

# Turtle Symmetry

Grade 2 - Mathematics



## Lesson Details

<b>Grade Level:</b>	2	<b>Curriculum Links:</b>	Mathematics, Visual Arts	<b>Time Needed:</b>	45 minutes
<b>Learning Goal</b>	To practice using a symmetry mirror and to symmetrically colour the entire image of a turtle. To understand what symmetry is and how to identify it in everyday objects.				
<b>Success Criteria</b>	By the end of this lesson, students will have practiced using a symmetry mirror, successfully coloured their turtle, discussed objects around them and in nature that have symmetry and identified the line of symmetry in various images.				
<b>Specific Expectations</b>	<p><i>Mathematics – Geometry and Spatial Sense</i></p> <ul style="list-style-type: none"> <li>• Locate the line of symmetry in a two-dimensional;</li> <li>• Create and describe symmetrical designs using a variety of tools.</li> </ul> <p><i>Visual Arts – Elements of Design</i></p> <ul style="list-style-type: none"> <li>• Use elements of design in artwork to communicate ideas, messages, and understandings.</li> <li>• Use a variety of materials, tools, and techniques to respond to design challenges: drawing, mixed media, painting, printmaking, sculpture.</li> </ul>				
<b>Materials Needed</b>	Worksheet (attached), Pencil, Symmetry Mirror, Colouring Pencils, Markers, Crayons.				

## Lesson Description

<b>Overview</b>	Using a symmetry mirror, students will re-create and properly colour the turtle on the provided worksheet. Students will generate a list of objects that have symmetry and identify the line of symmetry in various images.
<b>Activity</b>	<ol style="list-style-type: none"> <li>1. To begin, hand out the attached worksheet.</li> <li>2. Explain what symmetry is and ask the students if they can spot objects in the classroom that have symmetry (E.g. desk, pencil, a shape, chair, etc.)</li> <li>3. Next ask if the students can think of objects or animals in nature that have symmetry (E.g. tree, flower, butterfly, turtle, etc.)</li> <li>4. Hand out the symmetry mirrors and colouring utensils, and have the students complete the attached worksheet.</li> </ol>
<b>Background Information</b>	<p><b>Symmetry</b> is defined by an object looking exactly the same on both sides when a central dividing line (or mirror line) can be drawn on it.</p> <p>Turtles have symmetry. The top shell of a turtle is called a <b>carapace</b>. Many turtles have distinct carapace shapes or markings that can be used to identify them. The triangular (or geometric) sections on the carapace are called <b>scutes</b>. <b>Marginal scutes</b> are found around the carapace and <b>ridges</b> are the nodes/connections between them. The scutes of a turtle’s carapace are arranged in longitudinal rows with strict bilateral symmetry in organization. The colours and characteristics of the scutes vary from species to species. For example, the Spotted Turtle, although symmetrical in scute layout, has a random assortment of spots on the carapace.</p>
<b>Blacklist Masters</b>	<ul style="list-style-type: none"> <li>• Worksheet (attached)</li> <li>• Video Link(s): <a href="#">Ontario Turtle Identification</a></li> <li>• For more information, please visit <a href="https://www.turtleguardians.com/sample-page/id-turtles/">https://www.turtleguardians.com/sample-page/id-turtles/</a></li> </ul>

## Lesson Description

<b>Place-Based Learning</b>	Students are encouraged to go for a walk in nature and identify things that have symmetry.
<b>Inquiry-Based Learning</b>	Using <b>Confirmation Inquiry</b> , the students will investigate objects around them and in nature to determine if it has symmetry, all while using a symmetry mirror to complete an illustration.  Ask the students: <ul style="list-style-type: none"><li>• What is symmetry?</li><li>• What objects have symmetry?</li><li>• How does a turtle have symmetry?</li></ul>
<b>Turtle Stories</b>	Try drawing a picture of a turtle's habitat with just symmetrical objects found in nature. Students are encouraged to share their experiences, pictures, and worksheets on the Turtle Stories website, found here: <a href="https://www.turtlestories.ca/">https://www.turtlestories.ca/</a>
<b>Turtle Guardian Program Links</b>	In <b>Level 1</b> (Ontario Turtle Identification) of the <b>Turtle Guardian Program</b> , students will learn how to identify all 8 species of Ontario's turtles. For more information, please visit <a href="https://www.turtleguardians.com/what-is-a-turtle-guardian/">https://www.turtleguardians.com/what-is-a-turtle-guardian/</a>

## My Notes



# Turtle Symmetry

List objects in the classroom that have symmetry.

