

Year 5 Art Assessment: The Geometry of Rangoli

Learning objective: To understand the cultural significance, radial symmetry, and mathematical precision involved in creating traditional Diwali Rangoli patterns.

Read each question carefully. Use your knowledge of patterns, symmetry, and the cultural context of Diwali to provide detailed answers. Use full sentences for extended responses.

Rangoli is an ancient art form originating in the Indian subcontinent, traditionally created on the floor of a home during Diwali, the Festival of Lights. These designs are made using materials such as coloured rice, dry flour, sand, or flower petals. Beyond their aesthetic beauty, Rangoli patterns are designed to welcome guests and signify good luck. A key feature of these designs is the use of complex geometric shapes and radial symmetry, where the pattern radiates from a central point, mirroring itself perfectly around the design.

Word bank: Symmetry · Radial · Diwali · Pigment · Geometric · Pattern · Reflection · Festival of Lights

1. Identify two materials traditionally used to create Rangoli patterns and explain why natural materials are often chosen. (2 marks)

2. Define the term 'radial symmetry' in the context of a Rangoli design. (2 marks)

3. Max the monkey is helping design a Rangoli. If he wants to ensure his pattern is perfectly symmetrical, what mathematical strategy should he use to map out his points before adding colour? Justify your answer. (4 marks)

4. Compare and contrast the function of a Rangoli design in a home with that of a piece of art hanging in a gallery. Explain why one is considered 'ephemeral' (temporary) art. (4 marks)

5. Explain why geometric precision is vital when creating a large-scale Rangoli pattern. What might happen if the central axis is miscalculated? (3 marks)

6. Extended Response: Zara the zebra argues that Rangoli is a fusion of mathematics and creative expression. Write a paragraph justifying this statement, referencing the balance between structure and artistic flair. (5 marks)

7. If a family spends £12.50 on coloured sand and £7.25 on fresh marigold petals to create their display, calculate the total cost. If they have a budget of £25.00, how much change will they receive? (5 marks)

Draw: In the space provided, design a radial Rangoli pattern that incorporates at least three different geometric shapes. Ensure your design demonstrates clear line symmetry across both the vertical and horizontal axes.



Extension challenge: Imagine you are designing a community Rangoli for a public square. Write a brief proposal explaining your choice of colour palette (and the emotions those colours evoke) and how you will ensure the design remains safe and accessible for the public. Total: /25