The British Museum

KS3 Maths Challenge

In groups, students rotate through up to seven activities in different galleries applying a variety of mathematical concepts to unfamiliar challenges.

Key skills
- communication
- creativity
- selection and application of prior knowledge
- mathematical reasoning
- systematic and logistical approach
- justification of methods
- drawing conclusions
- reflect and evaluate approach

Mathematical content
- measures and mensuration
- proportional thinking
- transformations
- dynamic geometry
- creation of accurate diagrams

Links to the real world
- identifying the use of mathematics outside the classroom
- application of knowledge to unfamiliar situations
- experience the historical content of mathematics

Discussion points following the visit
- Given the size of the objects, how are they brought into the museum?
- How could you record how many people visit the museum?
- Is it possible to visit each gallery only once on a tour of the museum?

Practicalities
- Activities take approximately 15 minutes.
- Each activity is independent.
- Lockers and lunch facilities are available.
- All galleries are fully accessible.
- Challenges are suitable for up to 70 students a day.

The following pages provide a summary of challenges; further materials and solutions are provided at confirmation of booking.

Summary of challenges

Chinese Ming banknote
This challenge requires students to analyse the Chinese Ming banknote from AD1375 and mathematically compare it to a modern day British banknote.

This activity is located in Room 68: The Citi Money Gallery.
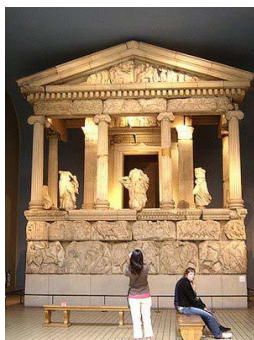

The Nereid tomb
This activity is based on using a simple clinometer and invented units of measurement to measure the height of a huge tomb from Lykia in southwest Turkey.

This activity is located in Room 17: Greece and Lykia.

Islamic patterns
Students work out ways to describe shapes, patterns and tessellations to each other or to another group (through transformations, co-ordinates or describing angles) who try to draw them.

This activity is located in Room 34: the Islamic world.
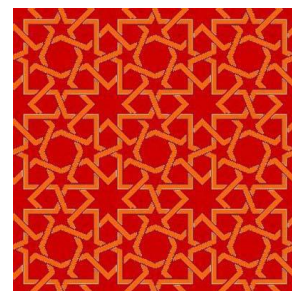
Number systems
This activity involves studying the early numbering systems of Babylonia which use base 60 and Roman numerals. The students explore conversions and then the difficulties each system presents for counting and recording, addition, subtraction, multiplication and division.

This activity is located in Room 56: ancient Mesopotamia

Chinese tangrams

The tangram is an ancient Chinese puzzle consisting of 7 shaped pieces known as tans. This activity consists of rebuilding a tangram square from the 7 tan pieces. They can then duplicate the square to make their own tans but only using folding and a pair of scissors (no rulers).
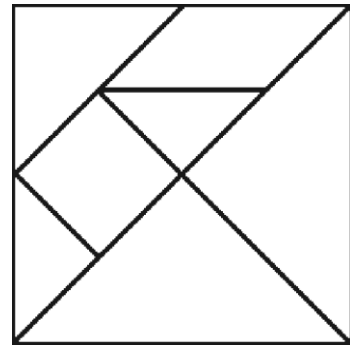
The activity is located in Room 33: China.

How high is the house pole?

Students have to calculate the height of a house pole made by the Haida people of the Pacific Northwest of America. They have only themselves and a pencil with which to work it out.

This activity is located in the Great Court.

The colossal arm

This activity uses a granite arm in the Egyptian sculpture gallery to pose the question: How big was the statue that this arm came from? Using a unit of measurement, such as fist or hand span, and a person's height, students can obtain a ratio and work out how big the statue would have been.

This activity is located in Room 4 or can be done with a colossal foot in Room 1 if there are a lot of groups in Room 4 at the time.