MATHS AND ISLAMIC ART & DESIGN TEACHERS’ RESOURCE

Explore the Islamic Middle East at the Home of Creativity

Key stages 1 & 2 Art & Design & DT

Tile, Unknown, Iran, 1275-1325. ©Victoria and Albert Museum, London.
Maths and Islamic Art & Design
Teachers' Resource
Key Stages 1 & 2 Art & Design and Design & Technology

Introduction

Why study Maths and Islamic Art & Design?
The study of Islamic art and design increases appreciation and understanding of geometry as Islamic art explores the geometric systems that depend upon the regular division of the circle. The use of these geometric systems creates a harmony among Islamic decorative arts and architecture, which is consistent with the Islamic belief that all creation is harmoniously interrelated.

Approaching an abstract subject in a concrete way provides a means of extending maths into other curriculum areas. The context of the Museum expands and enriches students' appreciation of the application of geometry in a cultural context and develops the sense of different cultural identities. By exploring Maths through the lens of Islamic Art & Design, students have the opportunity to become familiar and confident with the relationship between geometry and design.

Pre-visit activities

Students will need to have a good shape vocabulary and be adept at recognising shapes (circle, triangle, square, hexagon, octagon, six-pointed star, eight-pointed star, and regular and irregular polygons) to get the most from their visit to the Museum.

Practice by doing some shape recognition exercises. Provide students with large-scale triangular grid paper, or use a triangular template, and ask them to cut out mosaic pieces and arrange them to form specific patterns. Create stars and other shapes using drinking straws.

The Museum visit

Download the accompanying activities designed to support your visit. This resource contains introductory creative and discussion-based activities, devised to focus on the Jameel Gallery of Islamic Art, Room 42.

The resource can be used flexibly according to the time you have available. Grids and templates are provided with this resource to support students drawing. Bring additional paper and drawing pencils for the activities.

Islamic Faith
Islamic faith is based on the Islamic holy book, the Qur’an (sometimes spelt Koran), which followers of Islam believe to be the word of God as revealed through the Archangel Gabriel to the Prophet Mohammed in the early 7th century. The Prophet was born in Arabia in about AD 571 and died in AD 632. By the early eighth century Islam had spread by military conquest westward as far as Spain and eastward to Samarqand and the Indus Valley. Islam continued to expand, into Turkey and deeper into the Indian subcontinent, into north-western China and South-East Asia. Followers of Islam are called Muslims.

Islamic Art & Design
The Islamic faith provides laws to govern both religious observance and social behaviour. While the Qur’an contains no specific prohibition on figural imagery, most interpretations of Islamic law have tended to discourage such imagery. Islamic decoration consists of three main elements, which are often combined in the decorative scheme on a single object:

- Calligraphy in various forms of Arabic script (Arabic is the language of the Qur’an and therefore of God, and has a special significance in Islamic culture)
- Arabesques, scrollwork and other plant-like designs
- Geometrical designs using a limited number of geometric shapes in many different ways

Geometry in design
The use of geometry is important in the development of Islamic ornament, whatever form it takes. Circles, for example, are crucial in designing arabesque patterns, and even calligraphy has been described as 'spiritual geometry.' The use of purely geometric elements to create elaborate patterns, though, has become a sophisticated form of decoration on its own. The appeal of Islamic geometric decoration lies in its logical interrelation of parts, reflecting in abstract form the underlying order found in nature. Among the most important aspects of Islamic geometric design are repetition and variation. Symmetry and repetition give unity to the more complex designs.

Follow-up activities/find out more

- Ask students to reproduce some of the tile shapes they have seen in the Museum. If everyone works to the same scale then the finished results can be sorted into shapes based on six and eight and displayed together in tessellating panels.
- Using sketches made at the Museum for inspiration, ask your students to develop designs of their own using the triangular grid as a guide.
- This work could lead into other kinds of artwork. Create card rubbings and mobiles based on the designs seen during their visit.