

Zara's Pattern Explorer Journal

Learning objective: To identify, describe, and create repeating patterns inspired by natural and man-made structures.

Use this journal to document the patterns you find in the world around you. Zara the zebra loves to look for symmetry, tessellation, and motifs. Choose an object, sketch it, and use the questions to analyse how the pattern is constructed.

Word bank: symmetry · tessellation · motif · repeating · geometric · organic · alternating · sequence · rotation

1. Pattern Observation: Describe the object you have chosen and identify the repeating motif. Is it a geometric shape or an organic form? (2 marks)

2. Analysing Symmetry: Does your chosen pattern show reflective or rotational symmetry? Justify your answer by explaining how the pattern would look if you flipped or turned it. (3 marks)

3. Mathematical Precision: Compare this pattern to a basic grid. Explain why this pattern tessellates (fits together without gaps) or why it leaves spaces between the shapes. (3 marks)

4. Creative Reasoning: If you were to change the colour scheme of this pattern, how would it alter the viewer's perception of the shape? Explain your reasoning. (2 marks)

5. Predictive Thinking: What might happen to the visual balance of this pattern if you removed every second motif from the sequence? Describe the visual result. (3 marks)

6. Synthesis: Compare and contrast a pattern found in nature (like a honeycomb) with a pattern found on a piece of fabric. Why do you think these patterns are designed that way? (4 marks)

Extension challenge: Design your own complex repeating pattern using a ruler and compass. Once finished, write a 'pattern rule' explaining how your design repeats, similar to how we describe sequences in maths.