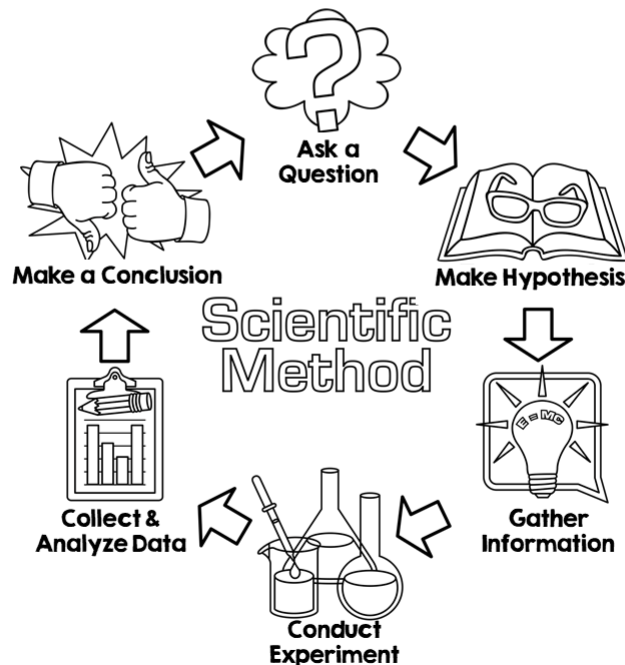


The Scientific Method Anchor Charts

The Scientific Method

The Scientific Method is a set of steps that help scientists make observations and test out their theories so they can better understand the world.

What are the steps of the scientific method?




Anchor charts cover the following:

- The Scientific Method
- Ask a Question
- Gather Information
- Make Hypothesis
- Conduct Experiment
- Collect and Analyze Data
- Make Conclusion



Each chart has five options for printing!

Conduct Experiment




When you conduct an experiment, you design an experiment to test your hypothesis. You will need materials and a steps for your experiment.

What does this look like?


- Creating an experiment that will prove if your hypothesis is true or false
- Using lab safety
- Following the steps to the procedure to ensure your results are valid
- Conducting the experiment multiple times to get a variety of data points

Strawberry Plant Example:
You design an experiment where you will grow 6 different strawberry plants. Each plant will be in an environment where you can control the temperature. Two of the plants will be in a 50 degree environment, two of the plants will be at a 60 degree environment, and two of the plants will be at an 80 degree environment. All plants will get the same amount of sunlight and water.



Mini Color

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Mini Black & White

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What does this look like?

Your own Example:

Mini Fill-In

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Full Page Color

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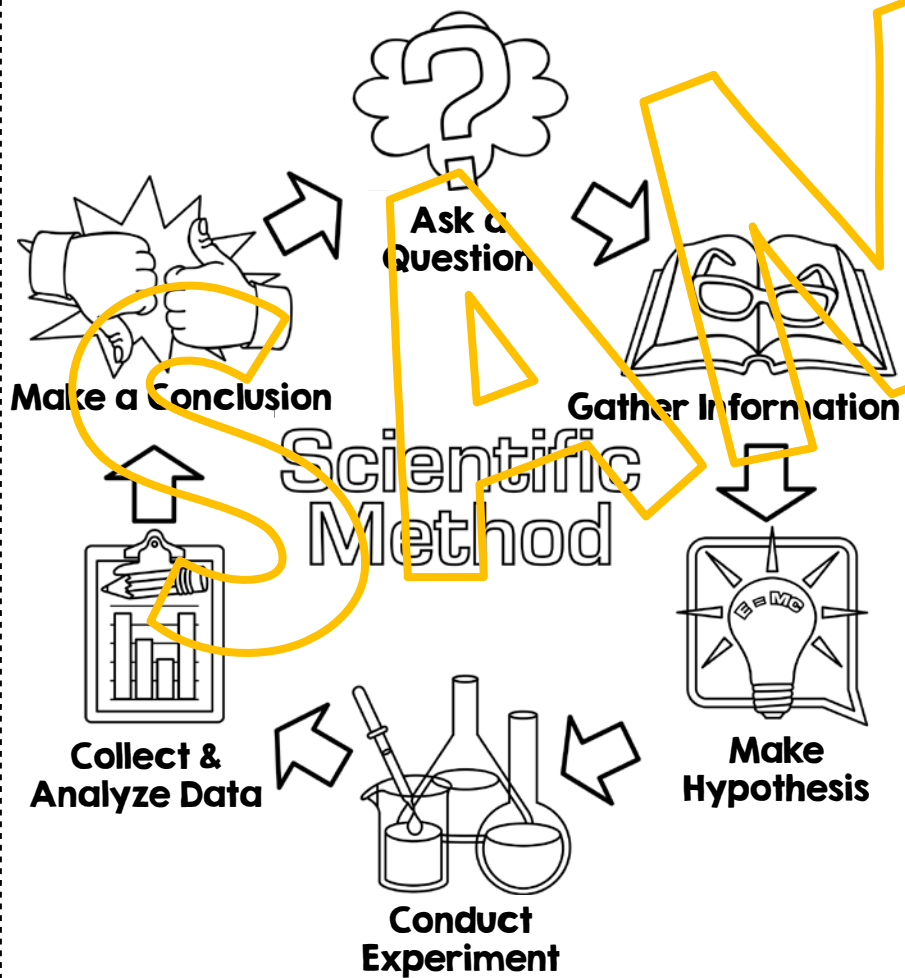
Full Page Black & White



