



Lesson Plan: Line Symmetry

Class: Third / Fourth Class

Strand: Shape and Space

Strand Units: Symmetry

TITLE: SYMMETRY AND THE SEA

Aim / Description:

The aim of this lesson plan is to teach students about line symmetry in the marine environment and familiarise them with drawing lines of symmetry in two dimensional shapes. The students will begin by identifying symmetrical pictures and work up to drawing symmetrical images by themselves. The use of drawing and identification will enable students to communicate their understanding of line symmetry in different shapes.

For more information on sea animals and their habitats see the following teaching materials found at www.explorers.ie: “Explorer Species Information Book”, “What will I see on the Seashore - Anecdotes about the Seashore”, “Seashore Ecology - Seashore Survey looking at the Zones” and “Illustration of the Seashore Zones”.

Materials

- Worksheet-Maths 14: Cut and Fold Shapes
- Worksheet-Maths 15: Pictures and Symmetry
- Worksheet-Maths 16: The Other Half
- Worksheet-Maths 17: Sketching Symmetry
- Selection of pencils, coloured pencils and markers
- Optional: Selection of symmetrical (have a line / lines of symmetry) and asymmetrical (have no line / lines of symmetry) specimens for students to observe

Activity:

Step 1:

- Put children into groups and provide with Worksheet-Maths 14.
- Have them cut out the shape and then fold it to identify the lines of symmetry.
- Ask the students how many lines of symmetry they can find on each shape.
- **Extension for Fourth Class:** Identify the lines of symmetry as vertical, horizontal or diagonal.
- In groups, the students can talk about why the lines of symmetry are correct using visual and oral communication skills.



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Step 2:

- Provide the Worksheet-Maths 15 to each student
- Ask students to study each image to identify if they have any line / lines of symmetry. The lines of symmetry may be vertical, horizontal or diagonal. Explain how images with lines of symmetry present are called symmetrical. Images with no lines of symmetry are called asymmetrical.
- Ask students to circle the correct answer for each image by identifying the images which portray symmetry.
- Discuss the results with students. (Sample questions: Was it easy to identify the symmetrical images? Why or why not. Can they think of other examples of symmetry in nature or real life? i.e. Humans, animals, leaf, window.

Extension for Fourth Class

Step 3:

- Provide the Worksheet-Maths 16 to each student.
- Ask students to complete the missing half of the pictures provided.
- Discuss lines of symmetry in each picture

Step 4:

- Provide Worksheet-Maths 17 to each student
- Allow students to draw a symmetrical sketch from the list provided.
- Have students mark the line / lines of symmetry on their sketch.

Outcome / Objective:

The children in the class should have developed an understanding for concepts of line symmetry in Shape & Space (Geometry) through the use of:

- **Identification**
- **Exploration**
- **Drawing**

The children in the class should have developed and applied skills in the following:

- **Communication and expression**
- **Understanding and recalling**
- **Reasoning and implementing**

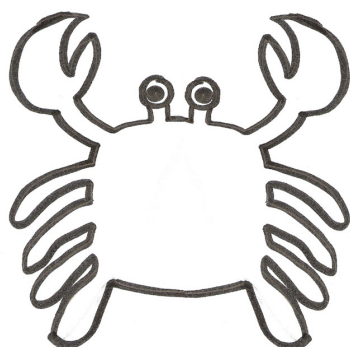
Worksheet-Maths 15: Pictures and Symmetry

Class: Third / Fourth Class

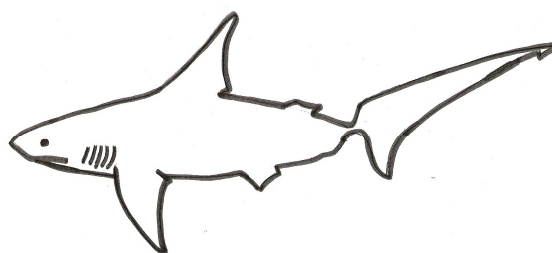
Strand: Shape and Space

Aim / Description:

Ask students to identify if the pictures shown are symmetrical (have lines of symmetry) or not and circle the correct answer for each one.



