

Science Learning Progression

Grades 6-8

Prerequisite knowledge:

Most *matter* can exist as *solids*, *liquids*, or *gases*. 4-5 PS2

Recognize that all *matter* is made up of *particles*.

I can draw conclusions about the physical structure of all matter.

Commit and toss:

Does air have particles?

- A. No, because you can't feel or see it.
- B. No, because it is empty space & does not have matter.
- C. Yes, because air is made of atoms.
- D. Yes, air is the empty space between particles.

Cite evidence that *particles* are constantly moving.

I can explain that particles of matter are constantly moving by citing evidence.

Place a sugar cube in a cup of warm colored water.

Exit Slip: Draw a diagram of what's happening in the cup, and explain your diagram.

Describe how *solids*, *liquids*, & *gases* behave differently when put in a container.

I can relate the movement of particles in the *three states of matter* to the *properties* of each state.

Formative Assessment:

- Have three balloons: one containing ice, one containing water, one containing air. Hold them all in an empty aquarium where everyone can see them.
- In their journals, students predict what will happen when each balloon is released.
- Release each balloon one by one.
- In their journals, students relate the movement of particles in each balloon to the properties of the three states

Solids, *liquids*, and *gases* differ in the *motion* of individual *particles*. In *solids*, *particles* are packed in a nearly rigid structure; in *liquids*, *particles* move around one another; and in *gases*, *particles* move almost independently.

6-8 PS2F

Later big ideas that build on this big idea include:

Phases (states) of matter (solid, liquid, & gas) describe the energy of particles. The more energy the more the particles move.
6-8PS2E