LIFEPAC®

SCIENCE

STUDENT BOOK

7th Grade | Unit 10

Alpha Omega
PUBLICATIONS

SCIENCE 710
Science Review

LIFEPAC Test is located in the center of the booklet. Please remove before starting the unit.

Author:
Virginia Maghan
Judith Cobb, M.A.Ed.

Editor-In-Chief:
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Editor:
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804 N. 2nd Ave. E.
Rock Rapids, IA 51246-1759

Science Review

Introduction

My name is John Hall. I am a student at the Christian Academy. While studying science at school, I decided to become a scientist. I am writing this log to organize and record all the data I have learned this year. I want to investigate the different sciences so that I can decide which science I want to make my career.

I plan to dedicate my life to God through science. Before each log entry I plan to reread Joshua 1:8, "...but thou shalt meditate therein day and night, that thou mayest observe to do according to all that is written therein: for then thou shalt make thy way prosperous, and then thou shalt have good success."

I want to research different scientists at work. By learning about other scientists, I will be able to decide on a science in which to specialize. I shall study the astronomer at work, the meteorologist at work, and the medical scientist at work. Those sciences are the ones I have studied this year.

Objectives

Read these objectives. The objectives tell you what you will be able to do when you have successfully completed this LIFEPAC. When you have finished this LIFEPAC, you should be able to:

1. List the five steps in the scientific method.
2. List the metric units of length, mass, and volume.
3. List four types of graphs.
4. Write one scientific achievement for each of the following scientists: Aristotle, Ptolemy, Copernicus, Kepler, Brahe, Newton, Galileo, Fahrenheit, Celsius, Torricelli, Vesalius, and Nightingale.
5. Define these terms: constellation, myth, hemisphere, zenith, nadir, comet, meteor, and Milky Way.
6. Label a diagram of the planets and the asteroids.
7. Label a diagram of four phases of the moon.
8. Explain how the sun produces solar energy.
9. Name the two brightest stars in our sky.
10. Name the main elements of weather.
11. Explain how temperature affects weather.
12. List the different air masses.
13. Describe where each air mass is formed.
14. List the abbreviations of the air masses.
15. Name and describe the three basic cloud types.
16. Name the four classes of weather fronts and describe the weather that is associated with them.
17. Explain how the meteorologist can predict weather.
18. Explain the difference between expiration and inspiration.
19. Explain how the heart and lungs work together.
20. List the three types of cells in the blood.
21. Explain the difference between arteries, veins, and capillaries.
22. Explain the function of the skeleton.
23. Explain how the nervous system works.
24. List four functions of the digestive system.
25. Define absorption and excretion.
26. Explain the function of three endocrine glands.

Survey the LIFEPAC. Ask yourself some questions about this study and write your questions here.

1. SCIENTISTS AT WORK

Scientists search for ways to unlock the door to nature's puzzling questions. God has given man a superior brain that serves as the key to the door. Scientists must organize their facts and record their data in an organized way. Scientists must be dedicated, for they are always learning something new. Scientists have developed medicines, the automobile, and rockets that take man to the moon. They ask "Why?" and dedicate their lives to finding answers to their questions.

SECTION OBJECTIVES

Review these objectives. When you have completed this section, you should be able to:

1. List the five steps in the scientific method.
2. List the metric units of length, mass, and volume.
3. List four types of graphs.
4. Write one scientific achievement for each of the following scientists: Aristotle, Ptolemy, Copernicus, Kepler, Brahe, Newton, Galileo, Fahrenheit, Celsius, Torricelli, Vesalius, and Nightingale.

VOCABULARY

Study these words to enhance your learning success in this section.

accurate (ak´ yur it). Correct, without error.

astronomy (u stron´ u mē). Study of stars and planets.

axis (ak´ sis). A straight line at right angles to another straight line.

ellipse (i lips). An oval.

interpret (in tėr´ prit). To explain the meaning.

meteorology (mē tē u´ rol´ u jē). Study of weather.

metric system (met´ rik sis´ tum). System of measurement used by scientists.

observation (ob zur vā´ shun). A close inspection.

research (ri sėrch). A careful search or study.

Note: *All vocabulary words in this LIFEPAC appear in* **boldface** *print the first time they are used. If you are not sure of the meaning when you are reading, study the definitions given.*

Pronunciation Key: h**a**t, **ā**ge, c**ă**re, f**ä**r; l**e**t, **ē**qual, t**ė**rm; **i**t, **ī**ce; h**o**t, **ō**pen, **ô**rder; **oi**l; **ou**t; c**u**p, p**u**t, r**ü**le; **ch**ild; lo**ng**; **th**in; /*ŦH*/ for **th**en; /*zh*/ for mea**s**ure; /*u*/ represents /*a*/ in **a**bout, /*e*/ in tak**e**n, /*i*/ in penc**i**l, /*o*/ in lem**o**n, and /*u*/ in circ**u**s.

LOG ENTRY I-A: SCIENTIFIC METHOD

Scientists must keep **accurate** records of everything they observe. Each detail must be accurately recorded. Scientists often make graphs, charts, and drawings in their notebooks. The notes and charts help them to remember what they observe.

As a student of science, and a future scientist, I shall keep a detailed notebook, too. The first thing I have decided to study is the scientific method so I can approach my studies in a truly scientific way. I have discovered that the scientific method is made up of five steps: stating the problem, forming the hypothesis, conducting an experiment, interpreting data, and drawing conclusions.

Stating the problem. The first step in the scientific method is stating the problem. A problem in science is anything puzzling or unexplained. Some typical problems that early scientists stated were these: What is air made of? What causes movement in the human body? How can we travel to the moon?