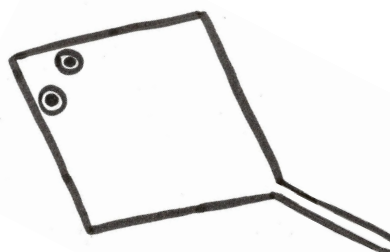
Yes No



Yes No



Yes No



Yes No



Worksheet-Maths 14: Cut and Fold Shapes

Class: Third / Fourth Class

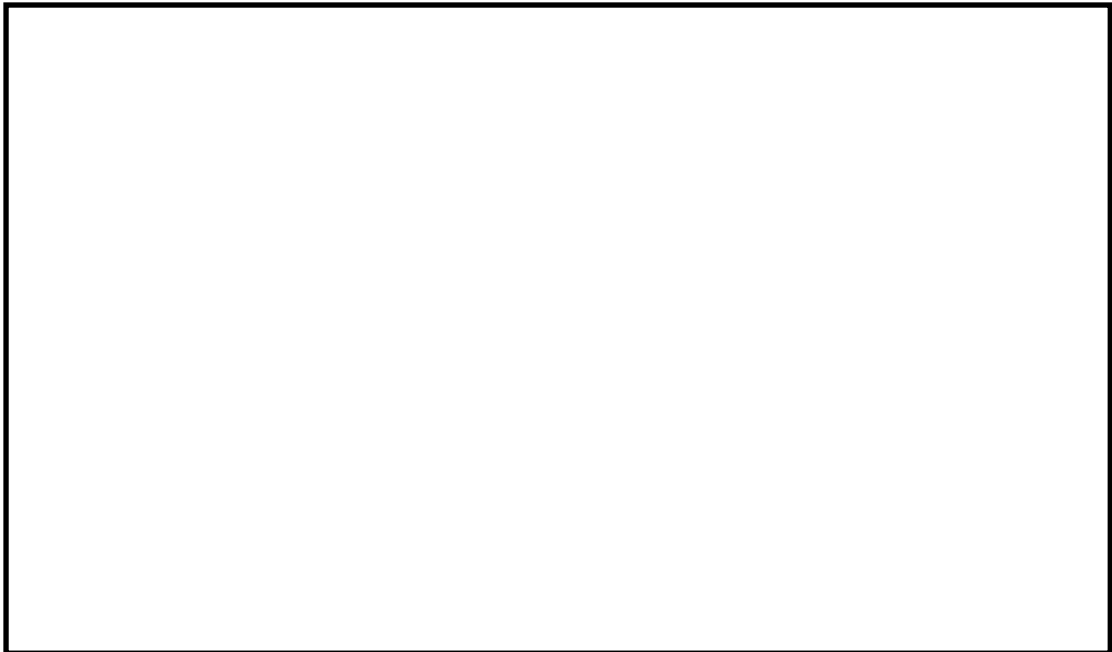
Strand: Shape and Space

Aim / Description:

The aim of this worksheet is to provide students with different shapes to cut and fold. Once the shapes have been cut out, students can fold them to show the line/ lines of symmetry. Ask students how many lines of symmetry they can find on each shape.

Shapes:

