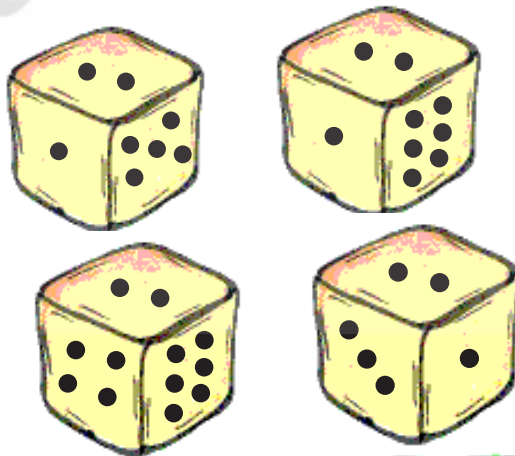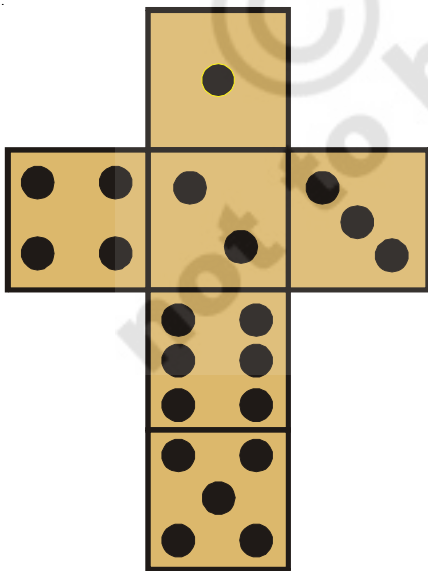# Playing with shapes

Sujatha, Vani and Gautham were playing ludo.

