

## 5<sup>th</sup> Grade - Lesson 1.1

### Matter is Made of Tiny Particles

#### NGSS Alignment

#### Performance Expectations

5-PS1-1: Develop a model to describe that matter is made of particles too small to be seen.

#### Disciplinary Core Ideas

##### PS1.A: Structure and Properties of Matter

- A model that shows gases are made from matter particles that are too small to see and that are moving freely around in space can explain many observations. (5-PS1-1)

*By squeezing an open and closed “empty” bottle, students gather evidence that there must be something in the bottle. By squeezing a bottle with a balloon on it, students see that the gas molecules escape from the bottle and inflate the balloon. These phenomena, observations, and explanations help students to develop an understanding that matter is made from particles that are too small to be seen.*

#### Science and Engineering Practices

##### Developing and Using Models

- Develop a model to describe phenomena. (5-PS1-1)

*After squeezing the bottles and making observations of the behavior of a gas, students see a molecular model animation of the molecules of a gas. Students use and further develop this molecular model to explain their observations.*

*Students also develop and use molecular models of a solid and liquid to describe observations of other phenomena in the lesson.*

#### Crosscutting Concepts

##### Scale, Proportion, and Quantity

- Natural objects exist from the very small to the immensely large. (5-PS1-1)

*Students use molecular-level models to explain how these sub-microscopic particles affect how a gas, liquid, and solid behave on the macroscopic level.*