

# The Wrong Tool for the Job

TEACHER DEMO

RUN AT 12:40 • CENTREPIECE

30 MIN

## The point

Same nail, same board, four hammers — the job succeeds or fails **purely on the material**. Failure names the missing property better than any success.

## Materials

- Real steel hammer • toy plastic hammer • foam hammer
- **Sugar-glass hammer** (cast 1–2 days ago; recipe in the Teacher Guide)
- Soft pine board with 4–5 nails pre-started
- Hour-old paper cup of water (sagging) • chocolate spoon + warm cocoa
- Safety glasses for all • big towel/tray • dustpan

## Steps

- 1 Set the contest; kids **predict each hammer's fate**: works / bounces / nothing / breaks.
- 2 **Steel hammer**: nail in three swings. Why? Hard, strong, heavy.
- 3 **Plastic toy hammer**: bounces off. Which property is missing?
- 4 **Foam hammer**: nothing at all. **Shape is not enough!**
- 5 **Sugar-glass hammer**: glasses ON, swing over the towel — it **shatters into shards on first contact**. Look at the pieces: sharp shards, not crumbs. That is **brittle**.
- 6 Bring the **sagging paper cup**: which property was missing?
- 7 Stir the **chocolate spoon** into warm cocoa until it slumps and melts away.
- 8 Close: right **SHAPE** every time, wrong **MATERIAL** every time — then re-ask the 9:30 **shovel riddle**.

*Say: "Nobody would ever really make a glass hammer — and now you know WHY nobody would. When grown-ups build things, they are choosing materials on purpose, every single time."*

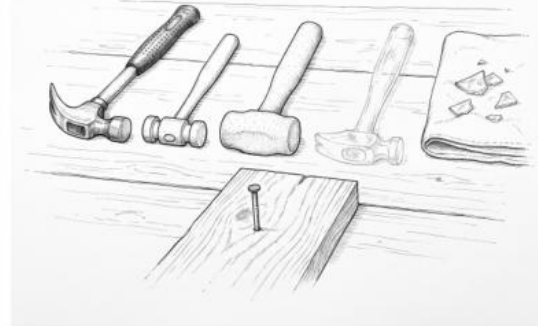


Fig. 1 — four hammers, one job

## TEACHER PREP — DAYS BEFORE

**1–2 days ahead (adult only)**: cast the sugar-glass hammer (recipe in the Teacher Guide); store sealed — it goes sticky in open air. **Day before**: start the nails. **~8:30 today**: stage the paper cup of water (+ an understudy at 11:30). If the casting soft-bends, chill 20 min to turn it brittle again.

## SAFETY

**Safety glasses on EVERY child and adult** before the sugar-glass swing. Shatter over the **towel-lined tray**; wrap leftover pieces in the towel to bin them. All swings **adult-only**. Full shard sweep before anyone leaves — shards are candy-sharp AND candy: floor shards go in the bin, **never in mouths**; each child gets one clean reserved piece at the end.

## What to watch for

- Predictions locked in before each swing
- Shards, not crumbs — point at them: brittle, like the acrylic strip
- Kids answering the shovel riddle themselves

## EXPECTED RESULT

Steel works; plastic bounces (too light/soft); foam does nothing; sugar-glass shatters (brittle); paper sags (soaks and weakens); chocolate melts (can't hold shape warm). **The material must match the job.**