Science 7 Heat and Temperature Unit

Big Idea: What is heat and how does it affect us?

Outcome:

HT7.2 Explain how understanding differences between states of matter and the effect of heat on changes in state provide evidence for the particle theory.

Understandings:

Temperature affects the particles of a substance which then affects its state.

The state of a matter determines what form something can exist in around us.

Theories can be supported or refuted, based on evidence accumulated.

Temperature can be measured in many ways.

Essential questions:

1. How does temperature affect the state of a substance?

2. Why is it important to understand what state a substance is at a certain temperature? How does that affect your daily life?

3. How can a theory be supported?

4. How can we measure temperature? How has this method changed over the years?

Students need to know:

-states of matter

-how to make a graph

-particle model

-how to conduct an experiment

-instruments that measure temperature

-heat

-temperature

-kinetic energy

And be able to:

-provide examples from daily life that illustrate the effects of heating and cooling on a solid, liquid and gas

-conduct experiments to determine the effects of changes in termperature on solids, liquids and gases

-construct and label a heating curve

-create a visual/drama to explain changes of state

-choose appropriate instruments to collect data

-trace historical developments...discuss standardization

-distinguish between heat and temperature using the particle model

-explain the supportive/refuting parts of the particle theory