-native Hawaiian.

trees and underbrush to the stream far below. He could see Starlene and Mo farther ahead, their heads bobbing as they walked, both almost down to the pond where the boy had died.

"Hey," Joe-Boy went on, "maybe you going be the one to find his body."

[10] "You don't cut it out, Joe-Boy, I going… I going…"

"What, cry?"

Vinny scowled. Sometimes Joe-Boy was a big fat babooze.

They slid down the trail. Mud oozed between Vinny's toes. He grabbed at roots and branches to keep from falling. Mo and Starlene were out of sight now, the trail ahead having cut back.

Joe-Boy said, "You going jump in the water and go down and your hand going touch his face, stuck under the rocks. *Ha ha ha… a ha ha ha!*"

[15] Vinny winced. He didn't want to be here. It was too soon, way too soon. Two weeks and one day.

He saw a footprint in the mud and stepped around it.

The dead boy had jumped and had never come back up. Four search and rescue divers hunted for two days straight and never found him. Not a trace. Gave Vinny the creeps. It didn't make sense. The pond wasn't that big.

He wondered why it didn't seem to bother anyone else. Maybe it did and they just didn't want to say.

Butchie was the kid's name. Only fourteen.

[20] Fourteen.

Two weeks and one day ago he was walking down this trail. Now nobody could find him.

The jungle crushed in, reaching over the trail, and Vinny brushed leafy branches aside. The roar of the waterfall got louder, louder.

Starlene said it was the goddess that took him, the one that lives in the stone down by the road. She did that every now and then, Starlene said, took somebody when she got lonely. Took him and kept him. Vinny had heard that legend before, but he'd never believed in it.

---

3. **Gnarly** ***(adjective)*** knobbly, rough, and twisted

Now he didn't know what he believed.

[25] The body had to be stuck down there. But still, four divers and they couldn't find it?

Vinny decided he'd better believe in the legend. If he didn't, the goddess might get mad and send him bad luck. Or maybe take him, too.

Stopstopstop! Don't think like that.

"Come on," Joe-Boy said, nudging Vinny from behind. "Hurry it up."

Just then Starlene whooped, her voice bouncing around the walls of the ravine.

[30] "Let's *go*," Joe-Boy said. "They there already."

Moments later, Vinny jumped up onto a large boulder at the edge of the pond. Starlene was swimming out in the brown water. It wasn't murky brown, but clean and clear to a depth of maybe three or four feet. Because of the waterfall you had to yell if you wanted to say something. The whole place smelled of mud and ginger and iron.

Starlene swam across to the waterfall on the far side of the pond and ducked under it, then climbed out and edged along the rock wall behind it, moving slowly, like a spider. Above, sun-sparkling stream water spilled over the lip of a one-hundred-foot drop.

Mo and Joe-Boy threw their towels onto the rocks and dove into the pond. Vinny watched, his muddy towel hooked around his neck. Reluctantly, he let it fall, then dove in after them.

The cold mountain water tasted tangy. Was it because the boy's body was down there decomposing?[4] He spit it out.

[35] He followed Joe-Boy and Mo to the waterfall and ducked under it. They climbed up onto the rock ledge, just as Starlene had done, then spidered their way over to where you could climb to a small ledge about fifteen feet up. They took their time because the hand and footholds were slimy with moss.

Starlene jumped first. Her shriek echoed off the rocky cliff, then died in the dense green jungle.

Mo jumped, then Joe-Boy, then Vinny.

The fifteen-foot ledge was not the problem.

---

4. **Decompose** ***(verb)*** to decay and fall apart

It was the one above it, the one you had to work up to, the big one, where you had to take a deadly zigzag trail that climbed up and away from the waterfall, then cut back and forth to a foot-wide ledge something more like fifty feet up.

That was the problem.

That was where the boy had jumped from.

Joe-Boy and Starlene swam out to the middle of the pond. Mo swam back under the waterfall and climbed once again to the fifteen-foot ledge.

Vinny started to swim out toward Joe-Boy but stopped when he saw Starlene put her arms around him. She kissed him. They sank under for a long time, then came back up, still kissing.

Vinny turned away and swam back over to the other side of the pond, where he'd first gotten in. His mother would kill him if she ever heard about where he'd come. After the boy drowned, or was taken by the goddess, or whatever happened to him, she said never to come to this pond again. Ever. It was off-limits. Permanently.

