

Map of the Unit: the Particle Model of Matter

(📍 denotes a student investigation)

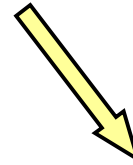
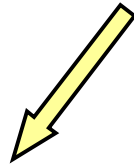
📍 Can You Name It?

📍 How Small?



PARTICLE MODEL of MATTER

Everything in the world
is made of tiny particles



These particles have
STICKINESS

📍 Swab the Deck
& Swab Balance

📍 Drops Away

📍 Drops on a Candle

These particles are
SPACED or
ARRANGED
in certain ways

📍 Nosey Balloons

📍 Mixing Liquids

📍 Rice and Marbles

📍 How Squishable

These particles have
MOTION

📍 Mesmerizing Colors

📍 Disappearing Crystals

📍 Hot Metal

📍 From Ice to Steam

PARTICLE MODEL of MATTER

All things in the world around us are made of extremely tiny particles.

Solids, liquids, and gases are all made of particles.

Some properties of these particles:

STICKINESS:

All particles show some amount of “stickiness” – they cling to each other and to other things.

The amount of stickiness varies. Some particles stick to each other very strongly; others stick less strongly. But all of them are sticky.

SPACING:

The particles in a substance can have tiny pockets of empty space between them.

In a gas, there is a lot of empty space between the particles (they are spread out).

The particles in a liquid are as close together as they are in a solid.

The particles in a solid are locked in place; the particles in a liquid are essentially touching but are free to move around each other.

MOTION:

All particles show some amount of motion.

Temperature is an indicator of the amount of motion. The higher the temperature, the faster they are moving.

When the a solid or liquid gains heat energy (and so its temperature increases), the particles move (wiggle) more and push each other a little bit apart, causing the solid or liquid to expand slightly.