

Build the Three States

KIDS HANDS-ON

RUN AT 11:50

15 MIN

The point

Solid, liquid, and gas are the **same spheres in different arrangements**. The balls never change — only the spacing and the grip.

Materials

- Chunky ball-and-stick or magnetic-sphere particle model set (pooled, one shared build)

Steps

- 1 **SOLID:** snap spheres into a tight, rigid grid.
- 2 Try to **push one sphere past another** without breaking it out — you can't. That's why solids hold their shape.
- 3 **LIQUID:** unsnap into a loose clump, touching but free. **Slide spheres slowly past each other** — the clump flows into a ring of hands, its "container."
- 4 **GAS:** scatter the spheres across the whole table, far apart, none touching.
- 5 The punchline, pointing at the spheres: **show me where a ball got bigger... it never did.**
- 6 Rebuild all three fast, calling back to the acting game: hug → handshakes → fly free.

Say: "Show me where the balls got bigger when we made the gas... right — they never do. Particles never change size or shape. Only the grip changes."

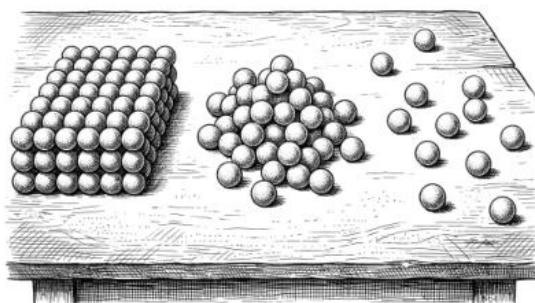


Fig. 6 — one set of spheres, three arrangements: solid, liquid, gas

TEACHER PREP

Pool the whole set for one shared build and rotate builders — too few spheres makes a sad "solid."

SAFETY

Magnetic spheres **pinch** (keep hands at table level) and are a **swallow hazard** — keep the set away from any under-3 visitor entirely.

What to watch for

- The "can't push past" moment in the solid grid
- The liquid clump genuinely flowing to fit its container
- A child narrating the acting game onto the table unprompted

EXPECTED RESULT

All three states built from identical spheres — **arrangement and grip are the only differences**, and the spheres never change size or shape.