Grandmother: Why are you all wasting time? You should be studying.

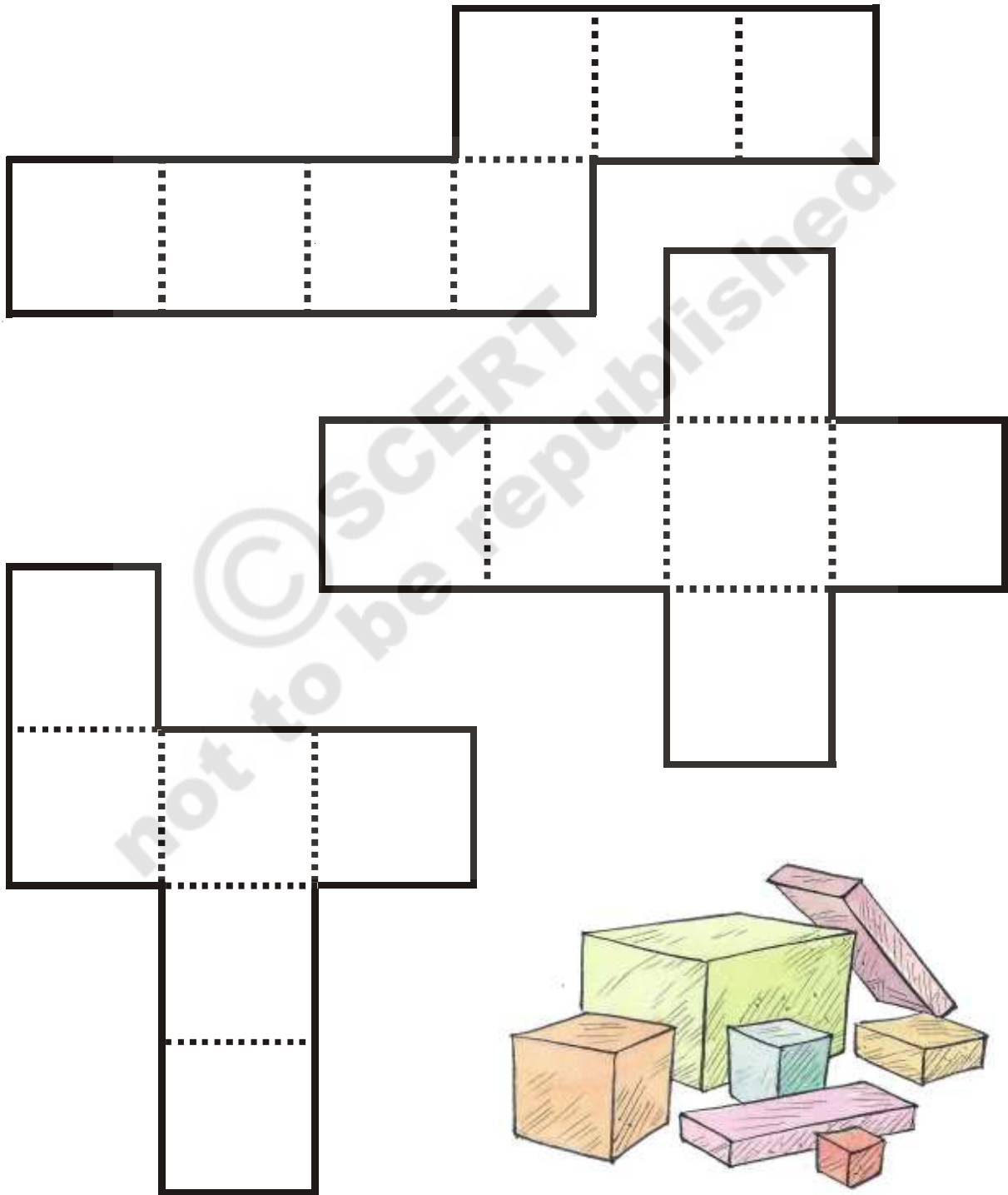Vani: We are learning maths while playing with the dice.

