



WORKSHEET 41

Translations and Reflections

Year 5 Mathematics — Space & Shapes Strand

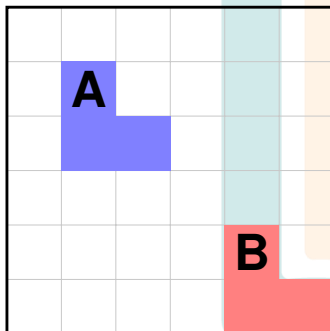
Australian Curriculum v9.0 — AC9M5SP03

Name: _____

Date: _____

Section 1: Fluency - Identifying Slides (Translations)

Question 1: Look at the grid below. How many squares right and how many squares down did Shape A slide to reach the position of Shape B?



Answer: _____

Question 2: If a triangle slides 2 units up, does its size change?

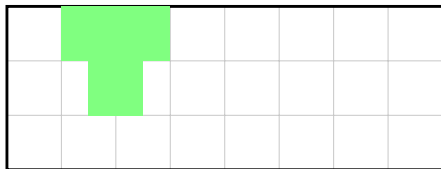
Answer: _____

Question 3: A square is translated 4 units left. In which direction did it move?

Answer: _____



Question 4: Look at the shape below. Draw what it looks like after sliding 3 units to the right.

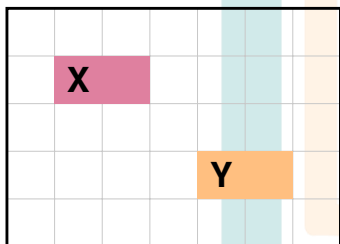


Answer: _____

Question 5: True or False: A translation changes the orientation of a shape.

Answer: _____

Question 6: Describe the translation from Shape X to Shape Y.



Answer: _____

Question 7: A shape is at position (2, 3). After a translation 3 units right, what is its new position?

Answer: _____

Question 8: What stays the same when you translate a shape?

Answer: _____



Sliding Star Says:

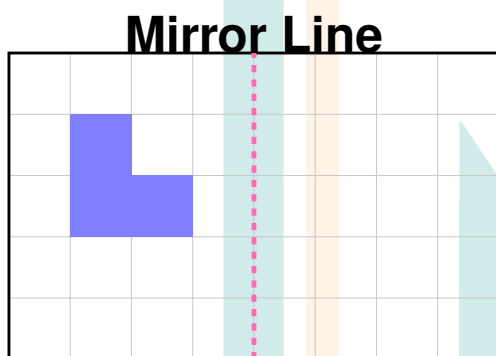


“You’re a Translation Titan!”

Joke Time: Why did the shape go to the gym?
To work on its translations!

Section 2: Reasoning - Mirror Images (Reflections)

Question 9: Draw the reflection of the shape across the dashed mirror line.

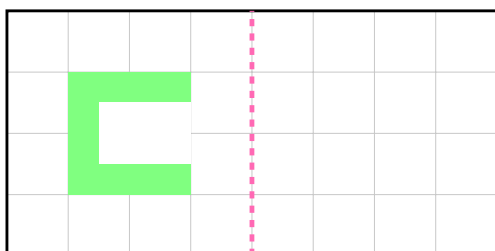


Answer: _____

Question 10: Does a reflection change the size of a shape?

Answer: _____

Question 11: Draw the reflection of the letter 'C' across the mirror line below.



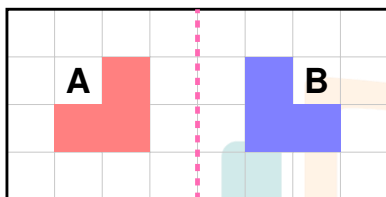


Answer: _____

Question 12: True or False: A reflection creates a mirror image.

Answer: _____

Question 13: Look at the diagram. Is Shape B a reflection of Shape A across the mirror line?

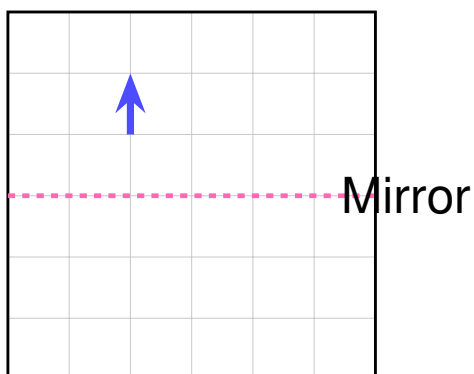


Answer: _____

Question 14: What is the name of the line used in reflection?

Answer: _____

Question 15: Reflect the arrow across the horizontal mirror line.



Answer: _____



Mirror-Image Butterfly Says:

“You’re a Reflection Champion!”

Joke Time: Why did the shape look in the mirror?
To see its reflection perfection!

Section 3: Challenge - Combining Moves

Question 16: If you translate a square 3 units left and then reflect it, does its size change? Explain why or why not.

