Textile Treasures: Designing with Fabric

Learning objective: To understand the properties of different fabrics and apply this knowledge to design a functional textile product.

Read each question carefully and use your knowledge of materials and sewing techniques to answer. Max the monkey is curious about how different fabrics behave in his latest maths-inspired project!

Textiles are all around us, from the clothes we wear to the bags we carry. Choosing the right material requires understanding properties like strength, flexibility, and texture. When designing a textile product, we must consider how the pieces join together and how to prevent the edges from unravelling.

Word bank: Template · Fraying · Stitch · Natural fibre · Synthetic · Durability · Seam allowance

1. Max wants to make a heavy-duty pouch for his maths equipment. Explain why denim or canvas would be a more suitable choice than silk or thin cotton. (2 marks)

2. Define the term 'seam allowance' and justify why it is a critical step in the construction of a fabric bag. (2 marks)

3. Compare and contrast natural fibres (like cotton or wool) with synthetic fibres (like polyester). Give one advantage of each. (2 marks)

4. If you were to create a decorative patch for a jacket, describe the process you would use to attach it securely so that the edges do not fray. (2 marks)

5. What might happen if you used a needle that was too thick for a very delicate fabric? Explain your reasoning. (2 marks)

6. Zara is designing a patterned cushion. How could she use the concept of repeating patterns and symmetry to make her design more aesthetically pleasing? (2 marks)

Draw: Draw a design for a functional school pencil case. Label your drawing with the type of fabric you have chosen, the method of fastening (e.g., button, zip, or velcro), and indicate where you will place your seams.

Extension challenge: Imagine you are an expert textile designer. Write a short proposal explaining how you would upcycle an old, worn-out garment into a new, useful item. Justify your choice of product based on the material's original properties.