Measurement and Geometry: Location and Transformation: Drawing Reflected Shapes

Australian Curriculum
This lesson plan could be used to support the teaching and learning of the following Content Description from the Australian Curriculum.

Y5 – Measurement and Geometry
Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries (ACMMG114)

Child-Friendly Aim: I can draw the position of a shape following a reflection.	**Success Criteria:** I know that when reflected, a shape keeps the same dimensions. I can count how far each point is from the mirror line.	**Resources:** **Lesson Pack** Mirrors
	Key/New Words: Coordinate, translation, reflection.	**Preparation:** Differentiated **Drawing Reflected Shapes Activity Sheets** – one per child **Candy Reflection Game** – one per group

Prior Learning:	It will be helpful if children have had practise at drawing symmetrical patterns and recognising line symmetry in a variety of diagrams.

Learning Sequence

	Is It a Reflection? Using the images shown on the **Lesson Presentation**, the children have to decide whether the diagram shown is an accurate reflection.	
	Reflecting Shapes in a Mirror Line: Use the information and images on the **Lesson Presentation** to explain that in geometry, a reflection describes a movement where a shape or object is flipped over a mirror line, without changing the size, and every point of the shape or object remains the same distance from the mirror line.	
	Drawing a Reflected Shape: Use the information and images on the **Lesson Presentation** to demonstrate how to accurately draw a reflected shape, ensuring that each point of the shape is translated equally.	
	Drawing Reflected Shapes: Children complete the differentiated **Drawing Reflected Shapes Activity Sheets** to demonstrate they can represent the position of a shape following a reflection. Draw simple 2D shapes after reflections over a horizontal or vertical mirror line where there is no space between the shape and mirror line. Draw 2D shapes after reflections over a horizontal or vertical mirror line. Draw more complex 2D shapes after reflections over a horizontal or vertical mirror line.	
	Candy Reflection: Using the **Candy Reflection Game** and mirrors, the children play as a group. First, a card is drawn from the deck and placed onto the game board. The card displays several different candies which are worth different numbers of points. Each player decides a different mirror line to place the mirror on – a player cannot choose a mirror line that another player has chosen. Once all the players have made a selection, the mirror is placed onto each mirror line in turn. On each placement of the mirror, the player who chose the mirror line wins the number of points on the reflected sweets. The player with the most points wins.	

Masterit

Reflectit: Using a large mirror on a table, investigate the reflective symmetry of different objects placed upon it.

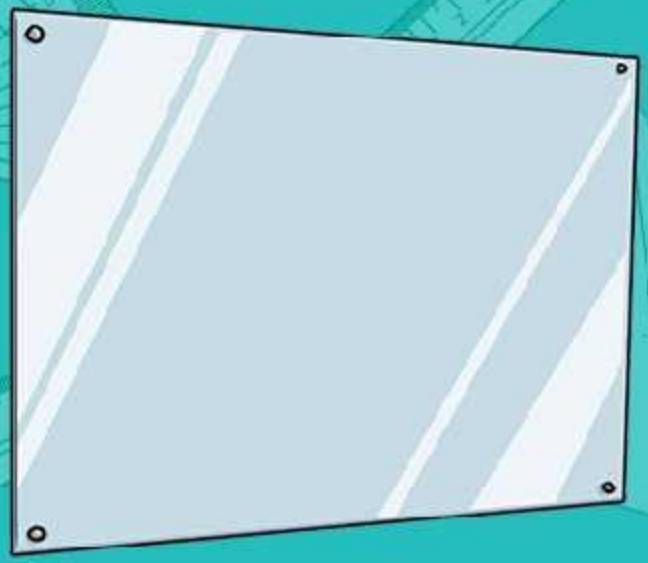
Gymit: Develop complex paired gymnastic sequences which show reflection.

Investigateit: Investigate reflective symmetry in the alphabet, flags, road signs etc.

Mathematics

Measurement and Geometry

Drawing Reflected Shapes



Aim

- I can draw the position of a shape following a reflection.

Success Criteria

- I know that when reflected, a shape keeps the same dimensions.
- I can count how far each point is from the mirror line.

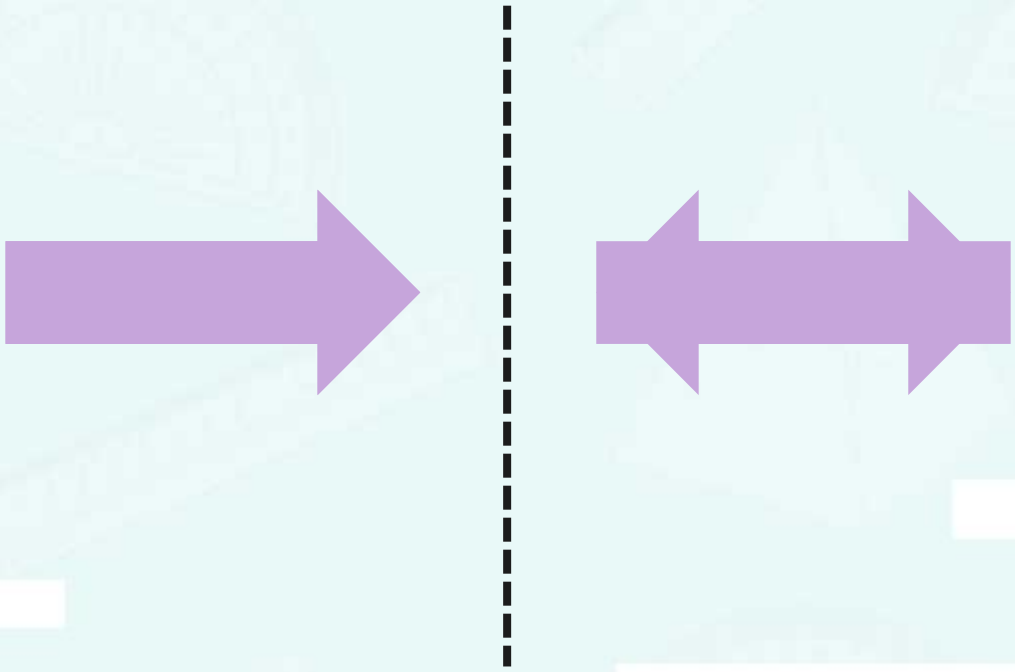
Is It a Reflection?

This reflection is correct!

Show Answer

Is It a Reflection?

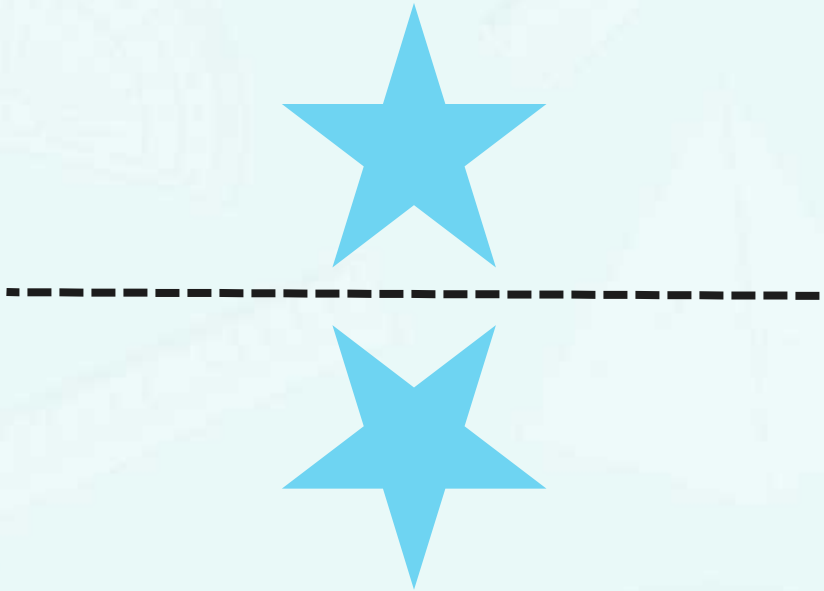
This reflection is incorrect! Click here to see the correct reflection.



Show Answer

Is It a Reflection?

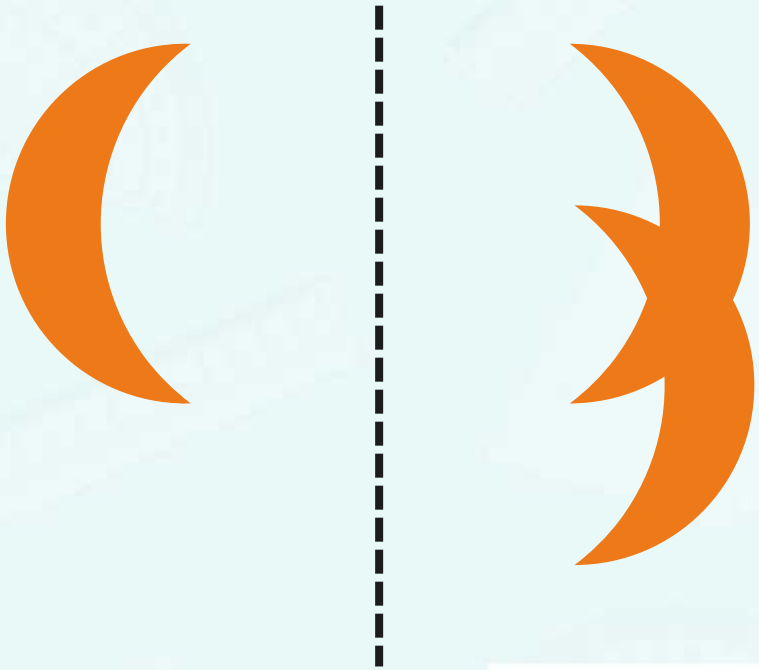
This reflection is correct!



Show Answer

Is It a Reflection?

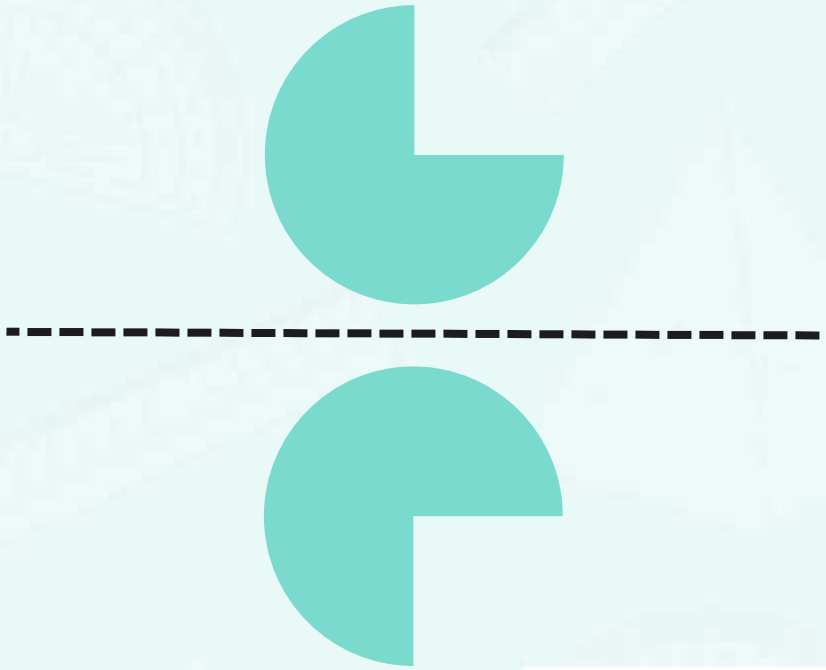
This reflection is incorrect! Click here to see the correct reflection.