The next day the teacher gave this problem to Vani in class. Match this cut-out of the dice with the actual dice. Try yourself.
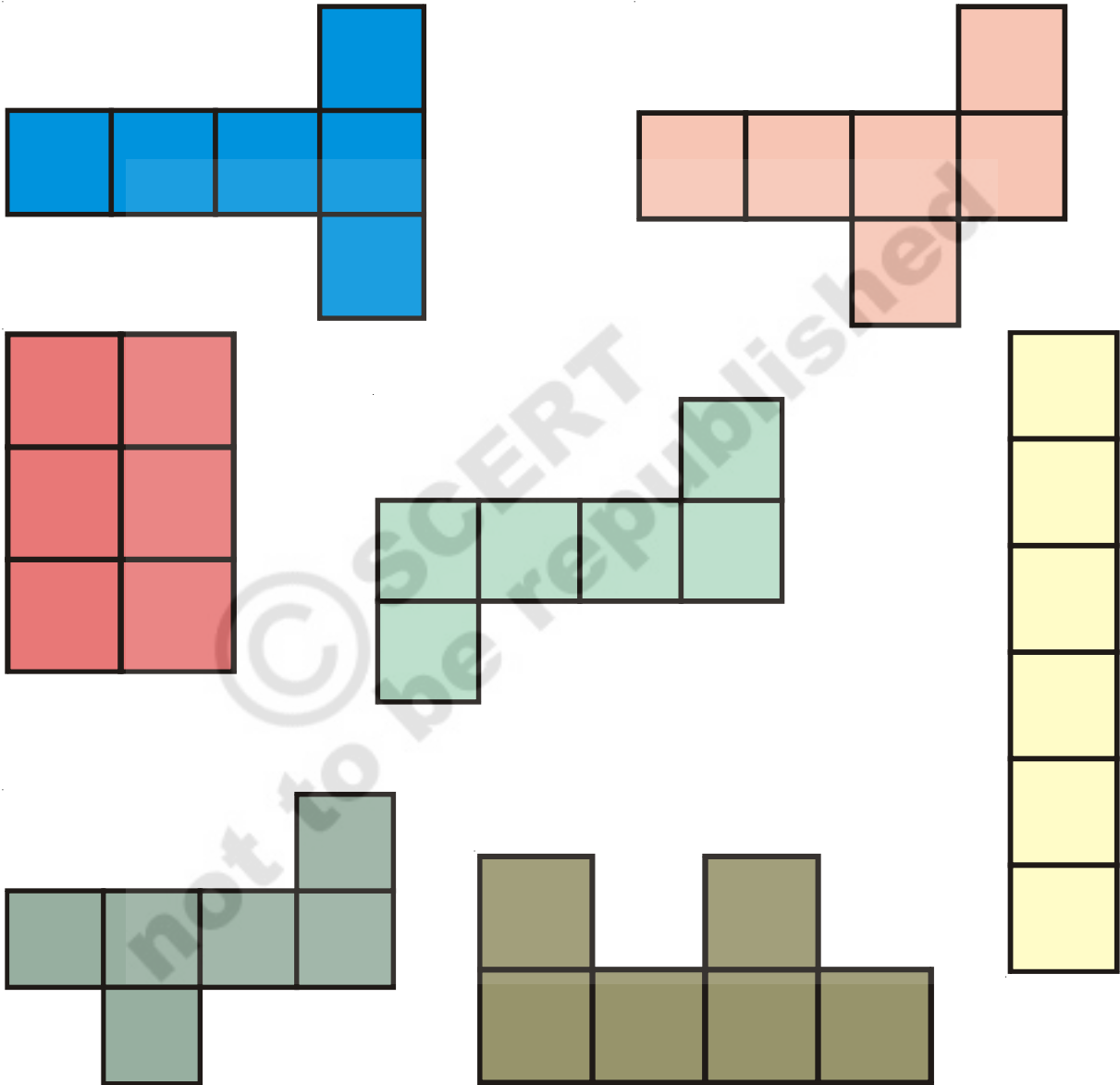
A dice is cube shaped.

