

# Week of April 20-24, 2020

## Junior High Science

### Debra Welch

Hello students! I hope all of you are staying healthy. I just want everyone to know that I am thinking of you and miss having school as normal. Remember to keep your immune systems strong! Basic directions are: You need to complete one lesson a week for only the class you were currently enrolled in and choose from the 3 choices. Choices 1 & 2 are for review of material we have already covered this year. I will start at the beginning and go through the year's material. Choice #3 will always be new work using your textbook or other handouts I include. I will make every effort to keep your work simple to do, considering that we are not learning together in the classroom. Your work should be turned in as a hard (paper) copy to the office or through email in a word or google document. My email is: [debra.welch@oakland5.org](mailto:debra.welch@oakland5.org). Please be sure all work has your name! If you have not turned in the assignment by the following Monday, I will need to email your parents and/or place a phone call home. Please be diligent to turn work in on time. I suggest you set up a schedule just as if you were at school and allow for the normal time period. Most assignments I send you will take less time than our normal 40 minutes. Comments will be made on paper copies and returned to you. If you send in homework answers as an email I will reply to your email and give my comments/reflections of your work. I will be supplying you with the necessary notes or you will need to use your book to find the answers. If you have any questions feel free to email me and I will get back to you by email during my office hours. If you can't email feel free to call the office and leave me a message. Good Luck and stay healthy!

See Assignments on following page:

Class	Choice 1	Choice 2	Choice 3 (Enrichment)
8th Grade Life Science	<p>Read the notes provided on the Scientific Method.</p> <p>Do The Case of the Polluted Stream p29. Write in complete sentences using proper spelling, grammar &amp; punctuation.</p>	<p>Refer to text Ch 1 or the Scientific Method notes provided.</p> <p>Directed Reading worksheet p17.</p>	<p>Viruses: Use your notes from last week &amp; Chap 2-3 in text to fill out worksheet.</p> <p>Do: Enrichment p32 "The size of Viruses"</p>
6th Grade General Science	<p>Use the notes provided on scientific method terms.</p> <p>Do p1 Experimenting to Find Answers &amp; Cause &amp; Effect Match.</p>	<p>Use Notes provided on Scientific Method.</p> <p>Do 1-16 using the word bank on bottom of page.</p>	<p>Refer to the powerpoint notes provided last week and textbook: Do Weather Instruments p101. Match up picture from word bank</p>

## The Scientific Method

**Scientific method-** a series of planned steps in order to solve a problem in science.

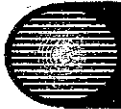
Scientists ask questions about our world and try to solve problems using this method.

**Observation-** this is done by using our senses and tools such as a microscope. This is a Fact: the ball is red. There is no opinion, write exactly what occurs or what is seen.

**Inference-** after observing a situation a judgement is made on what is happening. It may NOT be true- Ex: the man is driving a jaguar, therefore he is rich.

### Steps of the Scientific Method:

1. **State the problem-** identify the problem to be researched.
2. **Gather Information-** research the problem.
3. **Form a hypothesis-** a hypothesis is an educated guess.
4. **Test the hypothesis-** this is done by conducting an experiment that "tests" Hypothesis.
  - a) record data- during the experiment
  - b) analyze the data- interpret what the outcome means.
5. **Draw a conclusion-** by accepting or rejecting the hypothesis. If rejected, a new hypothesis must be developed.



## Content Outline for Teaching

# The Nature of Science

## Section 1 How Science Works

Underlined words and phrases are to be filled in by students on the Note-taking Worksheet.

- A. Science—process of trying to understand the world
- B. Archaeology—branch of science that studies the tools and other cultural remains of humans
1. Tools—could be stone or bone
  2. Weapons—for hunting or defense
  3. Rock drawings—clues to everyday life
  4. Remains of buildings
  5. Pottery—whole or shards; can more accurately date culture
- C. Technology—knowledge gained from science used to conduct scientific studies; radar surveys can help study archaeological sites.
- D. Archaeological excavations or digs are important ways of studying a site.
1. As artifacts are found, they are mapped, photographed, registered, and cataloged.
  2. In a lab, chemical analysis can help determine the age of artifacts.