Answer: _____

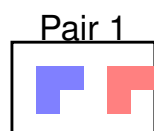
Question 17: A shape is translated 2 units down and then 3 units right. Describe the final position.

Answer: _____

Question 18: Which transformation changes the orientation of a shape: translation or reflection?

Answer: _____

Question 19: Look at the shapes below. Identify which transformation was used: Slide (Translation) or Flip (Reflection)?



Answer: _____



Question 20: Challenge: Can you translate a shape and then reflect it back to its original position? Explain.

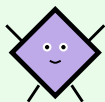
Answer: _____

Question 21: What properties remain unchanged in both translations and reflections?

Answer: _____

Question 22: A triangle is reflected across a vertical line and then translated 4 units up. Draw or describe the final result.

Answer: _____



Dancing Diamond Says:

“You’re a Transformation Master!”

Joke Time: Why was the triangle so good at basketball?
Because it always had the best pivot!

Excellent work! Check your answers on the next page.



WORKSHEET 41

ANSWER KEY

Section 1: Fluency - Identifying Slides (Translations)

1. 3 squares right and 3 squares down
2. No, its size does not change
3. Left (or to the left)
4. The shape should be drawn 3 units to the right, maintaining same size and orientation
5. False (translation does not change orientation)
6. 3 units right and 2 units down
7. (5, 3)
8. Size, shape, and orientation all stay the same

Section 2: Reasoning - Mirror Images (Reflections)

9. The L-shape should be drawn as a mirror image on the right side of the dashed line
10. No, reflection does not change size
11. The letter 'C' should be drawn facing the opposite direction (like a reversed C)
12. True
13. Yes
14. Mirror line or line of symmetry (or axis of reflection)
15. Arrow should point downward below the mirror line

Section 3: Challenge - Combining Moves

16. No, the size does not change. Transformations preserve size and shape
17. 2 units down and 3 units right from the original position
18. Reflection (it creates a mirror image with reversed orientation)
19. Slide/Translation (the shapes maintain the same orientation)
20. Not easily; you would need specific conditions (answers may vary)
21. Size and shape (also area and perimeter)
22. The triangle would be flipped and then moved upward 4 units



WORKSHEET 42

Rotations and Symmetry

Year 5 Mathematics — Space & Shapes Strand

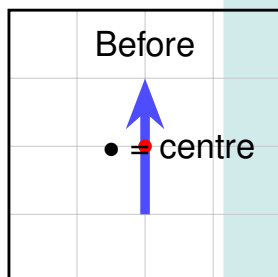
Australian Curriculum v9.0 — AC9M5SP03

Name: _____

Date: _____

Section 1: Fluency - Quarter and Half Turns (Rotations)

Question 1: Draw what the arrow looks like after a quarter turn (90 degrees) clockwise.



Answer: _____

Question 2: How many degrees is a half turn?

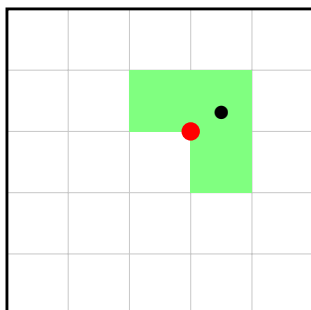
Answer: _____

Question 3: An arrow points North. After a quarter turn clockwise, which direction does it point?

Answer: _____



Question 4: Draw the shape after a half turn (180 degrees) around the centre point.



Answer: _____

Question 5: True or False: A rotation changes the size of a shape.

Answer: _____

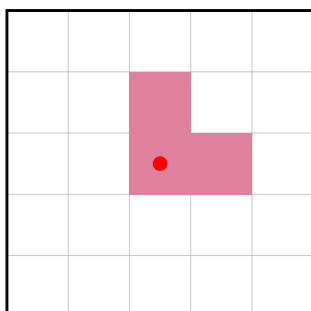
Question 6: How many quarter turns make a full turn?

Answer: _____

Question 7: If you rotate a square 90 degrees, does it look the same?

Answer: _____

Question 8: Draw the letter 'L' after a quarter turn anti-clockwise.





Answer: _____



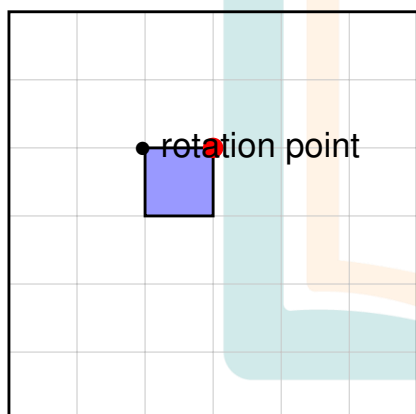
Spinning Wheel Says:

“You’re a Rotation Star!”

Joke Time: Why did the shape get dizzy?
It did too many rotations!

Section 2: Reasoning - Points of Rotation

Question 9: Rotate the square 180 degrees around the dot. Draw the new position.



