



## Unit 1 Structure and Properties of Matter

### Grade 7 Science

#### Unit Length and Description:

4 instructional weeks

Students will focus on the properties of substances and the criteria used to determine if a reaction has occurred. They will also develop models that predict or describe changes in particle motion, temperature, and state of matter when thermal energy is changed. Students will also plan investigations to determine relationships among energy transfer and/or changes in kinetic energy.

#### Science Standards:

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| <b>7-MS-PS1-2</b> | Analyze and interpret data on properties of substances before and after substances interact to determine if a chemical reaction has occurred.  |
| <b>7-MS-PS1-4</b> | Develop and use a model that predicts and describes changes in particle motion, temperature, and the state of a pure substance when thermal energy is added or removed.  |
| <b>7-MS-PS3-4</b> | Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. |

#### Enduring Understandings- Unit Anchor Phenomenon:

Brinicles encase aquatic organisms with a tube of ice.

#### Essential Questions- Reflective Summaries:

- Develop a model that describes changes in particle motion, temperature, and the state of pure substances when brinicles form and thermal energy is added and removed.
- Develop a model that describes the relationship among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of particles in an ecosystem that has a brinicle.