Rectangle



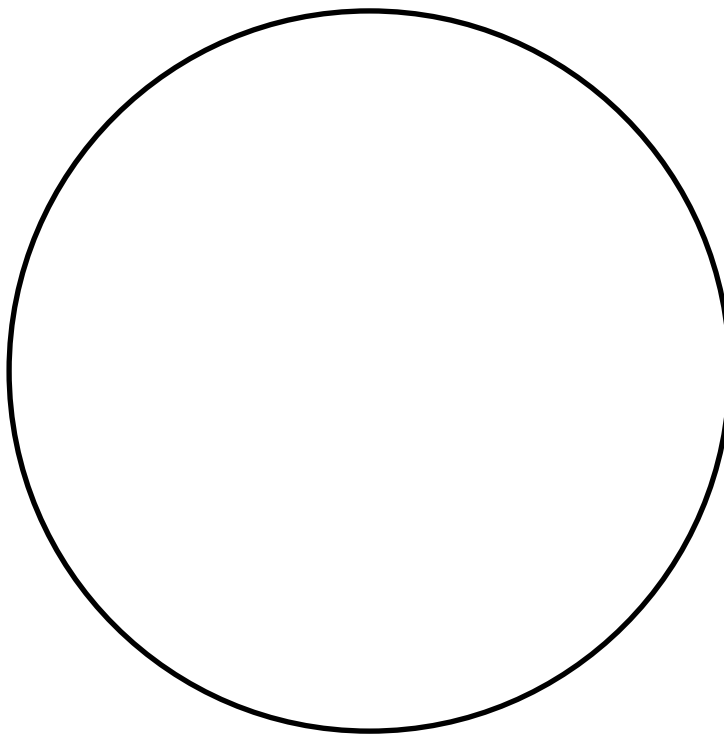


Worksheet-Maths 14: Cut and Fold Shapes

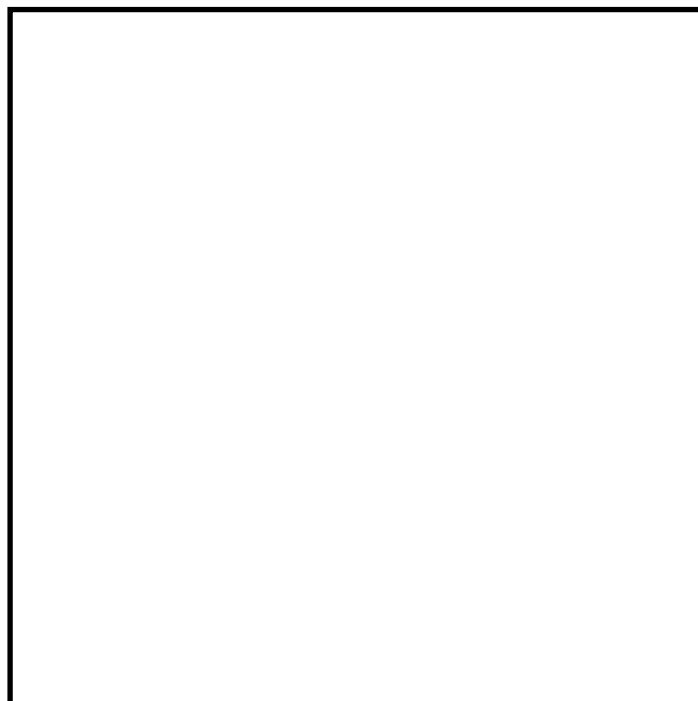
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Circle



