TESSELATIONS.

ART AND MATHS IN ARCHITECTURE

45 minute session

Suitable for Years 5 – 6

OUTLINE

A tessellation is any pattern made of repeating shapes that covers a surface completely without overlapping or leaving any gaps. A checkerboard is a tessellation made of squares. The squares meet edge to edge with no gaps and no overlapping areas. The pattern of bricks on a wall is a tessellation made of rectangles.

Over 2,200 years ago, ancient Greeks were decorating their homes with tessellations, making elaborate mosaics from tiny, square tiles. Early Persian and Islamic artists also created spectacular tessellating designs. More recently, the Dutch artist M. C. Escher used tessellation to create enchanting patterns of interlocking creatures, such as birds and fish.

Making tessellations combines the creativity of an art project with the challenge of solving a puzzle!

Workshop instructions on reverse side.

WHAT YOU NEED?

A4 Paper cut into rectangles 9 rectangles (example template provided), A3 Paper or larger, Scissors, Sticky tape, Pencils and Pens.

TEACHER'S ROLE

We encourage teachers to participate in the workshop however the teacher is responsible for duty of care and behaviour management of the class and must be present for the duration of the session.

Available to schools within 50km radius of Adelaide CBD. If your school is located outside of this limit please request a booking to discuss.
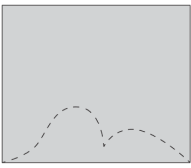
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STEP 1

STEP 2
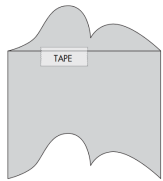
STEP 3

STEP 4

STEP 5

INSTRUCTIONS

*Original workshop by Geometry Playground*

1. Draw a line between two adjacent corners on one of the long sides of the rectangle. Your line can be squiggly or made up of straight segments. Whatever its shape, your line must connect two corners that share one of the long sides of the rectangle.

2. Cut along the line you drew. Take the piece you cut off and slide it straight across to the opposite long side of the rectangle. Line up the long, straight edges of the two pieces and tape them together.
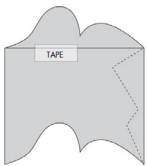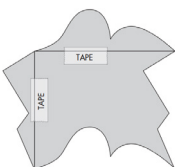
3. Now draw another line that connects two adjacent corners on one of the short sides of the shape.

4. Cut along this new line. Take the piece you cut off and slide it straight across to the opposite side of the shape. Line up the straight edges and tape them together.

5. You have now created a shape that you can use as a pattern to make a tessellation. Now on you A3 trace your pattern. Now move your pattern across, up or down to align with the line you have drawn and trace your pattern again. Keep going moving and tracing until you have filled up your A3 page. This is called a translation tessellation.

VARIATIONS

Have a look at the two variation examples given. Can you see how they managed to make this pattern?

Here is a clue, Variation 1 is called a reflection tessellation and Variation 2 is called a rotational tessellation.

Now see if you can make your own Reflection and Rotational tessellation patterns.