But not his dad. He said, "You fall off a horse, you get back on, right? Or else you going be scared of it all your life."

His mother scoffed and waved him off. "Don't listen to him, Vinny, listen to me. Don't go there. That pond is haunted." Which had made his dad laugh.

But Vinny promised he'd stay away.

But then Starlene and Joe-Boy said, "Come with us anyway. You let your mommy run your life, or what?" And Vinny said, "But what if I get caught?" And Joe-Boy said, "So?"

Vinny mashed his lips. He was so weak. Couldn't even say no. But if he'd said, "I can't go, my mother won't like it," they would have laughed him right off the island. No, he had to go. No choice.

So he'd come along, and so far it was fine. He'd even gone in the water. Everyone was happy. All he had to do now was wait it out and go home and hope his mother never heard about it.

When he looked up, Starlene was gone.

He glanced around the pond until he spotted her starting up the zigzag trail to the fifty-foot ledge. She was moving slowly, hanging on to the roots and branches on the upside of the cliff. He couldn't believe she was going there. He wanted to yell, *Hey, Starlene, that's where he* died!

But she already knew that.

Mo jumped from the lower ledge, yelling, "Banzaiiii!" An explosion of coffee-colored water

erupted when he hit.

[55] Joe-Boy swam over to where Starlene had gotten out. He waved to Vinny, grinning like a fool, then followed Starlene up the zigzag trail.

Now Starlene was twenty-five, thirty feet up. Vinny watched her for a while, then lost sight of her when she slipped behind a wall of jungle that blocked his view. A few minutes later she popped back out, now almost at the top, where the trail ended, where there was nothing but mud and a few plants to grab on to if you slipped, plants that would rip right out of the ground, plants that wouldn't stop you if you fell, nothing but your screams between you and the rocks below.

Vinny's stomach tingled just watching her. He couldn't imagine what it must feel like to be up there, especially if you were afraid of heights, like he was. *She has no fear*, Vinny thought, *no fear at all. Pleasepleaseplease, Starlene. I don't want to see you die.*

Starlene crept forward, making her way to the end of the trail, where the small ledge was.

Joe-Boy popped out of the jungle behind her. He stopped, waiting for her to jump before going on.

[60] Vinny held his breath.

Starlene, in her cutoff jeans and soaked T-shirt, stood perfectly still, her arms at her sides. Vinny suddenly felt like hugging her. Why, he couldn't tell. *Starlene, please.*

She reached behind her and took a wide leaf from a plant, then eased down and scooped up a finger of mud. She made a brown cross on her forehead, then wiped her muddy fingers on her jeans.

She waited.

Was she thinking about the dead boy?

[65] She stuck the stem end of the leaf in her mouth, leaving the rest of it to hang out. When she jumped, the leaf would flap up and cover her nose and keep water from rushing into it. An old island trick.

She jumped.

Down, down.

Almost in slow motion, it seemed at first, then faster and faster. She fell feetfirst, arms flapping to keep balance so she wouldn't land on her back, or stomach, which would probably almost kill her.

Just before she hit, she crossed her arms over her chest and vanished within a small explosion of rusty water.

[70] Vinny stood, not breathing at all, praying.

Ten seconds. Twenty, thirty…

She came back up, laughing.

She shouldn't make fun that way, Vinny thought. It was dangerous, disrespectful. It was asking for it.

Vinny looked up when he heard Joe-Boy shout, "Hey, Vinny, watch how a man does it! Look!"

[75] Joe-Boy scooped up some mud and drew a stroke of lightning across his chest. When he jumped, he threw himself out, face and body parallel to the pond, his arms and legs spread out. *He's crazy*, Vinny thought, *absolutely insane*. At the last second Joe-Boy folded into a ball and hit. *Ca-roomp!* He came up whooping and yelling, *"Wooo! So good!* Come on, Vinny, it's hot!"

Vinny faked a laugh. He waved, shouting, "Naah, the water's too cold!"

Now Mo was heading up the zigzag trail — Mo, who hardly ever said a word and would do anything anyone ever challenged him to do. *Come on, Mo, not you, too.*

Vinny knew then that he would have to jump.

Jump, or never live it down.

[80] Mo jumped in the same way Joe-Boy had, man-style, splayed out in a suicide fall. He came up grinning.

Starlene and Joe-Boy turned toward Vinny.

Vinny got up and hiked around the edge of the pond, walking in the muddy shallows, looking at a school of small brown-backed fish near a ginger patch.

