

Essential Question

**How do we read and describe
what a graph shows?**

Parts of a Graph

- Each axis shows one variable
- Axis label: variable and unit
- Scales go up in even steps

Which Variable Goes Where?

- x-axis: what you change (independent)
- y-axis: what you measure (dependent)
- Memory trick: DRY MIX

The **independent variable** is the one you change on purpose, and it goes on the x-axis.

Reading a Value off a Graph

- Find your x value on the x-axis
- Go straight up to the line
- Go straight across to read y

Read the number there
and attach the unit from
the axis label.

Reading Between Gridlines

- Find the value of one square
- Start at the gridline below
- Count squares and add

When a point falls between labeled gridlines, first find the value of one small square: divide the difference between two labels by the number of squares between them.

Describing the Trend

- Read the graph from left to right
- Name what happens to y as x increases

A good trend sentence names both variables, such as “As time increases, the temperature of the water increases.”

Example: Heating Water

Try it first!

A beaker of water is heated on a hot plate. Use the graph to find the temperature of the water at 4 min.

Diagram: A graph of temperature in degrees Celsius versus time in minutes. A red straight line starts at 20 degrees at 0 minutes and rises to 95 degrees at 5 minutes. Gridlines are every 1 minute and every 20 degrees.

Example: Burning Candle

Try it first!

A candle burns down over 8 hours. Use the graph to find the height of the candle at 3 h.

Diagram: A graph of candle height in centimeters versus time in hours. A blue straight line starts at 20 centimeters at 0 hours and falls to 0 centimeters at 8 hours. Gridlines are every 1 hour and every 5 centimeters.

Example: Making Hydrogen Gas

Try it first!

Zinc reacts with acid to make hydrogen gas. Describe the trend in the graph, and find the volume of gas where it levels off.

Diagram: A graph of volume of gas in milliliters versus time in seconds, from 0 to 180 seconds. A green curve rises steeply at first and then flattens out near the top of the graph.

Big Ideas

- Label axes: variable (unit)
- Independent on x, dependent on y
- Find one square's value first
- Trend: increasing, decreasing, leveling off