### DISCUSSION QUESTION:

How are archaeological sites found? *Many are accidentally found; some are found through research.*

## Section 2 Scientific Problem Solving

- A. Scientific methods—solving problems using step-by-step procedures
- B. Scientific problem—question without an answer
1. Scientists make observations using their senses.
    - a. What do you see? Did it change?
    - b. Is there an odor?
    - c. Did the texture change?
  2. Observations lead to inferences—conclusions about observations
- C. After identifying a problem, a hypothesis is developed based on observation, research, or prior knowledge.

*After many years of testing a Theory becomes a Law - or Rule of Nature.*

## Content Outline for Teaching (continued)

- D. An experiment, a series of carefully planned steps, tests the hypothesis.
  - 1. **Independent variable**—the factor that is changed in the experiment
  - 2. **Dependent variable**—the factor or outcome to be measured in the experiment
  - 3. **Constants** are factors that stay the same during the experiment.
  - 4. A standard used for comparison is a **control**.
- E. Data are collected during the experiment through numeric measurements and observations.
- F. After analyzing data, a scientist makes a conclusion, which is valid only after multiple experiments support it.

### DISCUSSION QUESTION:

What is a hypothesis based on? *observation, research, prior knowledge*

Name \_\_\_\_\_ Date \_\_\_\_\_

**1 Experimenting to Find Answers** **Exercise 1**  
Student Edition pages 6-7 *Critical Thinking*

**A. Read the following eight statements. Write *fact* or *theory* next to each one.**

- 1. \_\_\_\_\_ Fire is hot.
- 2. \_\_\_\_\_ Billions of years ago, Earth began as a big cloud of dust and gases.
- 3. \_\_\_\_\_ The first living things were small and developed in the oceans.
- 4. \_\_\_\_\_ Food gives people energy.
- 5. \_\_\_\_\_ Plants need light in order to live.
- 6. \_\_\_\_\_ Babies who are held a lot grow up to be happier, more secure people.
- 7. \_\_\_\_\_ Houseflies usually live for less than a month.
- 8. \_\_\_\_\_ Smoking causes lung cancer.

**B. Choose one of the *fact* statements. Write how you could prove it to be true.**

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**C. Choose one of the *theory* statements. Explain why it cannot be proven or has not yet been proven.**

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Name: \_\_\_\_\_ Class: \_\_\_\_\_

Date: 4/20-24

Fill in the blanks in these sentences with the word that fits.

1. A statement that can be tested is a \_\_\_\_\_.
2. Information you gather with your senses can be called \_\_\_\_\_.
3. An archaeological dig is also known as an \_\_\_\_\_.
4. The factors that stay the same in an experiment are the \_\_\_\_\_.
5. Items found during an archaeological dig are referred to as \_\_\_\_\_.
6. The step-by-step process of scientific problem-solving is called the \_\_\_\_\_.
7. When we draw conclusions from the observations it is known as \_\_\_\_\_.
8. The approximate age of artifacts are determined through \_\_\_\_\_ analysis..
9. The statement after analyzing the data, based on the observations is the \_\_\_\_\_.
10. The use of knowledge gained through science to make new products or tools that people can use is called \_\_\_\_\_.
11. The information gathered from an experiment is called the \_\_\_\_\_.
12. The factor or outcome that will be measured in an experiment is the \_\_\_\_\_.
13. The process of trying to understand the world is called \_\_\_\_\_.
14. The standard used for comparison in an experiment is the \_\_\_\_\_.
15. The one factor that you change in an experiment is the \_\_\_\_\_.
16. The study of the tools and cultural remains of humans is the study of \_\_\_\_\_.

