UNIT 3 LESSON 3

START (10')

Tell children to work in pairs.

Give 3 or 4 shapes to each group.

Each group draws an axis on white paper.

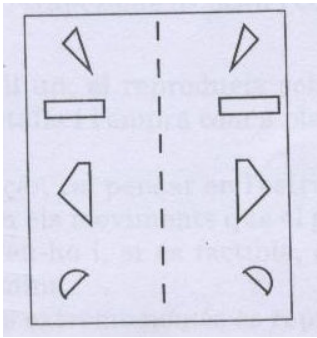
A player chooses a shape and draws it on the paper (following the perimeter shape).

The second player tries to do the symmetrical partner.

Repeat it with the same shape in a different position or with another shape.

Children are allowed to square and ruler.

The winner is the player with the most symmetries. Fold the paper to check it.



Discuss what they did to make the symmetry:

Did you use the ruler and the square?
What for?
How many shapes had the right reflective symmetry?

MAIN TEACHING (40')

Place a shape on the board. Move it in a straight line horizontally to the right.

Ask the special name for this type of movement:

What is the special name for this type of movement?

Establish that it is a translation and that the shape has been translated horizontally to the right.

Ask selected children to translate the shape: vertically upwards, downwards and horizontally to the left.

Ask how could we determine how far in each direction the shape has been translated:

How could we determine how far in each direction the shape has been translated?

Collect suggestions and try them out with the children. Discuss the use of a number grid.

Show the first set of co-ordinates on sheet 1. Ask children to give the co-ordinates of the points of the triangle. Record them on the board as : (2,3) (4,1) (5,3).

Ask what the new co-ordinates will be if the triangle is translated two units upwards:

What the new co-ordinates will be if the triangle is translated two units upwards?

Record the new co-ordinates. Plot them on the grid and join together using a ruler to make a triangle. Discuss the accurate plotting and joining of points.

Work with the other shapes on sheet 1, translating them to the left, right, upwards or downwards.

Discuss the effect of translating a shape asking what changes when a shape is translated and what remains he same:

What changes when a shape is translated?
What remains the same?

Establish that the position is changed, but the size and shape remain the same. Explain that the shapes which are identical are known as congruent shapes.

Give out worksheet 3.7. Explain that in part one of the sheet each shape is going to be translated according to the instructions. The new points are to be plotted and joined and the co-ordinates recorded for the original position of the shape and new positions. In part 2, the children should draw the translated shape then record the new co-ordinates.

<u>ENDING</u> (10)

Discuss the children's results. Ask for the co-ordinates for each example, and record on the board for the children to check. Deal with errors or misunderstandings.

Ask if the two shapes in each of their examples are congruent and how they know it.

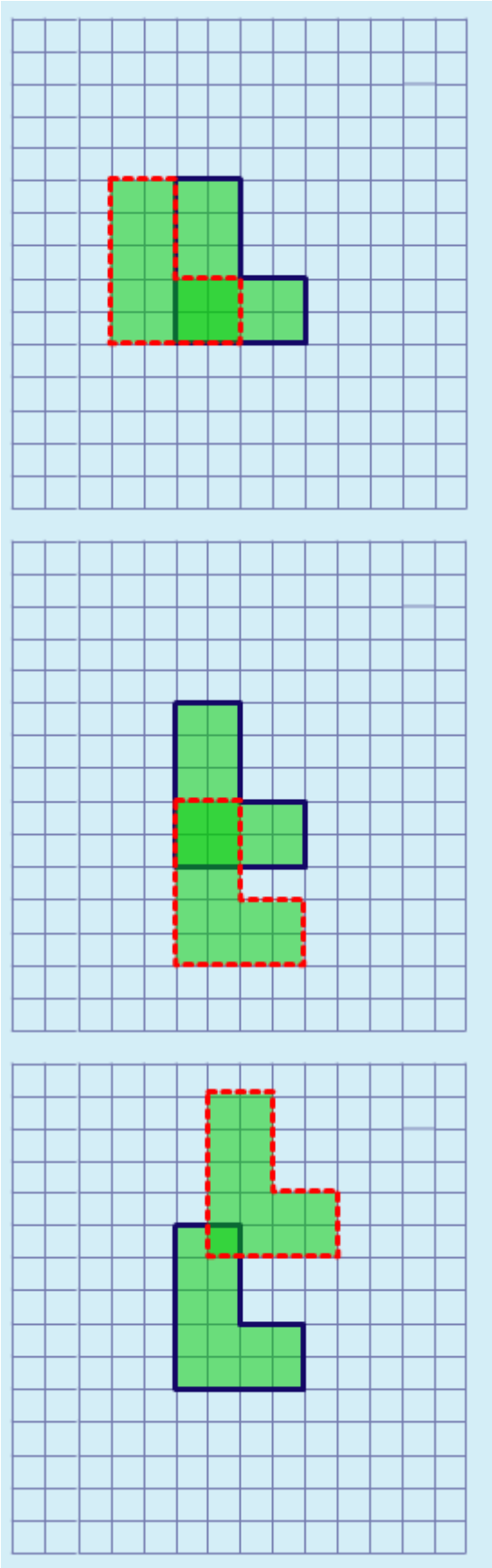
Are the two shapes in each of your examples congruent?
How do you know this?