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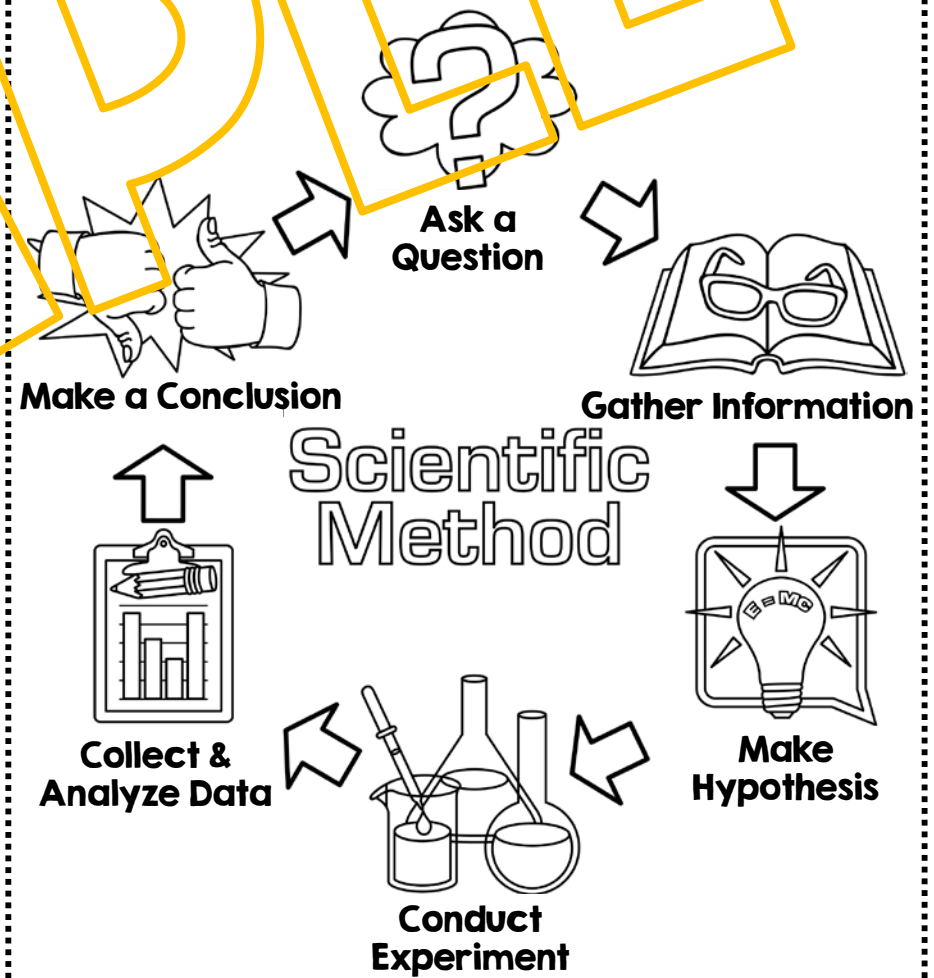
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Ask a Question



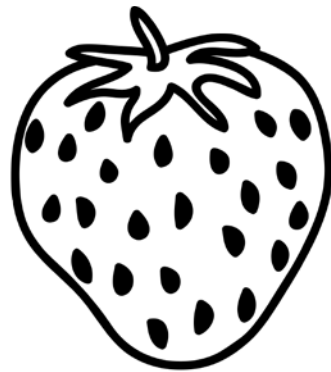
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What does this look like?