Show Answer

Is It a Reflection?

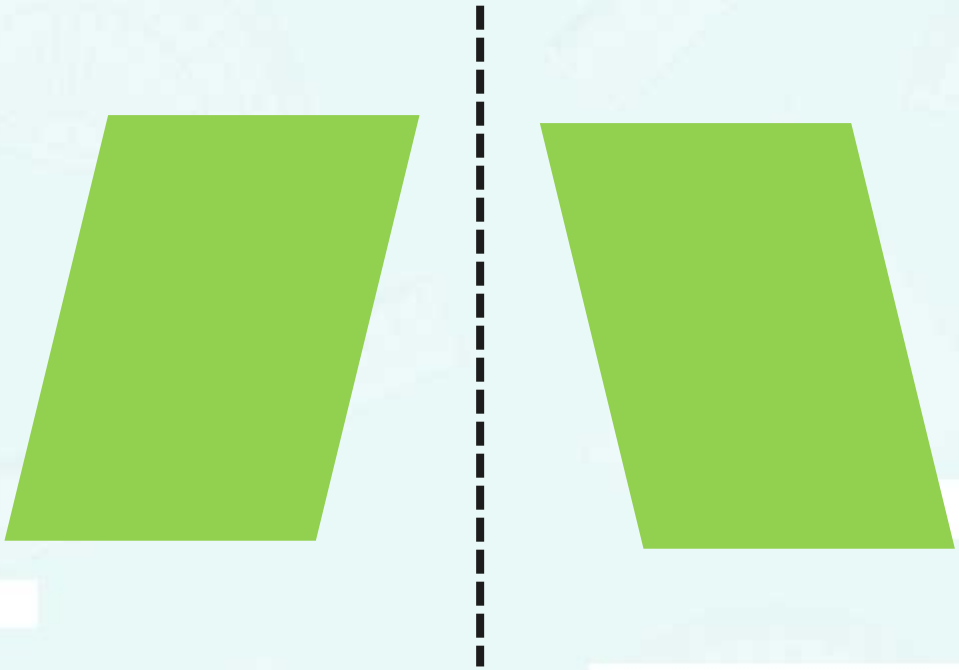
This reflection is correct!



Show Answer

Is It a Reflection?

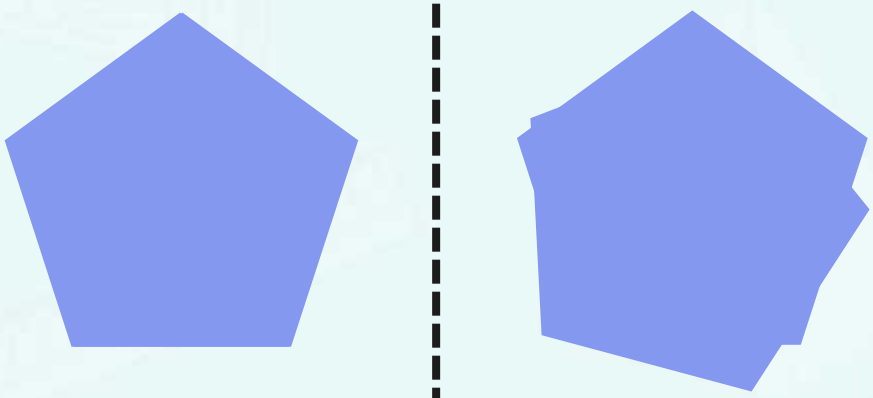
This reflection is correct!



Show Answer

Is It a Reflection?

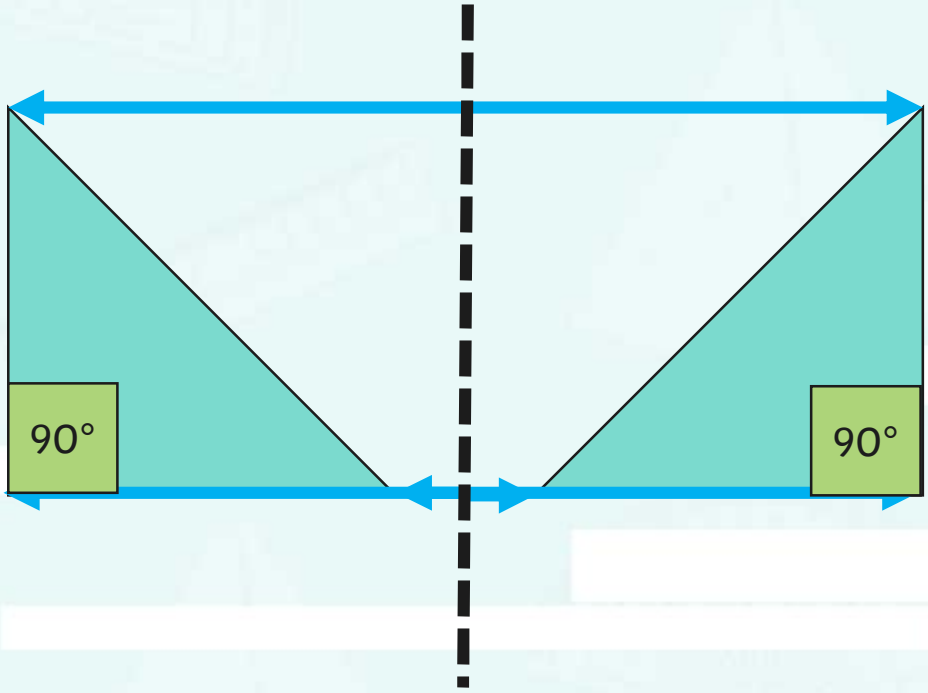
This reflection is incorrect! Click here to see the correct reflection.



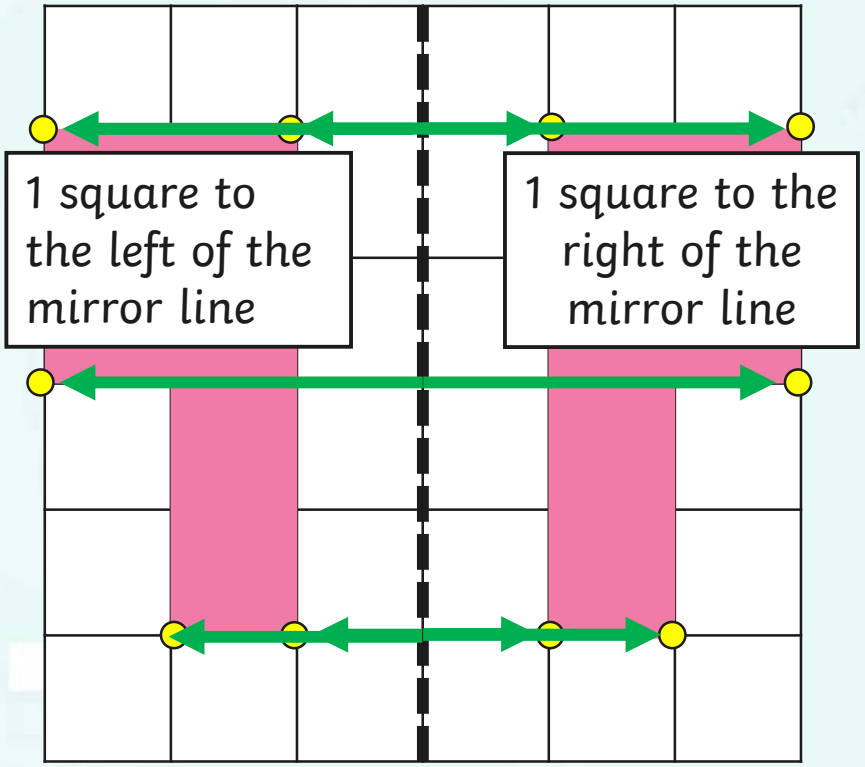
Show Answer

Reflecting Shapes in a Mirror Line

The reflected image is congruent to the original. This means that the measurements of the sides and angles have not changed.



Drawing a Reflected Shape



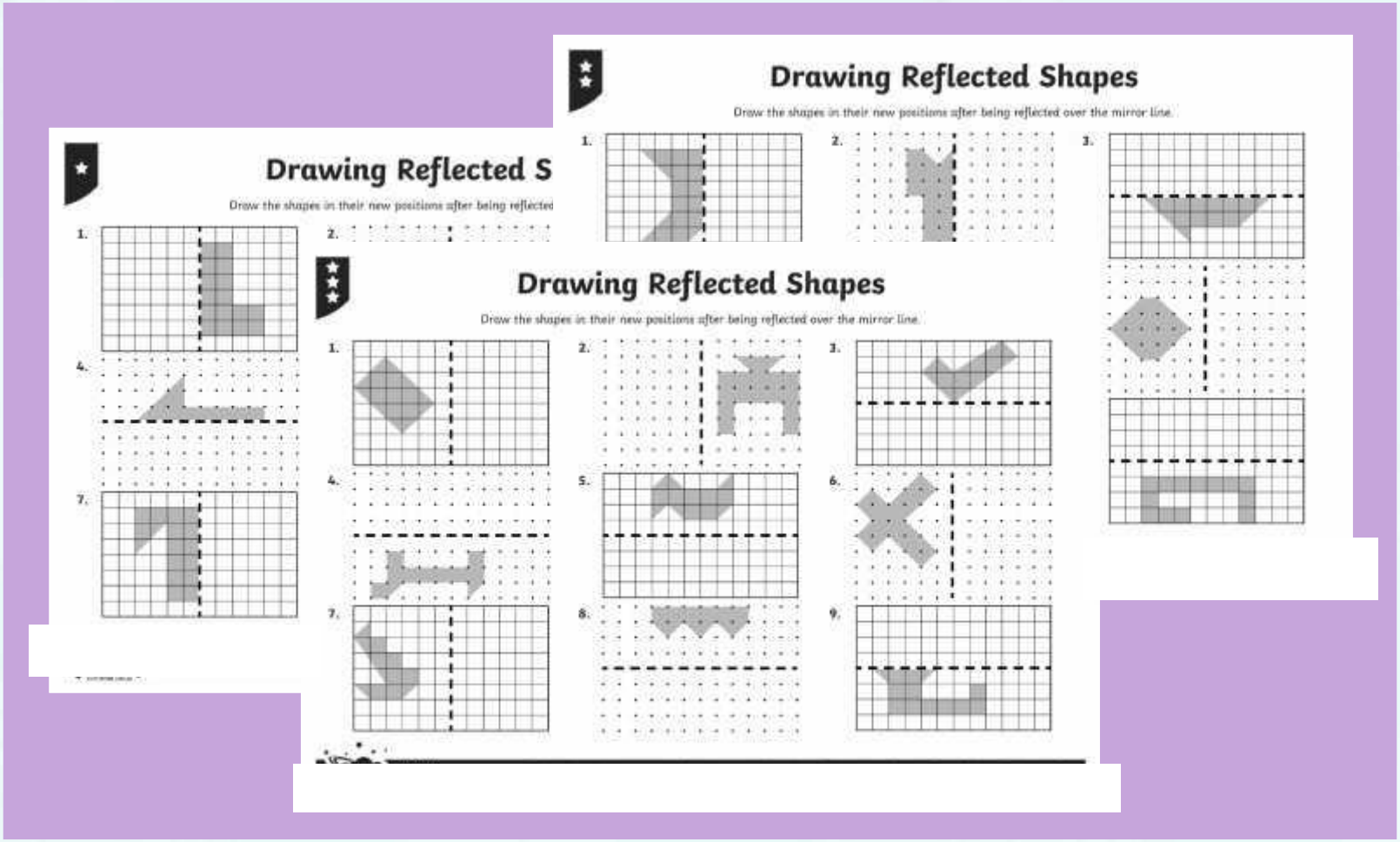
When asked to draw the new position of a 2D shape after a reflection, we have to make sure that each corner of the reflected shape is the same distance from the mirror line.