The scientific method is a way to explore and to discover God's world. Before a scientist begins his exploration, he must state the problem he wishes to solve. A problem I want to solve is this question: How does water move up the stem of a plant?

Complete these sentences.

1.1 Scientists must keep accurate _____ .

1.2 The first step in the scientific method is _____ .

1.3 A problem should be stated in _____ .

1.4 A problem in science is anything that is _____ .

Complete this activity

1.5 State any scientific problem you would like to solve.

Write it here. _____

_____

_____

Forming the hypothesis. A *hypothesis* is a scientific guess. This guess is based on past knowledge and observations the scientist has made. The hypothesis is a reasonable, or educated, guess that could solve the scientist's problem. I know that God has given man a circulatory system that carries food to every cell of the body. My hypothesis is that God has given His plants a special pipeline that carries water from the roots to every cell in the plant.

Write true or false.

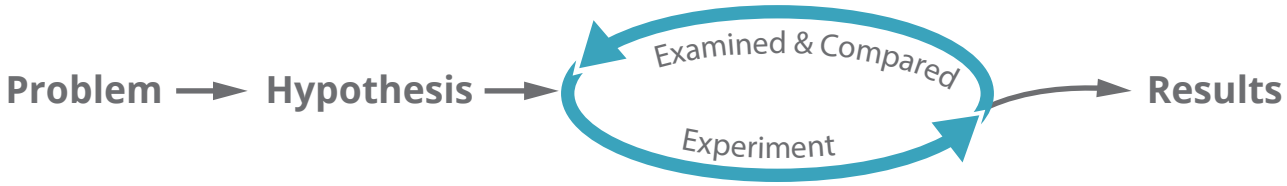
1.6 _____ A hypothesis is a scientific guess that answers the scientist's question or problem.

1.7 _____ Scientists may have more than one hypothesis.

1.8 _____ Scientists do not have to formulate a hypothesis when using the scientific method.

1.9 _____ A hypothesis is a question.

Conducting an experiment. A scientist must have evidence to support or to deny his hypothesis. To obtain this evidence, a scientist must test his hypothesis. The test of a hypothesis is called an *experiment*. An experiment produces results that are compared to the hypothesis to determine whether the hypothesis is correct.



An experiment that takes place in the laboratory involves **observation**. Experiments that take place in the library involve research.

I shall conduct my experiment in a laboratory. To test my hypothesis, I shall put celery in half a glass of water colored with red food coloring.

View 710 Testing a Hypothesis, from the Grade 7 SCIENCE EXPERIMENTS Video

Try this investigation to see if your experiment proves John's hypothesis.

These supplies are needed:

- stalk of celery
- half a glass of water
- teaspoon
- sharp knife
- red food coloring

Follow these directions and answer these questions. Put a check in the box when each step is completed.

- ☐ 1. Mix one teaspoon of red food coloring into the water.
- ☐ 2. Cut the end off the stalk of celery. The stalk should then be about 4" to 6" long.
- ☐ 3. Put the cut end of the celery into the glass of colored water.
- ☐ 4. Wait 1 day and take the celery out of the water.
- ☐ 5. Observe the cut end of the celery.
- ☐ 6. Cut a cross section of the celery and observe that section.

1.10 Which parts of the stem have the most food coloring?

_____

1.11 Did the cross section of the celery look the same as the bottom of the stalk?

_____

TEACHER CHECK _____ initials _____ date

Testing a Hypothesis Experiment

Complete this activity.

1.12 Draw a diagram of the cross section of the celery.

Interpreting data. The written results of experiments are called *data*. Accuracy is very important when recording data. The big question after I record the data is how do I interpret the data. What does all the information mean? When the scientist has **interpreted** or explain-ed his data, he is ready to draw a conclusion.

When I took the celery out of the glass of colored water, I saw several dark red spots on the surface of the cross section. The cross section was identical to the bottom of the celery. Here is my diagram.

My interpretation of this data is that the dark red dots on the celery are part of the water-carrying pipeline of this plant.

Drawing conclusions. After the scientist has collected the data and interpreted it, he is ready to draw a conclusion. A *conclusion* is the final decision on whether the hypothesis is correct. Before a scientist states the conclusion, he may want to go to the library to **research** the experiments and conclusions of other scientists. He may also perform the experiment several times, recording and comparing data each time.

I performed the same experiment with a radish and a carrot. My data agreed with my experiment with the celery. I went to the library and

researched how water moves up the stems of plants. I learned that plants have long strands called *xylem* that carry water. The xylem is made of hollow cells. These cells form a pipeline from the roots to the leaves of plants. The dark red spots on the celery are xylem. My conclusion is that my hypothesis is correct. God *has* given His plants a special pipeline that carries water from the roots to every cell in the plant.

I plan to use the scientific method in all of my science studies.

END OF LOG I-A

John

Complete these sentences.

1.13 The test of a hypothesis is called a(n) _____ .

1.14 Experiments that take place in the library involve _____ .

1.15 The written results of experiments are called _____ .

1.16 The final decision on whether or not the hypothesis is correct is called the _____ .

1.17 A scientist must gather evidence to support or deny his _____ .

Complete this activity.

1.18 List in order the five steps in the scientific method.

a. _____

b. _____

c. _____

d. _____

e. _____

LOG ENTRY I-B: SCIENTIFIC MEASUREMENTS

The Apostle Paul wrote to the Philippians (Philippians 3:16 and 17), "Nevertheless, whereto we have already attained, let us walk by the same rule, let us mind the same thing. Brethren, be followers together of me, and mark them which walk so as ye have us for an ensample." Man cannot measure his need for spiritual guidance, but he can measure the material things that God has given him.