- Paying attention to things going on in the world around you
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Strawberry Plant Example:

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What caused the strawberry plants to produce less fruit?



Ask a Question



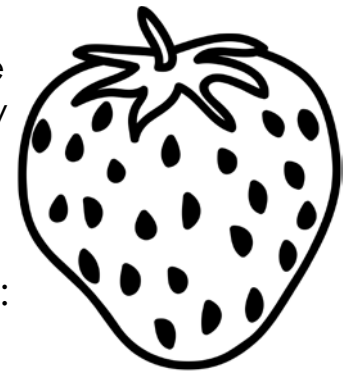
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Gather Information



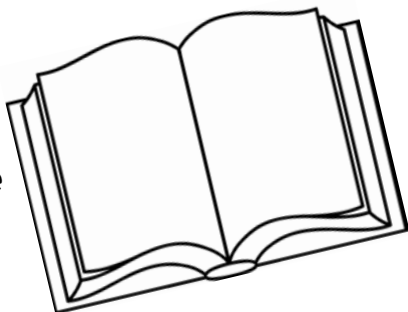
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- Researching the topic that will help you answer your question
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You know that in general, plants need sunshine, nutrients, and water to grow. **You look in an almanac to gather some more information.** You look up the previous years rainfall and temperature and compare it to the data from this year.



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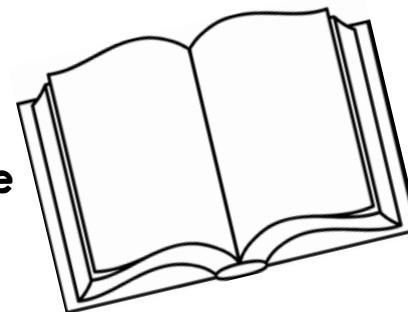
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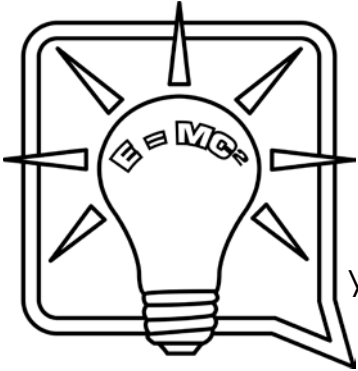
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Make a Hypothesis



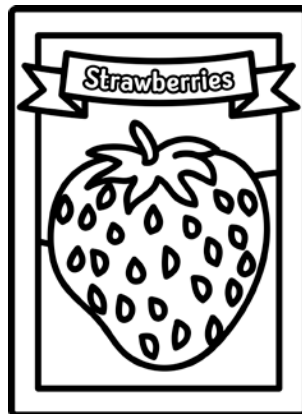
When you make a hypothesis, you make a prediction based on the information you already know and the information you researched. A hypothesis is an educated guess.

What does this look like?

- Use all of your background knowledge and the information you learned during your research to make a prediction
- Write your hypothesis using if... then...
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Strawberry Plant Example:

You realize that the temperature this year has been significantly cooler than the previous year's. You predict that the strawberry plants did not grow because of the cool temperature. You can make the following hypothesis: **If the temperature is below 60 degrees, then strawberry plants will not grow to produce fruit.**



Make a Hypothesis



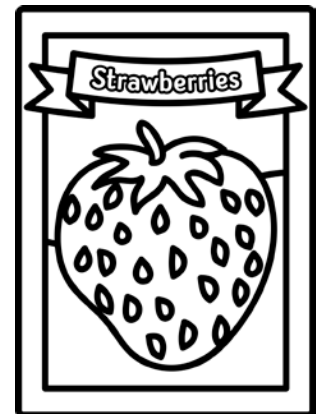
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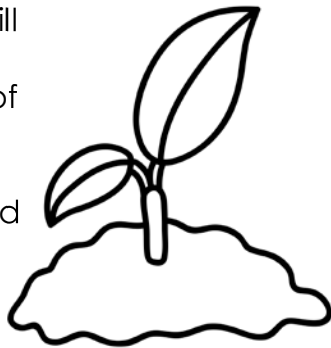
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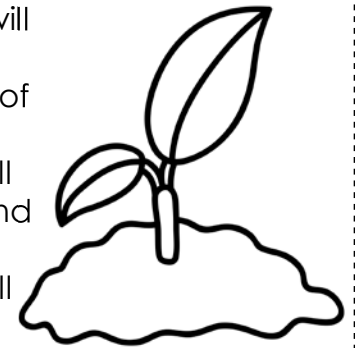
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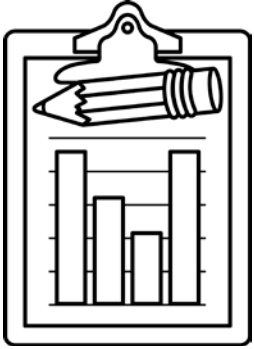
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Collect & Analyze Data



