Science 7 Heat and Temperature Unit

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

Outcome:

HT7.1 Assess the impact of past and current heating and cooling technologies related to

food, clothing, and shelter on self, society, and the environment.

Assess 🡪 impact on self, society and environment (of heating and cooling technologies

related to food, clothing and shelter)

Understandings:

* Heating and cooling of substances has forced us to develop new technologies, and has also created a need for certain jobs.
* The heat capacity of a substance influences its use.
* There are some heating and cooling problems that cannot be solved using scientific and technological knowledge.
* There are certain problem-solving processes that can help in designing, constructing and evaluating devices which solve heating and cooling challenges.\
* Human need influences technological development.
* Scientific principles and knowledge is part of product development.

Essential questions:

How does the heating or cooling of a substance affect the development of a new

technology?

How does the heat capacity of a substance influence its use?

What kinds of problems exist that cannot be solved by scientific and technological

knowledge and why not?

What processes can we use to design, construct, and evaluate scientific and

technological devices?

.How do we decide what products we develop? How are these decisions linked to other

factors (like location, climate, etc.)?

How are science, commerce and technology linked?

Students need to know:

-ways to communicate (visual, oral, written)

-heat capacity definition and capacities of certain materials

-home insulation types

-technological problem solving process

-photo journal/technology skills

-research skills (including ways to communicate questions, ideas, intentions, plans and

results of inquiries)

-how to develop evaluation criteria

-careers related to the science of heating and cooling

-problems related to cooling and heating

And be able to:

-illustrate historical development (technologies)

-communicate inquiries of heat transmissions

-analyze design/function of technologies

-compare heat capacities of materials

-evaluate insulation

-use technological problem solving to design...

-assess prototypes

-provide examples of problems (heating/cooling) in a home'

-create a career photo journal