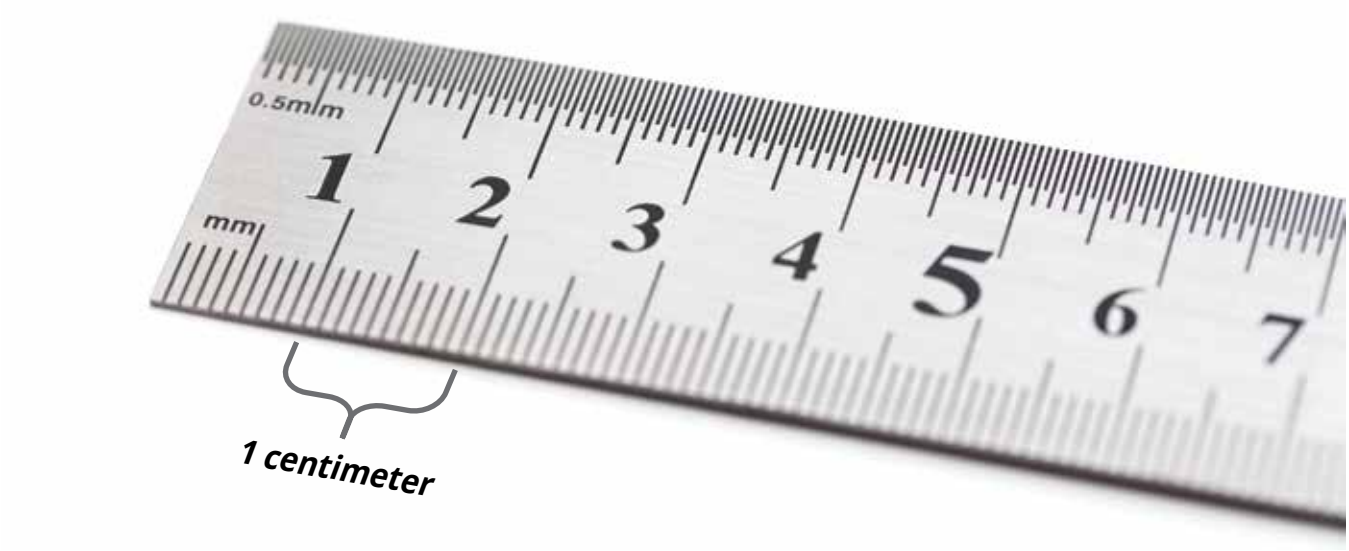
Scientists must measure everything they do. They use the metric system to measure length, mass, and volume. Scientists use graphs and charts to measure their experiments and to make them understandable.

I must review Science LIFEPAC 702 and brush up on measurement.

Metric system. The **metric system** is the system of measurement used by scientists. The metric system originated in France in 1670 and has been the basic system used in most of Europe since then.

The modern metric system is known as the International System of Units. The name International System of Units with the international abbreviation SI was given to the system by the General Conference on Weights and Measures in 1960. In 1965 Great Britain began using metrics. The United States has still not completely converted to the metric system.

In the metric (SI) system the standard unit of length is the meter. The meter is a little longer than a yard. The meter is divided into 100 equal parts called *centimeters*, or 1,000 equal parts called *millimeters*. One thousand meters equals one kilometer. The prefix *centi-* means one-hundredth, *milli-* means one-thousandth, and *kilo-* means one-thousand. These prefixes are used for all units of measurement in the metric system.



The standard unit of volume is the liter. Volume is the amount of space that matter takes up. The liter is subdivided into 100 centiliters and 1,000 milliliters. A milliliter and a cubic centimeter are the same. There-fore, volume can be measured in cubic centimeters or in milliliters.

The standard unit of mass is the kilogram. The kilogram is divided into 1,000 grams and 1,000,000 milligrams. One thousand grams equals one kilogram. Scientists measure the *mass* of an object rather than the weight. The mass of an object remains the same, but the weight of an object changes. Weight depends on gravity. If I were on the moon, I would not weigh the same as I do on earth. *Mass* is the measure of the amount of matter. It is a property of matter and does not change.

This container has 150 mL in it.

Match these items.

1.19	_____	system of measurement used by scientists	a.	kilometer
1.20	_____	amount of space that matter takes up	b.	centi-
1.21	_____	measure of the amount of matter	c.	kilo-
1.22	_____	one-thousandth of a kilogram	d.	metric system
1.23	_____	one-hundredth	e.	millimeter
1.24	_____	one thousand meters	f.	liter
1.25	_____	one-thousandth of a meter	g.	volume
1.26	_____	one thousand	h.	gram
1.27	_____	standard unit of volume	i.	kilogram
1.28	_____	standard unit of mass	j.	mass
			k.	centigram
			l.	cubic meter

Complete this activity.

1.29 Measure this line with a metric ruler and write the measurement in centimeters.

Define these words.

1.30 mass _____

_____

1.31 volume _____

_____

1.32 metric system _____

_____

Complete these sentences.

