Symmetry
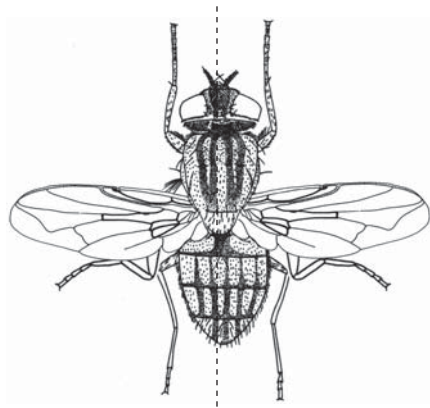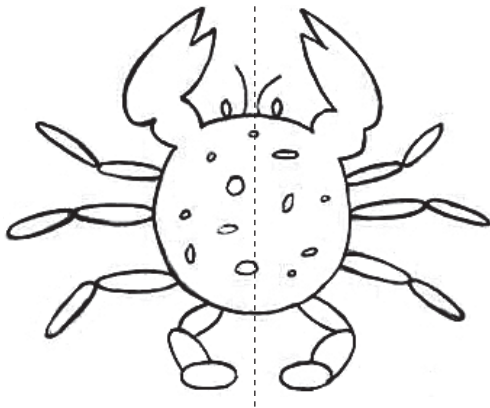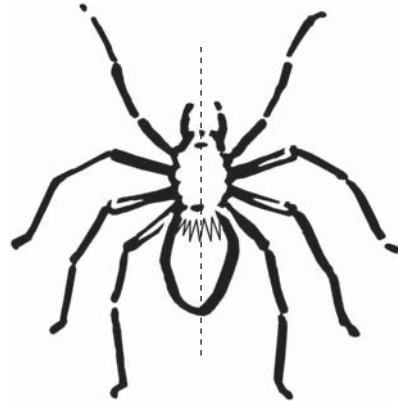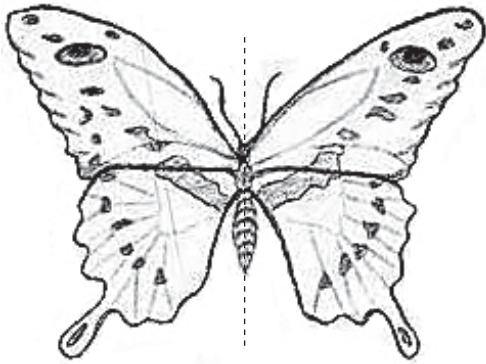
Symmetry in nature

Nearly all birds, insects, fish and people have a balanced appearance with respect to one or more lines.

The butterfly, spider, crab and housefly have a natural beauty related to their shape.

Stand a mirror on the dotted line and see how one half is reflected giving the entire picture.

We call this reflectional symmetry. The line on which the mirror is placed is called a line of symmetry.

Line of symmetry

Cut out this square. Fold the paper so that the two halves of the square will be equal in size and fit each other exactly. How many ways are there?

Each of these folds or lines are lines of symmetry. Look how the two halves fit exactly one over the other.

Now cut out each of these figures. Fold them to find out the lines of symmetry.
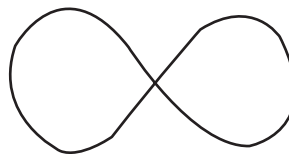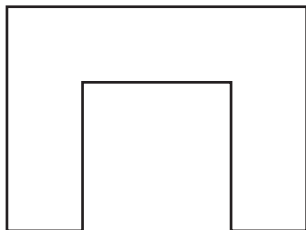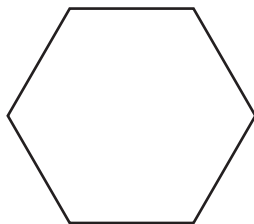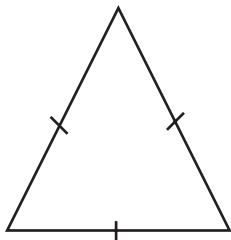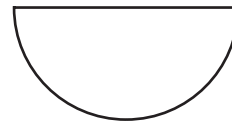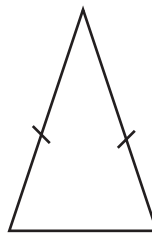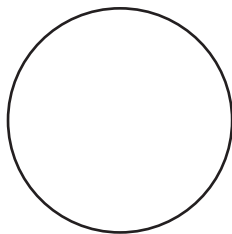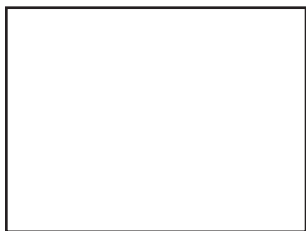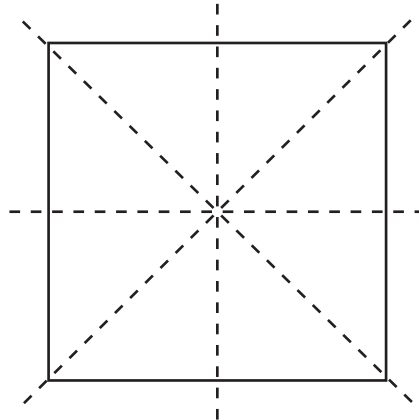
Mirror images