Square

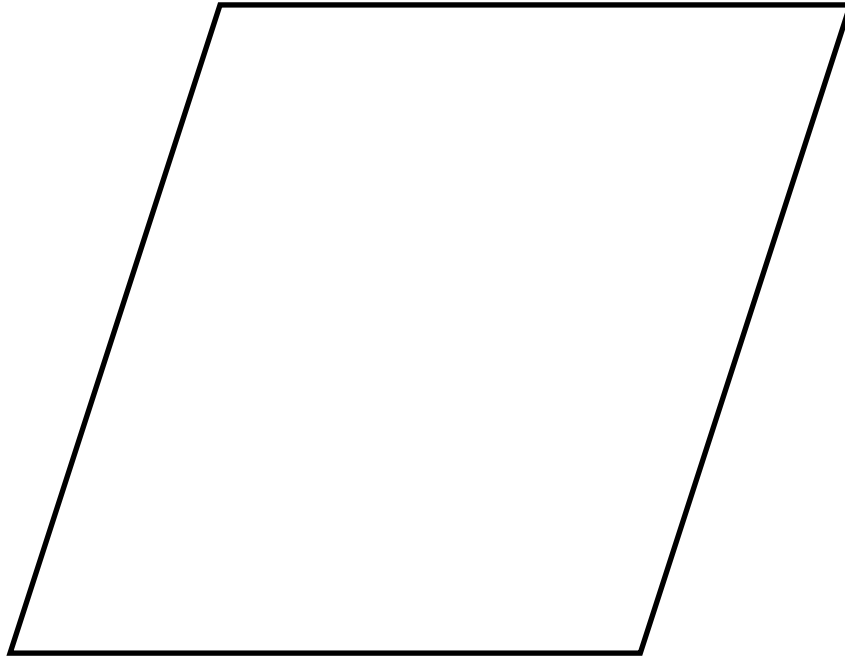


Worksheet-Maths 14: Cut and Fold Shapes

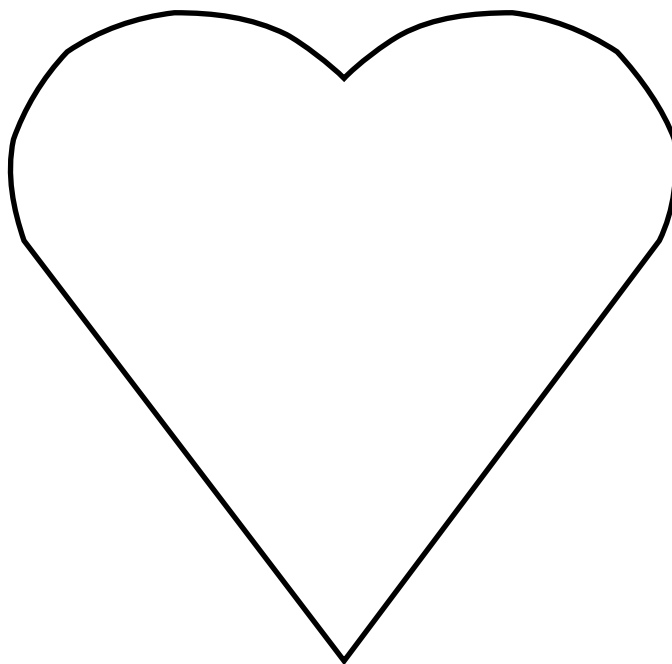
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Parallelogram



