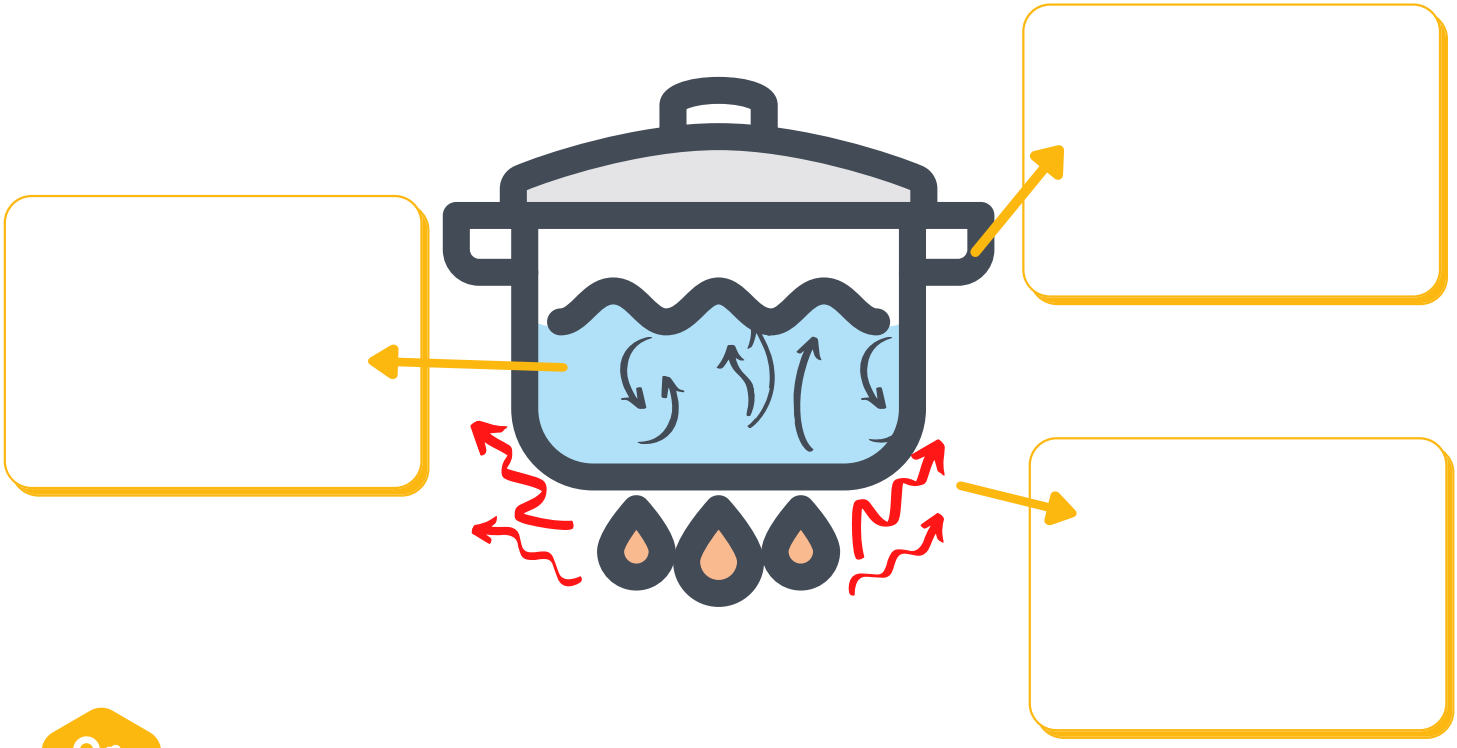
| Name: | |
|---|---|
| Grade: | Section: |

## WHAT'S COOKING?

Below is an illustration of a pot being heated over an open fire.
Label the heat flow stages and describe what's going on in each stage.