Alphabet Images
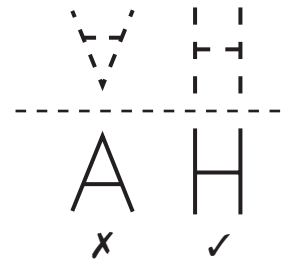Write out all the letters of the alphabet (in capitals). Let us find out which letters do not change in appearance when reflected in a mirror. There are 2 ways of placing the mirror.

a. Place the mirror sideways   or   b. up/down
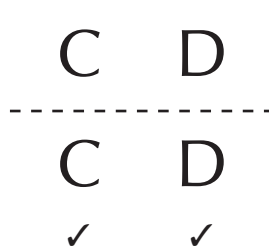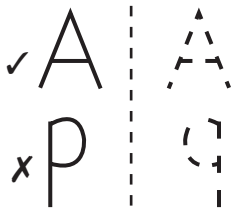
Can you think of small words which look the same when reflected 1. sideways or 2. up/down. Here is an example.
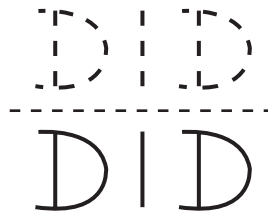
Word images

You can find really long words with horizontal line symmetry. Here are two examples to help you:

DECIDED   DECODED

Can you think of more?

Completing symmetrical shapes

Given any figure, and its line of symmetry let us complete it like this.

Here are some half shapes. Complete them symmetrically. Try making more half shapes on your own.

Point symmetry

Pick up any one card, say the king of spades, from a deck of playing cards. Cut it across as shown. Lay the two pieces alongside as shown. What do you notice?
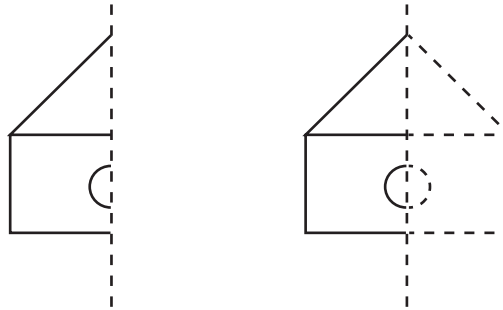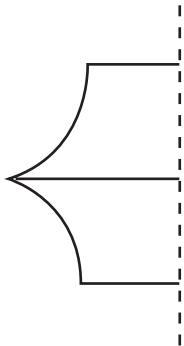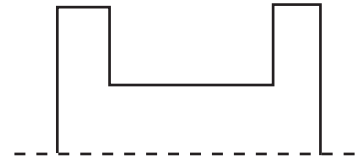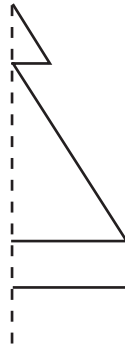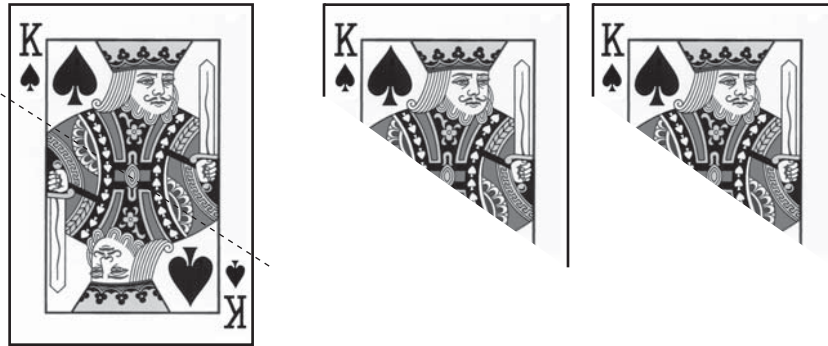

Cut another card horizontally. Are the two pieces alike?
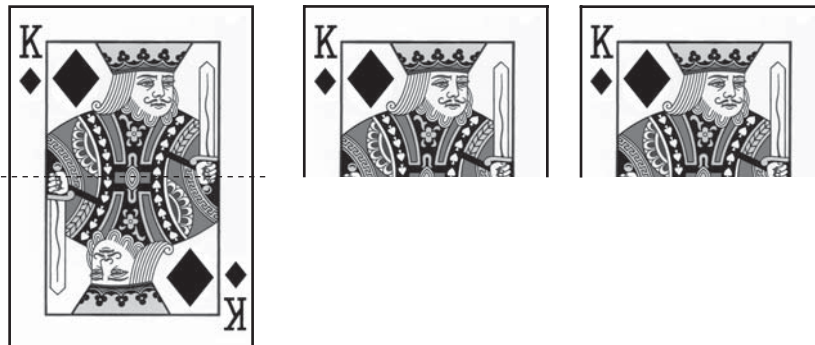
Anything with point symmetry will look the same from the opposite direction.