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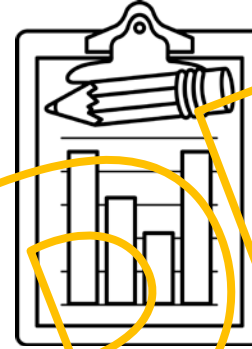
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Strawberry Plant Example:

Each week you will collect data. **Each week, you will measure the height of each strawberry plant.** At the end of the growing season, you will calculate the total number of strawberries each plant produced. Once you've collected the data you will compare the results of each plant.



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Make a Conclusion



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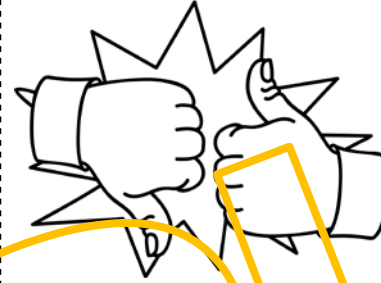
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Strawberry Plant Example:

After looking at the data, you discovered that the two plants in the 50 degree environment didn't grow as tall or produce as many strawberries as the plants at the 60 or 80 degree environment. **You can confirm your hypothesis is true**, but you realized that your experiment only looked at a very small sample of plants and you wonder how valid your results are. If you do the experiment again you would have more plants at each temperature point.

Sometimes, your conclusion might lead you to ask more questions and begin the scientific method all over again

