



# STEAM ACTIVITIES

Explore how Science, Technology, Engineering and Mathematics all meet Art.

## CREATE YOUR OWN TANGRAM




### Purpose of the task

(as required by the National Curriculum)

- Considering shapes from a variety of different angles and perspectives as well as building spatial awareness
- Using rotation and geometric manipulations to create art
- Trial and error and problem solving skills to create shapes and objects
- Using imagination to create stories
- Understanding the fundamentals of building shapes from other shapes
- Making links with the use of shapes in existing artworks

# Let's talk about Tangrams:



A Tangram is a flat puzzle made of 7 different shapes.

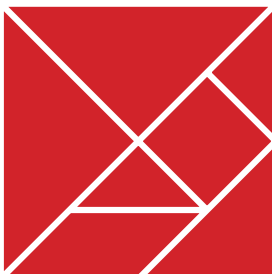
The Tangram is the most famous of all Chinese puzzles.

What is special about a Tangram is that you can arrange these shapes to create a square.



The shapes in a Tangram have been known to have around 6500 puzzle arrangements to make different shapes – such as animals, people and objects.

You may have seen wooden or glass Tangrams before.



← Here is a Tangram

- Can you tell me what shapes you can see?
- How many triangles are there in a Tangram?



Manipulating shapes to create images of people, art and objects has been seen in many famous paintings and artwork.

Take a look at artists like **Paul Klee** and **Piet Mondrian** – can you identify the different shapes they have used in some of their artwork?

The next time you see a painting or an artwork, try and see if they are any distinctive shapes that have been used to create the art.

# CREATE YOUR OWN TANGRAM

You are going to make your very own Tangram today. After you have made it, you can rearrange the shapes to try and create objects, people or animals in order to tell a story or set a particular scene.

## Things you will need:

1. Paper
2. Card
3. Scissors
4. Crayons/Colour Pencils
5. Pencils/ markers



Be mindful of the environment and try to use recycled materials like discarded cardboard / paper.

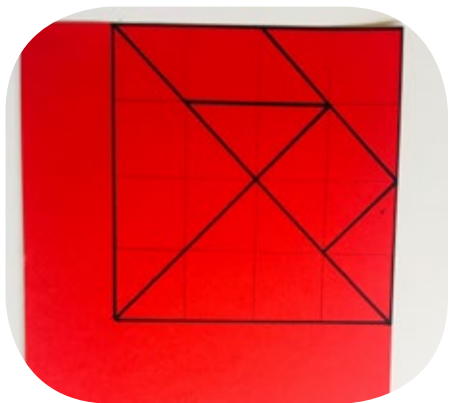


## Method:

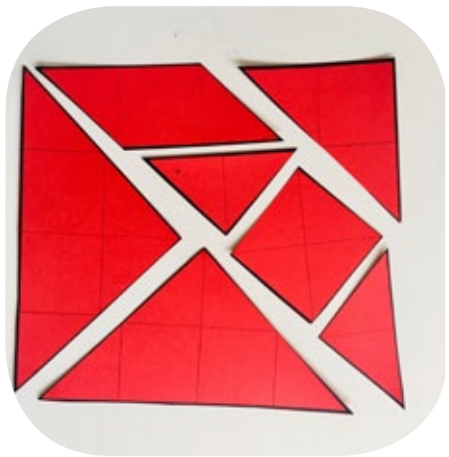


1. Using your card, draw a 16 cm X 16 cm square with a ruler and a pencil

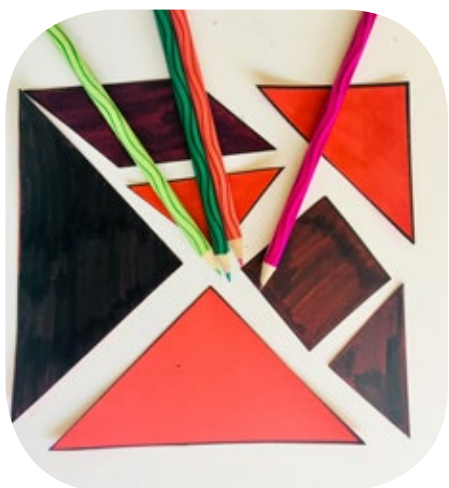
2. Divide this large square into smaller squares of 4cm X 4cm



3. Using a marker or a pen draw the following shapes to match the image



4. Cut out the shapes and colour them in if you like



5. You should have 7 cut outs, 5 triangles, 1 square and a parallelogram

6. Now you have the shapes for your Tangram, you can start arranging them into several other shapes. Examples of some shapes are shown below. You can also ask to look on the Internet where you will find an array of different shapes you can make using these Tangrams.



7. Create stories with your Tangrams, if you wish you can draw the shapes onto paper and create backgrounds.

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**Continue for more Tangram activities:**

If you choose to do these activities, you might want to make a smaller Tangram with a square that is 8cm x 8cm.

You can find shapes in a wide variety of art works. They can be stacked and arranged in different ways to create a complex drawing or painting!

## Activity 1

Below is an image of a print by Melissa Instone, a former pupil of Castle School which was acquired for the Gallery's collections.

The print was made in 2001 (a year after the Gallery opened) and shows The New Art Gallery Walsall building towering above the viewer.

- Can you identify the different types of shapes that have been included?
- How many circles do you see and what do you think the circles represent?



Melissa Instone, *The New Art Gallery Walsall*, 2001

### ACTIVITY

**Using your Tangram shapes, try and recreate a picture of a building similar to this one.**

Remember you can draw around your shapes to use them as many times as you want. Try and rotate the shapes in many different directions.

## Activity 2

Here is an image of another work from Walsall's Collections. This was painted in watercolour on paper by an artist called **Leonard Stanley** who lived from 1920 – 1885. You can see that shapes such as triangles are a common feature on these buildings.

- **How many triangles do you see?**

Did you know that triangles are a common shape used on the top of most buildings and houses because it allows the rainwater to drain down properly and protect the house from getting damaged?



Leonard Stanley (1920-1985), *Deplets Houses in Dlgbeth*, watercolour on paper

### ACTIVITY

**Can you design your own High Street using your Tangrams?**

## Activity 3

Take a look at these geometric shaped artworks.

They have been made by artist **Chris Clinton** who has unwound novelty dartboards and then painstakingly wound them again in reverse to create intricate abstract patterns.

The concept of reconstruction and recycling art is a great way of turning old, unusable objects into decorative artwork.



Chris Clinton, Novelty Dartboard Series, 2013

### ACTIVITY

**Have a look around your house for old and unusable objects or pieces of recycling. This can be old cutlery or plates, or even discarded paper toilet rolls. Can you try and use your material to create a novelty piece of art that you can display in your house?**

Try and consider using patterns and shapes from your tangrams to help you design the artwork.



## Share your work with us:

- We would love to see pictures of your tangrams or from the other activities!



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