

Year 5 Design Technology: The Art of Prototyping

Learning objective: To understand the purpose of prototyping and how iterative design leads to high-quality final products.

Use these flashcards to test your knowledge of the prototyping process. Work with a partner to discuss how Kit the fox might use these concepts to build his inventions.

What is a prototype?

A prototype is a preliminary, simplified model of an idea used to test how a product might work before the final version is made.

Define 'Iteration' in the design process.

Iteration is the cycle of creating, testing, and improving a prototype multiple times to achieve a better result.

Why is 'Feedback' vital when testing a prototype?

Feedback provides different perspectives on what works well and what needs changing, helping the designer identify flaws they might have missed.

Explain the difference between 'Functionality' and 'Aesthetics'.

Functionality refers to how well the product works and performs its task, while aesthetics refers to its appearance and visual appeal.

What are 'Ergonomics'?

Ergonomics is the study of how people interact with products, ensuring they are comfortable, safe, and easy for humans to use.

What is the purpose of an 'Annotated Sketch'?

An annotated sketch provides visual details along with labels and notes that explain the materials, measurements, and intended features of a design.

Why might a designer choose cardboard for an early prototype instead of metal?

Cardboard is inexpensive, easy to cut and manipulate, and allows for quick testing of shapes and sizes without wasting costly materials.

What is a 'Modification'?

A modification is a specific change or adjustment made to a design based on the results of a test or evaluation.

Explain why a prototype should be viewed as a 'work in progress'.

It is not meant to be the final product, it is a tool for learning, discovery, and solving problems that arise during the creative process.

What is 'Refinement' in prototyping?

Refinement is the process of polishing and perfecting the design after initial testing, focusing on making the product more durable and efficient.