Heart

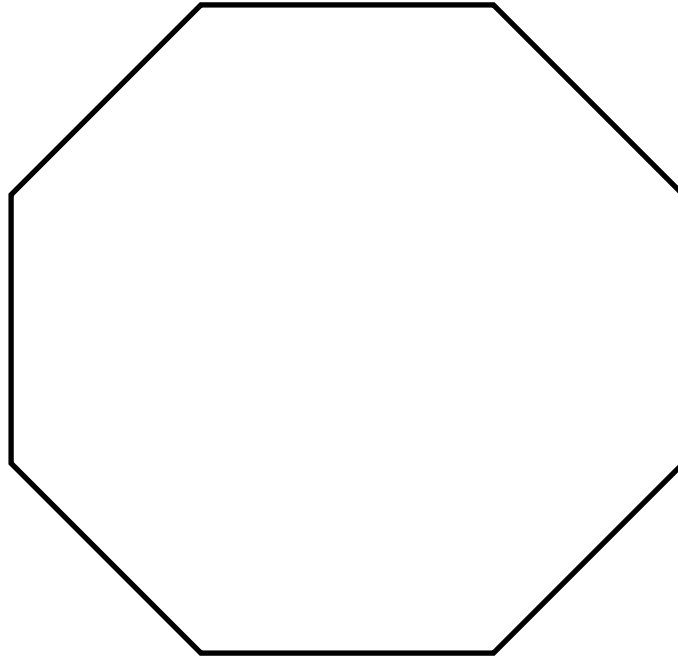


Worksheet-Maths 14: Cut and Fold Shapes

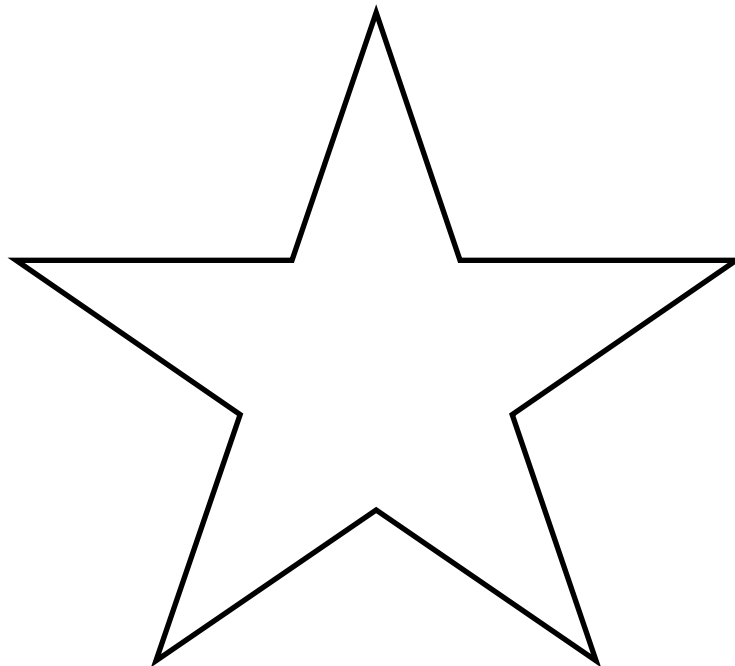
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Octagon



5 pointed star

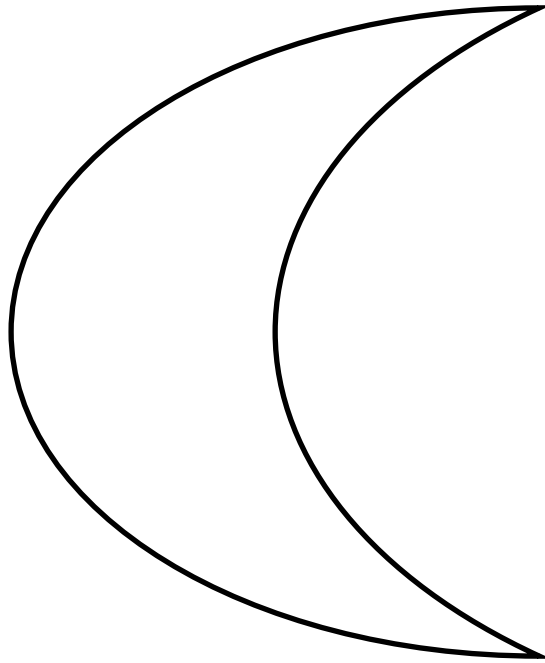


Worksheet-Maths 14: Cut and Fold Shapes

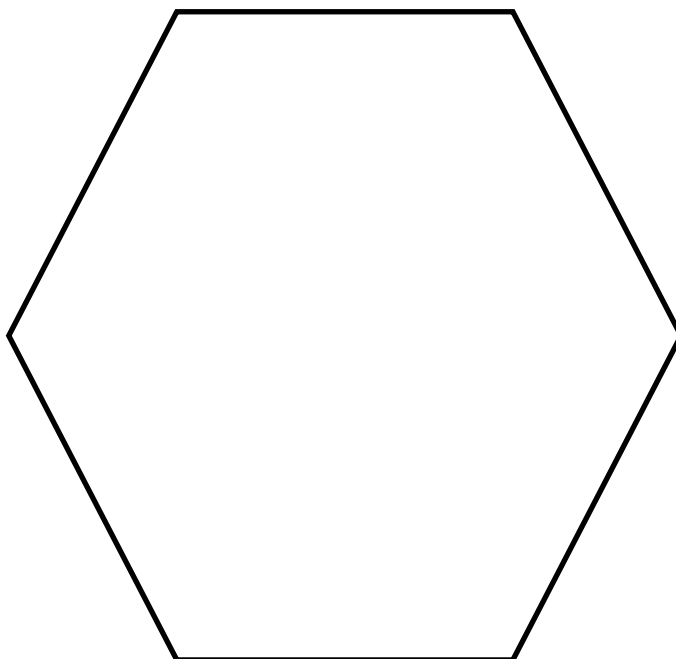
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Moon