Activity

3 nets have been given below. Trace them on paper. Cut along the dark lines. Which of these nets can be folded into cube shaped figures?
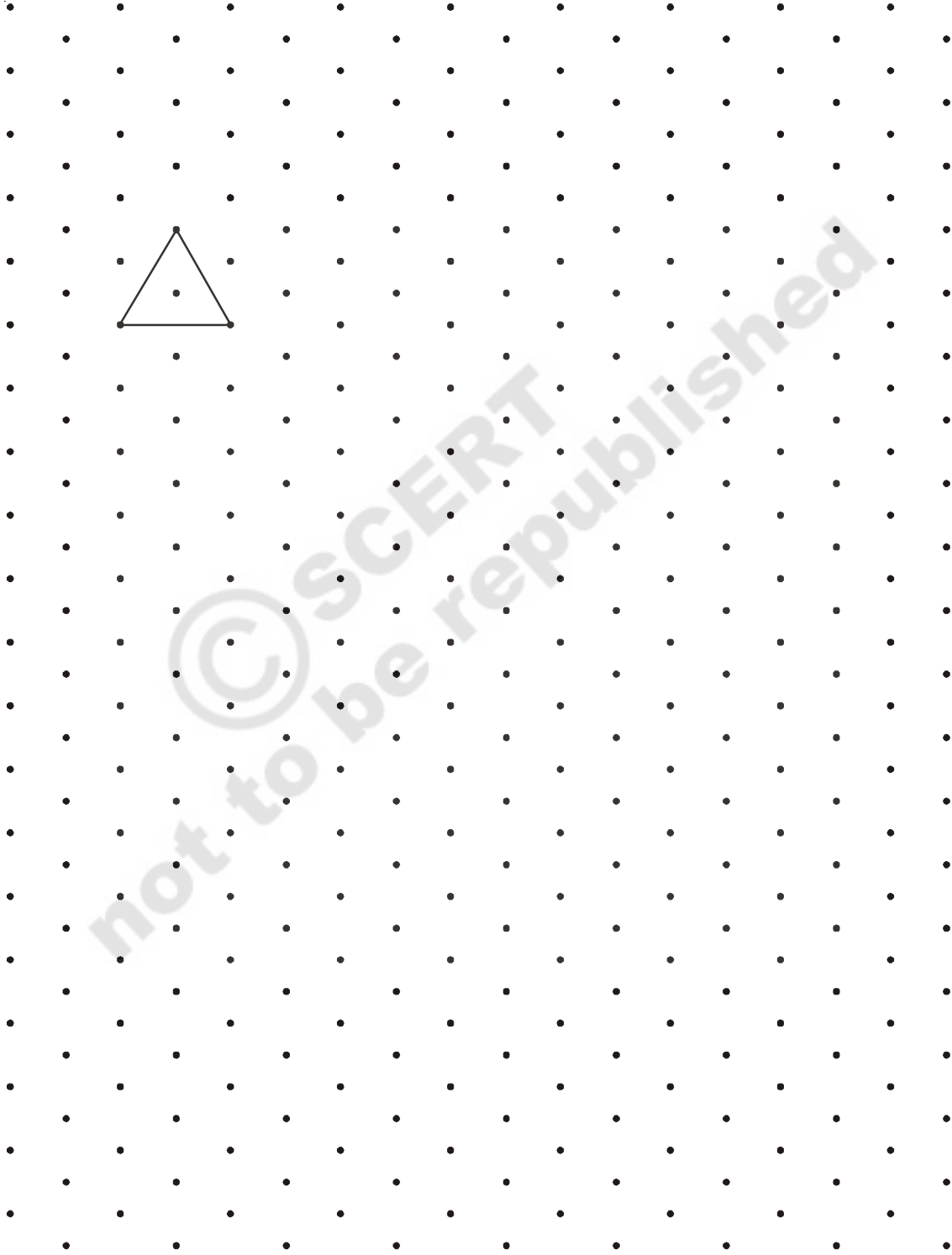
1. Look at the given nets. Tick (✓) the ones that can be folded into a cube.

(a) Now, draw a different nets that can be folded into a cube in your notebook.

(b) Also, Draw a net that will not give you a cube.

Can you draw shapes on these dots?

Make squares, rectangles and triangles of different sizes by joining the dots given below. one has been done for you.

Playing with shadows

There was power cut in the night. Vani switched on a torch.

Her grandmother showed her how to make animal shadows using her hands.

Try This
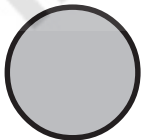
1.   Make different animal shadows using your hands.

Vani and her Grandmother started looking at shadows of different objects.

Vani: We can get a rectangle shadow from a book. We can also get a rectangle shadow from a match box.

Do This

1. Can you match the shadows with the objects? Remember what Vani said that two different objects may have similar shadows.

Circle

Vani saw that there were many objects whose shadows were circles, Ex:- bangles, balls and coins.

Next day Vani draw a circle with her bangle in the school.

Goutham also draw a circle with his coin.

Sujatha took a rope. She tied thick pieces of wood on both ends of the rope. She and Goutham made a circle on the ground using the rope. See the picture.

↓

Try This

1. Vani wants to make a smaller circle using the same rope. How can she do it?

2. Go out side with your friends. Make circles on the ground like Goutham and Sujatha.

Do you remember finding the centre of a square in the chapter on angles. Now, Let us find the centre of a circle.

