Reasoning and Problem Solving
Step 2: Right Angles in Shapes

National Curriculum Objectives:

Mathematics Year 3: (3G4a) Recognise angles as a property of shape or a description of a turn
Mathematics Year 3: (3G4b) Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Use the angle clues to match a shape to a description using circles, triangles and regular quadrilaterals.
Expected Use the angle clues to match a shape to a description using circles, regular polygons and irregular quadrilaterals, with some shapes orientated diagonally.
Greater Depth Use the angle clues to match a shape to a description using circles, irregular polygons and irregular quadrilaterals, with most shapes orientated diagonally.

Questions 2, 5 and 8 (Problem Solving)
Developing Sort simple shapes into a Carroll diagram based on right angles using circles, triangles and regular quadrilaterals.
Expected Sort shapes into a Carroll diagram based on right angles using circles, regular polygons and irregular quadrilaterals, with some shapes orientated diagonally.
Greater Depth Sort shapes into a Carroll diagram based on right angles using circles, irregular polygons and irregular quadrilaterals, with most shapes orientated diagonally.

Questions 3, 6 and 9 (Reasoning)
Developing Based on a shape's properties, decide which is the odd one out using circles, triangles and regular quadrilaterals.
Expected Based on a shape's properties, decide which is the odd one out using circles, regular polygons and irregular quadrilaterals, with some shapes orientated diagonally.
Greater Depth Based on a shape's properties, decide which is the odd one out using circles, irregular polygons and irregular quadrilaterals, with most shapes orientated diagonally.

More Year 3 Properties of Shapes resources.

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Right Angles in Shapes

1a. Match the statements to the correct shape.



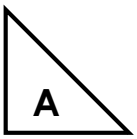
Steph

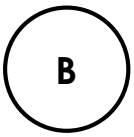
My shape has 4 right angles.

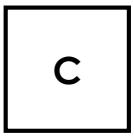


Jack

My shape has 1 right angle.







D

PS

1b. Match the statements to the correct shape.



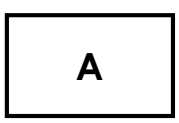
Rhona

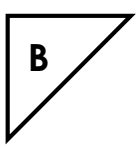
All of the angles in my shape are right angles.

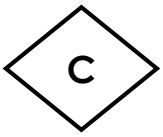


Saul

My shape has fewer right angles than Rhona's shape.







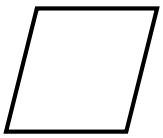
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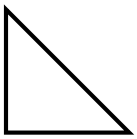
PS

2a. Sort the shapes into the Carroll diagram.

	Has no right angles	Has 1 right angle
Has angles greater than a right angle.		
Has no angles greater than a right angle.		







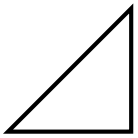
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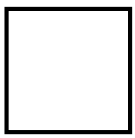
PS

2b. Sort the shapes into the Carroll diagram.

	Has 1 right angle	Has 2 or more right angles
Has all angles the same		
Doesn't have all angles the same		



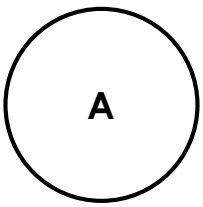


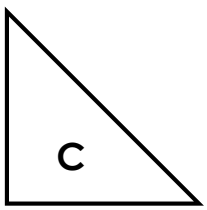


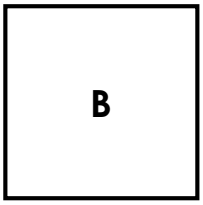
D

PS

3a. Which shape is the odd one out?





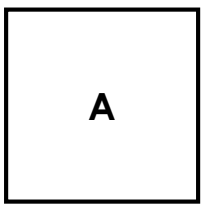


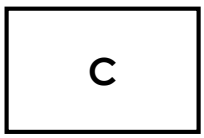
Explain why.