First identify the distance of a corner from the mirror line on the original shape.

Then apply this to the opposite side of the mirror line.

Repeat this process with each corner.

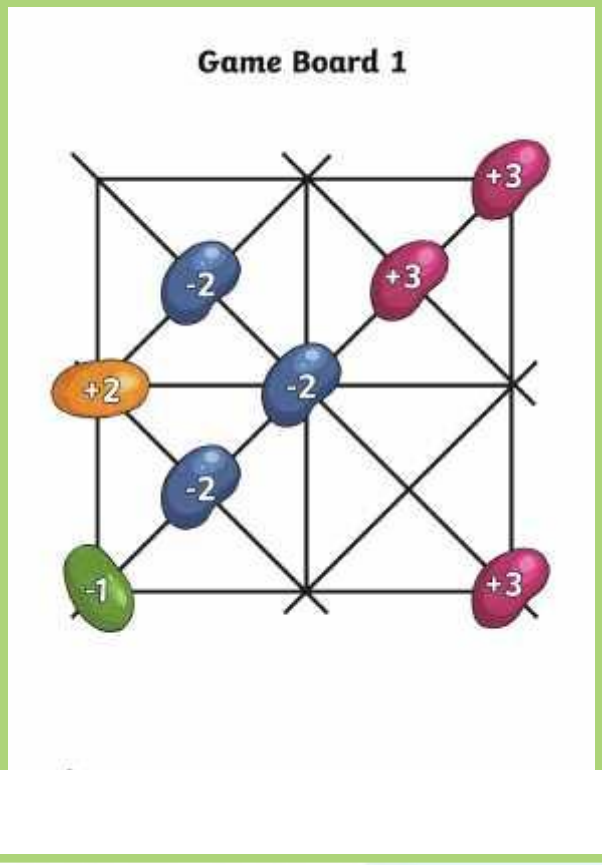
Drawing Reflected Shapes



Candy Reflection

A game for partners or a small group.

- Choose one of the game boards.
- Choose a mirror line to place your mirror along.
- One by one, place the mirror along the mirror line and calculate the score of the reflected candy.
- The person with the greatest score wins the round.

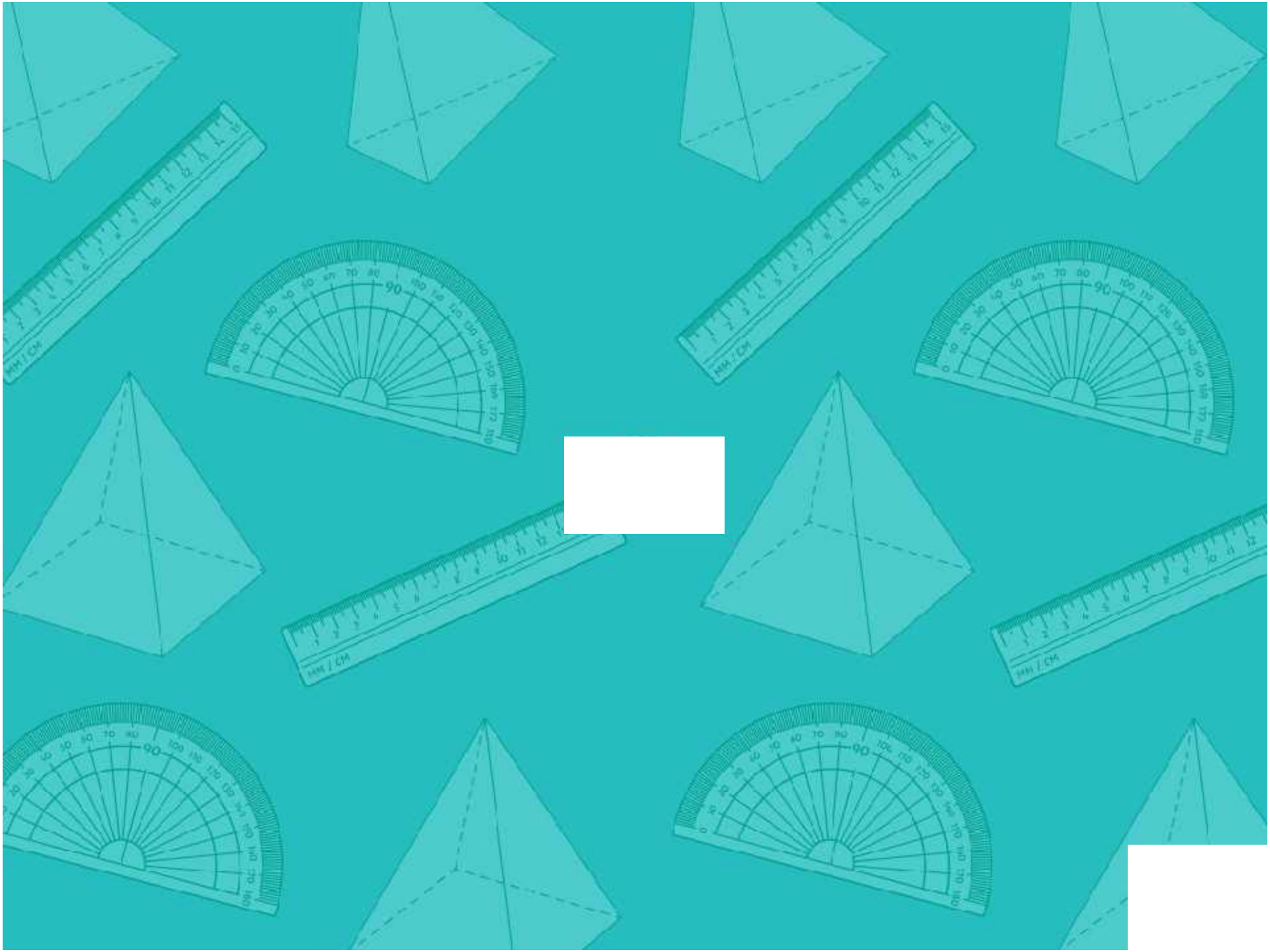


Aim

- I can draw the position of a shape following a reflection.

Success Criteria

- I know that when reflected, a shape keeps the same dimensions.
- I can count how far each point is from the mirror line.



Aim: I can draw the position of a shape following a reflection.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I know that when reflected, a shape keeps the same dimensions.				**Notes/Evidence**					
I can count how far each point is from the mirror line.									

Next Steps

- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

Aim: I can draw the position of a shape following a reflection.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I know that when reflected, a shape keeps the same dimensions.				**Notes/Evidence**					
I can count how far each point is from the mirror line.									

Next Steps

- _____
- _____

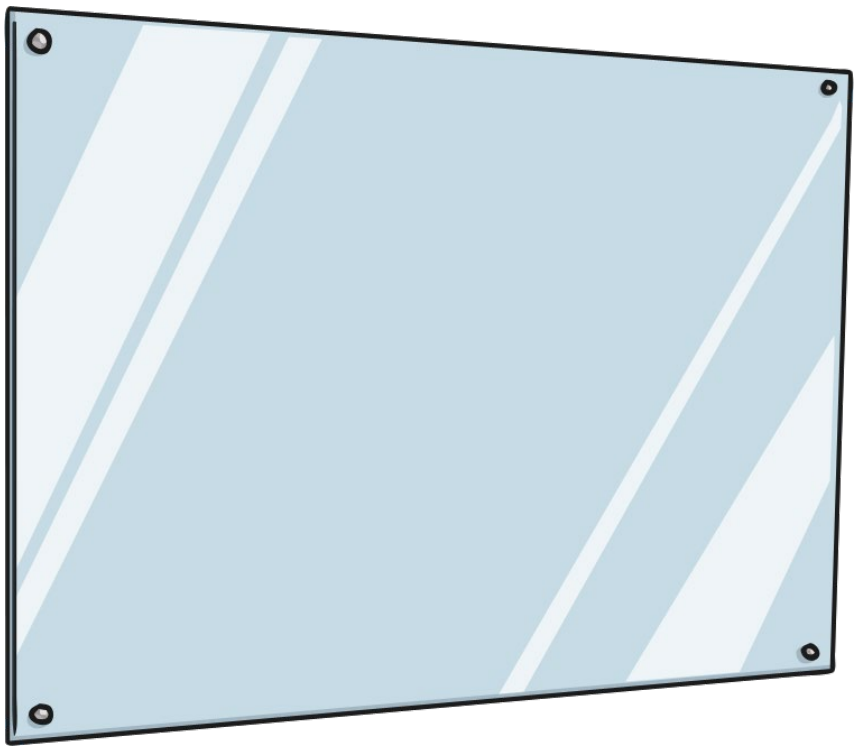
T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

Candy Reflection Game

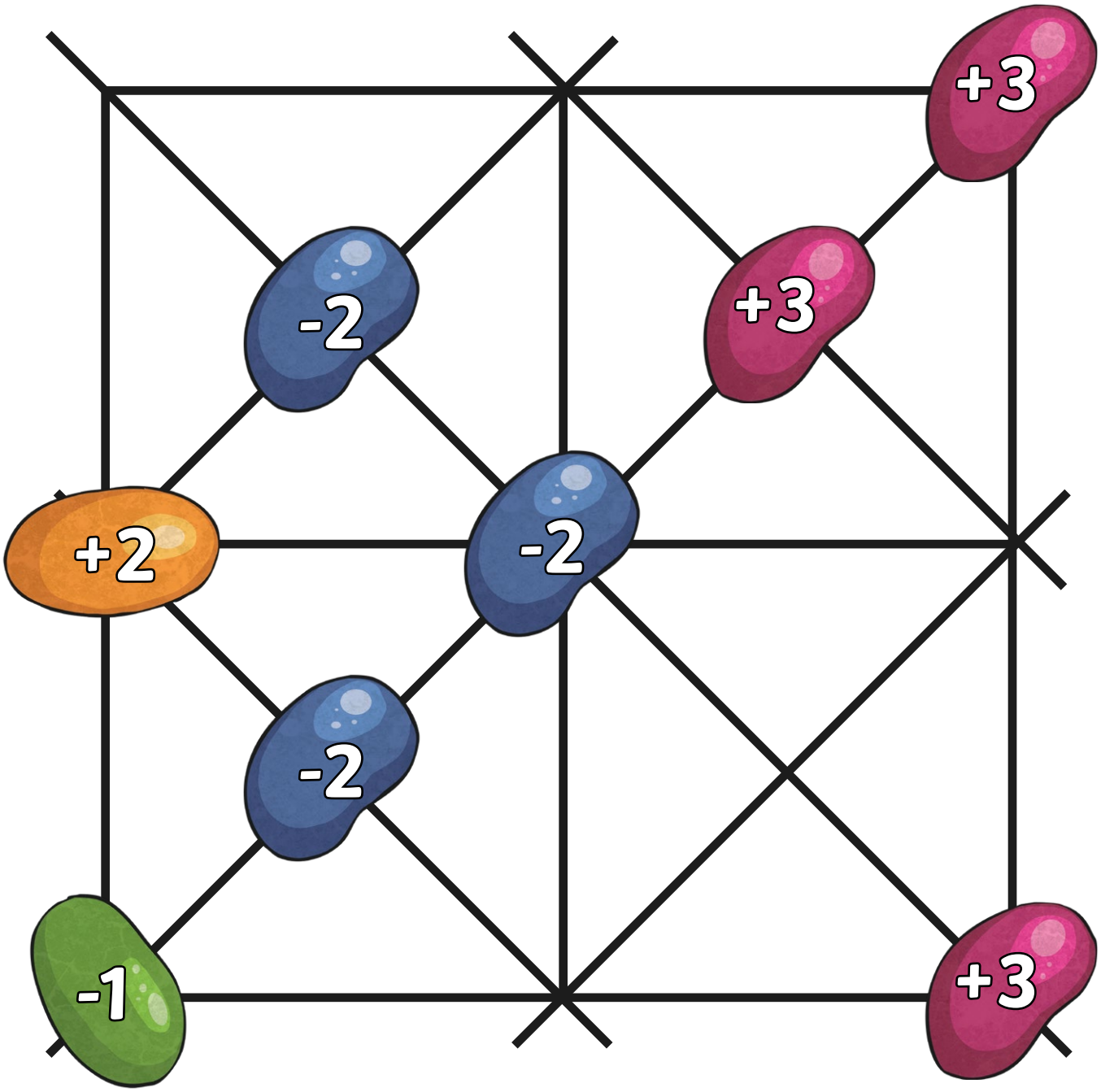
Instructions

A game for partners or small groups.