1.33 The standard unit of length in the metric system is the _____ .

1.34 The prefix for one-thousandth is _____ .

1.35 One-hundredth of a meter is a _____ .

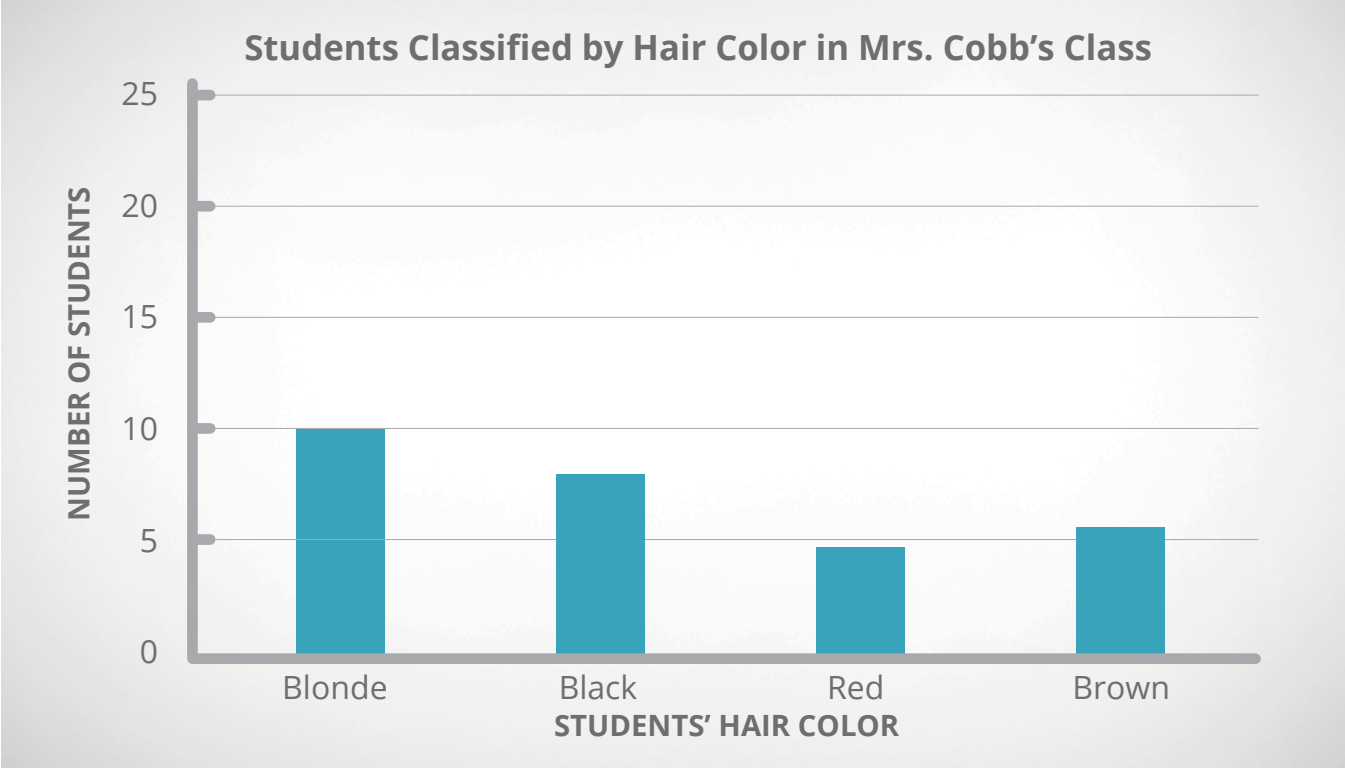
1.36 One-thousandth of a liter is a _____ .

1.37 One-hundredth of a gram is a _____ .

1.38 One thousand grams is a _____ .

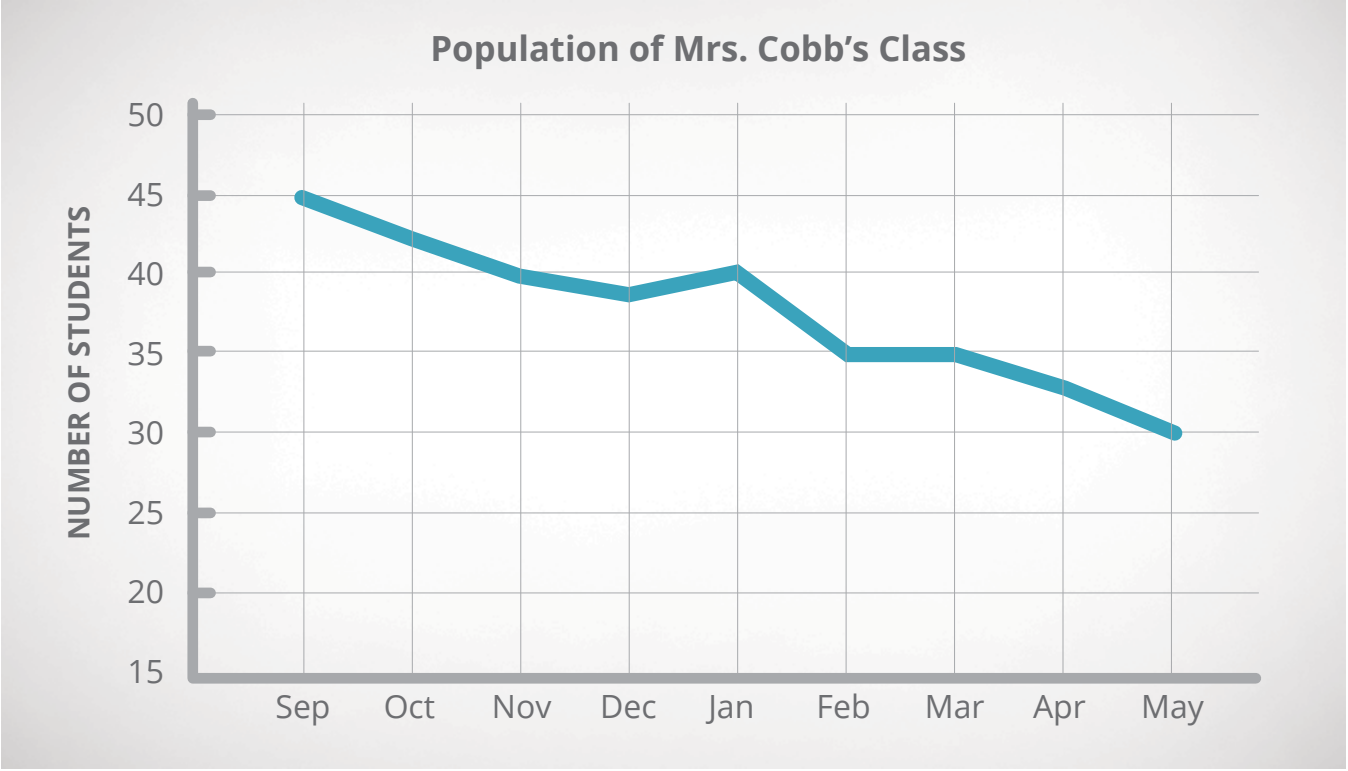
Graphs. When I was doing research on scientific experiments in the library, I learned that one of the best ways to record data was to chart it on a graph. A *graph* is a drawing that shows a table of related numbers. A graph organizes data so that the data is easy to understand. Graphs and charts are used to present information, to show relationships, to catch the reader's eye, and to make data easily understood.