Activity

Take a bangle and draw circle on a piece of paper using it. Cut the circle. Fold it 3 times as shown in the picture.
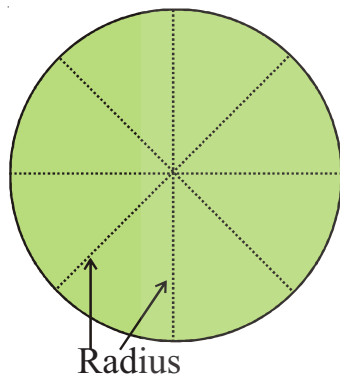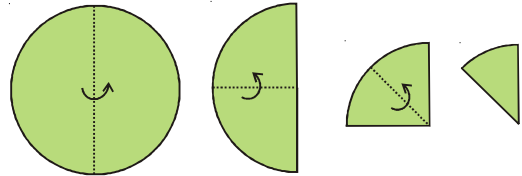
Open it. Do you see the creases on the paper?

They are all meeting at one point. This is the centre of the circle.

Take a scale. Measure the length from the centre to the edge of the circle. Take as many different points on the edge, as you want.

You will find that the length from the center to the edge is the same each time. This length is called the radius of the circle.

Radius

Do This

1. Tick (✓) the circle with the longer radius.

(a) The radius of the bigger circle is _____ cm.

(b) The radius of the smaller circle is _____ cm.
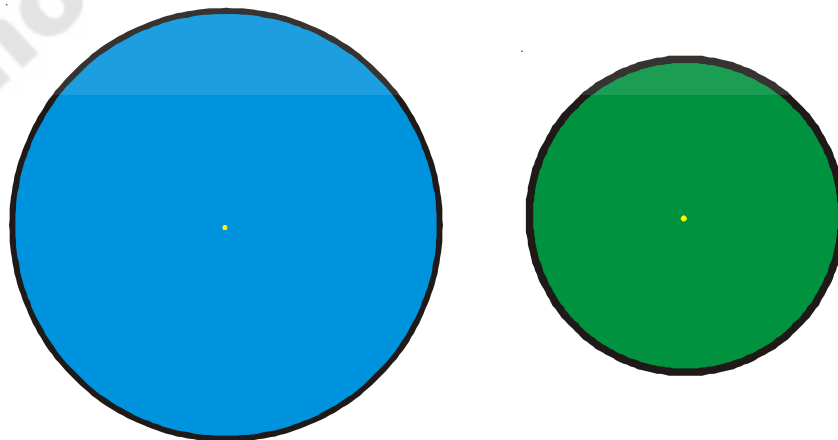
Tangram

Grandmother was very happy that Vani was studying hard. She decided to reward Vani.

Grandmother: I will reward you with a Chinese puzzle - it is called **Tangram**!! Let us make a tangram set.
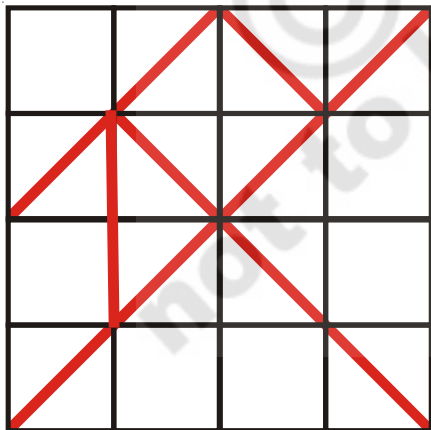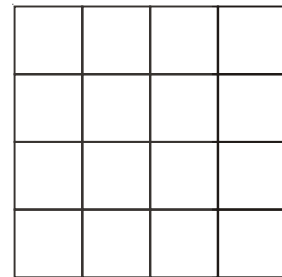
Activity

Lets make tangram

Take a hard sheet of paper. Use cartridge sheets or old cards or stick some white paper on cardboard.

