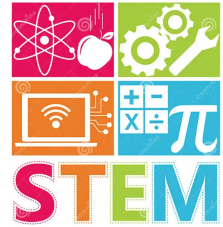


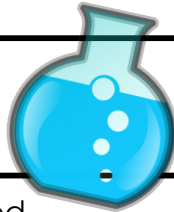
SCIENCE Newsletter

Week of : Sept. 25th to 29th, 2023



	4A,B,C,D,E Home Learning
Monday	-NO SCHOOL-
Tuesday	Read "Procedures" on page 1 and answer questions on page 2
Wednesday	Read "Results" on page 3 and answer questions on page 4
Thursday	-Complete the Scientific Method Study Guide -Be ready to review the study guide tomorrow in class.
Friday	Study using your Study Guide for Monday's Test

Vocabulary



Scientific method
Investigation
Research
Data
Infer
Problem statement
Hypothesis
Variables
Independent variable
Dependent variable
Control group
Procedures
Materials
Trials
Results
Conclusion
Application
Abstract
Bibliography

Reminders



- [Monday 10/02 Topic 1a Unit Test](#)
- **Fairchild Challenge:**
Please bring in class
Wednesday the
completed pages for
your Plant Passport!

Procedures

Name: _____

You follow procedures every day. In the morning, you wake up, eat breakfast, brush your teeth, get dressed, then go to school. When you enter your Classroom, you may unpack, hang up your backpack, do your morning work, then wait for instructions from your teacher. Procedures are just steps that we follow.

Procedures for experiments normally begin with a list of materials you will need. Anything your hands will use during an experiment should be included on the materials list. A cooking recipe first lists the ingredients you will need, then gives you step by step instructions of what to do with those ingredients. This is exactly what your procedures should look like. Scientists write their procedures for themselves and for others. They should include as much detail as possible so the scientist can plan well for the experiment, but also so they can share their experiment with other scientists that may want to replicate it.

Richard wants to test which material would be best to retain water temperature inside of a cup. After he does research and forms his hypothesis, he will decide which materials to test and exactly how he wants to test them. Below, you will see that Richard was specific about the material and quantity of each cup, the temperature at which to pour the water in the cups, and how to measure the temperatures. These procedures will help Richard stay on track and if he shares them with other scientists, they are specific enough for them to replicate his experiment.

Materials:

- ☐ 1 metal cup
- ☐ 1 plastic cup
- ☐ 1 paper cup
- ☐ 3 cups of water at 50°F
- ☐ 3 thermometers
- ☐ Paper and pencil for recording

Procedures:

1. Gather your materials. Set each cup out in front of you. Pour 1 cup of water into each cup.
2. Place a thermometer in each cup.
3. Record the temperature reading of each cup every 10 minutes for one hour.

The final step before sharing your findings should always be to repeat the experiment. Conducting the same experiment multiple times, or having “multiple trials”, will lead to more consistent results and give your results more credibility.

Procedures

Name: _____

Each set of procedures below is missing important information. Decide what is missing and write it below.

1. Fill the two beakers.
2. Pour 20 g of salt into one beaker and 20 g of sugar into the other.
3. Stir it, then record how much of each substance has dissolved.

Missing?

1. Open your 4 2L soda bottles (coke, diet coke, mountain dew, and sprite).
2. Drop Mentos in each bottle. Allow for a reaction.
3. When the sodas are finished reacting, measure the amount liquid left in each bottle and record.

Missing?

1. Gather 4 pots that drain water. Put a different material in each pot.
2. Pour 1 cup of water into each pot.
3. Wait 10 minutes. Measure the amount of water that drained out of every pot.

Missing?

1. Gather 2 different brands of markers.
2. Choose the purple marker and blue marker from each brand.
3. Fill up 4 cups with 1 cup of water.
4. Remove the caps from the markers, then place them tip down into the water.
5. Observe the amounts of color that absorb into the water to infer which brand of marker has the most ink.

Missing?

Results

Name: _____

Scientists collect data while conducting their experiment. Data can come in the form of photographs, measurements, or general observations. Data that is collected throughout an experiment will be organized and analyzed. To analyze data, you need to look closely at it and find any trends.