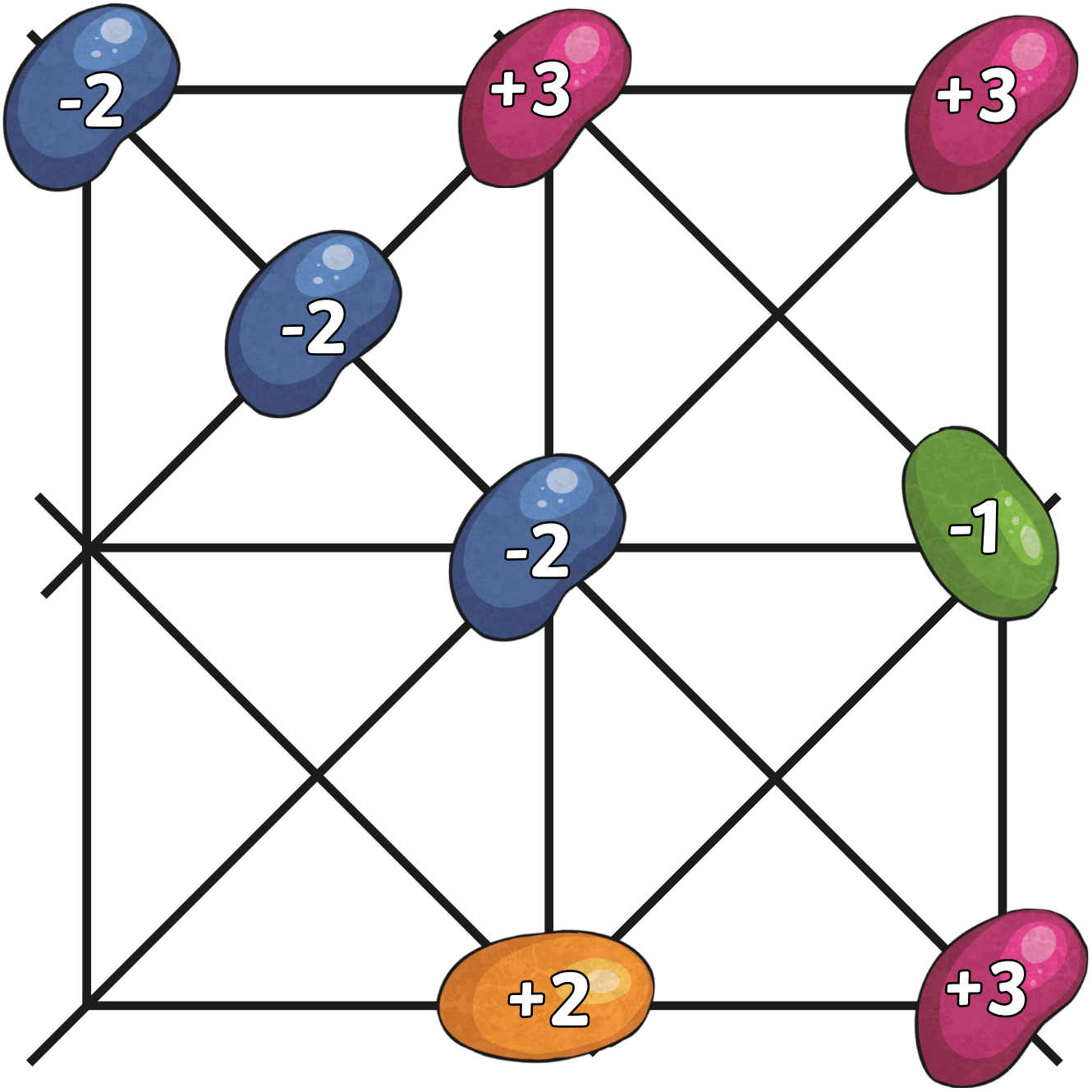
- Choose one of the game boards.
- Choose a mirror line to place your mirror along.
- One by one, place the mirror along the mirror line and calculate the score of the reflected candy.
- The person with the greatest score wins the round.



