



THE BIG IDEA

People make **countless things** — but almost all of them from only a **few materials**: wood, metal, plastic, glass, stone, rubber, leather, and fibers.

A spoon is an **object**; wood is its **material** — what it is made of. The same object can be made of many different materials: a cup can be glass, metal, wood, paper, or rubber, and each one behaves its own way.

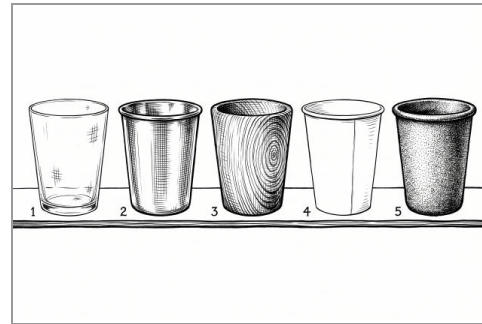


Fig. 1 — one object, five materials: the same cup in 1 glass · 2 metal · 3 wood · 4 paper · 5 rubber.

HOW DO YOU TELL MATERIALS APART?

- **Touch it** — metal feels cold; wood feels warm.
- **Heft it** — metal is heavy; wood and plastic are light.
- **Tap it** — metal rings, wood knocks, plastic clicks, glass tings.
- **Test it** — does it bend and spring back, or snap? Does a magnet grab it? Can you see through it?

Every material has its own ways — its **properties**. Builders pick the material whose properties match the job. Pick wrong, and the tool fails — nobody makes a glass hammer.

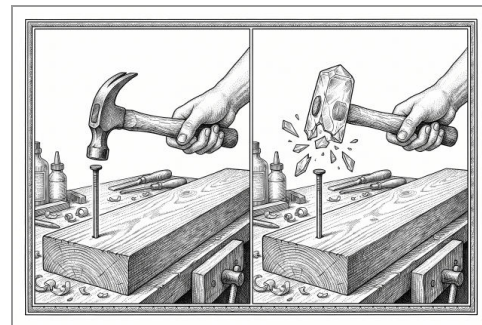


Fig. 2 — the material must match the job: steel drives the nail; brittle glass shatters into shards.

WORDS TO KNOW

wood

metal

glass

plastic

material

property

flexible

brittle

transparent

WATCH FOR THIS IN EVERYDAY LIFE

- Pick three tools in the house and name what each is made of — “*why that material, and what would be a silly one?*”
- Find something metal that feels cold, and something wooden right beside it that doesn’t — “*same room, same temperature — which one is fooling your finger?*”
- Tap a glass, a pot, and the table — “*can you hear each material’s own voice?*”
- Look at a shovel: metal blade, wooden handle — “*why did somebody build one tool from two materials?*”