Establish that in each example the two shapes are identical in all but their positions and are therefore congruent.

Transformation

Translation

- Translation is when a shape slides from one place to another, without turning.

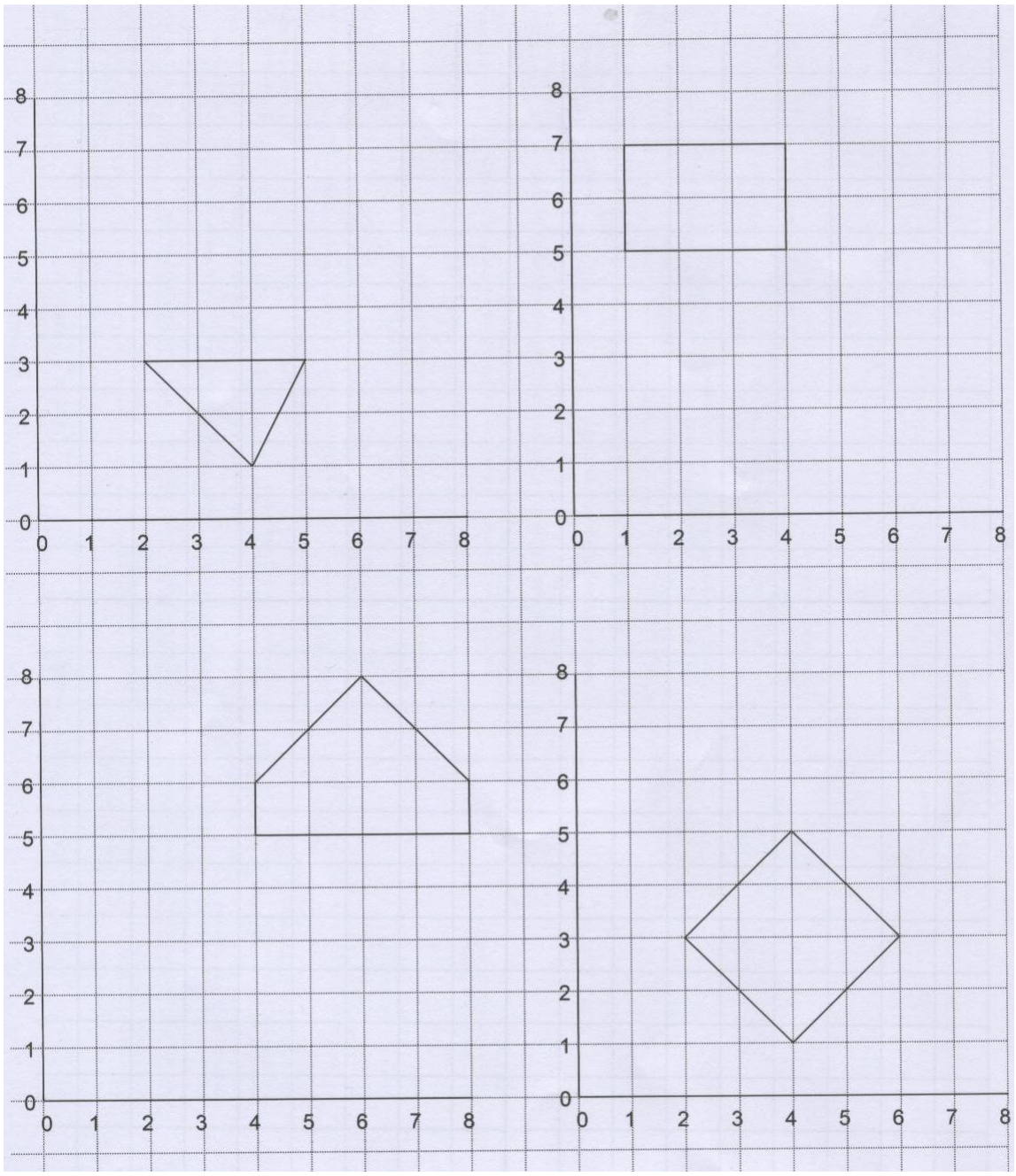


2 squares to the left

3 squares down

1 square to the right and
four squares up

RESOURCES

bag with shapes, square, ruler, worksheet 3.7,sheet 1, P.Point translation U3 L3 and translation bis U3 L3,
http://www.mathsonline.co.uk/nonmembers/gamesroom/transform/postshape.html

Sheet 1