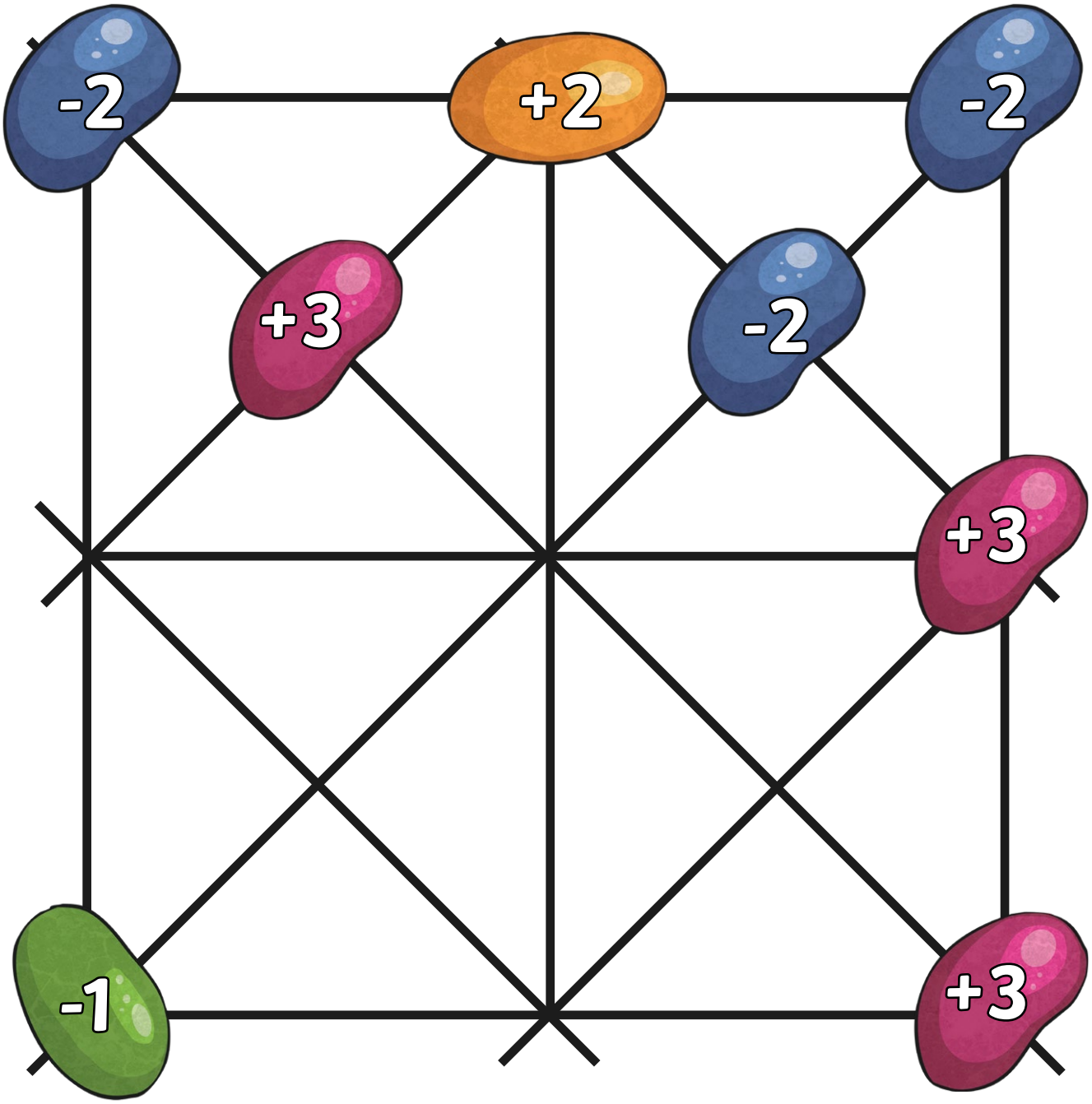
Game Board 1



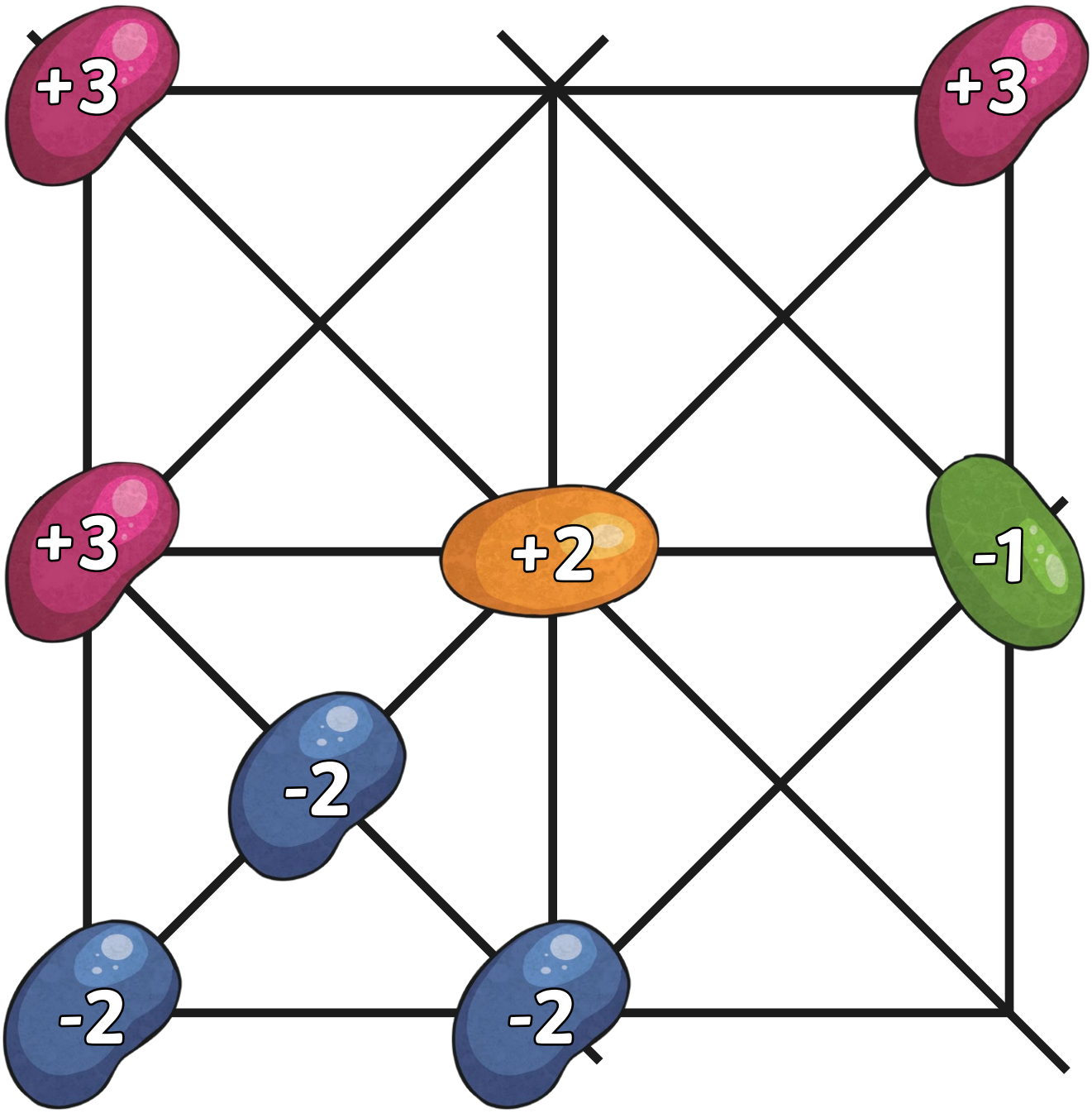
Game Board 2



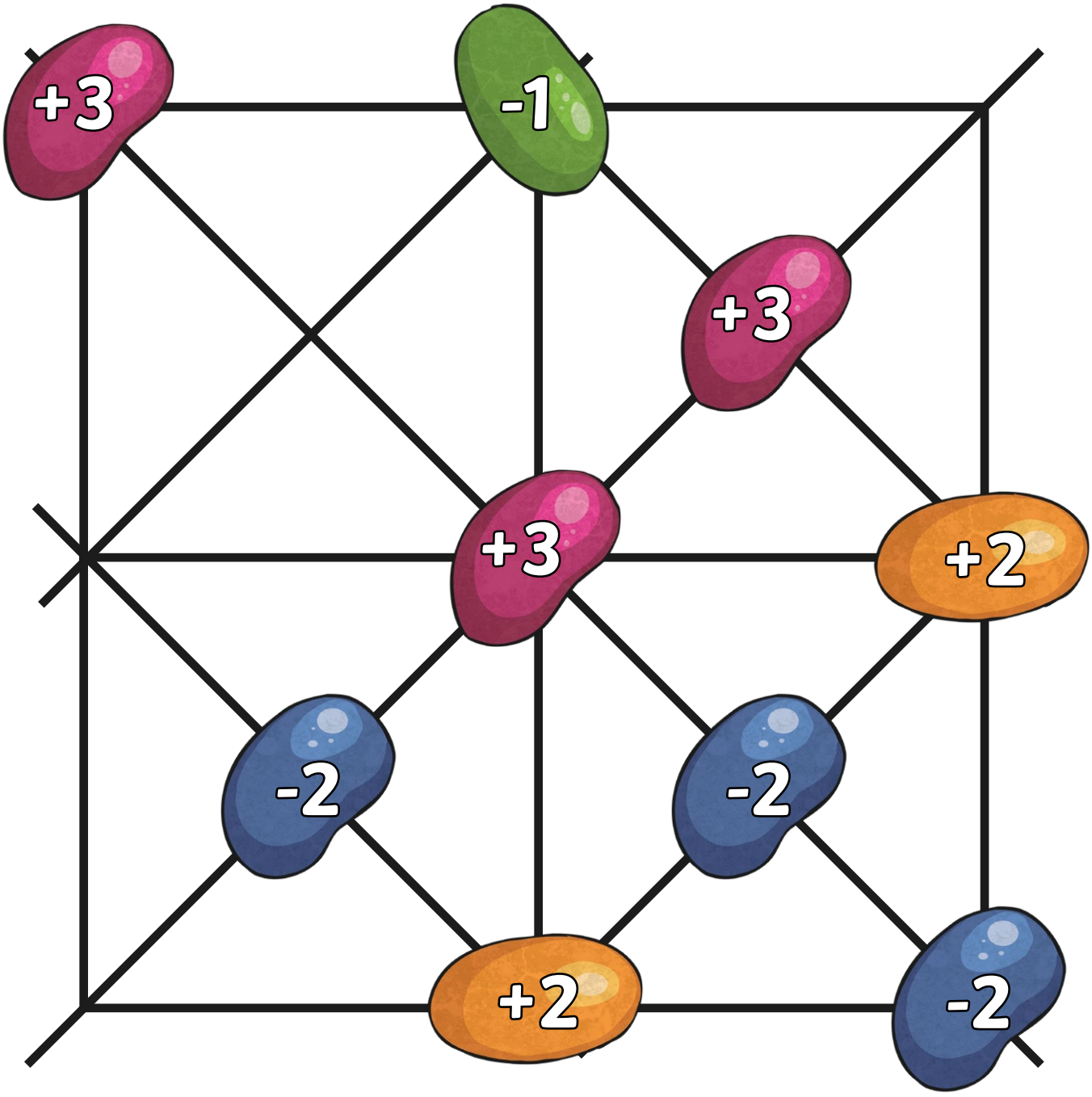
Game Board 3



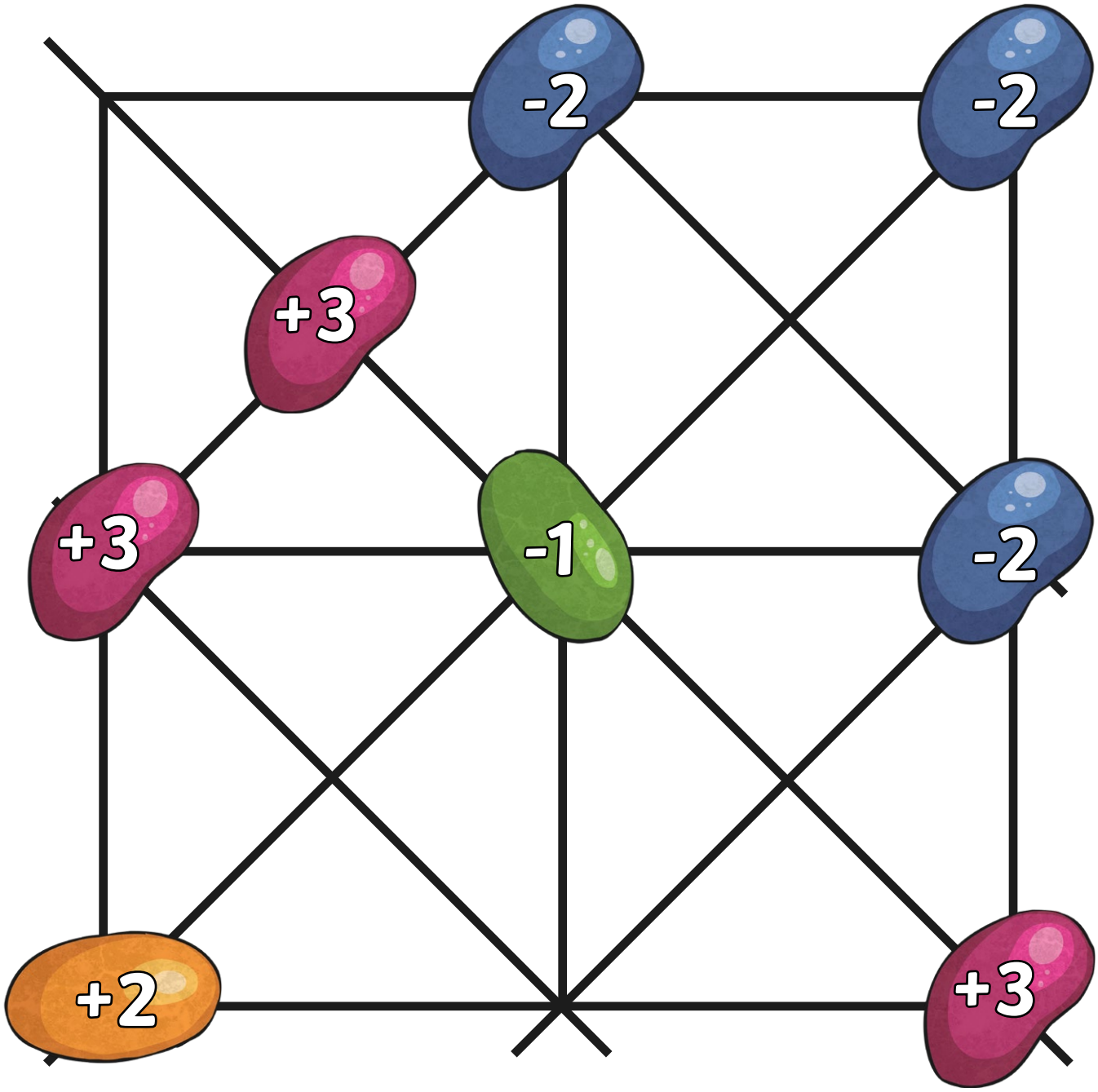
Game Board 4



Game Board 5



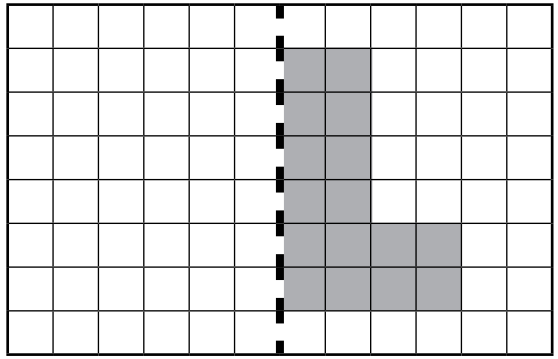
Game Board 6



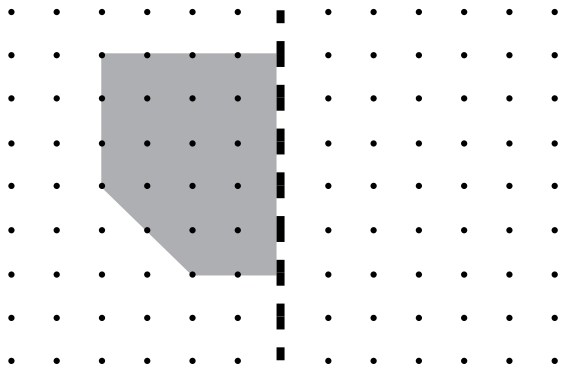
Drawing Reflected Shapes

Draw the shapes in their new positions after being reflected over the mirror line.

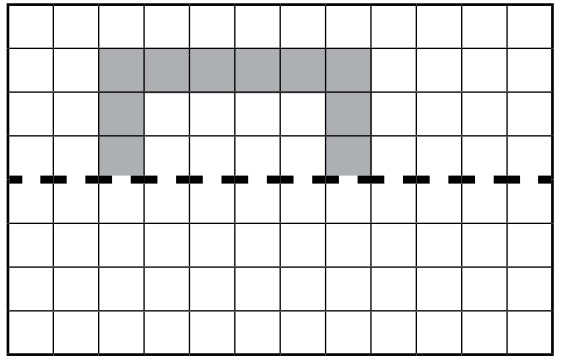
1.