Four kinds of graphs are used by scientists to record data. The *bar graph* uses the height of the column to catch the reader's eye and presents information in an easily understood way. I decided to use a bar graph to chart the hair colors of students in my class.



A graph has a title and two axes. One **axis** is horizontal and one is vertical. The vertical line on my graph is the number line. It represents the number of students in my class. The horizontal line represents the various hair colors.

A *line graph* is useful in showing how population, income, and profit either increase or decrease over a period of time. I asked my teacher to help me graph the changes in the population of my class for the past year.



Looking at the graph, I can easily see that my class has almost continually lost members during the year.

A *pictograph,* or picture graph, uses symbols, or pictures, to record data and to make it easy to understand. I decided to turn my line graph into a pictograph.

A *circle graph* shows the relationship of different parts to the whole. Circle graphs are often used in the presentation of budgets. The whole budget is represented by the entire circle. Different parts of the budget are represented by the divisions of the circle. I made a circle graph to show how I budget my allowance. I used the circle graph formula

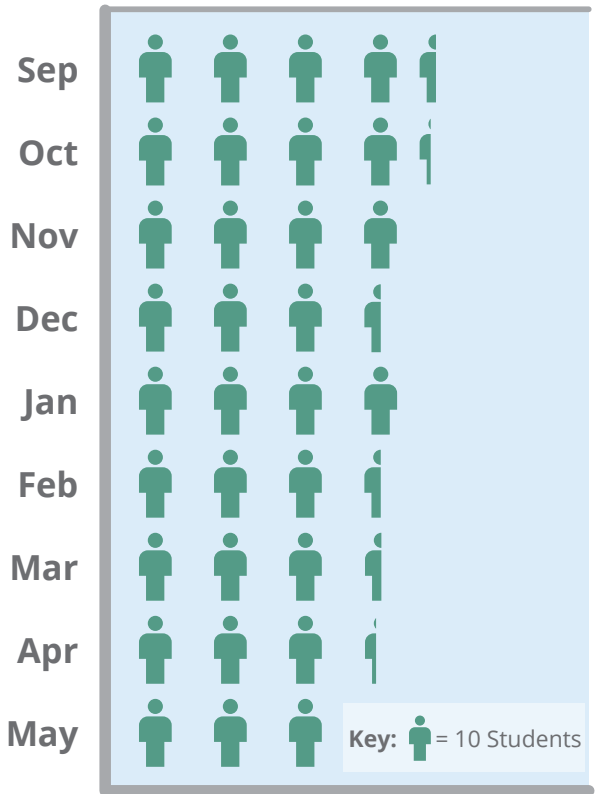
$$\frac{category}{total} x360°$$

to determine how to divide the circle graph properly. I used my protractor to measure the angles.

My allowance is $5.00 per week. I budget it this way:

Tithe	$.50
Missions	.50
Recreation	1.50
Savings	2.00
School Supplies	.50
categories Total	$5.00