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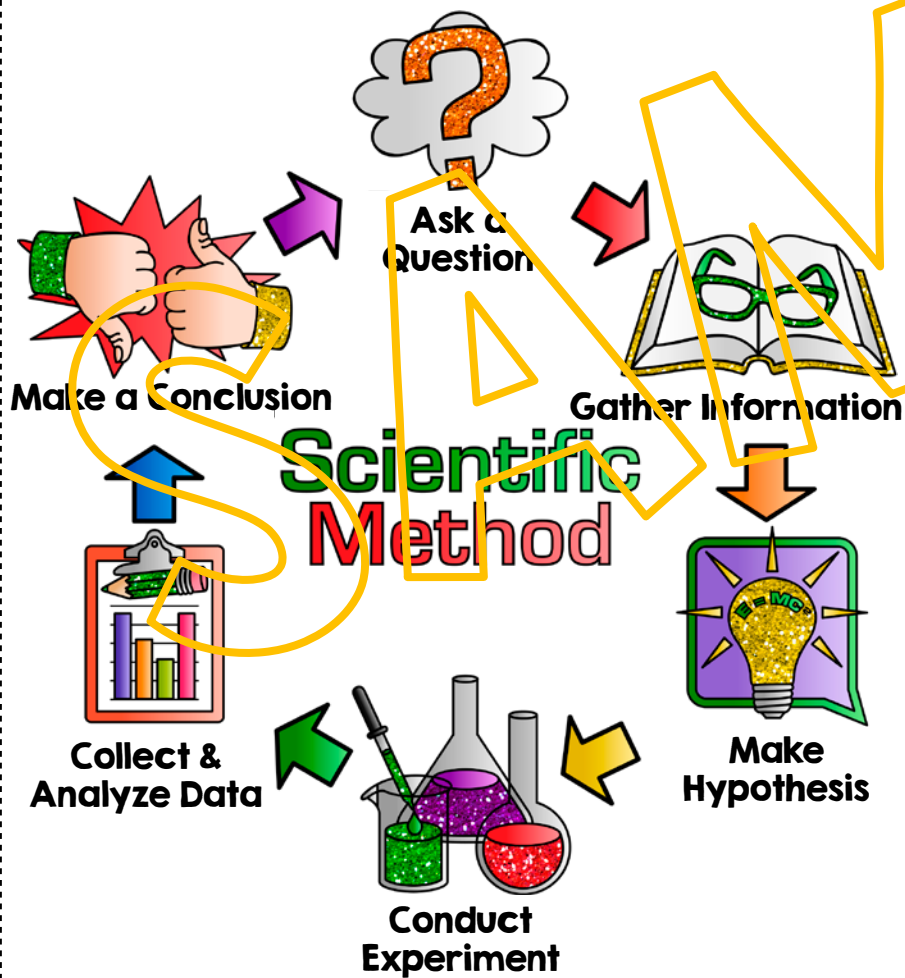
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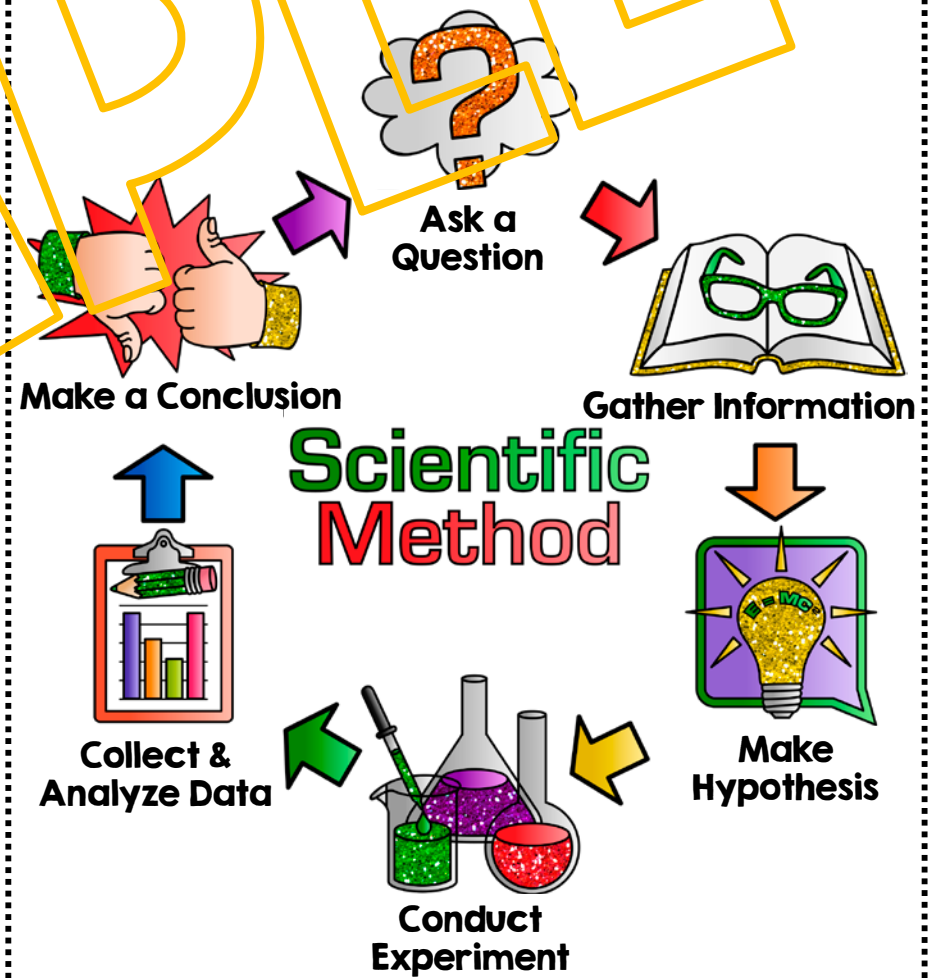
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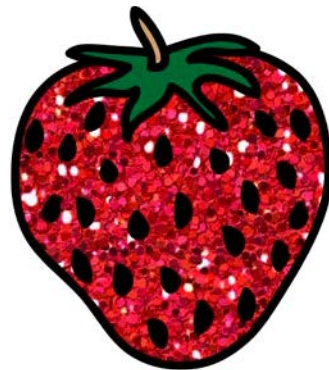
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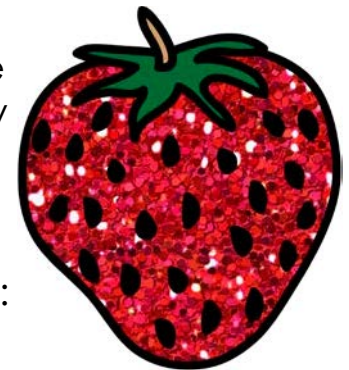
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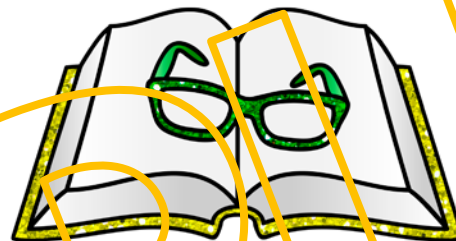