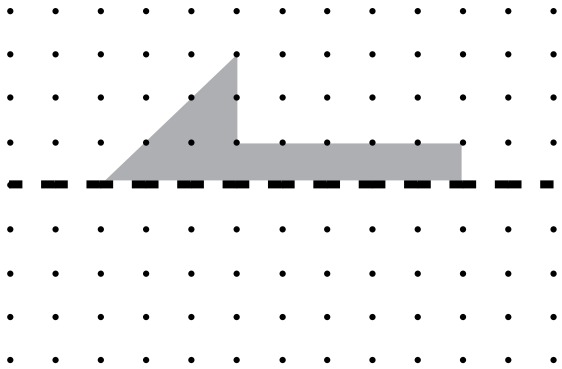
2.



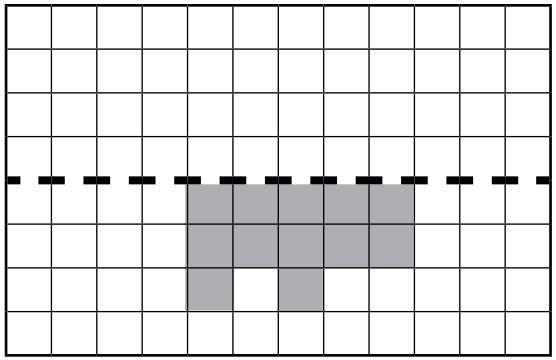
3.



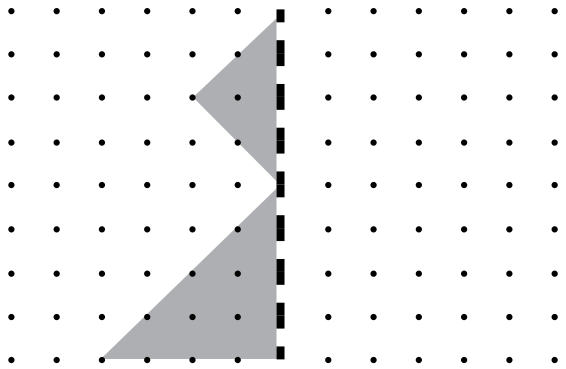
4.



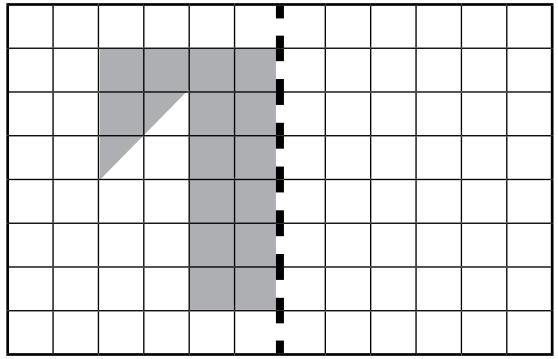
5.



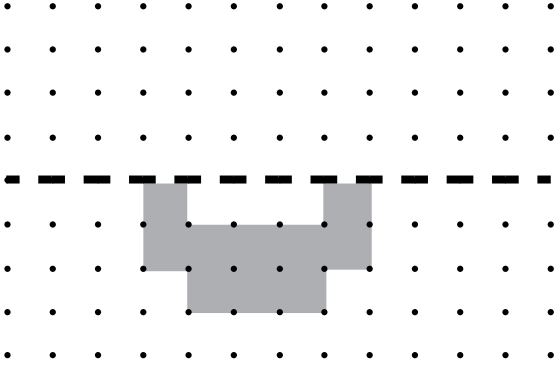
6.



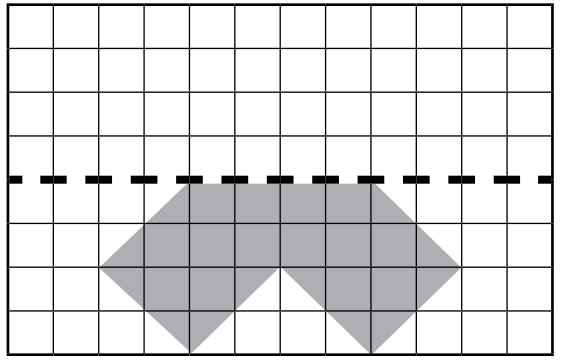
7.



8.



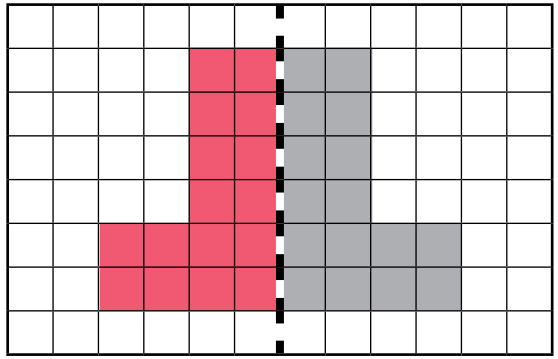
9.



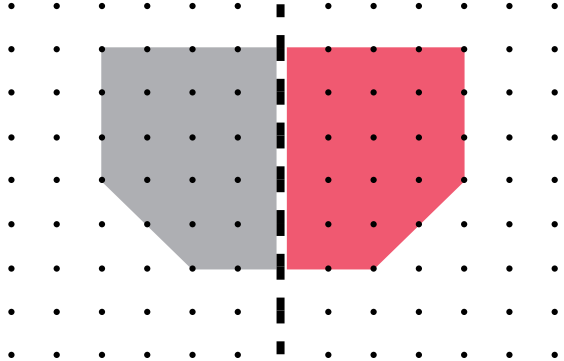
Drawing Reflected Shapes Answers

Draw the shapes in their new positions after being reflected over the mirror line.

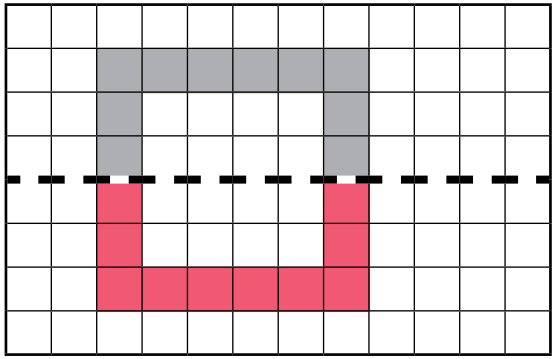
1.



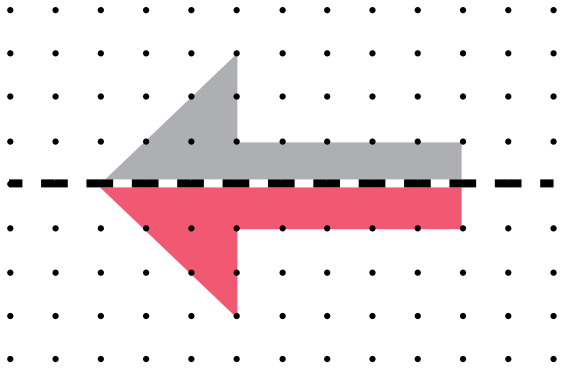
2.



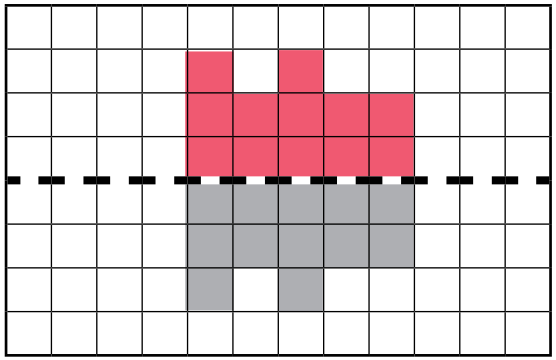
3.



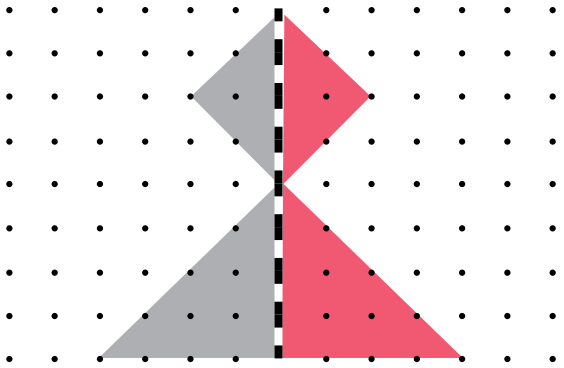
4.



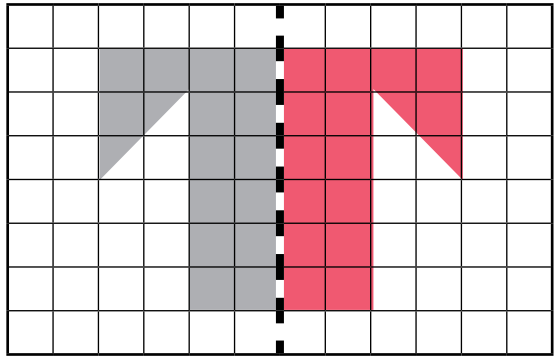
5.



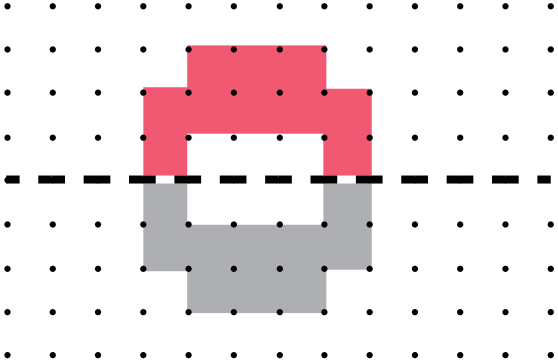
6.



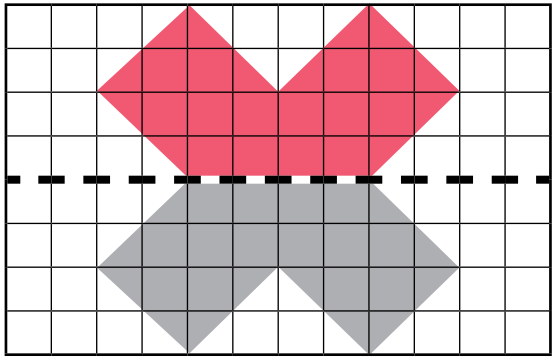
7.



8.



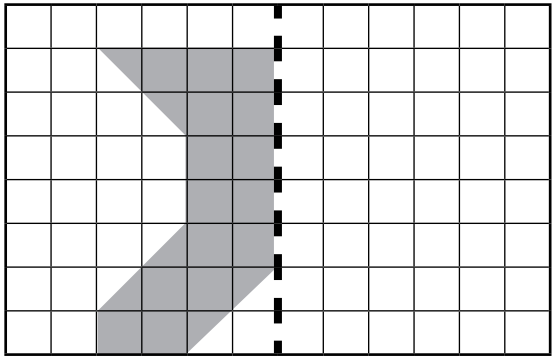
9.



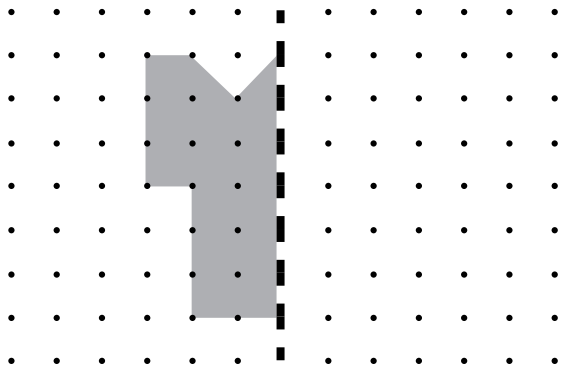
Drawing Reflected Shapes

Draw the shapes in their new positions after being reflected over the mirror line.