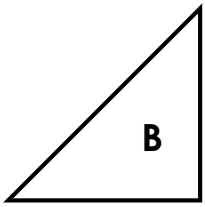
D

R

3b. Which shape is the odd one out?







Explain why.

D

R

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Right Angles in Shapes

4a. Match the statements to the correct shape.



Paula

My shape has 2 right angles.



Logan

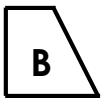
My shape has 2 right angles and has made a quarter turn clockwise from Paula's.



Yosef

My shape has 2 fewer right angles than Logan's.







PS

Right Angles in Shapes

4b. Match the statements to the correct shape.



Lydia

My shape has 2 more right angles than Addison's.



Addison

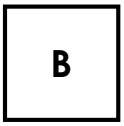
My shape has no right angles.

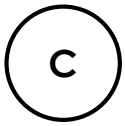


Ronan

My shape has double Lydia's right angles.



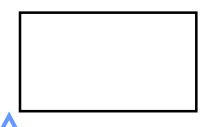


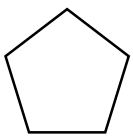


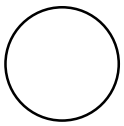
PS

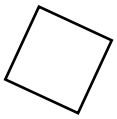
5a. Sort the shapes into the Carroll diagram.

	Has no right angles	Has at least 1 right angle
Has fewer than 3 sides		
Has at least 3 sides		





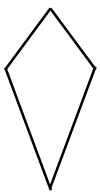


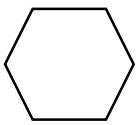


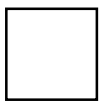
PS

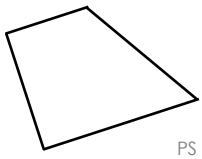
5b. Sort the shapes into the Carroll diagram.

	Has fewer than 2 right angles	Has 2 or more right angles
All angles are equal		
All angle are not equal		





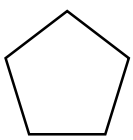




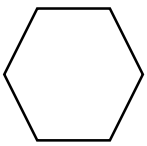
PS

6a. Which shape is the odd one out?

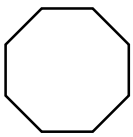
A.



B.



C.



D.

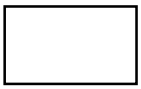


Explain why.

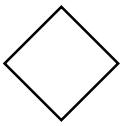
R

6b. Which shape is the odd one out?

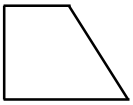
A.



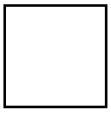
B.



C.



D.



Explain why.

R

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Right Angles in Shapes

7a. Match the statements to the correct shape.



Kevin

My shape has enough right angles to make 1 full turn and a quarter turn.



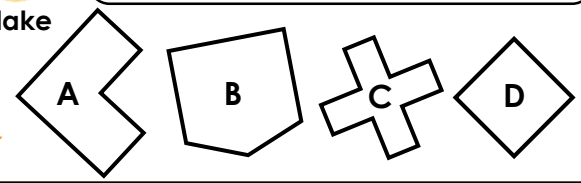
Daisy

My shape has enough right angles to make 2 half turns.



Blake

Daisy's shape has twice as many right angles as my shape.



GD PS

7b. Match the statements to the correct shape.



Kelsey

My shape has twice as many right angles as a square.



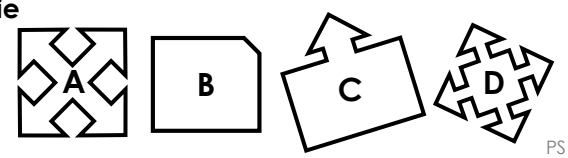
Quinn

My shape has enough right angles to make one more half turn than Charlie's



Charlie

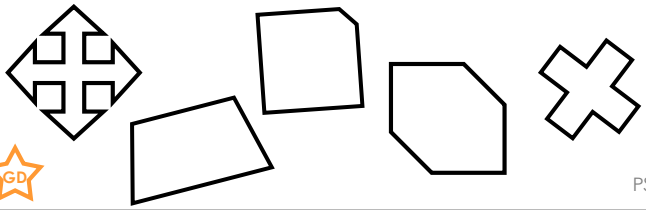
My shape has 5 fewer right angles than Kelsey's.