Some data is best organized in a table. Measurements and details regarding different designs or variables are displayed well in a table, as seen below. If your data consists of visual observations, such as color, cloudiness, or general appearance, it may be best to display this data through photographs so other scientists can see them, too. After analyzing the data and discovering trends and patterns, scientists will be ready to form their conclusion.

Let's consider the question: *Does the length of a paper airplane affect the distance it travels when thrown?* Using paper airplanes made with 3 different lengths with the same wingspans, we can test this question. Each time a plane is thrown, we record the details about the plane as well as the distance it traveled. We can also take photographs to document the plane designs. Once our data is collected, we will organize it in a way that fits our data. Since we have number measurements, making a data table would best represent our data. Now that the data is organized, we can begin finding trends and making inferences.

	Design A	Design B	Design C
Length	6 in	8 in	10 in
Wingspan	6 in	6 in	6 in
Distance Traveled	10 ft	14 ft	20 ft

From this data, we can identify that the longer paper airplanes will fly further.

To analyze your results, you must collect and organize your data. Then, identify trends and patterns that reveal information that can help you find your answer.

Results

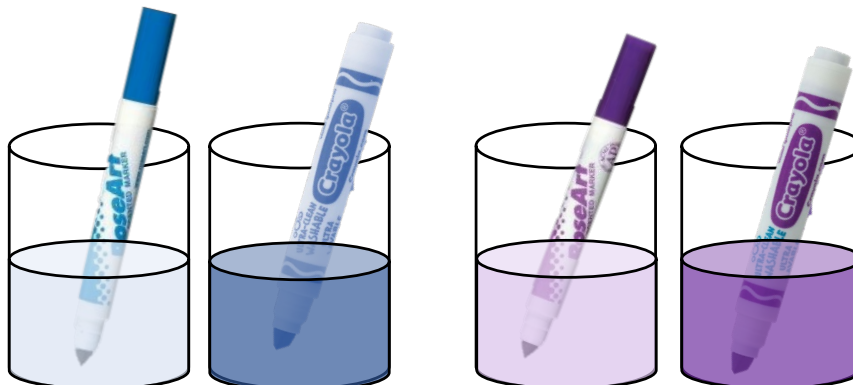
Name: _____

Look at each set of results. Find a trend, pattern, or observation that you could gain information from and record it on the sticky note.

Lengths Traveled by Cars with Different Masses

	Car A	Car B	Car C
Mass	10 g	20 g	30 g
Distance Traveled 1	6.2 m	12.5 m	18 m
Distance Traveled 2	6.7 m	12.3 m	19.2 m

Crayola vs. RoseArt



Our Favorite Pets

	Dog	Cat	Fish
Girls	12	10	5
Boys	15	8	3

Scientific Method Test Study Guide

1. The first step in the Scientific Method is to ask _____.
2. This is called the _____.
3. In step 2, you will make a _____, or educated prediction.
4. What is the correct **format** for writing a hypothesis?

5. The **independent Variable** is the factor that _____ in the experiment.
6. The **dependent Variable** is the _____ in the experiment.
7. The **constant/control variable** is the factor that _____ in the experiment.
8. _____ are the steps you will follow in your experiment.
9. The _____ is a list that contains everything you will need to conduct your experiment.
10. Data gathered in the form of **numbers and measurements** is _____ Data.
11. Data gathered using **general observations using your 5 senses** is _____ Data.
12. _____ are assumptions or conclusions drawn based on observations.
13. _____ are observations based on facts collected from your 5 senses.

14. In the _____ you will write about how your hypothesis supported or did not support your hypothesis.

15. In the following experiment, identify the **independent and dependent** variables:

Does the temperature of the water affect how fast the colored coating of an M&M dissolves?

Independent Variable: _____

Dependent Variable: _____

16. In the following experiment, which of the following variables is the **control** variable?

Does the type of ball affect the distance a ball will travel when going down a 3 foot ramp?

- a. The height of the ramp
- b. The type of ball
- c. The distance the ball travels