34.1 Science Observation and Measure

Biology

Summarize main points from each video.

Video Title / topic _____

Video Title / topic _____

Video Title / topic _____

Topic Introduction

Summarize your understanding of each paragraph.

Observation is the active acquisition of information from a primary source. In living beings, observation employs the senses. In science, observation can also involve the recording of data via the use of instruments.

The term may also refer to any data collected during the scientific activity. Observations can be qualitative, that is, only the absence or presence of a property is noted, or quantitative if a numerical value is attached to the observed phenomenon by counting or measuring.

The scientific method is a body of techniques for investigating phenomena, acquiring new knowledge, or correcting and integrating previous knowledge. To be termed scientific, a method of inquiry is commonly based on empirical or measurable evidence.

The process of the scientific method involves making conjectures (hypotheses), deriving predictions from them as logical consequences, and then carrying out experiments or empirical observations based on those predictions.

Read/Summarize Text

1. **Read the passage.**
2. **Underline key expressions in each sentence.**
3. **Re-write each word (or expression) you underlined.**
4. **Summarize the passage.**

Scientific Method

1

The scientific method requires observations of nature to formulate and test hypotheses. It consists of these steps:

2

1. Asking a question about a natural phenomenon
2. Making observations of the phenomenon
3. Hypothesizing an explanation for the phenomenon
4. Predicting logical, observable consequences of the hypothesis that have not yet been investigated
5. Testing the hypothesis' predictions by an experiment, observational study, field study, or simulation
6. Forming a conclusion from data gathered in the experiment, or making a revised/new hypothesis and repeating the process
7. Writing out a description of the method of observation and the results or conclusions reached
8. Review of the results by peers with experience researching the same phenomenon

Re-write words you underlined

3

_____ _____ _____

_____ _____ _____

Using a complete sentence, summarize or rephrase the passage

4

https://en.wikipedia.org/wiki/Observation

Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

SI base unit

The International System of Units (SI) defines seven units of measure as a basic set from which all other SI units can be derived. The SI base units and their physical quantities are the metre for measurement of length, the kilogram for mass, the second for time, the ampere for electric current, the kelvin for temperature, the candela for luminous intensity, and the mole for amount of substance.

The SI base units form a set of mutually independent dimensions as required by dimensional analysis commonly employed in science and technology.

The names and symbols of SI base units are written in lowercase, except the symbols of those named after a person, which are written with an initial capital letter. For example, the metre (US English: meter) has the symbol m, but the kelvin has symbol K, because it is named after Lord Kelvin and the ampere with symbol A is named after André-Marie Ampère.

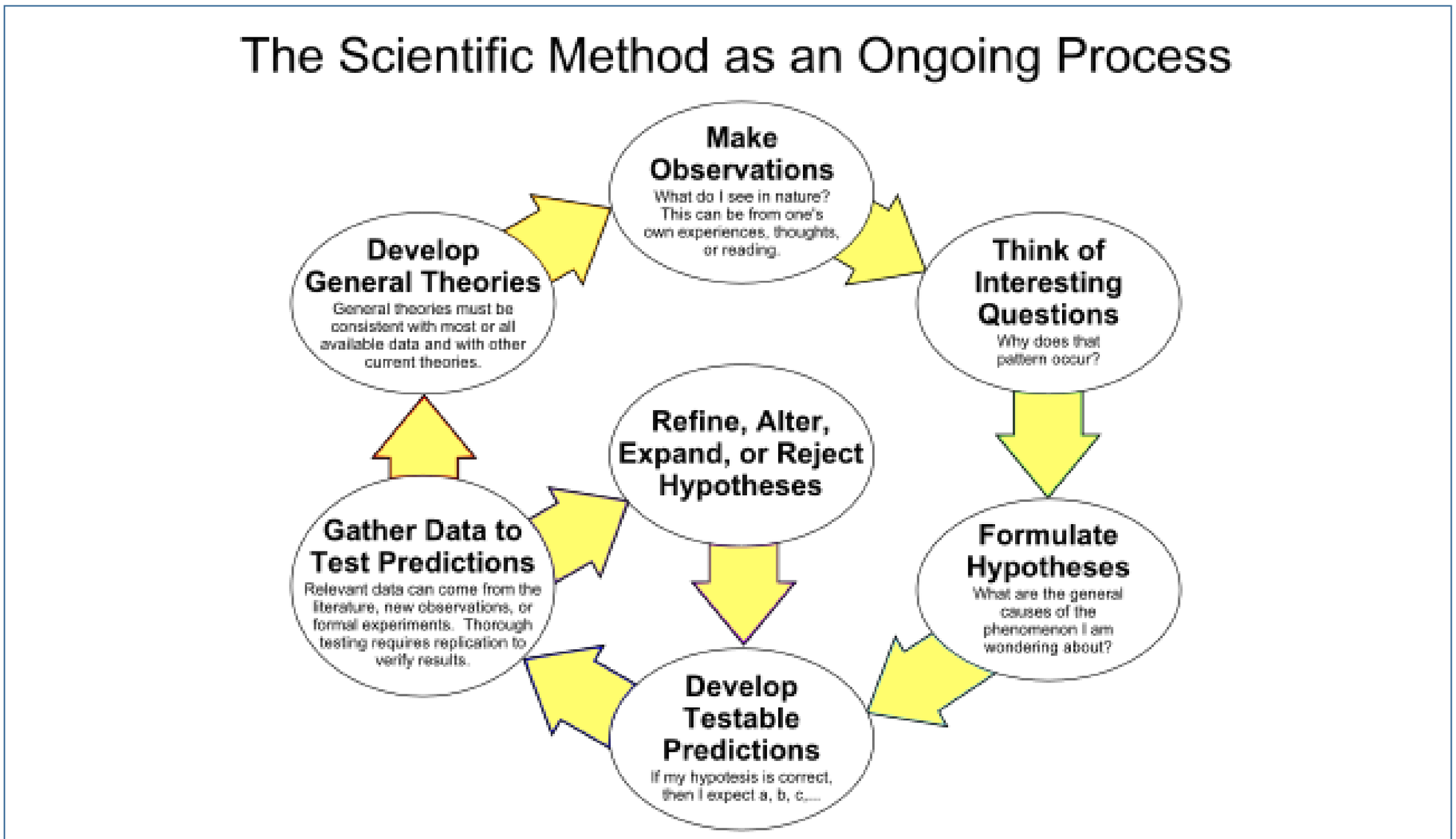
Several other units, such as the litre (US English: liter), are formally not part of the SI, but are accepted for use with SI.