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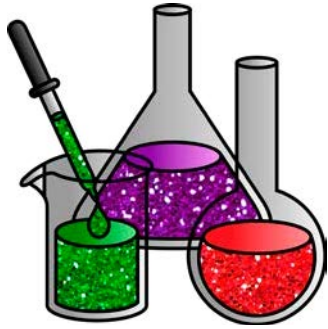
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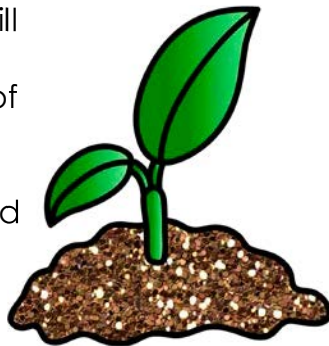
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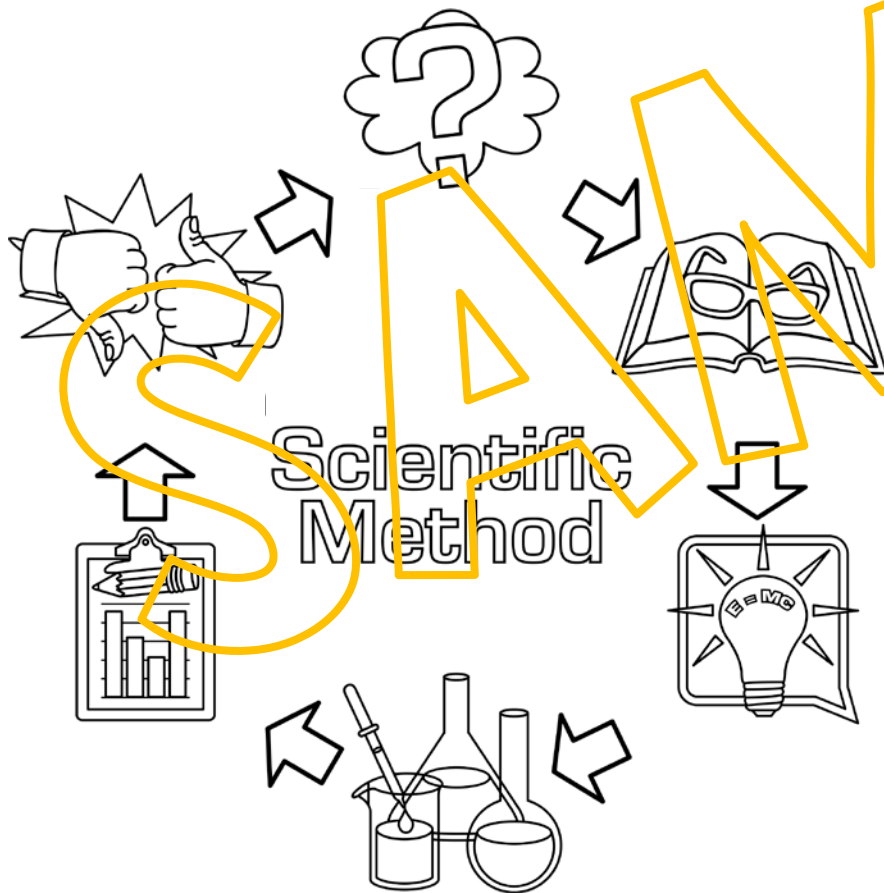
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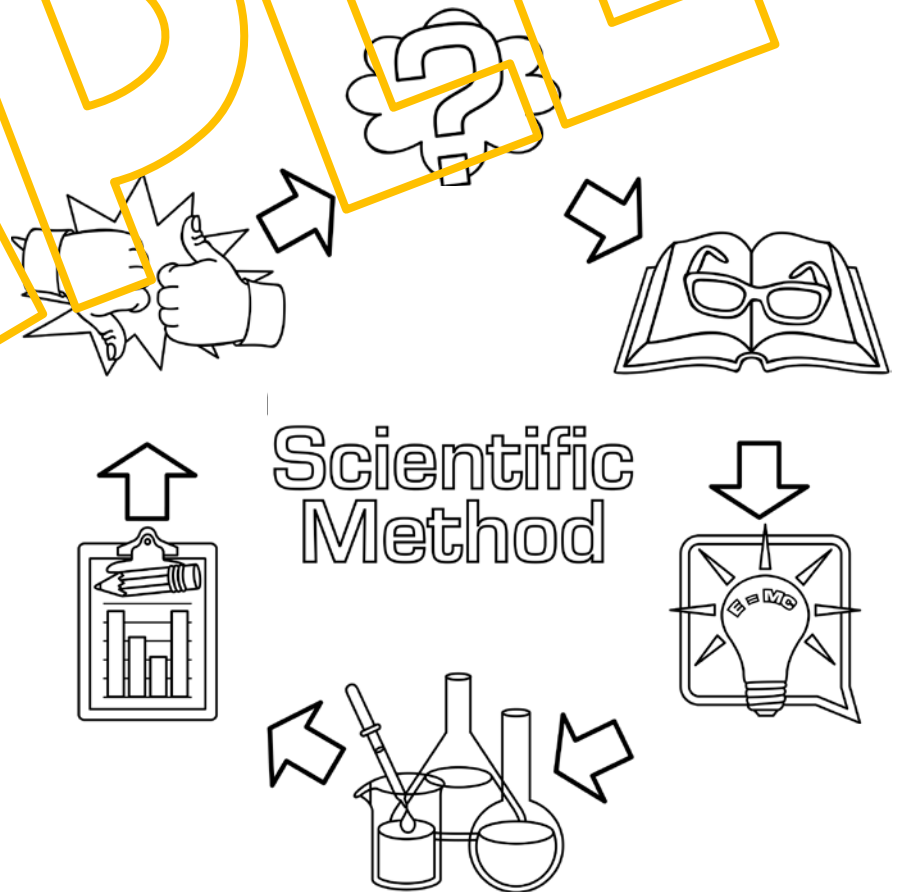
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Gather Information

