Reasoning and Problem Solving
Step 3: Compare Angles

National Curriculum Objectives:

Mathematics Year 3: (3G4a) Recognise that angles are a property of a 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 Draw a shape with specified angles. No more than two of each; acute and obtuse or right-angle.
Expected Draw a shape with specified angles. Differing amounts of each; acute and obtuse or right-angle.
Greater Depth Draw a shape with specified angles. Differing amounts of each; acute and obtuse or right-angle and some which may require curved sides.

Questions 2, 5 and 8 (Problem Solving)
Developing Make a table to show how many of each type of angle are in the shape. Acute and obtuse or right-angles in one shape.
Expected Make a table to show how many of each type of angle are in the shape. Acute and obtuse or right-angles in two shapes.
Greater Depth Make a table to show how many of each type of angle are in the shape. Acute and obtuse or right-angles in two shapes with some curved sides.

Questions 3, 6 and 9 (Reasoning)
Developing Explain the error a child has made when discussing the types of angles in a shape.
Expected Explain the error two children have or have not made when discussing the types of angles in a shape. One child correctly describing the angles.
Greater Depth Explain the error two children have made when discussing the types of angles in a shape. Both children could be right or wrong.

More resources which follow the same small steps as White Rose.

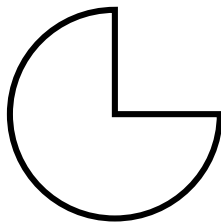Did you like this resource? Don't forget to review it on our website.

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Reasoning and Problem Solving – Compare Angles

1a. Draw a shape with...

- 2 obtuse angles
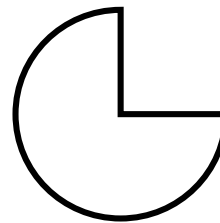- 2 acute angles

90 degree angle cut out given for reference.
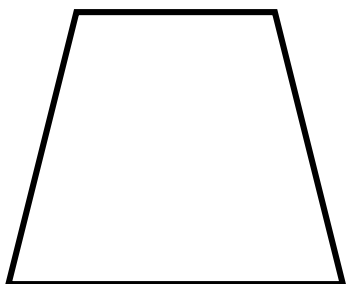
PS

1b. Draw a shape with...

- 1 right angle
- 2 acute angles

90 degree angle cut out given for reference.

PS

2a. Make a table to show how many of each type of angle you can find in this shape:

PS

2b. Make a table to show how many of each type of angle you can find in this shape:

PS

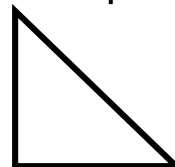**3a.** Year 3 have been asked to describe the angles in this shape:

Jason says:

> It has 4 angles that are quite big, so they must be obtuse.

Is he correct? Explain how you know.

R

3b. Year 3 have been asked to describe the angles in this shape:

Aaron says:

> It has 3 angles. So that means it has 1 of each type of angle.
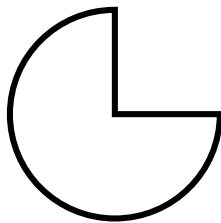
Is he correct? Explain how you know.

R

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Reasoning and Problem Solving – Compare Angles – Year 3 Developing

Reasoning and Problem Solving – Compare Angles

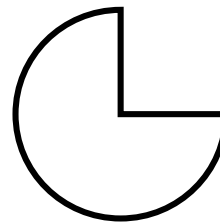**4a. Draw a shape with…**

- 5 obtuse angles

⭐ *90 degree angle cut out given for reference.*
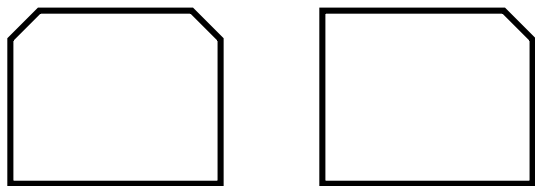
PS

4b. Draw a shape with…

- 2 obtuse angles
- 3 right angles

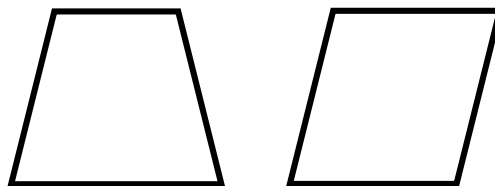⭐ *90 degree angle cut out given for reference.*

PS

5a. Make a table to show how many of each type of angle you can find in both these shapes:

⭐

PS

5b. Make a table to show how many of each type of angle you can find in both these shapes:

⭐

PS

6a. Year 3 have been asked to describe the angles in this shape:

Max and Emmy say:

> It has a corner cut out so it only has 3 angles left.

