Notes for teachers

National curriculum links
- Numeracy

About this session
Students handle examples of African beadwork and apply their numeracy skills to create their own examples of maths inspired by African objects.

Location African galleries, Room 25, Clore Centre for Education
Format Group work, object-handling, gallery visit
Capacity 32 students
Duration 180 minutes with a 30-minute break for lunch
Price £60
Note Students attending should wash and dry their hands before the session to help conserve the handling objects. They should also wash their hands after the session.

In detail
- Introduction to Africa. Students look at a map of Africa are asked to name countries.
- Students split into small groups to handle beadwork from southern Africa.
- Students learn how to create a pattern using coloured beads and some of the vocabulary used to describe patterns.
- Students go to the Africa Gallery (Room 25) where they work in small groups exploring colour, number, shape and pattern.
- Students use pattern vocabulary to produce a piece of maths art.

Before your visit
- Introduce/revise the key themes and vocabulary listed below.
- Look at an atlas and locate the continent of Africa. Discuss the areas of Africa together with the countries that make up the continent.
- Think about the different materials that beads can be made from and the different ways that beads are used (as jewellery, sewn on to clothing or as decoration on objects).

After your visit
- Students can create and record their own patterns.
- Make a classroom collection of objects which are decorated with beading.
- Make strung necklaces which use pattern to create the design.
- Create batik and woven patterns using the activity sheets below.

Find out more
- More KS1 resources and sessions
- Related galleries: 25, 34, 26, Great Court
- Take a look at the galleries with Google Street View

Museum maths: Notes for teachers
Visit notes for students and adult helpers

You can print this summary sheet and take it with you during your visit.

Learning objectives
• Discover African beadwork
• Generate patterns
• Talk about patterns

Key words
2D shape names (e.g. square, diamond)
colours (e.g. blue, green, white)
multi-coloured
diagonal
zig-zag
row
column
repeating pattern

African beadwork
• The session begins with an introduction to Africa.
• Students handle pieces of real African beadwork in small groups and talk about the colours, shapes and patterns they can see.
• Each group tells the rest of the class what they discovered.

Making a pattern
• Students find out how to make a pattern with beads and then work in small groups to make a small bead pattern.
• Each group shows their bead pattern to the rest of the class and explains how it works.

Looking for patterns
• Students visit the Africa Gallery to explore shapes, colours, numbers and patterns.
• You will see how this works with a picture of Perseus and the gorgon.

Talking about patterns
• The students will use pattern vocabulary to produce a piece of maths art
• In small groups the students handle modern African objects and talk about the colours, shapes and patterns they can see on the objects.
**Classroom activity**

**Beautiful batik**

Batik is a technique used to create patterns on fabric using a dye-resistant paste and a colourful liquid dye. First, the pattern is marked onto the fabric with a paste which dries on to the surface of the fabric. Then the piece of fabric is coloured. The coated areas resist the dye and when the coating is removed the final pattern is revealed.

Batik is used in many parts of Africa to create patterned fabric using either a metal stencil or by hand-drawing the design on to the cloth. A traditional dye is indigo which is produced from a plant grown across the continent. The coating, applied to resist the dye, consists of a damp paste made from plant starches (such as rich starch or vegetable root starch), wax or mud.

This is a classroom-friendly version of the batik technique which younger students can enjoy safely.

- Plan a simple pattern or motif on paper with a pencil or pen.
- Take a piece of watercolour paper and copy the pattern or motif on to the paper using a white wax crayon.
- Use watercolour paints to add colour to the paper. The wax will resist the colour, and the pattern will be revealed.
Wonderful weaving
Weaving is practised across Africa. Patterns are often based on traditional designs and may denote the age, social status, gender or marital status of the wearer. Weaving can also be used to create mats and baskets from plant fibres.

Explore the technique of weaving using railings, or any other school fencing with an open structure, as a weaving frame. Use scarves, thick ribbon and long strips of fabric for weaving in and out. Plastic laundry baskets also make good looms; just add ribbon, wool and strips of fabric. Here is a smaller scale weaving activity that requires a piece of A4 paper to create the weaving frame and strips of coloured paper to create the pattern.

To make the weaving frame, fold the paper in half lengthways and cut down from the folded edge almost to the open edge all the way along. Open up your paper weaving frame.

Cut some weaving strips. The students can use a single colour to weave a chequer board pattern or a variety of different colours to create a more patchwork effect.

Take a strip and weave it – over and under – through the weaving frame strips. Continue adding strips immediately underneath this first strip – alternating the first part of the weaving, one starting over, then the next one starting under.