

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

## Scientific Investigations Unit Review Study Guide

**Part 1:** Match each part of the experiment with the correct example below. Write the letter that is next to the part of the example on the line next to the example.

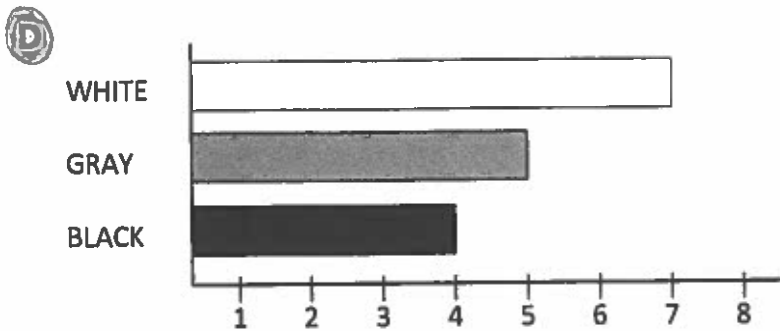
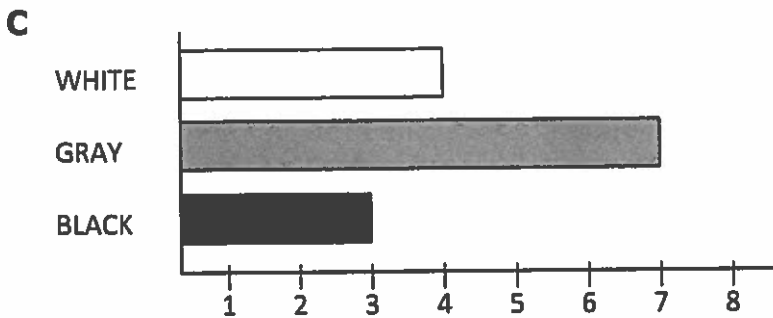
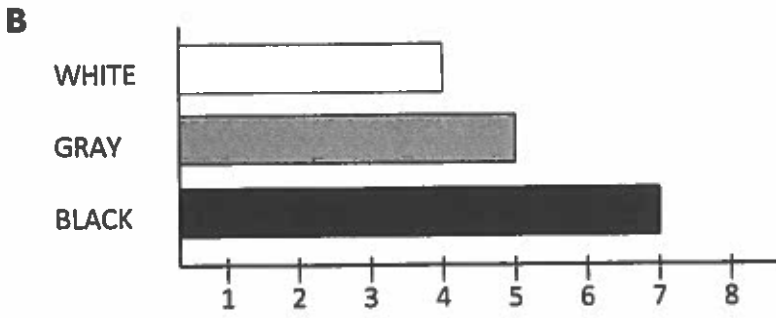
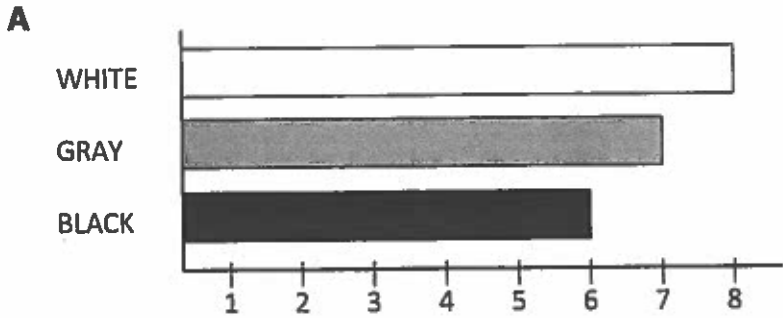
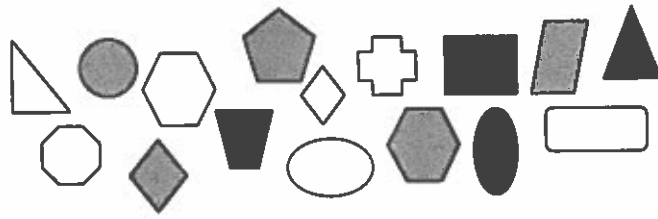
- ~~a.~~ constants
- b. hypothesis
- ~~c.~~ question
- ~~d.~~ dependent variables
- ~~e.~~ observation
- ~~f.~~ procedures
- ~~g.~~ materials
- ~~h.~~ Independent variables
- ~~i.~~ conclusion

1. i I learned that bubbles will become larger when you add soap to them.
2. d I will use the same straw, paper cup, and water.
3. g I need a straw, paper cup, water, liquid soap, a pencil, and paper.
4. e I noticed that the bubbles became larger when I added more drops of soap.
5. d The size of the bubbles changed because I changed the number of drops I added to the cup.
6. c What will happen to the size of the bubbles when I add more drops of soap?
7. h I will change the number of drops of soap I add to the cup.
8. f First, fill the cup  $\frac{3}{4}$  full with water. Second, put 5 drops of soap into the cup and mix. Third, use the straw to blow bubbles. Fourth, write what you observed in the chart below. Fifth, add 5 more drops of soap into the cup and repeat steps 3 and 4. Sixth, add 20 more drops of soap into the cup and repeat steps 3 and 4.
9. b If I add more drops of soap to the cup of water, then the bubbles will become larger.

Part 2: Look at the chart below then correctly answer the questions.

1. Look at the shapes below. Which bar graph correctly organizes the shapes by color?

W | 7  
G | 5  
B | 4



2. How is the data on the previous page sorted? The data is sorted by color

3. What are the names of the different categories? The categories are named white, gray, & black.

**Part 3:** Read the data below then answer the questions by circling the correct word to describe the statement being made.

The graph shows the amount of weight Billy has gained over a 5 year period of time.