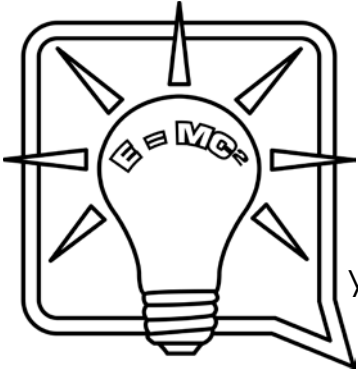


When you gather information, you think about what you already know and then you research to learn more information about the topic.

What does this look like?

Your own Example:

Make a Hypothesis



When you make a hypothesis, you make a prediction based on the information you already know and the information you researched. A hypothesis is an educated guess.

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Your own Example:

Conduct Experiment



When you conduct an experiment, you design an experiment to test your hypothesis. You will need materials and a steps for your experiment.

What does this look like?

Your own Example:

Conduct Experiment

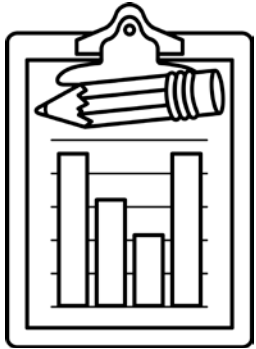


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What does this look like?

Your own Example:

Collect & Analyze Data

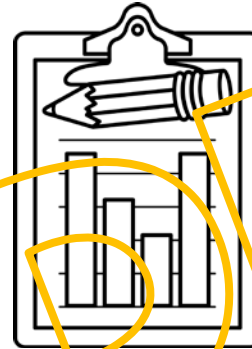


When you collect and analyze data, you make observations and record what you see happening. You can use a chart, table, or graph. Organizing your data will make it easier for you to analyze.

What does this look like?

Your own Example:

Collect & Analyze Data



When you collect and analyze data, you make observations and record what you see happening. You can use a chart, table, or graph. Organizing your data will make it easier for you to analyze.

What does this look like?

Your own Example:

Make a Conclusion



When you make a conclusion, you make a generalization based off of the data you collected during the experiment.

What does this look like?

Your own Example:

Make a Conclusion



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What does this look like?

Your own Example: