

Nova's Guide to the Properties of Materials

Explore the Extraordinary World of Materials with Nova the Owl!

- **Why do we use metals for cooking pans but plastic for the handles? Think about conductivity and thermal insulation.**
- **How does the property of solubility help us separate a mixture of salt and sand using water?**
- **Which material properties make a window glass transparent, whereas a wooden door is opaque?**
- **What makes a material 'hard' compared to one that is 'flexible'? Consider how they react under pressure.**
- **If a material is permeable, what does that mean for its ability to keep water out of a raincoat?**

Did you know? Did you know that some materials are 'smart'? Scientists have developed shape-memory alloys that can return to their original shape after being bent or twisted, simply by applying heat! It is like a material having its own built-in memory.

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