**Select your answers from the following words:**

control  
inference  
data  
dependent variable

science  
constants  
hypothesis  
artifacts

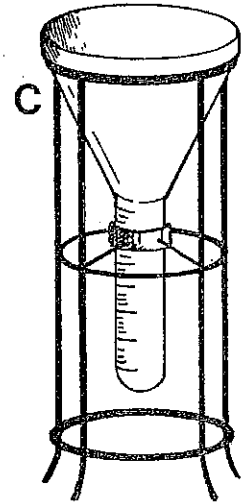
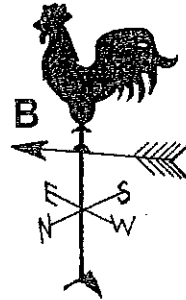
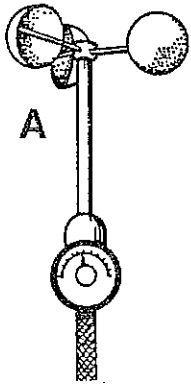
conclusion  
scientific method  
excavation  
archaeology

observations  
technology  
chemical  
independent variable

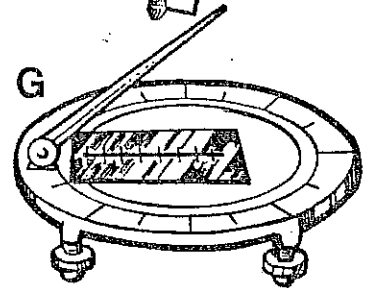
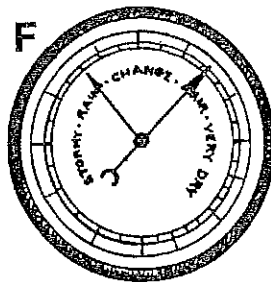
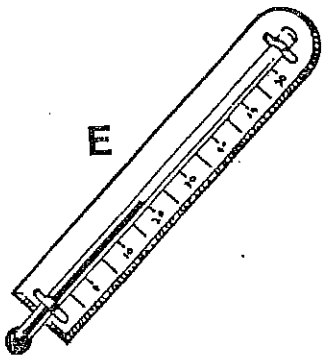
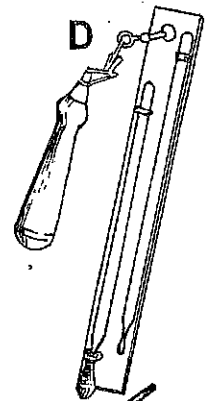
# Weather Instruments

Name \_\_\_\_\_

Meteorologists use a variety of instruments to gather data. Many of these instruments are pictured below. Identify each instrument and tell what it measures.



	Weather Instrument	It Measures . . .
A		
B		
C		
D		
E		
F		
G		



## WORD BANK

temperature  
anemometer  
weather vane  
rain gauge  
wind direction

relative humidity  
thermometer  
hygrometer (SLING PSYCHROMETER)  
precipitation  
cloud altitude and direction

atmospheric (air) pressure  
barometer  
nephoscope  
wind speed



Name: \_\_\_\_\_

# Cause and Effect Match

Match each cause on the left with an effect on the right.

- | <u>Cause</u>                                | <u>Effect</u>                    |
|---|----------------------------------|
| 1. _____ Baby Lisa began to cry.            | a. She played in the sand.       |
| 2. _____ It was raining outside.            | b. He got a belly ache.          |
| 3. _____ The phone rang.                    | c. Lance flew his kite.          |
| 4. _____ Nana plants seeds in the garden.   | d. He fell and scraped his knee. |
| 5. _____ My lawn mower was out of gas.      | e. He ate dinner.                |
| 6. _____ Someone came to the door.          | f. The dog began to bark.        |
| 7. _____ It is a windy day.                 | g. He had nothing to wear.       |
| 8. _____ The boy tripped on a rock.         | h. Mom gave her a bottle.        |
| 9. _____ Robert ate too many jellybeans.    | i. She answered it.              |
| 10. _____ Caren practiced kicking the ball. | j. I couldn't cut the grass.     |
| 11. _____ All the clothes were dirty.       | k. She won her soccer game.      |
| 12. _____ Lee's mom took her to the beach.  | l. I shoveled the driveway.      |
| 13. _____ Tyler was hungry.                 | m. Flowers began to grow.        |
| 14. _____ It snowed outside.                | n. We couldn't get in the car.   |
| 15. _____ Mom locked the car door.          | o. We pulled out an umbrella.    |