GD PS

8a. Sort the shapes into the Carroll diagram.

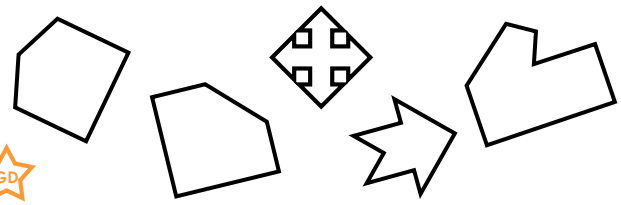
	Has 3 or more right angles	Has 3 or more non-right angles
Has enough right angles for a full turn		
Not enough right angles for a full turn		



GD PS

8b. Sort the shapes into the Carroll diagram.

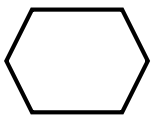
	Has enough right angles for a full turn	Not enough right angles for a full turn
Has angles less than a right angle		
Has angles greater than a right angle		

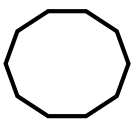


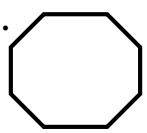
GD PS

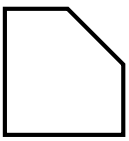
9a. Which shape is the odd one out?

A. 

B. 

C. 

D. 

E. 

Explain why.

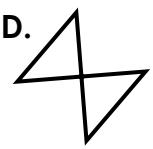
GD R

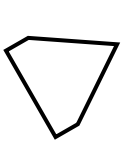
9b. Which shape is the odd one out?

A. 

B. 

C. 

D. 

E. 

Explain why.

GD R

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Reasoning and Problem Solving
Right Angles in Shapes

Developing

1a. Steph – C, Jack – A

2a.

	Has no right angles	Has 1 right angle
Has angles greater than a right angle.		
Has no angles greater than a right angle.		

3a. Example answer: A is the odd one out because it has no angles.

Expected

4a. Paula – C, Logan – B, Yosef – A

5a.

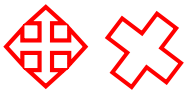
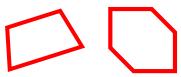
	Has no right angles	Has at least 1 right angle
Has fewer than 3 sides		
Has at least 3 sides		

6a. Example answer: D is the odd one out because it the only shape with a right angle.

Greater Depth

7a. Kevin – A, Daisy – D, Blake – B

8a.

	Has 3 or more right angles	Has 3 or more non-right angles
Has enough right angles for a full turn		
Not enough right angles for a full turn		

9a. Example answer: E is the odd one out because it is the only shape with a right angle.

Reasoning and Problem Solving
Right Angles in Shapes

Developing

1b. Rhona – A, Saul – B

2b.

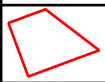
	Has 1 right angle	Has 2 or more right angles
Has all angles the same		
Doesn't have all angles the same		

3b. Example answer: B is the odd one out because the others have 4 right angles.

Expected

4b. Lydia – A, Addison – C, Ronan – B

5b.

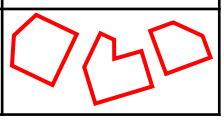
	Has fewer than 2 right angles	Has 2 or more right angles
All angles are equal		
All angle are not equal		

6b. Example answer: C is the odd one out because it only has 2 right angles, all the rest have 4 right angles.

Greater Depth

7b. Kelsey – D, Quinn – C, Charlie – B

8b.

	Has enough right angles for a full turn	Not enough right angles for a full turn
Has angles less than a right angle		
Has angles greater than a right angle		

9b. Example answer: B is the odd one out because the other shapes each have 2 right angles.

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