Hexagon

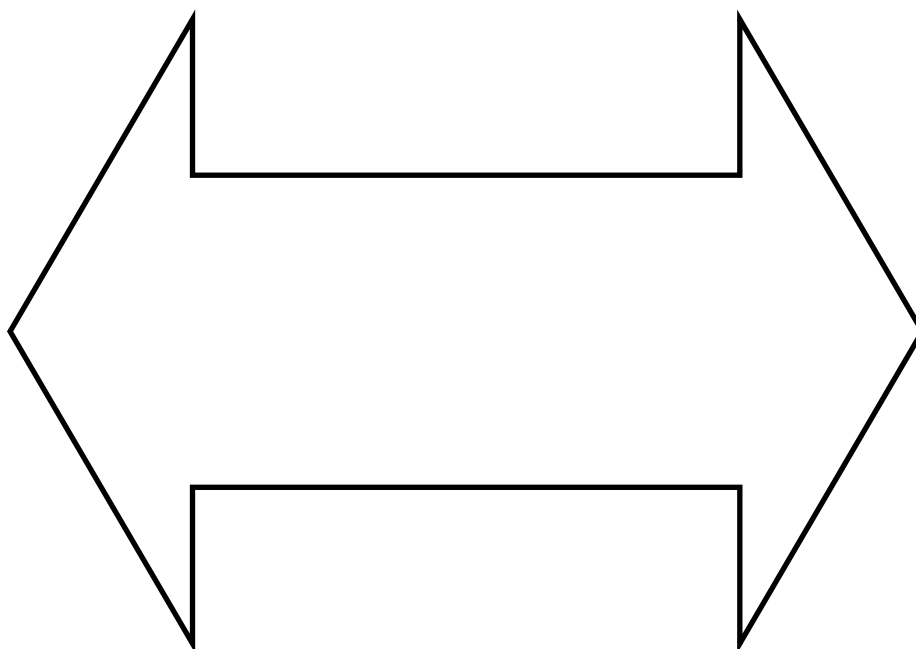


Worksheet-Maths 14: Cut and Fold Shapes

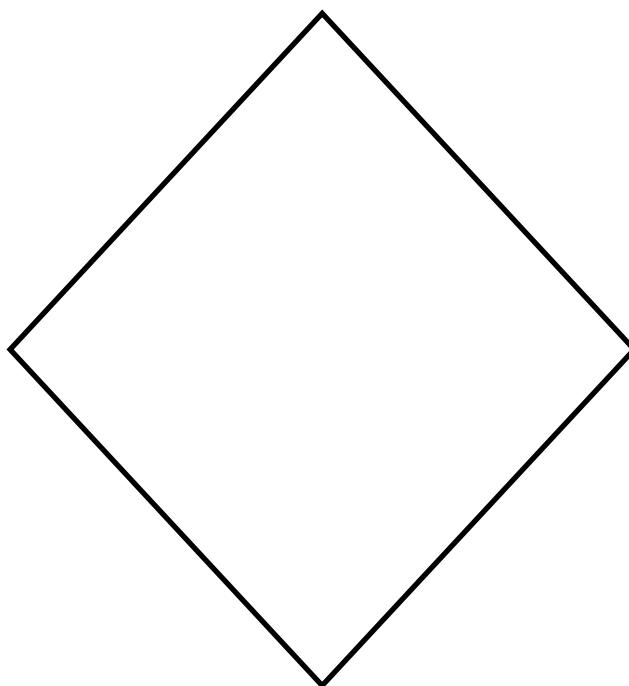
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Left and right arrow



