Scientific Method

Name _____

What is the scientific method? It is a _____ that is used to find _____ to questions about the world around us.

Is there only one "scientific method"? No, there are several versions of the scientific method. Some versions have more _____, while others may have only a few. However, they all begin with the identification of a _____ or a _____ to be answered based on observations of the world around us and provide an _____ method for conducting and analyzing an experiment.

What is a hypothesis? It is an _____ _____ based on observations and your knowledge of the topic.

What is data? It is _____ gathered during an experiment.

_____
What do you want to know or explain? Use observations you have made
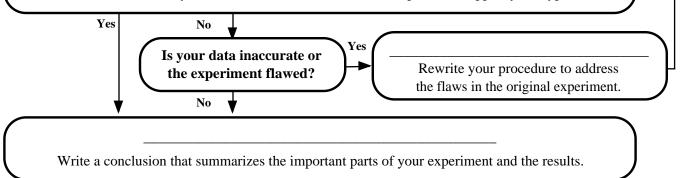to write a question that addresses the problem or topic you want to investigate.

⬇

_____
What do you think will happen? Predict the answer to your question or the outcome of the experiment.

⬇

_____
How will you test your hypothesis? Develop a procedure
for a reliable experiment and address safety rules.

⬇

_____
Follow the steps in your procedure to perform your experiment. Record data and observations!

⬇

_____
Is the data reliable? Does your data and observations from the experiment support your hypothesis?

Yes | **No** ⬇

Is your data inaccurate or the experiment flawed? → **Yes** → _____
Rewrite your procedure to address
the flaws in the original experiment.

No ⬇

_____
Write a conclusion that summarizes the important parts of your experiment and the results.

Scientific Method

What is the scientific method? It is a process that is used to find answers to questions about the world around us.

Is there only one "scientific method"? No, there are several versions of the scientific method. Some versions have more steps, while others may have only a few. However, they all begin with the identification of a problem or a question to be answered based on observations of the world around us and provide an organized method for conducting and analyzing an experiment.

What is a hypothesis? It is an educated guess based on observations and your knowledge of the topic.

What is data? It is information gathered during an experiment.

Identify the Problem
What do you want to know or explain? Use observations you have made
to write a question that addresses the problem or topic you want to investigate.

↓

Form a Hypothesis
What do you think will happen? Predict the answer to your question or the outcome of the experiment.

↓

Create an Experiment
How will you test your hypothesis? Develop a procedure
for a reliable experiment and address safety rules.

↓

Perform an Experiment
Follow the steps in your procedure to perform your experiment. Record data and observations!

↓

Analyze the Data
Is the data reliable? Does your data and observations from the experiment support your hypothesis?

Yes | **No** ↓

Is your data inaccurate or the experiment flawed? → **Yes** → **Modify the Experiment**
Rewrite your procedure to address
the flaws in the original experiment.

No ↓

Communicate the Results
Write a conclusion that summarizes the important parts of your experiment and the results.