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# Why Designers Build Prototypes Before Final Products

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## What Is a Prototype?

A **prototype** is an early, test version of a product that designers build before making the real thing. It's not perfect—it might look rough or work differently from the final version—but it lets designers test their ideas in real life.

Think about how a filmmaker makes a **test scene** before filming a whole movie, or how a chef tries a recipe before serving it to guests. That's what a prototype does for product designers.

Think of it like building a sandcastle practice tower before you build your best one on the beach. You learn what works and what doesn't, so the big version is better.

## Why Do Designers Build Prototypes?

Prototypes help designers find problems early, when it's cheap and easy to fix them. If a product gets to the factory and then to shops before anyone spots a problem, fixing it costs thousands of pounds and wastes time.

**Testing ideas** is another huge reason. A designer might think a phone button should go on the left, but when they build a prototype and test it with real people, they discover the right side is better. Prototypes let you test **user experience**—how people actually use your product—before it's too late to change.

Think of it like trying on clothes before you buy them. You want to make sure they fit and look good before you pay your money.

## How Do Prototypes Save Money?

Making a prototype costs money, but it saves much more money later. If **100 problems** are found during prototype testing, fixing them now might cost **£1,000**.

But if those problems aren't found until factories have made **10,000 products**, fixing it costs **£100,000** or more.

Prototypes also help designers **reduce waste**. Instead of making thousands of a product nobody wants, you find out during prototyping that people don't like the design, and you change it.

## What Happens Next?

After testing a prototype, designers might build a second one that's better, or even a third. Each version is called a **generation**. Finally, when the design is good enough, it's ready for **mass production**—making thousands or millions of them in a factory.

Without prototypes, we'd have broken, badly-designed products everywhere. Thanks to prototyping, the phone in your pocket, the shoes on your feet, and the game you love all work well because someone built a test version first.