Maybe they'd forget about him.

Starlene torpedoed over, swimming underwater. Her body glittered in the small amount of sunlight that penetrated the trees around the rim of the ravine. When she came up, she broke the surface smoothly, gracefully, like a swan. Her blond hair sleeked back like river grass.

[85] She smiled a sweet smile. "Joe-Boy says you're afraid to jump. I didn't believe him. He's wrong, right?"

Vinny said quickly, "Of course he's wrong. I just don't want to, that's all. The water's cold."

"Naah, it's nice."

Vinny looked away. On the other side of the pond Joe-Boy and Mo were on the cliff behind the waterfall.

"Joe-Boy says your mom told you not to come here. Is that true?"

[90] Vinny nodded. "Yeah. Stupid, but she thinks it's haunted."

"She's right."

"What?"

"That boy didn't die, Vinny. The stone goddess took him. He's in a good place right now. He's her prince."

Vinny scowled. He couldn't tell if Starlene was teasing him or if she really believed that. He said, "Yeah, prob'ly."

[95] "Are you going to jump, or is Joe-Boy right?"

"Joe-Boy's an idiot. Sure I'm going to jump."

Starlene grinned, staring at Vinny a little too long. "He is an idiot, isn't he? But I love him."

"Yeah, well…"

"Go to it, big boy. I'll be watching."

[100] Starlene sank down and swam out into the pond.

Ca-ripes.

Vinny ripped a hank[5] of white ginger from the ginger patch and smelled it, and prayed he'd still be alive after the sun went down.

He took his time climbing the zigzag trail. When he got to the part where the jungle hid him from view, he stopped and smelled the ginger again. So sweet and alive it made Vinny wish for all he was worth that he was climbing out of the ravine right now, heading home.

But of course, there was no way he could do that.

5. bundle

Not before jumping.

He tossed the ginger onto the muddy trail and continued on. He slipped once or twice, maybe three times. He didn't keep track. He was too numb now, too caught up in the insane thing he was about to do. He'd never been this far up the trail before. Once he'd tried to go all the way, but couldn't. It made him dizzy.

When he stepped out and the jungle opened into a huge bowl where he could look down, way, way down, he could see their three heads in the water, heads with arms moving slowly to keep them afloat, and a few bright rays of sunlight pouring down onto them, and when he saw this, his stomach fluttered and rose. Something sour came up and he spit it out.

It made him wobble to look down. He closed his eyes. His whole body trembled. The trail was no wider than the length of his foot. And it was wet and muddy from little rivulets of water that bled from the side of the cliff.

The next few steps were the hardest he'd ever taken in his life. He tried not to look down, but he couldn't help it. His gaze was drawn there. He struggled to push back an urge to fly, just jump off and fly. He could almost see himself spiraling down like a glider, or a bird, or a leaf.

His hands shook as if he were freezing. He wondered, *Had the dead boy felt this way?* Or had he felt brave, like Starlene or Joe-Boy, or Mo, who seemed to feel nothing.

Somebody from below shouted, but Vinny couldn't make it out over the waterfall, roaring down just feet beyond the ledge where he would soon be standing, cascading past so close its mist dampened the air he breathed.

The dead boy had just come to the ravine to have fun, Vinny thought. Just a regular kid like himself, come to swim and be with his friends, then go home and eat macaroni and cheese and watch TV, maybe play with his dog or wander around after dark.

But he'd done none of that.

Where was he?

Inch by inch Vinny made it to the ledge. He stood, swaying slightly, the tips of his toes one small movement from the precipice.[6]

Far below, Joe-Boy waved his arm back and forth. It was dreamy to see — back and forth, back and forth. He looked so small down there.

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6. **Precipice** ***(noun)*** a steep rock face or cliff

For a moment Vinny's mind went blank, as if he were in some trance, some dream where he could so easily lean out and fall, and think or feel nothing.

A breeze picked up and moved the trees on the ridge-line, but not a breath of it reached the fifty-foot ledge.

Vinny thought he heard a voice, small and distant. Yes. Something inside him, a tiny voice pleading, *Don't do it. Walk away. Just turn and go and walk back down.*

[120] " . . . I can't," Vinny whispered.

You can, you can, you can. Walk back down.

Vinny waited.

And waited.

Joe-Boy yelled, then Starlene, both of them waving. Then something very strange happened.