## FUN FACT!

There is convection happening within the Earth's mantle! The molten rock is in a semi-liquid state and rises up from the mantle after becoming hotter and less dense. As the rock loses heat into the Earth's crust, it becomes relatively cooler and denser, sinking back down to the core.

These convection processes are thought to contribute to volcanic eruptions, earthquakes and tectonic plate movement.

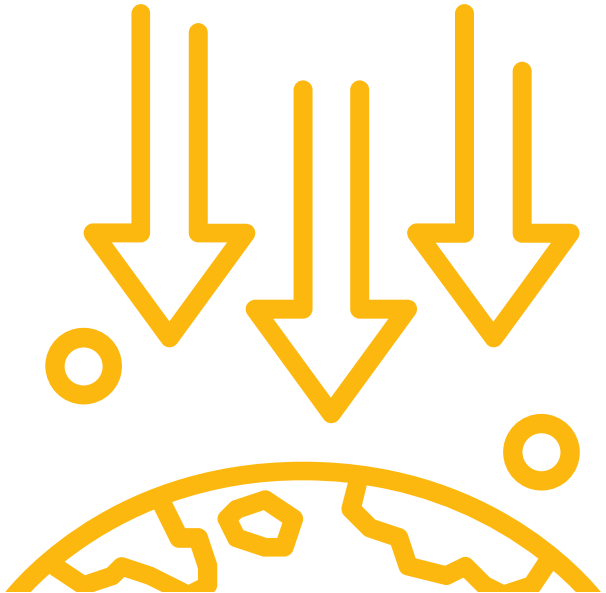
# FREEFALL IN MICROGRAVITY

Materials:

- Water Bottle (remove the cap)
- Water
- Bucket
- Scissors
- Step-stool

Instructions:

1. Use the scissors to poke one small hole on the side of the water bottle, closer to the bottom.
2. Cover the hole and fill the bottle three-quarters full with water. Hold the bottle over a sink and remove your finger. Observe.
3. Go outside or into an area that can get wet. Place the step stool beside a bucket.
4. Fill up the water bottle again. Step up onto the step stool and hold out the water bottle over the bucket.
5. Take your finger off the hole and let the water bottle drop into the bucket.



## BRAIN EXERCISE

Describe what happened to the water when the bottle was stationary and the hole is not covered.

Describe what happened to the water as the bottle fell into the bucket.

Explain why these two situations (bottle stationary vs bottle falling) had different outcomes.

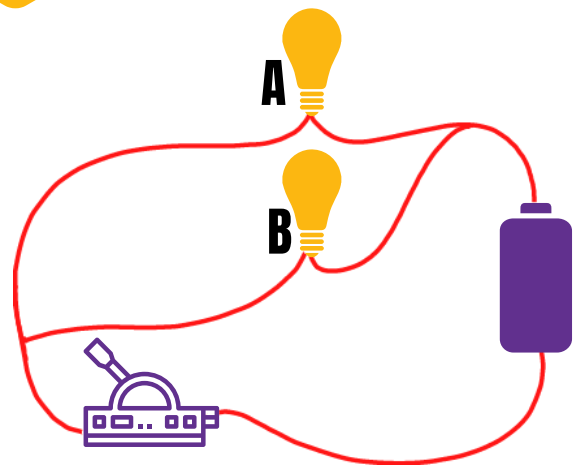
# TO BE OR NOT TO BE

Create a rhyming poem about any of Newton's 3 Laws of Motion. (The better if all three are mentioned!) Feel free to use the word bank as a guide.

**WORD BANK**

| | | |
|---|---|---|
| INERTIA | NET | ACCELERATION |
| MASS | EQUAL | INTERACTION |
| REACTION | FORCE | UNBALANCED |
| REST | ACTION | MOTION |

# LIGHTEN UP




Convert the illustration above to a schematic diagram, then label every component of the circuit.

What is the relationship between the current flowing out of the battery with the current flowing through bulb A and B?

What is the relationship between the voltage of the battery and the voltage across each bulb?