8th Grade
December Overview

Content Standards

Legalese	What that means to us
S.8.PS.3 Students will develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	- Make and use a model to show how temperature changes the movement of particles (at the molecular level) - Collect data on how temperature changes with the application of heat - Describe the states of matter
S.8.PS.6 Students will undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.*****	- Build something that will give off heat due to a chemical reaction - Describe the chemical reaction, including the elements involved and how their bonds change during the reaction
*** Engineering Standard of your choice along with PS #6.**	ETS.1. Invention ETS.2. Design ETS.3. Multiple tested designs ETS.4. The test

Informational Question

Materials that insulate or conduct heat are essential to a variety of technologies: heat shields on space shuttles, heat sinks on computers and cell phones, heat sinks for engines, to name a few. Choose a topic that relates to insulators or conductors of heat in the real world, research it, and create a product (essay, powerpoint, poster, presentation, etc).

Argumentative Question

Is it more important to keep things that need to stay cold cold, or to keep things that need to stay hot hot?

Literacy Standards

Legalese	What that means to us
S.6-8.L.10 Students will by the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.	Write a short reflection covering the following topics: - How you feel about reading, generally - How you approach reading in science class - Do you feel the AoWs are improving your reading skills? Why or why not?
S.6-8.L.13 Students will produce clear writing appropriate (development, organization, style) to the task, purpose, audience.	Completing on a ***daily*** basis: - Openers - Daily reflection Completing on a ***weekly*** basis: - Articles of the Week (AoWs) Completing on a ***monthly*** basis: - Informational AND Argumentative writing

Monday	Tuesday	Wednesday	Thursday	Friday
Nov. 27 *BB Lab*	Nov. 28	Nov. 29	Nov. 30 *Birthday Candle Lab*	Dec. 1
4	5 *Molecular Models*	6 *Dish Soap Lab*	7 RHNB Day	8
11 *Hot Ice Lab*	12 *Comp. Lab*	13 *Two Handwarmers Lab*	14	15
18 *Test Your Handwarmer*	19	20 Handwarmer Presentations	21	22 *Early Release & End of Unit*

Week 13
Introduce Standards & Translate
Lab: BB states of matter simulation
Suggested Deadline: AoW 13

Week 14
Lab: Hot Ice
Suggested Deadline: AoW 14, PS #3

Week 15
Lab:
Suggested Deadline: AoW 15, Info & Arg Writing

Week 16
Lab:
Final Deadline: AoW 16, PS #6 & ***all work*** *not yet turned in.*

Resources for Thermal Energy

Readings & Websites	**Safe Labs**
Owl Book, Chapter 5, “Thermal Energy,” p. 162-195 *Leopard Book*, Chapter 12, “Using Energy and Heat,” p. 424-461 *Everything You Need to Ace Science in One Big Fat Notebook*, Chapter 14, “Thermal Energy,” p. 137-142 *Motion, Forces, and Energy*, (skinny blue/green textbook), Chapter 6, “Thermal Energy and Heat,” p. 166-193	
Foldables, Worksheets	**Videos**