THE STANDARD

Particles of Matter

Develop a model to describe that matter is made of particles too small to be seen.

DCI
DISCIPLINARY CORE IDEA

PS1.A · Structure and Properties of Matter

> *"Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects."*

Everything is made of tiny pieces too small to see. 5th graders won't see the particles, so they have to picture them. They draw little dots to stand in for those pieces, then use the dots to explain something real, like why a basketball gets firm when you pump in air. The drawing IS the science here. **It lets them describe what their eyes can't catch.**

SEP
SCIENCE & ENGINEERING PRACTICE

Developing and Using Models

> *"Use models to describe phenomena."*

A model is a stand-in for something you can't see directly. 5th graders make a drawing of tiny particles, then point to it to describe what happened in a real test. The skill is using that picture to explain, not just to decorate. **When the syringe gets hard to push, their dots show why: the air pieces got squeezed closer.**

CCC
CROSSCUTTING CONCEPT

Scale, Proportion, and Quantity

> *"Natural objects exist from the very small to the immensely large."*

Some things are huge, like a planet, and some are so tiny you'll never see them, like the particles in air. This is the idea 5th graders carry out the door: just because something is too small to see doesn't mean it isn't there. **The air in a balloon is real matter, made of pieces far too small for your eyes.**