

Zara's Rangoli Design Analysis

Learning objective: To explore the cultural significance and geometric precision of Diwali Rangoli patterns while applying principles of symmetry and colour theory.

Use this template to plan and evaluate your Rangoli design. Think about the patterns Zara, our art-loving zebra, would use to represent joy and harmony during the Festival of Lights. Ensure your mathematical understanding of symmetry is applied to your pattern-making.

Word bank: symmetry · geometric · vibrant · pigment · radial · harmony · tradition · precision

1. Design Inspiration: Describe the cultural or natural themes you are incorporating into your Rangoli pattern and explain why you chose these specific elements. (3 marks)

2. Mathematical Symmetry: Explain how you have used reflectional or rotational symmetry to create a balanced design. Justify why symmetry is essential for traditional Rangoli. (4 marks)

3. Colour Theory: Which colours have you chosen for your design, and how do they work together to create a sense of brightness and celebration? (2 marks)

4. Material Choice: If you were creating this in a physical space, what materials (such as coloured sand, flower petals, or rice) would you use, and why are these materials traditionally significant? (2 marks)

5. Compare and Contrast: Compare your design to a simple geometric pattern. How does your complex design communicate a stronger message of welcome and prosperity? (4 marks)

6. Reflection: What might happen to the visual impact of your design if you removed the central focal point? Explain your reasoning. (3 marks)

Extension challenge: Design a secondary, smaller Rangoli pattern that acts as a border for your main design. Calculate the total perimeter of your main design if each square unit in your grid measures 2cm. If you were to sell 'Rangoli Kits' containing enough coloured powder to cover your design at a cost of £1.50 per square, how much would your design cost to create? Justify your pricing strategy.