metre	m	length
kilogram	kg	mass
second	s	time
ampere	A	electric current
kelvin	K	thermodynamic temperature
mole	mol	amount of substance
candela	cd	luminous intensity

https://en.wikipedia.org/wiki/SI_base_unit

Draw Illustration

Copy and Label the Illustration in the Space Provided



https://en.wikipedia.org/wiki/Scientific_method

Draw (Copy) the Illustration Here

Interpret a Graph

Write the title of the graph _____

Circle the type of chart this represents

Bar Chart *Line Chart* *Pie Chart* *Other*

If applicable,

What does the X-axis represent _____

What does the Y-axis imply _____

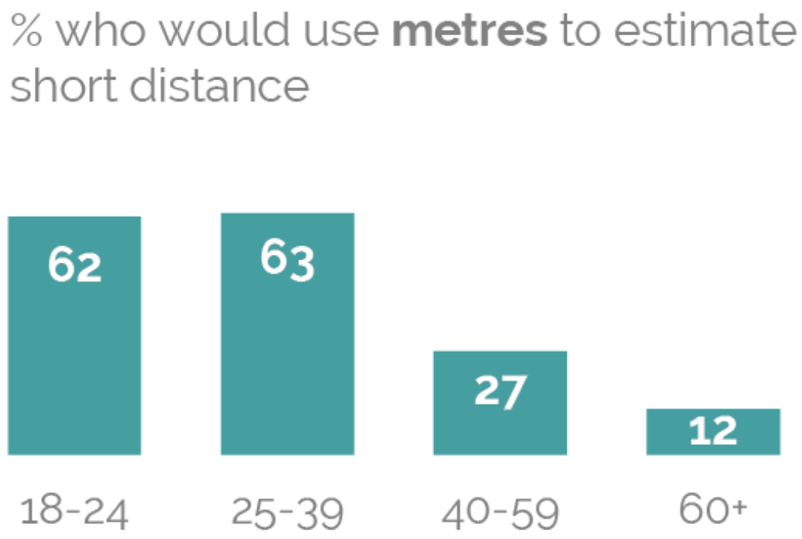
Summarize what this graph represents or conveys

_____

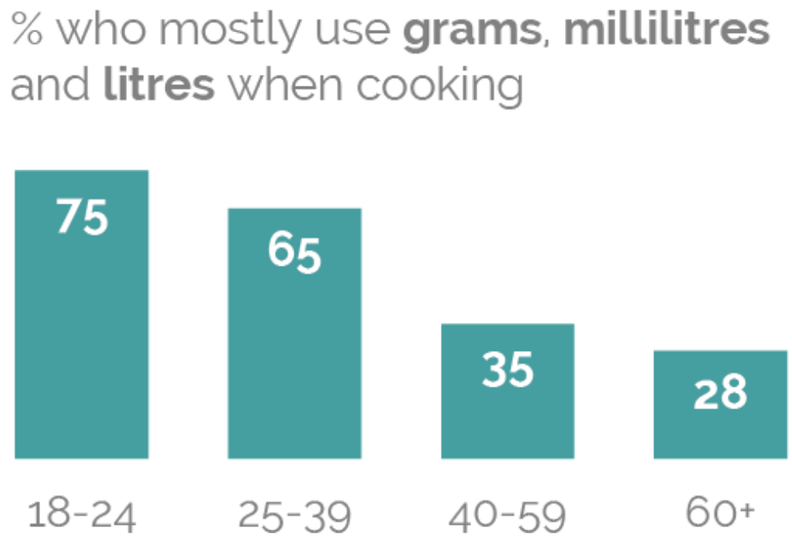
https://yougov.co.uk/news/2015/06/20/britains-metric-muddle/

Metrication that's catching on

% who would use **metres** to estimate a short distance



% who mostly use **grams**, **millilitres** and **litres** when cooking



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Show-Off Your Smarts!

Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

Q1. How can this information be applied to a young-person's life?

Q2. How does this information apply to (or impact) communities?

Q3. When do scientists need to apply this information? How?

Q4. How would a person from 100 years ago view this information?

Q5. How does this topic connect to other science topics or math?

Write down at least three words introduced or covered by this topic.

1.
2.
3.
4.
5.
6.

Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.