Population of Mrs. Cobb's Class



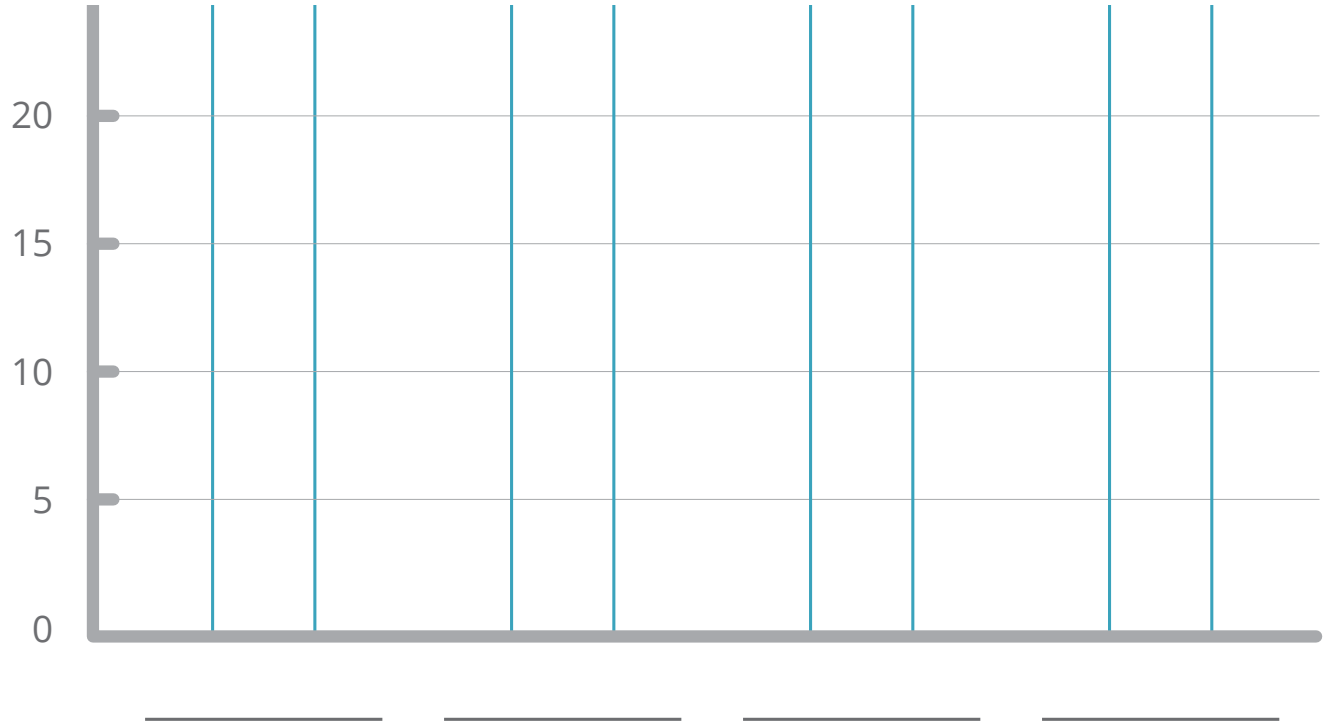
A scientist must be able to use the four different types of graphs to record his data. He must also be able to use the metric system. I shall use the metric system and the four types of graphs in my science work.

END OF LOG I-B

John

Complete this activity.

1.39 Make a bar graph using the students in your class to determine how many have blond, black, red, or brown hair. Label the axes and write the title.



1.40 Make a line graph using the students in your class to determine the fluctuation of student enrolment throughout the year. Draw and label the axes and entitle the graph.

1.41 Use your line graph information to construct a pictograph of the number of students in your class on the first day of each month.

1.42 Using a protractor, make John's circle graph.

TEACHER CHECK _____ initials _____ date

LOG ENTRY I-C: FAMOUS SCIENTISTS

Scientists become famous by inventing or discovering something that becomes a scientific breakthrough. God has given a few men in each century special gifts that allowed them to unlock the mysteries of His universe. The scientists who invented the telescope, the thermometer, and the barometer opened up the scientific fields of **astronomy** and **meteorology**. The scientists who first explored the inner workings of the human body paved the way for modern medicine.

I hope by studying these different scientists and the different sciences that I will, with God's help, choose the right scientific career.

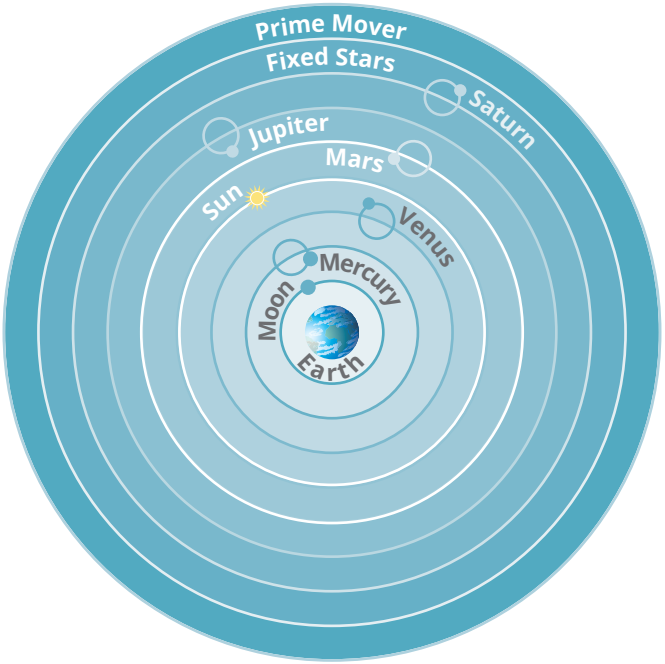
Astronomers. Aristotle and Ptolemy were responsible for the *geocentric theory* in astronomy. The geocentric theory portrays the earth as the center of the universe. Aristotle was a famous Greek philosopher and scientist who lived 300 years before the birth of Christ. He believed that the earth was flat and motionless. He believed that the earth was fixed in space and that all other heavenly bodies revolved around it.

In the third century after Christ, the astronomer Ptolemy also believed in the geocentric theory. However, he modified Aristotle's theory by explaining that the erratic movement of the five known planets was caused by *epicycles.* Ptolemy said that all heavenly bodies must move in circles because the circle was the perfect geometric form. Since all heavenly bodies were created by God, their shapes and movements must also be perfect, reasoned Ptolemy. Since the planets appeared to travel in loops, he thought that the loops were a combination of smaller circles moving around in larger circles. This series of circles-upon-circles was called epicycles. Using a combination of 39 different circles Ptolemy explained the movements of the moon, the sun, and the five planets.

