Science Planning

**Unit 2: Energy Affects Matter (7-9 weeks)**

**Week 3 Big Idea: Adding or removing thermal energy changes the arrangement and motion of molecules within a substance and causes the substance to change.**

Week 3 –11/18 -11/22

11/19 - YWBAT: apply scale, proportion and quantity to the substances in the air

Success is: identify the differences between healthy and polluted air and how polluted air affects our bodies

Phenomena: in the winter, Salt Lake City frequently experiences inversions, during which air quality deteriorates.

* Display picture of the inversion in
* Students draw a model of what they see
* In groups, they discuss what they see
* As a class, brainstorm questions; share
	+ Why are there layers?
* Shake polydensity bottle to separate the beads.
	+ Guiding ?s: How are the beads different from one another? Are the layers of beads not unlike the layers of the inversion? Could air particles be different from one another? If you weighed the beads which would weigh more? If I drew the molecular structure of the beads, what would it look like?
* Students write an explanation for what is happening during an inversion.
	+ explanations should demonstrate understanding that denser air is made up of more tightly packed molecules than less dense air

11/20 - YWBAT: apply scale, proportion and quantity to the substances in the air

Success is: identify the differences between healthy and polluted air and how polluted air affects our bodies

Phenomena: in the winter, Salt Lake City frequently experiences inversions, during which air quality deteriorates.

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11/22 - YWBAT understand the different states of matter and how does the structure of the molecules make them behave the way they do.

Success is: developing a model and an explanation that shows how and why molecules are organized in the different states of matter.

Phenomena: Different substances behave differently.

* Warm up: observe different substances and students classify them as a solid, liquid, or gas (in journals make a chart)
* Students draw what they think is happening in each state of matter at a molecular level in their journals
	+ Discuss
* Watch Brainpop <https://www.brainpop.com/science/matterandchemistry/statesofmatter/>
	+ Define ‘density’
* Adjust models
* Paragraph: Draw a model of how molecules are arranged in the three states of matter. Under each model, explain why the molecules are organized the way they are.
* Extension: Show Ted Ed Plasma video: <https://www.youtube.com/watch?v=tJplytSR-ww>