

Topic: Three States of Matter: Grades 1-3

All matter in the world can be categorized as a solid, liquid or gas.

Solid- definite shape and volume (amount of space matter takes up)

Liquid- no definite shape (take shape of container), but definite volume

Gas- no definite shape or volume (spread out to fill whatever space they are in)

Show examples of three states of matter- use three clear bowls to put ice, water and 'air' into them so the children can view examples of the three states of matter and you can discuss the differences and the properties of each.

Simple Demonstrations:

Liquids:

- Supplies: three different shaped clear containers and pitcher to hold water
- Pour the same amount of water into each container without the children observing.
- Ask the children which container has largest amount of water? (Children may think the one filled to the top has more)
- Pour water from each container into pitcher and mark the water level on the pitcher. (All have the same amount of water)

A liquid conforms to the shape of its container and retains the same volume.

Gas:

- Supplies: two Ziploc bags
- Breathe into one and inflate it. The gas in your breath that you can't see fills the bag and takes the shape of the bag.
- Release the air and the gas is released into the room. The same amount of gas that fills a small space (the baggie) can spread out in a large space (the room).

Solids:

- Supplies: a variety of solid objects
- Place a solid into a clear container? Does it take the shape of the container? No, it has its own shape.
- Place the same object in a half glass of water.

The water line rises because of the volume of the solid. Solids have a definite volume and liquids have a definite volume, so the entire volume is increased.

