



Name:.....

Mark:

Class:.....

CHEMISTRY

Scientific method

GRADE 9 General

**Identify** the common steps of scientific methods.

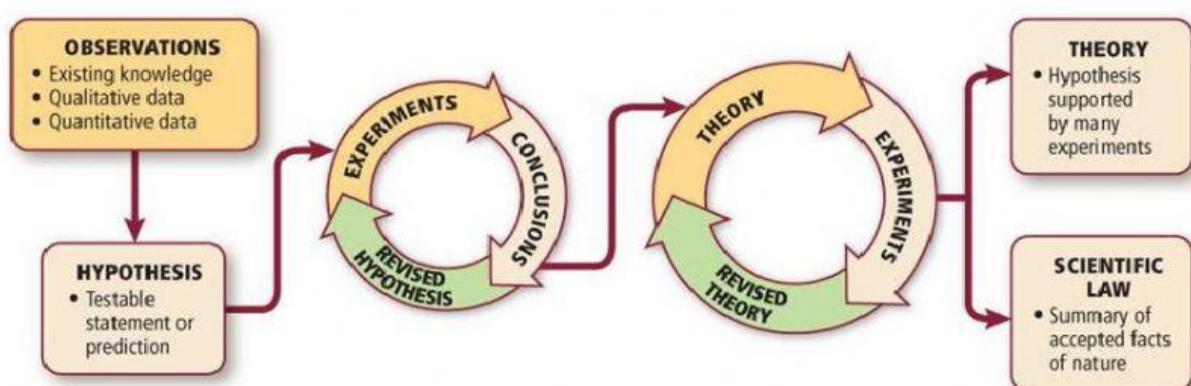
### New Vocabulary

scientific method

Scientific law

Conclusion

**Definition:** The **scientific method** is a systematic approach to problem solving



**Task** Analyze the above diagram and arrange the following steps of scientific methods in correct order

- Ask a question or identify a problem(eg. Jelly is solid or liquid)
- Experiment and observe (eg. Squeeze the jelly and observe the shape change/ Add the jelly into water and observe the change )
- Form a hypothesis (eg. Jelly is solid because it has a fixed shape or Jelly liquid because it is soft and can change shape)
- Background research (eg. Observe the appearance and do research on their properties)



**Choose the correct answer from the followings.**

1. A series of steps used by scientists to solve a problem or answer a question.

*scientific method      recipe      data collection      metric system*

2. This step of the scientific method is an educated guess or a prediction.

*Hypothesis      Research      Observation      Conclusion*

3. The summary at the end of an experiment that explains the results.

*Conclusion      procedures      materials      responding variable*

4. Why is it important for people to understand scientific principles and to think scientifically?

*It allows people to make informed decisions.  
It helps people estimate costs of products  
It helps people choose where to live  
It allows people to explain sports like an expert*

**Compare and contrast** types of data.

**New Vocabulary**

**qualitative data**

**quantitative data**

**Qualitative data** is obtained through observations that describe color, smell, shape, or some other physical characteristic that is related to the five senses.

**Quantitative data** is obtained from numerical observations that describe how much, how little, how big or how fast.



**Task**

**Group the following as Qualitative or Quantitative data**

A leaf is green.     The car weighs 1.2 tons     The flower has seven petals     A leaf is dark green.     A leaf is bumpy.     A leaf has veins. The leaf has 34 veins.

A leaf has o lot of veins.     A chair is hard.     The dog blinked 37 times in one minute.

A flower smells good.     The chicken took 34 seconds to cross the road.

A flower is stinky

<u>Qualitative data</u>	<u>Quantitative data</u>