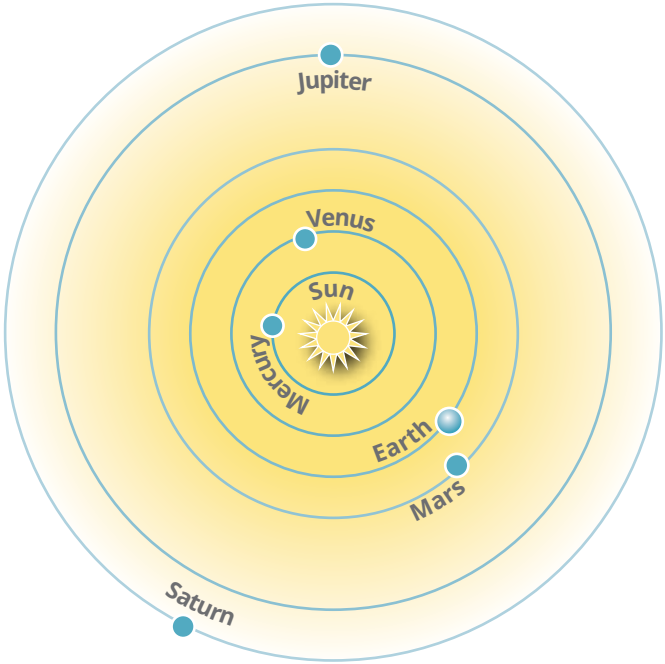
The Polish astronomer Copernicus was responsible for the heliocentric theory. The geocentric theory had been the accepted theory for 1300 years until Copernicus introduced the heliocentric theory. The heliocentric theory is based on these hypotheses:

1. The sun is at the center of a group of planets;
2. The earth is one of the planets;
3. All the planets, including the earth, revolve around the sun;
4. Each planet revolves in its own orbit at different distances from the sun;
5. The moon revolves in an orbit around the earth; and
6. The stars are extremely far away from the solar system. They do not revolve around the sun; therefore, they are not part of the solar system.

This theory is the basic theory that is accepted today.



| Ptolemy's Cosmology



| Copernicus's Cosmology

Galileo is considered the "Father of Modern Science." Galileo is credited with improving the new Dutch lenses that made objects appear larger. His newly developed telescope magnified objects 36 times. By 1609 Galileo had truly opened up a new vision of the solar system.

In the sixteenth century, Kepler announced his belief that Copernicus had used faulty observations in his calculations. Because of these incorrect calculations, Copernicus had drawn an inaccurate model of the solar system. Kepler worked as assistant to Tycho Brahe, who at that time had the most accurate observations of the solar system. With Brahe's information and years of work, Kepler learned that the orbits of the planets were not circles but **ellipses**. He explained the speed of a planet at each part of its orbit and the period of revolution of each planet. For the earth the period of revolution about the sun is one calendar year.

A century later Isaac Newton discovered why the planets go around the sun. His discovery is called the *law of universal gravitation*. His law has three sections:

1. Every object in the universe pulls at every other object. This force is called *gravity.*
2. The amount of gravitational force depends on the amount of matter called mass.
3. The amount of gravitational force between two objects depends on the distance between them: As the distance increases, the force decreases.

Because of the gravitational pull of the sun, the planets remain in orbit around the sun.

I learned so much about astronomy because of the work of these famous astronomers. All the men I have studied were successful because of their years of hard work and dedication. I shall ask God for strength and education needed to be a successful scientist.

Complete these sentences.

1.43 Aristotle and Ptolemy were responsible for the _____ theory.

1.44 The geocentric theory held that the center of the universe is the _____ .

1.45 A series of circles-upon-circles is called _____ .

1.46 In Ptolemy's time the known number of planets was _____ .

1.47 Ptolemy believed that the perfect geometric form was the _____ .

Write true or false.

1.48 _____ Copernicus was responsible for the heliocentric theory.

1.49 _____ In the heliocentric theory the earth is the center of the universe.

1.50 _____ Galileo is considered the "Father of modern science."

1.51 _____ A perfect circle is called an *ellipse.*

Complete this activity.

1.52 Write the three sections of Newton's Law of Gravitation.

a. _____

_____

b. _____

_____

c. _____

_____

Meteorologists. Galileo also made an important contribution to meteorology. All thermometers, however they work, are based on the first one made by Galileo in 1593. I have already learned that we use two temperature scales. The one we use in the United States is the Fahrenheit scale. It was invented in 1714 by Gabriel Fahrenheit, a German physicist. Fahrenheit set up his scale with 0° being what he thought was the temperature of a mixture of ice and salt. He made 100° equal to what he thought was the temperature of the human body.

About twenty years after Fahrenheit created his scale, Anders Celsius, a Swedish astronomer, invented another one. Celsius used the freezing point of water as 0° and the boiling point of water as 100°. The Celsius scale is the scale used in the metric system.

	F Thermometer	C Thermometer
Water boils	212° F	100° C
Body temperature	98.6° F	37° C
Water freezes	32° F	0° C

The first barometer, an important meteorological instrument, was constructed by Torricelli, an Italian physicist. Torricelli was a pupil of Galileo. He took a long thin glass tube that looked like a giant straw. He closed off one end of the tube and filled it with mercury. Mercury is a heavy liquid metal. Torricelli then poured more mercury into a bowl. With his finger over the open end of the tube, he turned the tube upside down and placed the end of the tube in the bowl of mercury. When he removed his finger, the mercury remained in the tube. Torricelli had guessed that air pressure would push down on the mercury in the bowl. That air pressure held up the mercury in the tube. Torricelli's barometer was the forerunner of the modern mercury barometer.

Match these items.

