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