**Billy's Weight Chart**

Age (years)	Weight (pounds)
10	70
11	75
12	80
13	85
14	90

1. Billy is gaining so much weight that his pants are not going to fit him soon.

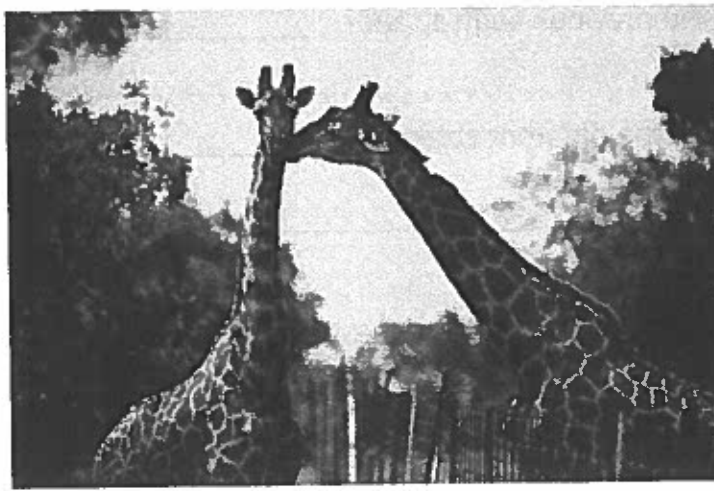
prediction      inference      observation

2. At 16 years old, Billy will weigh 100 pounds.

prediction      inference      observation

3. When Billy was 13 years old, he weighed 85 pounds.

prediction      inference      observation



4. These giraffes are living at a zoo.

prediction

inference

observation

5. After the giraffes are finished outside in the field, they will go inside to sleep for the evening.

prediction

inference

observation

6. The giraffes are covered with dark spots.

prediction

inference

observation

**Part 4:** Read each sentence and fill in the blanks with a word from the word box.

experiment	independent variable	inference	
hypothesis	dependent variable	conclusion	
procedures	observation	quantitative	prediction
constants	question	materials	qualitative

1. A question is what you are trying to find out. It will be answered once you've completed an experiment.
2. Data that is described in words is called qualitative data.
3. An independent variable is the change a scientist makes in an experiment.

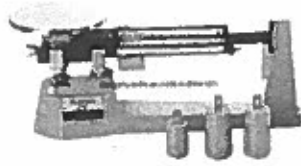
4. procedure are the steps the scientist is going to take to complete an experiment.
5. The things that are not changed and remain the same throughout the experiment are called constants.
6. An observation is what the scientist sees, feels, tastes, hears, or smells during an experiment.
7. A dependent variable is a change that happens because of the change the scientist makes.
8. Data that is described with numbers is called quantitative data.
9. The materials are the objects that are needed in order to complete an experiment.
10. A hypothesis is a prediction or guess about the answer to your question. It is always written as an If..., then... statement.
11. A prediction is a statement that tells what may happen in the future.
12. The conclusion is a sentence that states the results of the experiment, what was learned from the experiment, and answers the question.
13. An inference is a statement that is made based on data and background knowledge.
14. An experiment is a test that answers a hypothesis- a question or idea.

Part 5: Match the name of the instrument with its picture.

centimeter ruler	thermometer	
scale	graduated cylinder	
meter stick	balance	beaker



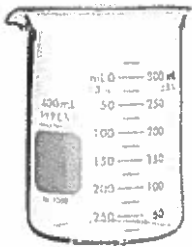
Centimeter ruler



Scale



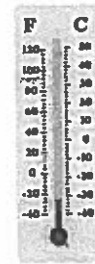
balance



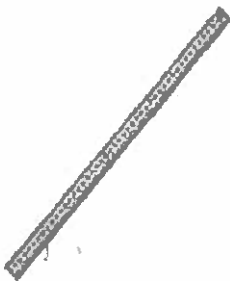
beaker



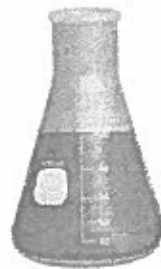
graduated cylinder



thermometer



meter stick



beaker



thermo meter

**Part 6:** Read each statement and decide which instrument you would use to measure the object listed in each statement. Match the instrument from the box below with the statement and write the letter on the space provided. Some answers will be used more than once.

- A. centimeter ruler or meter stick
- B. scales or balances
- C. graduated cylinders or beakers
- D. thermometers

- |  |  |
|--|--|
| 1. <u>B</u> the weight of an orange                          | 9. <u>C</u> the amount of juice in a cup                 |
| 2. <u>A</u> the length of a chair leg                        | 10. <u>B</u> the mass of a computer                      |
| 3. <u>C</u> the amount of soda in a bottle                   | 11. <u>D</u> the temperature of a classroom              |
| 4. <u>B</u> the mass of a brick                              | 12. <u>B</u> the weight of a toy truck                   |
| 5. <u>D</u> the temperature of a refrigerator                | 13. <u>C</u> the volume of water added to a box of Jello |
| 6. <u>C</u> the volume of milk in a mixing bowl              | 14. <u>D</u> the temperature of bath water               |
| 7. <u>A</u> the distance between the door knob and the floor | 15. <u>A</u> the height of a ladder                      |
| 8. <u>A</u> the length of a notebook                         | 16. <u>D</u> the temperature of hot chocolate            |

**Part 7:** Look at the graph below and then correctly answer the question.

Time	Temperature
10:00 am	80 degrees
10:30 am	82 degrees
11:00 am	84 degrees
11:30 am	86 degrees
12:00 pm	88 degrees
12:30 pm	90 degrees
1:00 pm	???

What is the temperature likely to be at 1:00?

92°