Does point symmetry work only for picture cards? Use some of the number cards to check this out.

Number Images
Use a mirror to list out the numbers (0 to 9) which display symmetry.

Can you read this numeral with help of the mirror? Try to write your secret codes.

Symmetrical shapes

Paper Folding

Take a piece of newspaper. Fold it exactly in two. Now take the folded edge and fold it on to itself. Mark an 'x' at the junction of the two folds. Tear (or cut) f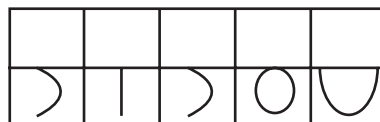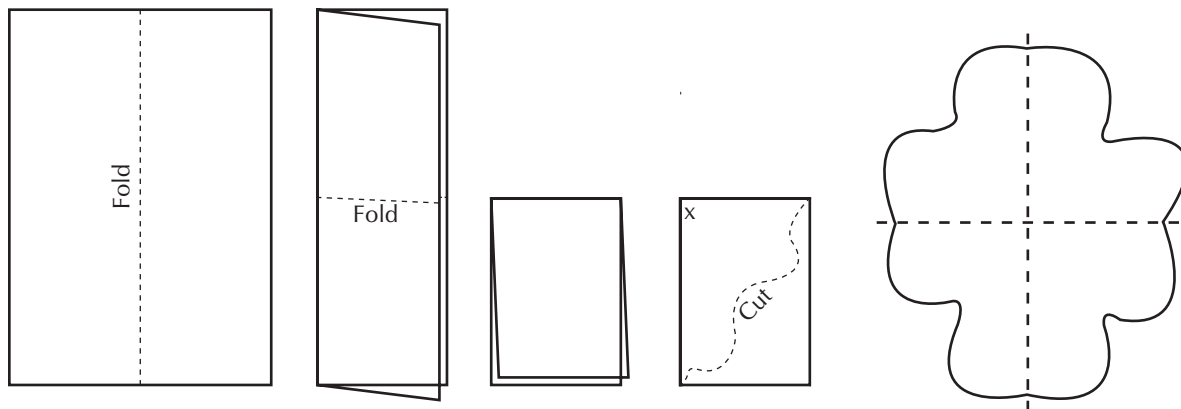rom one folded edge to the other folded edge. Open out the paper to show a symmetrical shape. The folds are the lines of symmetry.

Easy Art

Wouldn't you like to discover how artistic you are? All you need is a sheet of white paper and some tubes of paint. Fold the sheet in two, then open it out and lay it flat on a table. Squeeze spots of 3 or 4 colours on one half of the paper. Fold the other half over the paint and press down using a book or board.

Open out the folded half. *Voila*! Wasn't that fun? Use a mirror and check out the symmetry.
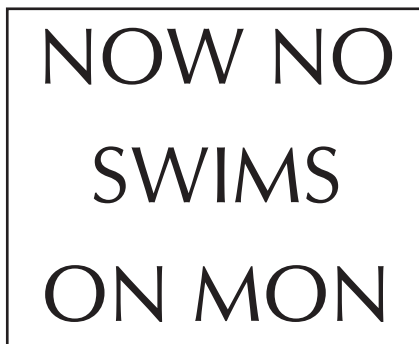
Flag study

Shown below are the flags of four countries:

How many lines of symmetry does each flag have? Fold and check. Draw flags of other countries and find out how many of them do not have any line of symmetry.
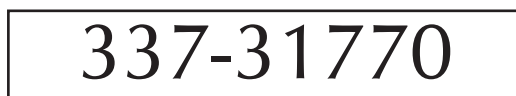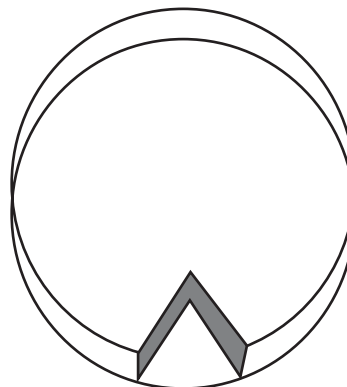
Figure this out!

1. This sign board was found next to a swimming pool. What do you notice?

NOW NO

SWIMS

ON MON

2. Mr. Oliver Lee wanted this number for his license plate on his car. Can you think why?

337-31770

3. You are offered the cut slice of cake on the plate. How do you get it?

(Just rotate the page through 180º)

Isn't the front page interesting? Is there vertical line symmetry? Yes and no. Look carefully to discover this by comparing the symmetrical parts of the drawing. You could of course use a mirror to help you check it out.

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