[125] Vinny felt at peace. Completely and totally calm and at peace. He had not made up his mind about jumping. But something else inside him had.

Thoughts and feelings swarmed, stinging him: *Jump! Jump! Jump! Jump!*

But deep inside, where the peace was, where his mind wasn't, he would not jump. He would walk back down.

No! No, no, no!

Vinny eased down and fingered up some mud and made a cross on his chest, big and bold. He grabbed a leaf, stuck it in his mouth. *Be calm, be calm. Don't look down.*

[130] After a long pause he spit the leaf out and rubbed the cross to a blur.

* * *

They walked out of the ravine in silence, Starlene, Joe-Boy, and Mo far ahead of him. They hadn't said a word since he'd come down off the trail. He knew what they were thinking. He knew, he knew, he knew.

At the same time the peace was still there. He had no idea what it was. But he prayed it wouldn't leave him now, prayed it wouldn't go away, would never go away, because in there, in that place where the peace was, it didn't matter what they thought.

Vinny emerged from the ravine into a brilliance that surprised him. Joe-Boy, Starlene, and Mo were now almost down to the road.

[135] Vinny breathed deeply, and looked up and out over the island. He saw, from there, a land that rolled away like honey, easing down a descent of rich Kikuyu grass pasture-land, flowing from there over vast highlands of brown and green, then, finally, falling massively to the coast and flat blue sea.

He'd never seen anything like it.

Had it always been here? This view of the island?

He stared and stared, then sat, taking it in.

He'd never seen anything so beautiful in all his life.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. Which of the following best describes the main theme of the passage?
    A. Parents know best and only want to protect their children.
    B. Imagining yourself in another person's position is a rare gift.
    C. Resisting social pressure from friends requires great courage.
    D. Friends who encourage you to face your fears are valuable and rare.

2. How do paragraphs 1-5 inform the passage?
    A. They reveal that a boy supposedly drowned in the ravine and suggest that the friends want to honor the boy by going to the ravine.
    B. They describe the ravine, showing the beauty of Hawaiian nature and setting a peaceful tone throughout the passage.
    C. They describe what happened to the boy, showing the importance of friendship and setting a mournful tone throughout the passage.
    D. They reveal that a boy supposedly drowned in the ravine and suggest that the friends want to show that they are unbothered by the rumors.

3. Which of the following details best shows why Vinny is troubled about going to the ravine?
    A. "Joe-Boy, hiking down just behind him, laughed. 'Hey, Vinny, just think, that kid walked where you walking.'" (Paragraph 5)
    B. "Vinny winced. He didn't want to be here. It was too soon, way too soon. Two weeks and one day." (Paragraph 15)
    C. "Vinny decided he'd better believe in the legend. If he didn't, the goddess might get mad and send him bad luck." (Paragraph 26)
    D. "Vinny watched, his muddy towel hooked around his neck. Reluctantly, he let it fall, then dove in after them." (Paragraph 33)

4. What does Starlene's point of view regarding what happened to the dead boy suggest about her?
    A. She is fanciful and hopeful about the boy's fate.
    B. She is afraid of discovering the boy in the ravine.
    C. She is lying to disguise that she is scared of the ledge.
    D. She is sad and hopeful the goddess will give him back one day.

5. How are Vinny's parents' points of view about the pond different?
    A. Vinny's mother believes the water in the pond is toxic, while his father thinks it is clean.
    B. Vinny's mother believes that the pond is home to the stone goddess, while his father does not.
    C. Vinny's mother warns Vinny to avoid the pond, but his father encourages Vinny to face his fears.
    D. Vinny's mother warns Vinny to only swim in the pond, while his father encourages him to dive in.

6. How does the word choice in the following quote develop the tone of the paragraph? "where there was nothing but mud and a few plants to grab on to if you slipped, plants that would rip right out of the ground, plants that wouldn't stop you if you fell, nothing but your screams between you and the rocks below." (Paragraph 56)
    A. It conveys an angry tone through phrases like "nothing" and "rip."
    B. It conveys a mocking tone through phrases like "a few plants" and "slipped."
    C. It conveys a frightened tone through phrases like "grab," "rip," and "screams."
    D. It conveys an accepting tone through phrases like "nothing" and "wouldn't stop."

