### Year 6 Transition Lesson

You will need a pencil, paper and some colouring pencils! We will be doing Tessellation today.



### **STARTER**

### **TASK**

Name the following shapes below:



### **EXTENSION**

Sketch and name as many solids (3D shapes) as you can.



## WHAT ON EARTH IS TESSELLATION?

A tessellation is created when a shape is repeated over and over again covering an area without any gaps or overlaps.



### Can you think of any real life tessellations?

I'll start you off, honeycomb





# You have 2 minutes to think of some other examples of real-life tessellations...



### Corn on the cob







# Pineapple







# Floor Tiles



We are going to investigate what shapes can tessellate.

First we need to know a definition; what do I mean when I say regular polygons?



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A polygon is a 2D shape with straight sides. A regular polygon means all the sides are the same size!



These are the shapes we will be investigating, can you remember what they are called?











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Can you make a prediction if any of these regular polygons tessellate?

Draw a couple in your book/paper to see if they tessellate. I will give you 5 minutes to make a prediction

If you want longer just pause the presentation!











### Lets find out if your predictions are correct!



















### There are only 3 regular tessellations. Can you see why?





### There are only 3 regular tessellations. Can you see why?



This is called **regular tessellation** is a repeating pattern of a regular polygon, which fits together <u>exactly</u>, leaving NO GAPS.





### Non Regular Tessellations

A non-regular tessellation is a repeating pattern of a non-regular polygon, which fits together <u>exactly</u>, leaving NO GAPS.

All triangles and all quadrilaterals tessellate. Why do you think that it? Your turn...

### **Drawing tessellations**



Can you take any 3 of these shapes and Tessellate them.

Either together or on their own.

Use your colouring pencils to indicate the different shapes!



# It's not just maths shapes that can be tessellated.



Maurits Cornelis Escher, usually referred to as M. C. Escher, was a Dutch graphic artist. He is known for his often mathematically inspired tessellations.

Let's take a look at some of his work...





















### **HOW TO MAKE AN ESCHERESQUE TESSELLATION**



<u>STEP 1</u>

Begin with a simple shape – use pencil!



STEP 5 Erase the original shape (square)





Change the shape of one side



<u>STEP 3</u>

Copy this

line on the

opposite

side

<u>STEP 6</u>

Add lines inside the shape to make a picture





STEP 4

Rotate the line and repeat it on the remaining edges



Repeat 8 – 10 times to tessellate







### **HOW TO MAKE AN ESCHERESQUE METAMORPHOSES**

This one is hard, there is a picture on the other side so you can see what it looks like!





### **HOW TO MAKE AN ESCHERESQUE METAMORPHOSES**