Diamond



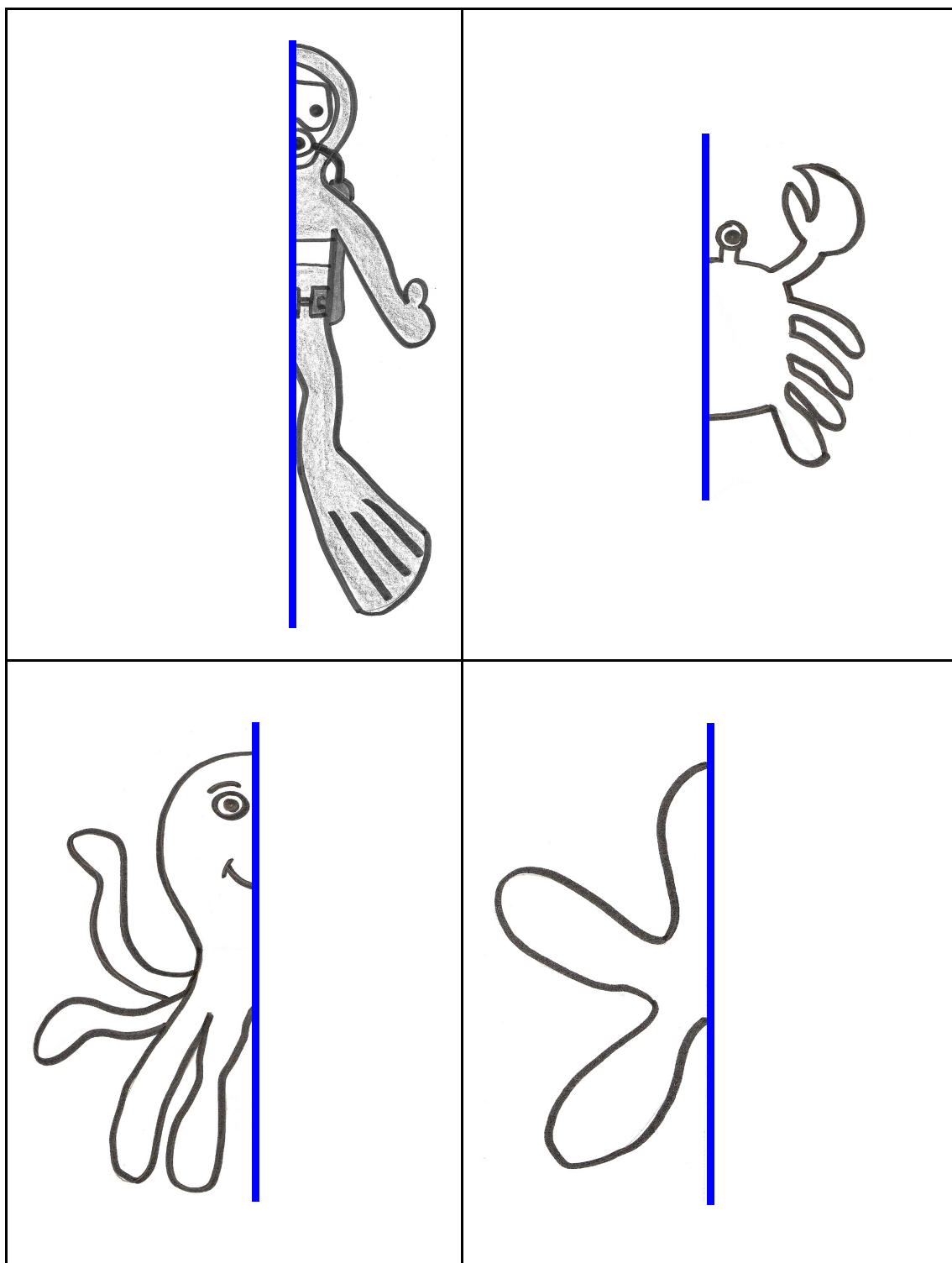
Worksheet-Maths 16: The Other Half

Class: Fourth Class

Strand: Shape and Space

Aim / Description:

Ask students to draw the other half of each picture in a symmetrical way.



Explorer Education Programme



Worksheet-Maths 17: Sketching Symmetry

Class: Fourth Class

Strand: Shape and Space

Aim / Description:

Make a symmetrical drawing of one of the following:

- Jellyfish
- Crab
- Turtle
- Fish
- Person