7. What does the following quote reveal about Vinny's character? Pick TWO responses. "She shouldn't make fun that way, Vinny thought. It was dangerous, disrespectful. It was asking for it." (Paragraph 73)
    A. Vinny wishes that he could be as carefree as Starlene.
    B. Vinny has an even more vivid imagination than Starlene.
    C. Vinny wants to be respectful toward the death of the boy Butchie.
    D. Vinny believes that Starlene's actions will summon Butchie's ghost.
    E. Vinny dislikes Starlene and wishes Joe-Boy would break up with her.
    F. Vinny fears that Starlene's careless attitude may cause more trouble.

8. How does Starlene jumping off the high ledge set the plot in motion?
    A. It impresses Vinny, prompting him and Starlene to become closer friends.
    B. It upsets Vinny and Joe-Boy, prompting them to leave and later find the missing boy.
    C. It encourages Joe-Boy to jump off the high ledge, despite Mo and Vinny's pleas to climb back down.
    D. It encourages the other boys to jump off the high ledge, pressuring Vinny to feel like he must also jump.

9. How do Vinny's actions at the end of the passage develop the theme?

    A. Vinny is torn between fear and doing what his friends want him to do; he learns to accept his fear and trust himself.

    B. Vinny is torn between fear and doing what his friends want him to do; he gives in to his fear and remains a coward.

    C. Vinny makes it to the top of the trail but does not jump; he realizes that the others will not make fun of him if they are really his friends.

    D. Vinny makes it to the top of the trail and imagines what the dead boy felt; he realizes that he should not waste his youth by being afraid.

10. How does the presumed death of the boy, Butchie, affect Vinny throughout the passage? Cite evidence from the story to support your answer.

Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Who is the bravest person in the story: Vinny, Starlene, Joe-Boy, or Mo? What do you think it means to be brave?

2. Can you give an example of peer pressure, like what Vinny faces from his friends in the story? Why is peer pressure so difficult to resist?

3. What lesson does Vinny learn from the tragedy that is Butchie's likely fate? Why do you think this is an important lesson for Vinny to learn?

COMMONLIT

Name: _____ Class: _____

A Meme is Not Just a Meme!

By Thomas Pool
2023

In this informational text, Thomas Pool explains what memes are and how they are made.

As you read, take notes on the examples the author uses to explain how memes came to be.

[1] There are two types of people in the world. Those who know what a meme is, and those who don't.

"Untitled" by Sara Kurfeß has no known restrictions on copyright.

For those who know what I'm talking about, you probably hear the word "meme," and your mind turns to the numerous funny images or videos that are captured and typically spread through social media; the smug-looking baby in a green and white sweater who clenches a fist full of sand. Michael Jordan crying. Again. Dancing babies. Grumpy cats. Kermit the frog sipping on a cup of tea.

But what we are in fact talking about are *Internet memes*. In other words, yes, there were memes before the Internet became a commonplace household thing. Some will say a meme is only as good as how long it sticks around and how many people use it. In other words, how frequently it's shared. The big "V" word — Did it go viral? *Well, did it?* But looking at the history of memes helps us to really understand what's going on when we repost that funny video we just watched.

The History of Memes

The term "meme" arrived long before the Internet.

[5] It was coined by the biologist Richard Dawkins in his 1976 book, *The Selfish Gene*. Dawkins saw similarities between how genes (those parts of cells within living beings and plants) act and how language and culture act. Genes reproduce themselves and there's a theory, called the *selfish gene theory*, that argues genes evolve[1] and change when they compete with one another. A simple example would be your parents' genes coming together to produce you. The genes compete and the result is something unique! In Dawkins' eyes, language and culture would

compete in a similar way when people communicated and hung out with one another, evolving and changing with people and societies much like genes do. He called this phenomenon "Memetics." And just like cells in our body, Dawkins saw language and cultures as being broken down into small parts, or units — ideas, symbols, and practices that spread from person to person. These units were called "memes."

What is memetics exactly? Well, to answer that, we have to rewind to a time before the Internet, before electricity, before language itself.

The Evolution of Language

We owe our survival as a species to two very important aspects of human nature: the ability to recognize patterns and the ability to convey that knowledge to others. For example, if cave dweller 1 sees that cave dweller 2 died after having eaten some wild berries plucked from a nearby bush, then cave dweller 1 would know not to eat those berries, and it was best to let others know not to eat them either. This need to exchange information led to the invention of language, a system of patterns contained in sounds and symbols that allows information to be stored and transferred. We love patterns. Just look, and you'll notice the patterns all around you. We hardly notice how many surround us until we focus on them. Our brains are so good at recognizing them, we don't even realize they are there.

