

Nova's Guide to Marvellous Materials

Explore, test, and discover: What makes a material fit for the job?

- **Why do we use transparent materials like glass for windows instead of opaque wood?**
- **How does the flexibility of a rubber band make it more useful than a rigid metal wire for securing objects?**
- **Which properties make metal the best choice for a cooking saucepan, and why would plastic be a poor choice for the base?**
- **In what way does a material's permeability affect its suitability for creating an outdoor raincoat?**
- **Can you explain why a magnet will attract a paperclip but fail to attract a plastic toy or a piece of cotton?**

Did you know? Did you know that some materials are 'smart'? Scientists have created special fabrics that can change colour depending on the temperature, while other materials are designed to be waterproof yet still allow air to pass through, keeping explorers dry and comfortable!

Key vocabulary: Transparent · Opaque · Flexible · Rigid · Thermal conductor · Permeable · Magnetic