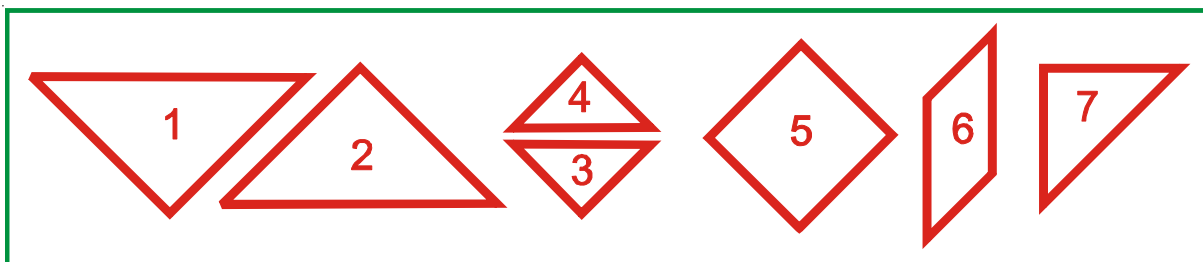Cut a big square from the sheet. Draw it into 4 equal parts as shown here.
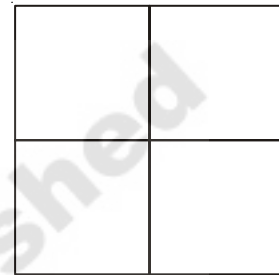
Then divide each of these parts into four more equal parts as shown-

We get a grid with sixteen equal squares. Draw dark lines on the grid as shown.

Cut carefully along the dark lines. This is our **tangram set!** It has seven pieces. **How many squares are there? How many triangles are there?**
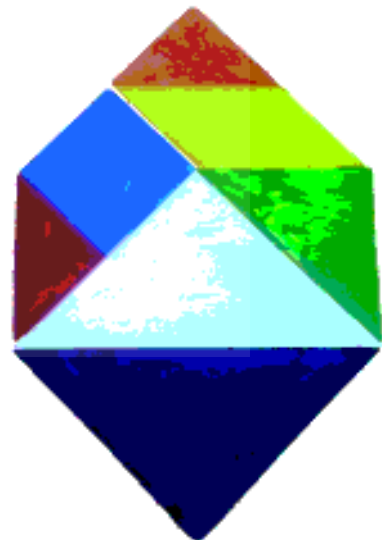
All the pieces of the tangram can be used to make different shapes a triangle and a rectangle have been made below
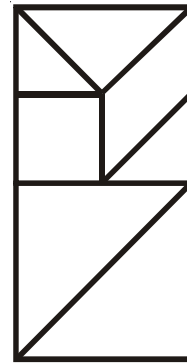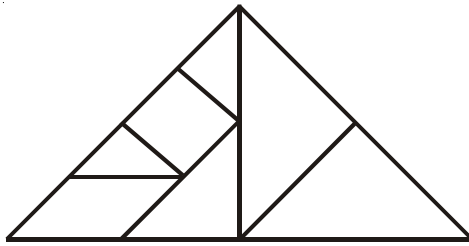
Now you make the some other shapes using all the pieces of the tangram.
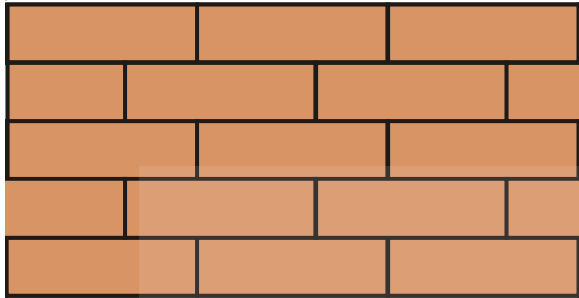
Try This
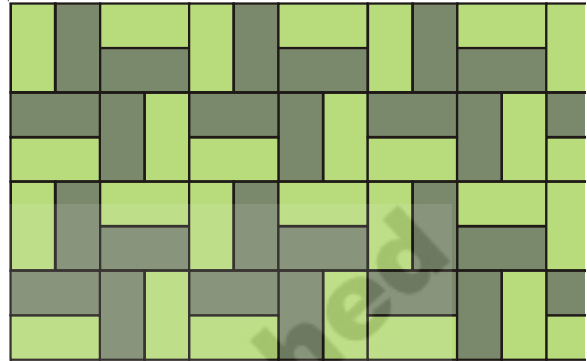
1. Make the figures given below using your tangram set.