Some linguists, those who study the nature of language, argue that language acts like a virus. It goes viral. It spreads from brain to brain, unable to be quarantined; it evades all efforts to suppress it and travels around the planet at a fast pace.

Memes are a language in and of themselves, so they act similarly to a virus. Someone makes a joke on Twitter, it becomes a meme on Instagram, then on TikTok. It spreads from person to person, platform to platform.

The Memes before the Internet Memes

[10] So, what was the first meme? According to some, it's a 1994 video of an animated dancing baby. Others say it's a comic from England published in 1921. But if we look at what Dawkins believed about how language spreads and changes, we can take that history back much farther.

Memes are not just jokes; they're an important reflection on the amazing capability of the human mind to understand the world around us. For all of human history, we have been referencing and encoding[2] information for each other, often as humor but also as vital,

1. **Evolve** ***(verb)*** to develop or change slowly
2. to convert into code

important knowledge. For instance, American soldiers graffitied "Kilroy was here" on walls across Europe in WWII, often accompanied with the doodle of a bald headed man with a long nose peeking over a wall. It became an 'in' joke for the soldiers, and it would boost their morale, knowing that their comrades in arms had been where they were. Soon after, Saturday morning comics in real, physical newspapers were serialized and self-referential.[3] Like how Garfield the cat hates Mondays and loves lasagna. If you were 'in' on those comics you could say 'I hate Mondays,' and everyone would know you were talking about the comic strip *Garfield*. Michelangelo's *The Creation of Adam* envelopes God in a brain, as a subtle rebellion against the Catholic Church, and those who understood, understood it completely.

Memes, like language, are a reflection of us – our culture, our values, our beliefs. What was once considered funny is now boring or unremarkable. And like language, memes rely on a deep understanding of those cultures and beliefs. Understanding a meme about the Kardashians requires a deep understanding of who they are and who they represent in our culture. If you know nothing about the Kardashians and receive a Kardashian meme, you'd be as clueless as someone who didn't speak French in Paris. The memes that tend to go viral and survive are those memes that are understood.

The Modern Meme

According to internet historians (yes, that's a real job), the modern meme began to take shape in the late 2000s and early 2010s. At first they started with generic[4] images with colorful backgrounds and text over them. Then came YouTube and the rise of 'viral' videos – even that term lends credit to Dawkins's beliefs. As social media began to grow in the early 2010s, memes began to spread like wildfire. New platforms quickly rose, then just as quickly fell, like Vine and Tumblr. The internet has no room for sentimentality, and what was once 'in' is now 'out.' "Charlie bit my finger" has been replaced with TikTok dances. What comes next is anybody's guess, but one thing's for certain: they will become more and more layered in history and culture, shedding off of us and onto the digital screens.

Between my writing this article and you reading it, the internet will have been flooded with thousands of new trends, niche jokes, and humorous videos. We want to laugh. Our brains are always searching for something to entertain us, and the internet has allowed for a non-stop flood of comedy.

[15] There will be jokes that some will understand, and others won't. As with many jokes, memes often take on a "who's in, who's out" mentality. Maybe you'll get it, maybe you won't. The internet is constantly evolving, so trying to keep up with it can be difficult, and predicting where it will go is almost impossible. But the best way of trying to understand how a good meme

3. referring back to itself
4. not special

works is not to look forward. To do that, we've got to look to the past and the history of memes.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. Which statement best summarizes a central idea of the text?
    A. In order to enjoy memes today, you need to spend a lot of time learning different languages from around the world.
    B. Most people today use memes as a way to show they are a part of a group with others, which is different from how memes were first used.
    C. Most people use memes to make jokes about important events in history, which is why you need to know history to understand them.
    D. In order to understand how memes are used today, people need to understand the history of how language developed and ideas are spread.

2. Which detail best supports the idea that memes are a form of communication?
    A. "Genes reproduce themselves and there's a theory, called the selfish gene theory, that argues genes evolve and change when they compete with one another." (Paragraph 5)
    B. "This need to exchange information led to the invention of language, a system of patterns contained in sounds and symbols that allows information to be stored and transferred." (Paragraph 7)
    C. "According to internet historians (yes, that's a real job), the modern meme began to take shape in the late 2000s and early 2010s." (Paragraph 13)
    D. "The internet is constantly evolving, so trying to keep up with it can be difficult, and predicting where it will go is almost impossible." (Paragraph 15)

3. The "Kilroy was here" graffiti by American soldiers is similar to Michaelangelo's "The Creation of Adam" because —
    A. They are both examples of people using language to fight back against powerful leaders.
    B. They are both examples of people using images to make people feel comfortable.
    C. They are both examples of people using a message designed for certain people.
    D. They are both examples of people using artwork to spread a funny joke.