Answer: _____

Question 10: What is the centre of rotation?

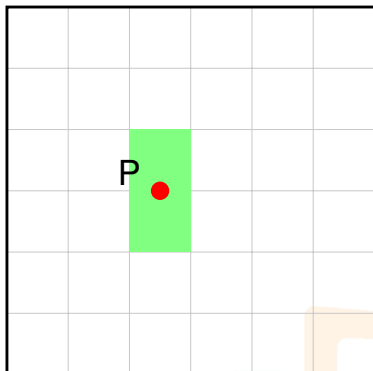
Answer: _____

Question 11: A triangle is rotated 90 degrees clockwise around its top vertex. Does the position of the top vertex change?



Answer: _____

Question 12: Look at the diagram. The shape rotates around point P. Draw the shape after a quarter turn clockwise.



Answer: _____

Question 13: If you rotate a shape 360 degrees, where does it end up?

Answer: _____

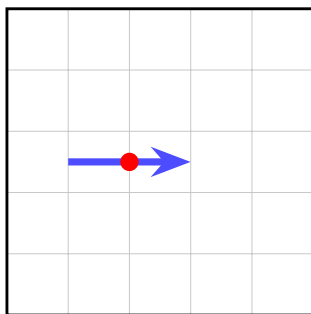
Question 14: True or False: All points on a shape move the same distance during a rotation.

Answer: _____

Question 15: Describe what happens to a rectangle rotated 90 degrees.

Answer: _____

Question 16: Draw the result of rotating this arrow 180 degrees around the red dot.



Answer: _____



Turning Turtle Says:

“You’re Spinning Smartly!”

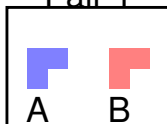
Joke Time: What did the circle say to the triangle?
You’re so edgy, let me show you how to rotate!

Section 3: Challenge - Identifying Transformations

Question 17: For each pair, identify if the transformation was a Slide (Translation), Flip (Reflection), or Turn (Rotation).

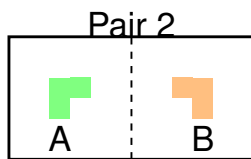
Pair 1:

Pair 1



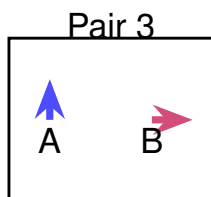
Answer Pair 1: _____

Pair 2:



Answer Pair 2: _____

Pair 3:



Answer Pair 3: _____

Question 18: Which transformation keeps the shape pointing in the same direction?

Answer: _____

Question 19: Which transformation creates a mirror image?

Answer: _____

Question 20: Challenge: Can you combine a rotation and a translation? Give an example.

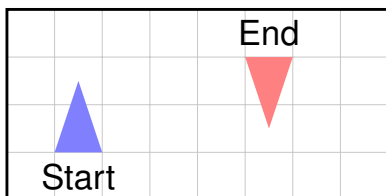
Answer: _____

Question 21: What do all three transformations (translation, reflection, rotation) have in common?



Answer: _____

Question 22: Look at the two shapes. Describe the transformation that occurred.



Answer: _____

Question 23: Challenge: Design your own transformation puzzle. Draw a shape and show it after one transformation.

Answer: _____



Transformation Detective Says:

“You’re a Movement Master!”

Joke Time: Why did the shape go to detective school?
To learn about trans-FORM-ations!

Outstanding work! Check your answers on the next page.



WORKSHEET 42

ANSWER KEY

Section 1: Fluency - Quarter and Half Turns (Rotations)

1. Arrow should point to the right (pointing East)
2. 180 degrees
3. East (or Right)
4. The L-shape should be drawn upside down/inverted around the centre point
5. False (rotation does not change size)
6. 4 quarter turns (or four)
7. Yes (a square has rotational symmetry)
8. The L should be rotated so it opens upward and to the left

Section 2: Reasoning - Points of Rotation

9. Square drawn on the opposite side of the rotation point, maintaining same size
10. The fixed point around which a shape rotates/turns
11. No, the top vertex stays in the same place (it's the centre of rotation)
12. Rectangle should be drawn horizontally extending from point P
13. Back to its original position (it completes a full turn)
14. False (points closer to the centre move less distance than points farther away)
15. It turns/rotates so that its orientation changes by 90 degrees
16. Arrow should point in the opposite direction (pointing left)

Section 3: Challenge - Identifying Transformations

17. Pair 1: Slide/Translation; Pair 2: Flip/Reflection; Pair 3: Turn/Rotation
18. Translation/Slide
19. Reflection/Flip
20. Yes, e.g., rotate a shape 90 degrees then slide it 3 units right
21. They all preserve size and shape (also called congruence)
22. Rotation and translation (or rotation 180 degrees then translation)
23. Student's own creative answer



Brilliant!

You've mastered Transformations!
Keep up the fantastic work in Year 5 Maths!