1.53 _____ made first thermometer

1.54 _____ metric temperature scale

1.55 _____ constructed first barometer

1.56 _____ liquid metal

a. Torricelli

b. Mercury

c. Fahrenheit

d. Celsius

e. Galileo

Complete these sentences.

1.57 Zero degrees on the Fahrenheit scale was based on the temperature of a mixture of a. _____ and b. _____ .

1.58 One hundred degrees on the Fahrenheit scaled was based on the temperature of the _____ .

1.59 Zero degrees on the Celsius scale was based on the _____ point of water.

1.60 One hundred degrees on the Celsius scale was based on the _____ point of water.

Medical scientists. I always wondered how doctors and nurses knew so much about human anatomy. I discovered in my research that Vesalius (1514-1564) was the first scientist to examine and record the inner workings of the human body. He used the bodies of executed criminals for his examinations. Without the knowledge of the inner workings of the human body, modern medicine would not exist. Vesalius also put together the first complete skeleton.

Florence Nightingale (1820-1910) was the founder of the nursing profession as we know it today. She was probably the greatest woman of medicine because she had enormous influence and made a powerful impact on the development of the medical profession. She was dedicated to her work because, from the time that she was a teenager, she knew that God had called her to relieve the miseries of poor and suffering people. She organized nurses who devoted their lives to nursing the sick and wounded soldiers in the Crimean War. She was truly a servant of God and a servant to her fellow man.

END OF LOG I-C

John

Write true or false.

1.61 _____ Vesalius was the first scientist to examine the inner workings of the human body.

1.62 _____ Florence Nightingale was the first woman doctor.

1.63 _____ Florence Nightingale put together the first complete skeleton.

1.64 _____ Without the knowledge of the inner workings of the body, modern medicine could not exist.

Match these items.

1.65	_____	developed a temperature scale	a. Aristotle
1.66	_____	first scientist to examine the inner working of the human body	b. Ptolemy c. Copernicus d. Galileo
1.67	_____	developed the geocentric theory	e. Brahe
1.68	_____	modified the geocentric theory	f. Kepler
1.69	_____	invented the barometer	g. Newton
1.70	_____	introduced the heliocentric theory	h. Torricelli i. Fahrenheit
1.71	_____	developed the telescope	j. Vesalius
1.72	_____	founded the nursing profession	k. Nightingale
1.73	_____	discovered elliptical orbits of planets	
1.74	_____	law of universal gravitation	

Review the material in this section in preparation for the Self Test. The Self Test will check your mastery of this particular section. The items missed on this Self Test will indicate specific areas where restudy is needed for mastery.

SELF TEST 1

Match these items (each answer, 2 points).

1.01	_____	developed geocentric theory	a. Torricelli
1.02	_____	introduced heliocentric theory	b. Copernicus
1.03	_____	founded nursing profession	c. Kepler
1.04	_____	invented barometer	d. Nightingale
1.05	_____	considered "Father of Modern Science."	e. Galileo f. Aristotle
1.06	_____	discovered law of universal gravitation	g. Celsius h. Vesalius
1.07	_____	examined the inner workings of the human body	i. Newton
1.08	_____	developed temperature scale	

Write true or false (each answer, 1 point).

1.09 _____ Meters and centimeters are units of length in the metric system.

1.010 _____ Mass is a measure of weight.

1.011 _____ Long distances are usually measured in kilometers.

1.012 _____ The weight of an object never changes.

1.013 _____ In the geocentric theory the earth is the center of the universe.

1.014 _____ The gravitational pull of the sun keeps the planets in orbit.

1.015 _____ The barometer measures the temperature of the air.

1.016 _____ Florence Nightingale believed that God had called upon her to relieve the suffering of poor people.

Write the letter of the correct choice (each answer, 2 points).

1.017 The number of centimeters in a meter is _____ .

a. 10 b. 100 c. 1000 d. 1

1.018 The liter is used to measure _____ .

a. weight b. mass c. volume d. length

1.019 The mass of an object is measured in _____ .

a. liters b. meters c. degrees d. kilograms

1.020 In science anything puzzling or unexplained is a scientific _____ .

a. problem b. experiment c. hypothesis d. conclusion

1.021 A scientific guess is a(n) _____ .

a. problem b. experiment c. hypothesis d. conclusion

1.022 After conducting an experiment, a scientist must first _____ .

a. state the problem
b. interpret data
c. draw conclusions
d. form a hypothesis

Complete these lists (each answer, 3 points).

1.023 List in order the five steps in the scientific method.

a. _____

b. _____

c. _____

d. _____

e. _____

1.024 List the four types of graphs.

a. _____

b. _____

c. _____

d. _____

50/63 **SCORE** _____ **TEACHER** _____ _____
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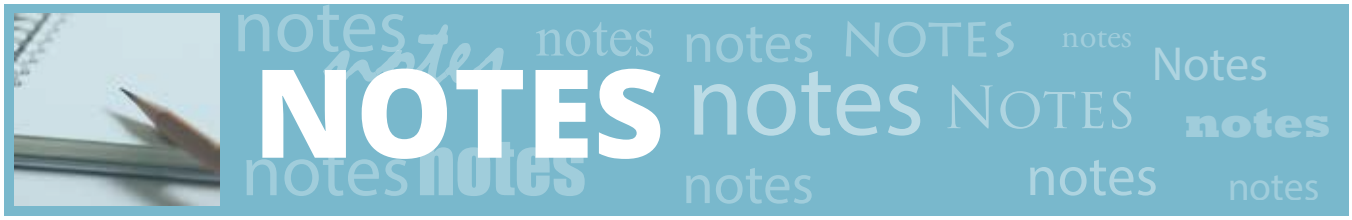
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