4. The word "suppress" in paragraph 8 most closely means —

   A. to hide.
   B. to share.
   C. to speed up.
   D. to keep down.

5. How does the author connect the way cave dwellers used language to the modern uses of memes?

Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Do you have a favorite (school appropriate) meme? What is it? What message is it trying to share? What do you need to be knowledgeable about in order to understand this meme?

2. Based on the text, do you think your favorite meme will be funny in 1 year? 5 years? 10 years? Why or why not?

3. Which social media platform do you think is the best source of memes? Why?


Welcome to
MATH

One Step Equations Practice

1. Solve for x : $x + 5 = 12$
   a. 17
   b. 5
   c. 7
   d. -7

2. Solve for x : $x - 3 = 4$
   a. 7
   b. 1
   c. -1
   d. -7

3. Solve for x : $4x = 20$
   a. 80
   b. 5
   c. 16
   d. 4

4. Solve for x : $\frac{x}{3} = 9$
   a. 3
   b. 6
   c. 27
   d. 12

5. Solve for x : $x - 10 = 0$
   a. -10
   b. 10
   c. 0
   d. 20

6. Solve for x : $x + 8 = 15$
   a. 7
   b. 23
   c. 8
   d. -7

7. Solve for x : $x \times 6 = 36$
   a. 6
   b. 216
   c. 30
   d. 12

8. Solve for x : $\frac{x}{5} = 2$
   a. 5
   b. 10
   c. 2.5
   d. 15

9. Solve for x : $x + 9 = 18$
   a. 27
   b. 9
   c. 0
   d. -9

10. Solve for x : $x - 7 = -2$
    a. -5
    b. 9
    c. 5
    d. -9

11. Solve for x : $7x = 49$
    a. 42
    b. 7
    c. 14
    d. 9

12. Solve for x : $\frac{x}{4} = 7$
    a. 28
    b. 11
    c. 3
    d. 21

13. Solve for x : $x + 6 = 3$
    a. -3
    b. 9
    c. 3
    d. -9

14. Solve for x : $x - 5 = 5$
    a. 10
    b. 0
    c. -5
    d. 1

15. Solve for x : $5x = 25$
    a. 125
    b. 20
    c. 5
    d. 1

Two-Step Equations Practice

1. Solve for x : $3x + 4 = 19$
   a. 3
   b. 5
   c. 6
   d. 7

2. Solve for x : $5x - 7 = 18$
   a. 5
   b. 4
   c. 6
   d. 7

3. Solve for x : $2x + 3 = 11$
   a. 3
   b. 5
   c. 4
   d. 6

4. Solve for x : $4x - 5 = 15$
   a. 3
   b. 5
   c. 4
   d. 6

5. Solve for x : $6x + 2 = 20$
   a. 2
   b. 4
   c. 3
   d. 5

6. Solve for x : $7x - 9 = 12$
   a. 3
   b. 2
   c. 4
   d. 5

7. Solve for x : $8x + 1 = 25$
   a. 3
   b. 2
   c. 4
   d. 5

8. Solve for x : $9x - 11 = 16$
   a. 2
   b. 3
   c. 4
   d. 5

9. Solve for x : $10x + 5 = 35$
   a. 3
   b. 2
   c. 4
   d. 5

10. Solve for x : $11x - 13 = 20$
    a. 2
    b. 4
    c. 3
    d. 5

11. Solve for x : $12x + 7 = 31$
    a. 3
    b. 2
    c. 4
    d. 5

12. Solve for x : $13x - 8 = 21$
    a. 2
    b. 3
    c. 4
    d. 5

13. Solve for x : $14x + 6 = 34$
    a. 3
    b. 4
    c. 2
    d. 5

14. Solve for x : $15x - 10 = 20$
    a. 3
    b. 2
    c. 4
    d. 5

15. Solve for x : $16x + 9 = 41$
    a. 3
    b. 2
    c. 4
    d. 5