

Nova's Guide to the Properties of Materials

Explore the world of matter with Nova the Owl—what makes a material perfect for the job?

- **Hardness** describes how difficult it is to scratch or dent a material. Diamonds are the hardest natural material, while foam is very soft.
- **Transparency** tells us if light can pass through an object. Transparent materials let light through, translucent materials let some light through, and opaque materials block light completely.
- **Solubility** is the ability of a substance to dissolve in water. For example, sugar is soluble in water, but sand is not.
- **Conductivity** measures how well heat or electricity can travel through a material. Metals are usually excellent conductors, while plastic is an insulator.
- **Flexibility** is how easily a material can bend without snapping. A rubber band has high flexibility, whereas a ceramic mug has very low flexibility.
- **Magnetic materials** are those that are attracted to magnets, such as iron, nickel, and cobalt. Not all metals are magnetic!

Did you know? Did you know? Some materials are 'thermal insulators', which means they stop heat from moving through them. That is why we use wooden spoons to stir hot soup instead of metal ones—the wood keeps your hand from getting burnt!

Key vocabulary: Hardness · Transparency · Conductivity · Solubility · Flexibility · Thermal Insulator · Magnetic