**Formative Assessment Task 1**

**6th grade Properties of Matter – after first day in new unit**

Context: 6th grade introductory lesson on Properties of Matter. First lesson in the multi-week unit. This intro lesson will target the concept that matter is made up of microscopically small particles, and that this concept can be used to explain states of matter and other phenomena.

**06-PS1-4**. **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**. [*Clarification Statement: Emphasis is on qualitative molecular-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawings and diagrams. Examples of particles could include molecules or inert atoms. Examples of pure substances could include water, carbon dioxide, and helium.*]

Reviews from 5th grade 5-PS1-1

|  |  |
| --- | --- |
| **5-PS1-1.** | **Develop a model to describe that matter is made of particles too small to be seen.** [Clarification Statement: Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water.] [*Assessment Boundary: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.*] |

Lesson Summary:

* Introduce scientific modeling (a way of understanding how something works)
* People-as-particles model a solid (students think, plan, then do. Arms linked). Different shapes that do/don’t fit a particular corner of the room
* People-as-particles model a liquid (students think, plan, then do. Slide past each other but don’t move away). “Pour” liquid into a corner of room
* People-as-particles model a gas (students think, plan, then do. Move independently and fill room).
* Use particle model to explore dissolving (9 students are a cube of salt with elbows linked, others are water particles that pull apart the salt particles one-by-one)
* Use particle model to think about different scenarios (e.g. large vs. small piece of salt, stirring the water)
* Discussion of modeling- strengths and weaknesses

Assessment Prompt (2 days later):

***Create a trifold (one section each for solid, liquid, gas) with two parts: (a) create your own model for each type of matter; (b) write a description of your models.***