Science 7 Heat and Temperature Unit

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

Outcome:

HT7.3 Investigate principles and applications of heat transfer via the processes of conduction, convection, and radiation.

Understandings:

Heat is transferred by conduction (s), convection (l) and radiation.

We are affected by conduction, convection and radiation.

Technology can enhance or restrict the transfer of heat energy.

Safety is important in the science lab. Labs must be conducted safely and efficiently using appropriate tools.

Essential questions:

1. How is heat transmitted?

2. How do the processes of convection, conduction and radiation affect us (self, society and environment)?

3. How can technology enhance or restrict the transfer of heat energy?

4. Why are safety precautions important in the lab?

Students need to know:

-conduction, convection and radiation

-environmental/societal impacts of convection, conduction and radiation

-technologies involving convection, conduction and radiation

-how to conduct an experiment

-how to display data

-lab safety

And be able to:

-demonstrate and explain heat transfer

-construct a visual of conduction in a solid

-model convection in a liquid

-assess impacts on society

-evaluate technologies that involve conduction, convection and radiation

-design and carry out experiments (radiant heat)

-select methods and tools for collecting and displaying data

-demonstrate safe work practices