2. Make more new figures with your tangram set using all 7 pieces. Do not forget to look at the figures your classmates have made?

Tiles

In a tangram, we have 7 different pieces. What if we had only 1 type of piece? Suppose you have [▭] tile. We can arrange it as follows.
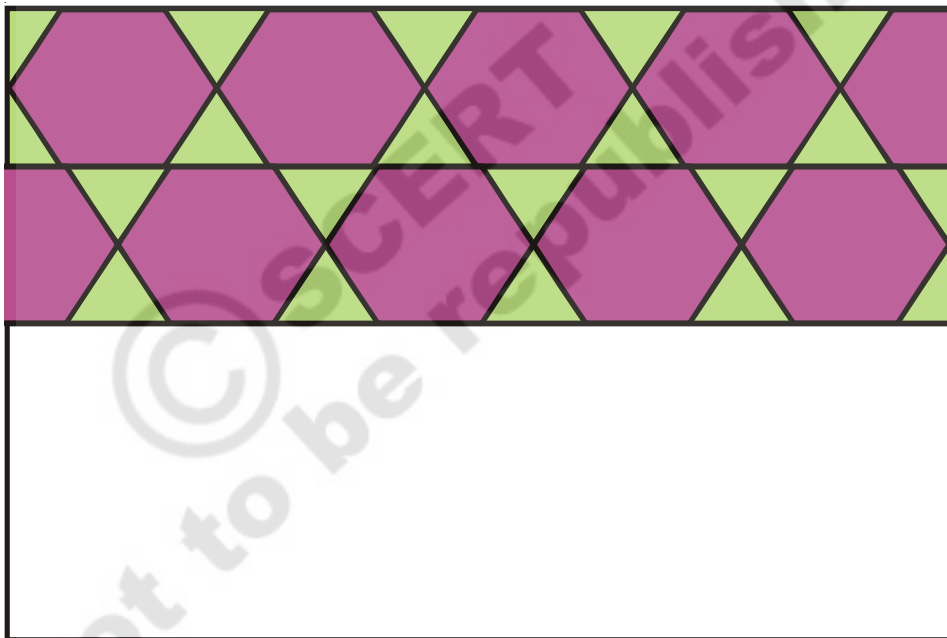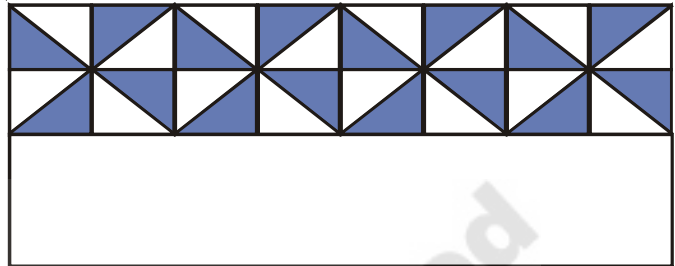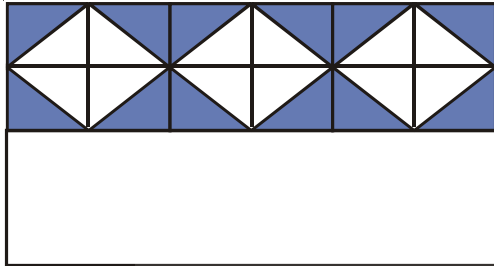
This looks like a brick wall.   This looks like a floor pattern.

Now use [▭] tile to make atleast 2 more floor patterns.

Do This

1. Extend the given floor patterns. Also identify the tile which is repeating itself.

2. Make at least 3 floor patterns using the given tile ▪ .