# Ways to Join Two Pieces of Material Together

KS2 DESIGN & TECHNOLOGY Ages 9-12 ⏰ 3 min read

## Why Do We Need to Join Materials?

Every day, we use objects that are made of **multiple pieces joined together**. Your shoes have soles glued or sewn to the upper part. A chair has legs screwed to the seat. Even your body is a incredible example of pieces—bones, muscles, and skin—all connected perfectly to work together.

Engineers and designers choose different joining methods depending on what materials they're using, what the object needs to do, and how long it needs to last.

Think of it like building friendships—some bonds are temporary (like sticking two pieces of paper together), while others are permanent and strong (like bolting metal beams together).

## Gluing and Bonding

**Adhesives** (fancy word for glue) work by sticking two surfaces together. Different glues work better with different materials. **Wood glue** bonds wood brilliantly, while **super glue** works instantly on plastic. The glue seeps into tiny surface bumps and creates a strong chemical bond as it dries.

## Fastening with Mechanical Joins

**Screws, nails, and bolts** are mechanical fasteners—they physically hold pieces together. Screws twist into wood or plastic, creating friction that holds firm. **Nails** are hammered in quickly but are less adjustable. **Bolts** with **nuts** create incredibly strong joints, perfect for heavy machinery.

Think of it like holding hands—you can grip hard (bolts), or clasp loosely (screws). Different strengths for different needs!

## Sewing and Stitching

One of the oldest joining methods, **sewing** uses thread to bind fabric together. Each stitch is a tiny loop that locks pieces in place. This method is flexible—you can undo stitches—making it perfect for clothes and bags.

## Welding and Soldering

**Welding** melts metal pieces together using extreme heat, creating a permanent bond as the melted metal cools and solidifies. **Soldering** uses a lower-temperature metal to join pieces. These methods create some of the strongest possible joints.

Think of it like melting two ice lollies together on a hot day—they become one solid piece.

## Choosing Your Method

When joining materials, consider: Does it need to be **permanent** or removable? How much **strength** is required? What **materials** are you connecting? The best choice depends on these questions!