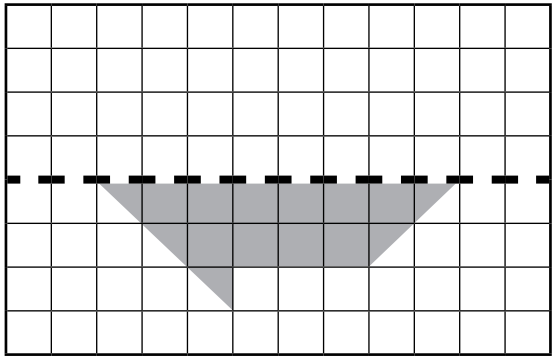
1.



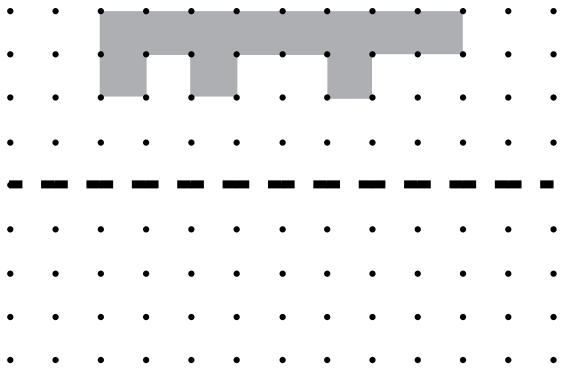
2.



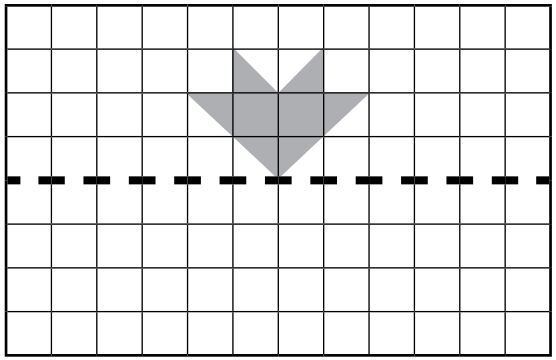
3.



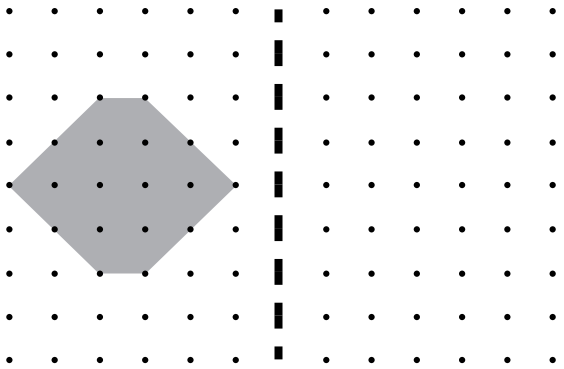
4.



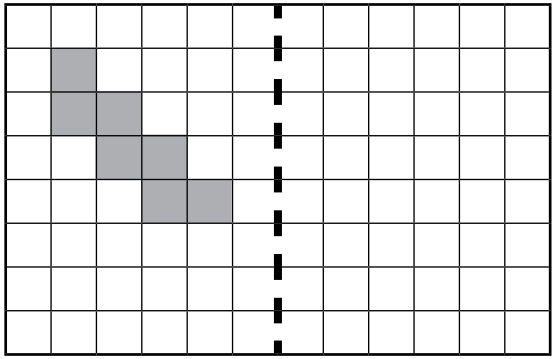
5.



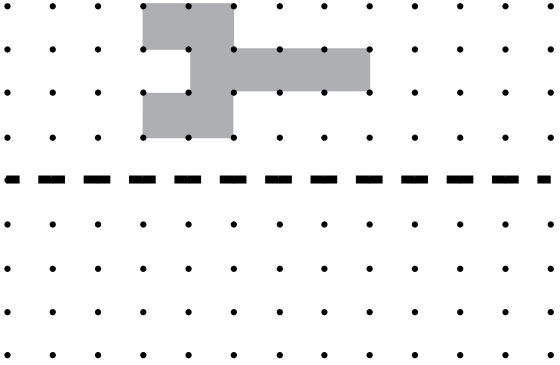
6.



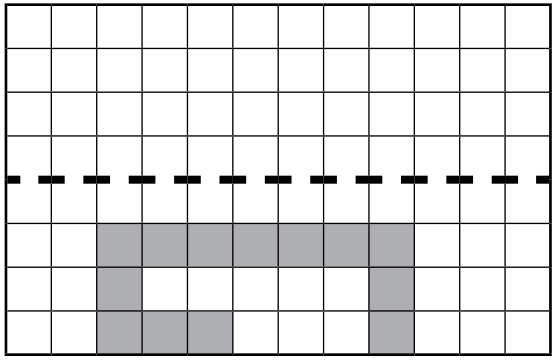
7.



8.



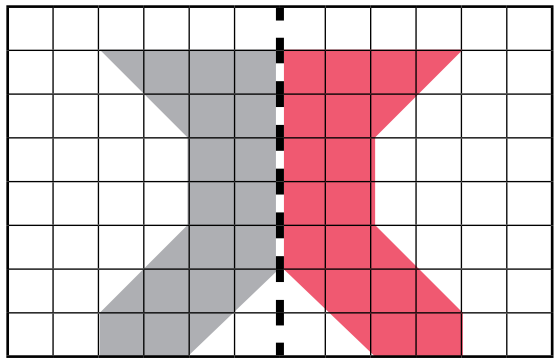
9.



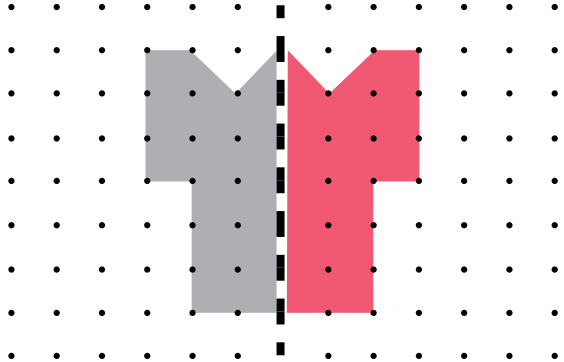
Drawing Reflected Shapes Answers

Draw the shapes in their new positions after being reflected over the mirror line.

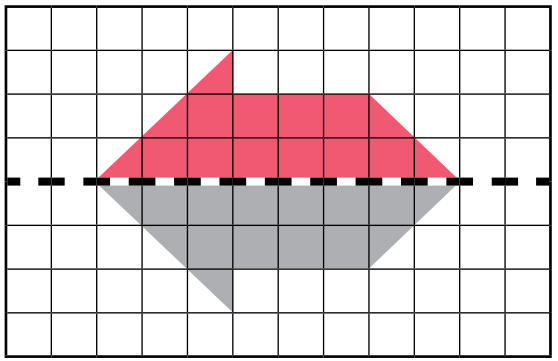
1.



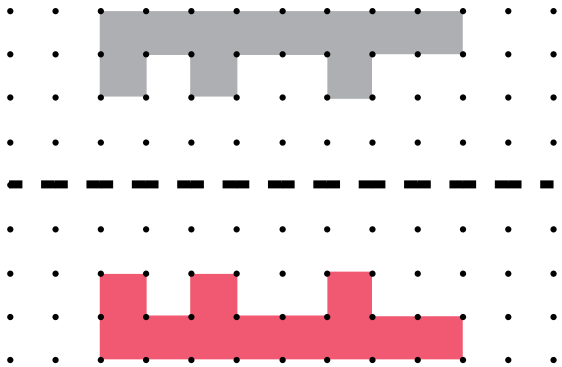
2.



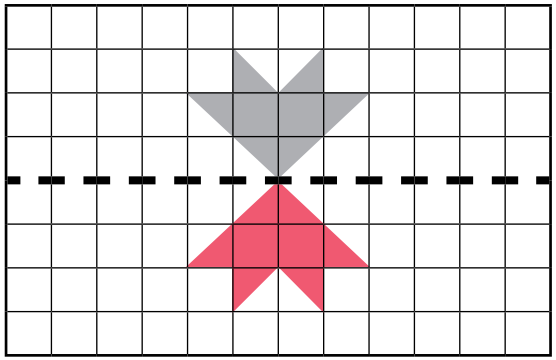
3.



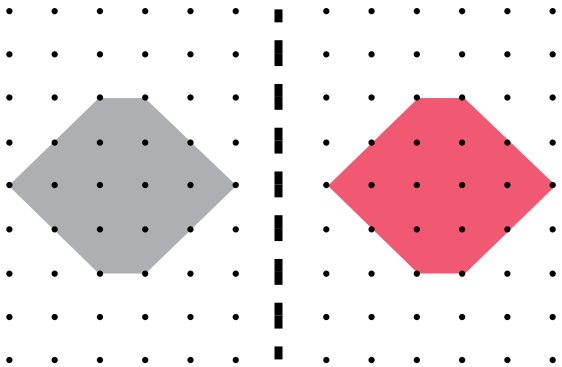
4.



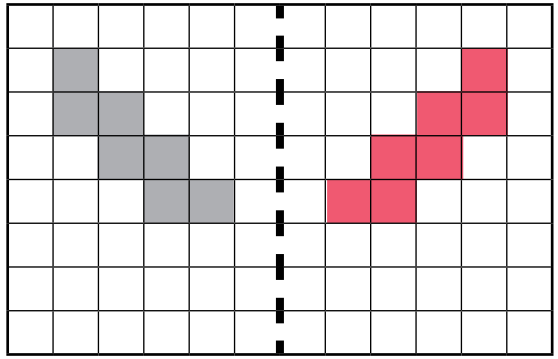
5.



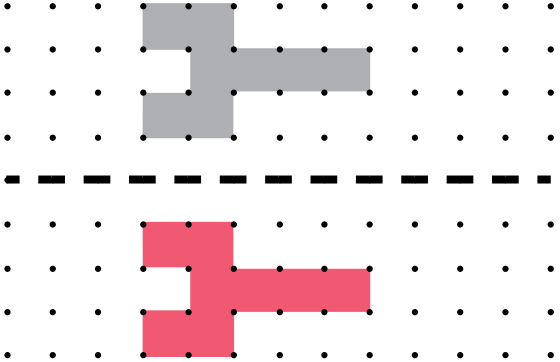
6.



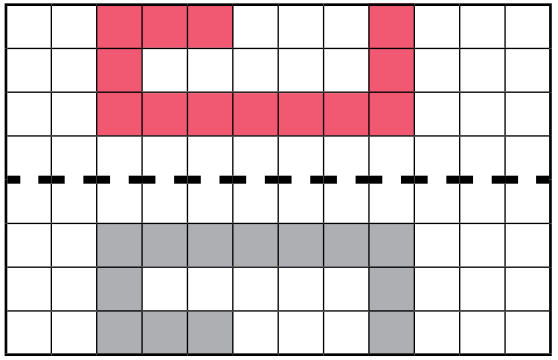
7.



8.



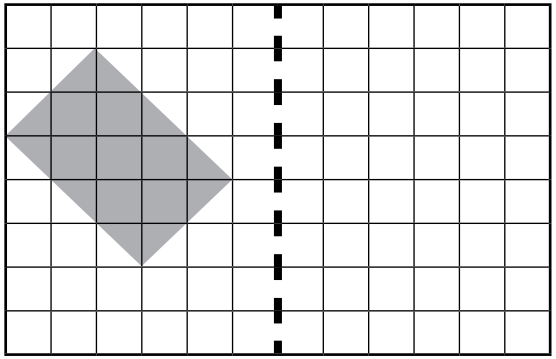
9.