Max

> It has three right angles.

Emmy

⭐ Who is correct? Explain how you know.

R

6b. Year 3 have been asked to describe the angles in this shape:

Rosie and Tanya say:

> This shape has 6 angles inside it you could measure.

Rosie

> It has two corners cut off. So it has 2 angles left.
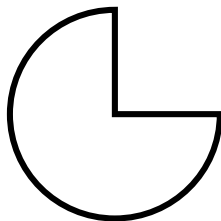
Tanya

⭐ Who is correct? Explain how you know.

R

Reasoning and Problem Solving – Compare Angles

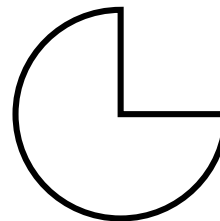**7a.** Draw a shape with…

- 2 right-angles

90 degree angle cut out given for reference.
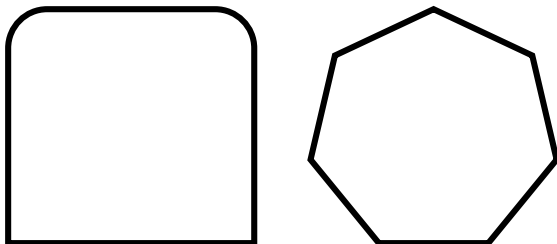
PS

7b. Draw a shape with…

- 4 obtuse angles
- 2 acute angles

90 degree angle cut out given for reference.

PS

8a. Make a table to show how many of each type of angle you can find in both these shapes:

PS

8b. Make a table to show how many of each type of angle you can find in both these shapes:

PS

9a. Year 3 have been asked to describe the angles in this shape:

Aisha and Scott say:

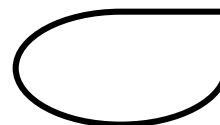> This shape has 4 corners and four angles.

Aisha

> This shape has 2 points.

Scott

Who is correct? Explain how you know.

R

9b. Year 3 have been asked to describe the angles in this shape:

Levi and Louisa say:

> This shape has 1 side like a circle. So it has no angles.

Levi

> This shape has a point that might be an angle.

Louisa

Who is correct? Explain how you know.

R

Reasoning and Problem Solving – Compare Angles

Developing

1a. Example answer:

2a.

Right-angles	0
Obtuse angles	2
Acute angles	2

1b. Example answer:

2b.

Right-angles	2
Obtuse angles	4
Acute angles	0

3a. Jason is wrong because his shape has 4 right angles.

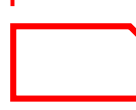**3b.** Aaron is wrong. The shape has a right angle and two acute angles.

Expected

4a. Example answer:

5a.

Right-angles	5
Obtuse angles	6
Acute angles	0

4b. Example answer:

5b.

Right-angles	0
Obtuse angles	4
Acute angles	4

6a. Max is wrong and Emmy is right. The shape has 3 right angles and 2 obtuse angles.

6b. Rosie is right, Tanya is wrong. The shape does have 6 internal angles.

Greater Depth

7a. Example answer:

8a.

Right-angles	2
Obtuse angles	7
Acute angles	0

7b. Example answer:

8b.

Right-angles	1
Obtuse angles	2
Acute angles	2

9a. Aisha is wrong. Scott is not using correct vocabulary. The shape has two corners (not points) which are right-angles.

9b. Levi is wrong. The shape has a circular looking side but it still has one corner as well. Louisa is also wrong as the shape has a corner (not a point).

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Reasoning and Problem Solving – Compare Angles   ANSWERS