Reasoning and Problem Solving Step 6: Angles in a Triangle 2

National Curriculum Objectives:

Mathematics Year 6: (6G4a) <u>Find unknown angles in any triangles, quadrilaterals, and regular polygons</u> Mathematics Year 6: (6G2a) <u>Compare and classify geometric shapes based on their properties and sizes</u>

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Determine whether a statement is true or false when recognising the value of angles in isosceles and right-angled triangles (when angles are given in multiples of 10). Expected Determine whether a statement is true or false when recognising the value of angles in isosceles and right-angled triangles (when angles are given in multiples of 5). Greater Depth Determine whether a statement is true or false when recognising and finding the value of angles in isosceles and right-angled triangled triangled triangles (when angles are given in multiples of 5). Greater Depth Determine whether a statement is true or false when recognising and finding the value of angles in isosceles and right-angled triangled triangles (when angles are given in exact degrees).

Questions 2, 5 and 8 (Problem Solving)

Developing Match the description to correct triangle when identifying types of triangle and length of sides.

Expected Match the description to correct triangle when identifying and finding up to one missing angle and side markings in isosceles and right-angled triangles (when angles are in multiples of 5).

Greater Depth Match the description to correct triangle when identifying and finding up to two missing angles in isosceles and right-angled triangles (when angles are given in exact degrees).

Questions 3, 6 and 9 (Problem Solving)

Developing Complete the missing information and write a description of the triangle when finding one missing angle (where all angles are multiples of 10) in isosceles and right-angled triangles.

Expected Complete the missing information and write a description of the triangle when finding two missing angles in isosceles and right-angled triangles (when angles are in multiples of 5).

Greater Depth Complete the missing information and write a description of the triangle when finding two missing angles in isosceles and right-angled triangles (when angles are given in exact degrees).

More <u>Year 6 Properties of Shapes</u> resources.

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Reasoning and Problem Solving – Angles in a Triangle 2 – Year 6 Developing



Angles in a Triangle 2



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Reasoning and Problem Solving – Angles in a Triangle 2 – Year 6 Expected



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Reasoning and Problem Solving – Angles in a Triangle 2 – Year 6 Greater Depth

<u>Reasoning and Problem Solving</u> <u>Angles in a Triangle 2</u>

Developing

1a. No, because two of the angles would have to be equal for this to be an isosceles triangle.
2a. 1B, 2A, 3C
3a. Isosceles, 70 degrees

Expected

4a. No, because two angles have to be the same and the total for all three angles must be 180 degrees.
5a. 1B, 2C, 3A
6a. 2, 70, 180 = 40 + 70 + 70

Greater Depth

7a. No, because although the angles add up correctly, the sides cannot all be equal.
8a. 1A, 2C, 3B
9a. 54, 180 = 72 + 54 + 54, 72 + 54 + 54 = 180

<u>Reasoning and Problem Solving</u> <u>Angles in a Triangle 2</u>

Developing

1b. Yes, because two of the angles are equal and all three angles total 180 degrees.
2b. 1C, 2A, 3B
3b. Isosceles, 40 degrees

Expected

4b. Yes, because two of the angles are equal and the total of all three angles is 180 degrees. 5b. 1B, 2A, 3C 6b. 2, 65, 180 = 50 + 65 + 65

<u>Greater Depth</u> 7b. No, because the angles do not total 180 degrees . 8b. 1B, 2C, 3A 9b. 72, 180 = 36 + 72 + 72, 36 + 72 + 72 = 180



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