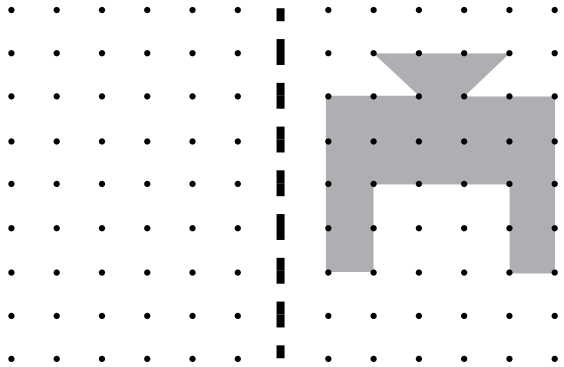
Drawing Reflected Shapes

Draw the shapes in their new positions after being reflected over the mirror line.

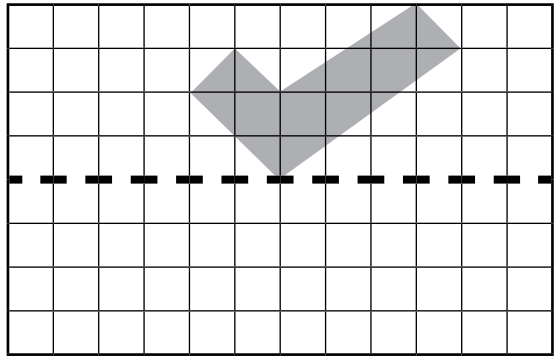
1.



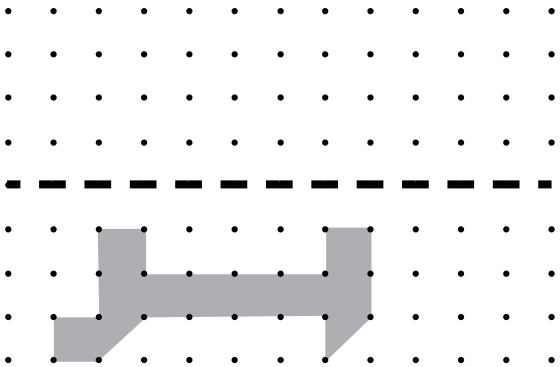
2.



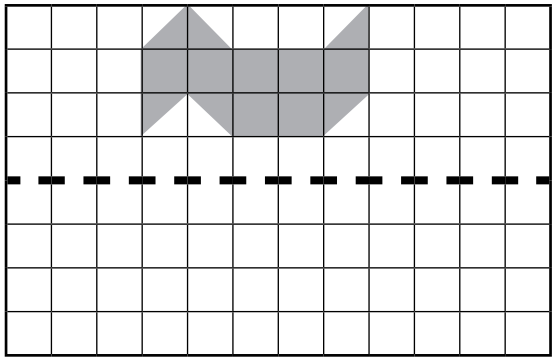
3.



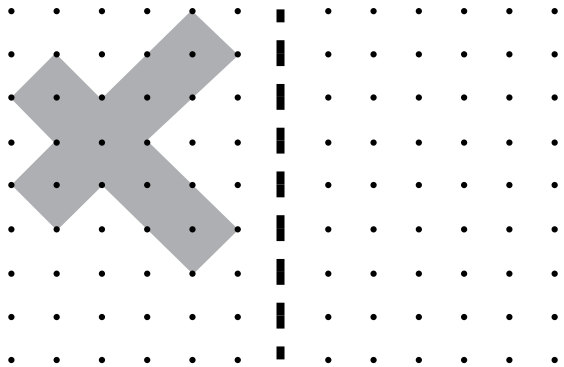
4.



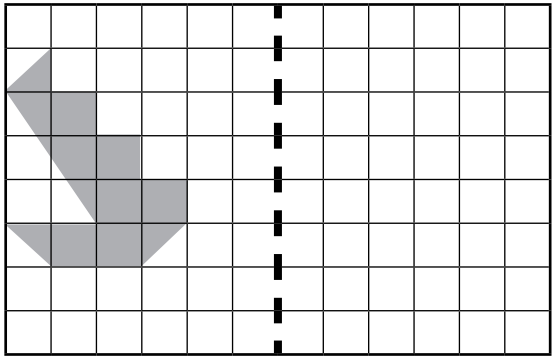
5.



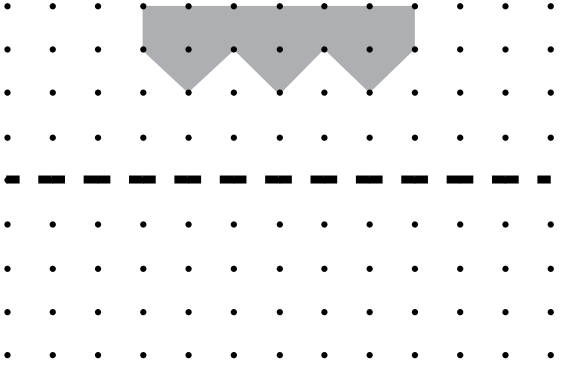
6.



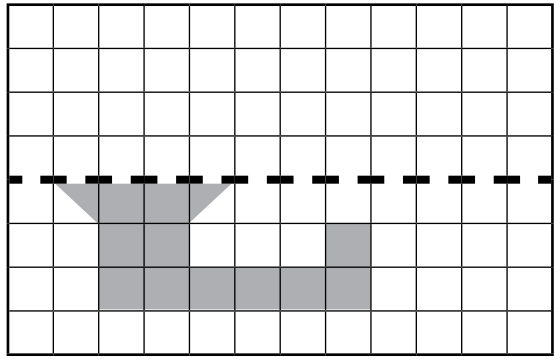
7.



8.



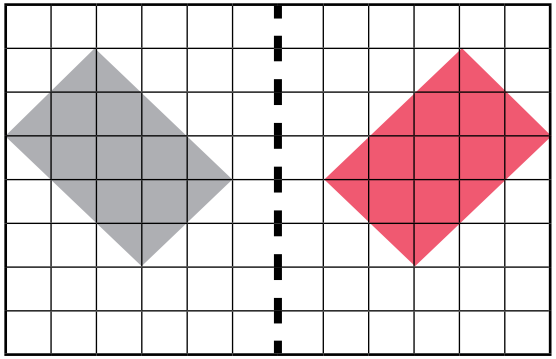
9.



Drawing Reflected Shapes Answers

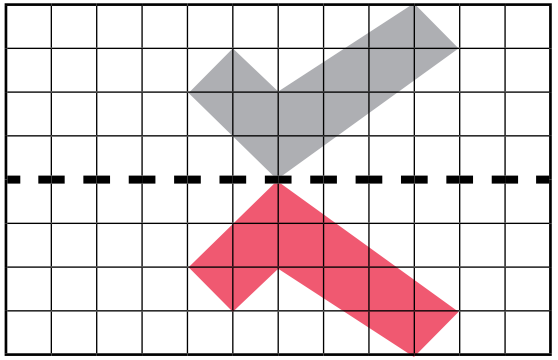
Draw the shapes in their new positions after being reflected over the mirror line.

1.

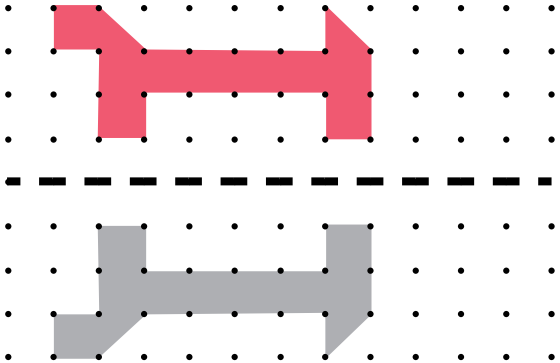


2.

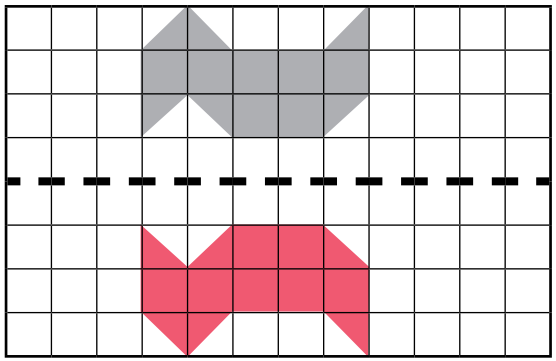
3.



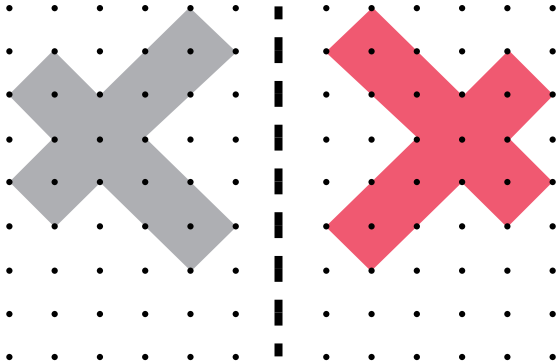
4.



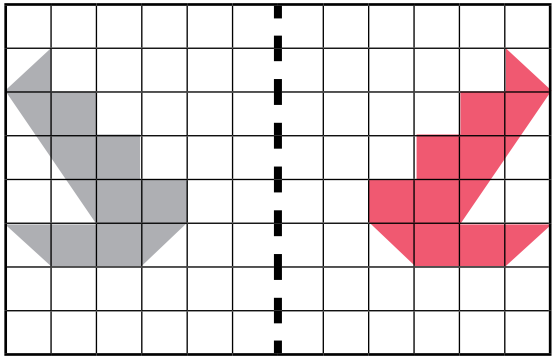
5.



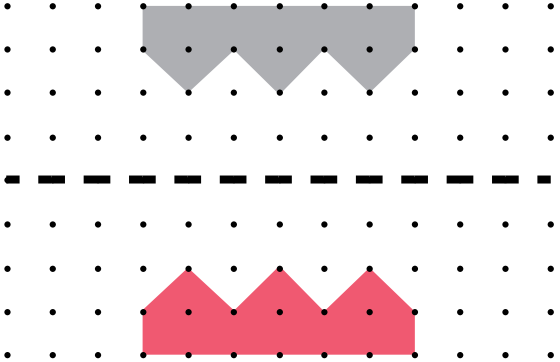
6.



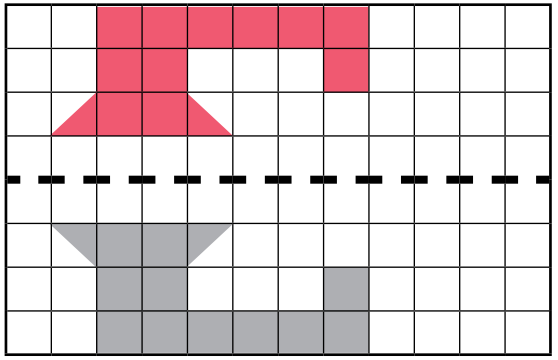
7.



8.



9.



Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Measurement and Geometry | Drawing Reflected Shapes

I can draw the position of a shape following a reflection.		
I know that when reflected, a shape keeps the same dimensions.		
I can count how far each point is from the mirror line.		

Regent Studies | www.regentstudies.com