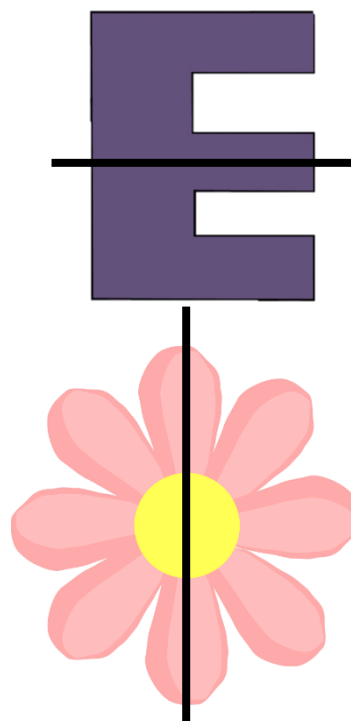
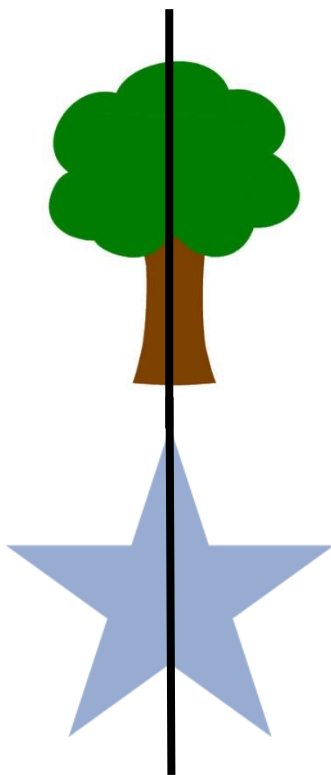
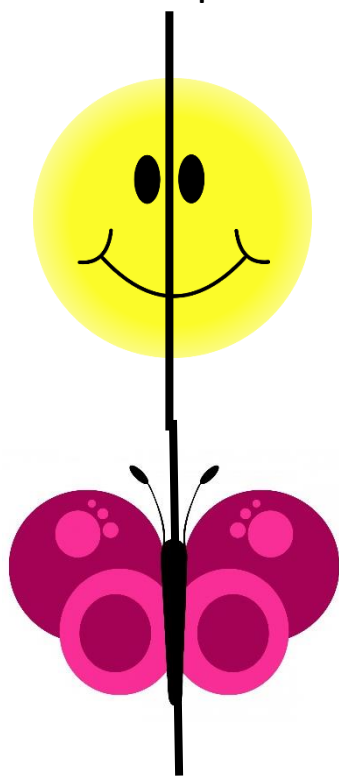
1. Desk
2. Pencil
3. Triangle

List objects in nature that have symmetry.

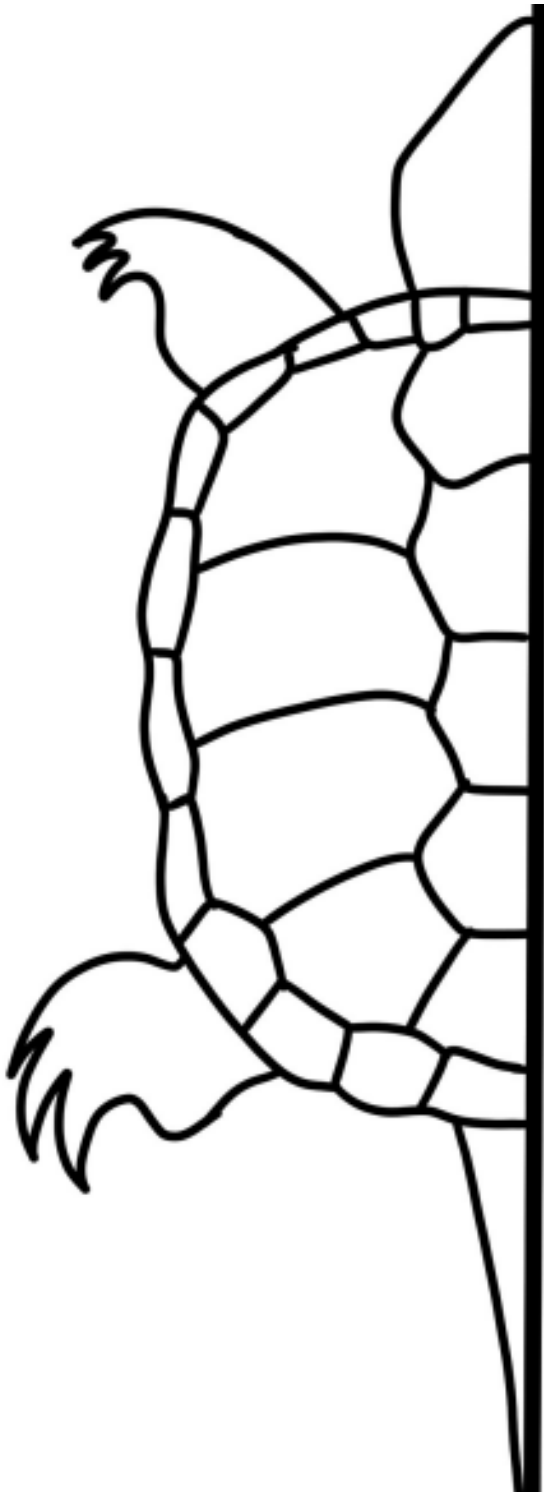
1. Tree
2. Flower
3. Butterfly

Use your pencil to draw the line of symmetry in the following images:

Example:



Use your symmetry mirror to draw the missing side of the turtle.  
Then, colour the turtle. Make sure the colours are symmetrical.





# Turtle Symmetry

List objects in the classroom that have symmetry.

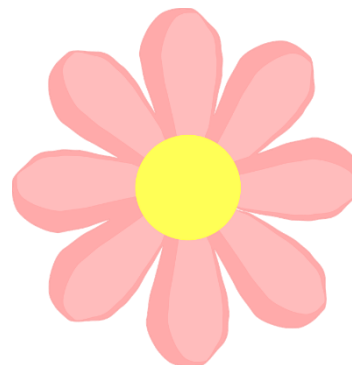
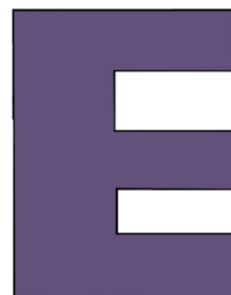
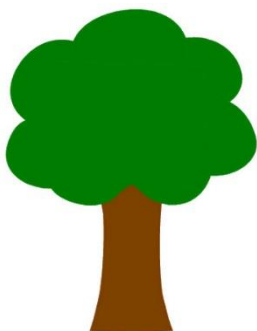
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

List objects in nature that have symmetry.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Use your pencil to draw the line of symmetry in the following images:

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