Varied Fluency – Measure with a Protractor

National Curriculum Objectives:

Mathematics Year 6: (6G2a) [Compare and classify geometric shapes based on their properties and sizes](#)
Mathematics Year 6: (6G3a) [Draw 2-D shapes using given dimensions and angles](#)
Mathematics Year 6: (6G4a) [Find unknown angles in any triangles, quadrilaterals, and regular polygons](#)
Mathematics Year 6: (6G4b) [Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles](#)

Differentiation:

Developing Questions to support measuring with a protractor using degrees in tens and in regular orientations.
Expected Questions to support measuring with a protractor using degrees in fives and in regular orientations.
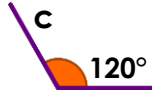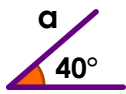**Greater Depth** Questions to support measuring with a protractor using degrees in ones and in irregular orientations.

More [Year 6 Properties of Shapes](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Measure with a Protractor

Measure with a Protractor

1a. What types of angles are these?

a 40°
b 90°
c 120°

acute	obtuse	right

VF

1b. What types of angles are these?

a 90°
b 140°
c 50°
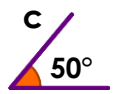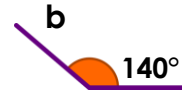
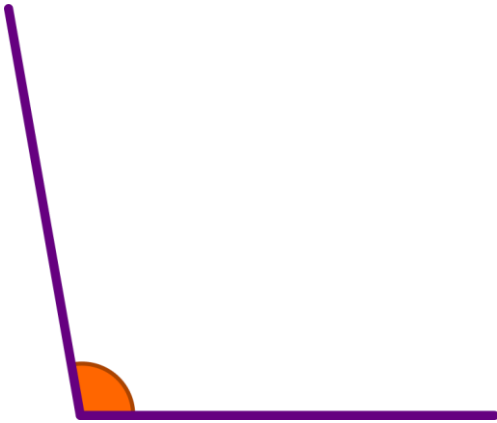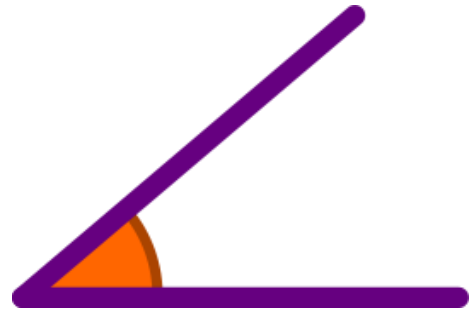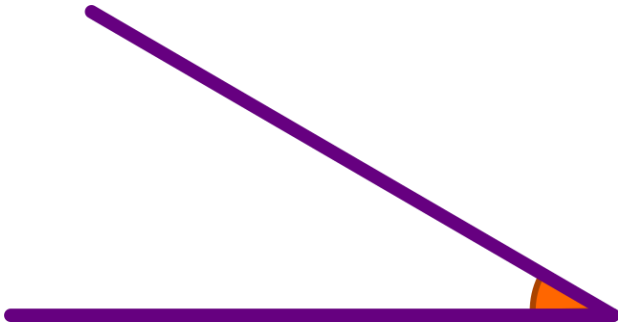| acute	obtuse	right

VF

2a. Measure this angle.

VF

2b. Measure this angle.

VF

3a. Estimate, then measure this angle.

VF

3b. Estimate, then measure this angle.

VF

4a. Fill in the blank:

An obtuse angle is _____ than 180°.

more	less

VF

4b. Fill in the blank:

An acute angle is _____ than 90°.

more	less

VF

Measure with a Protractor

5a. What types of angles are these?

a   b   c

acute	obtuse	reflex

E   VF
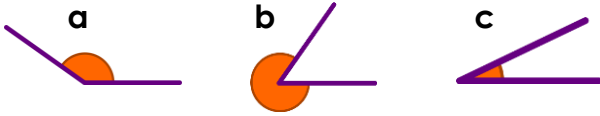
5b. What types of angles are these?

a   b   c
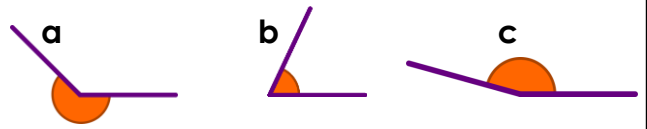
acute	obtuse	reflex

E   VF

6a. Estimate, then measure these angles.
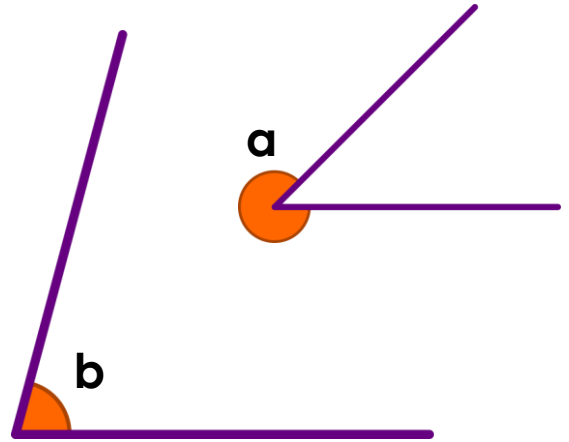
a

b
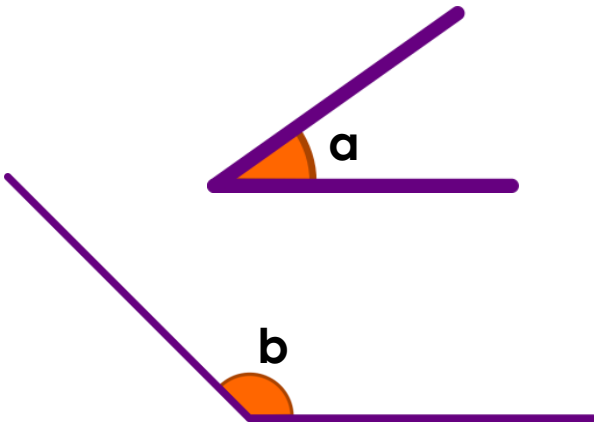
E   VF
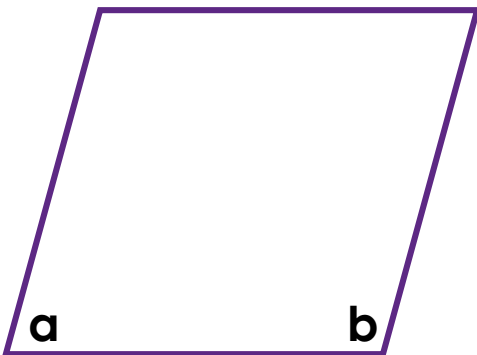
6b. Estimate, then measure these angles.

a

b

E   VF
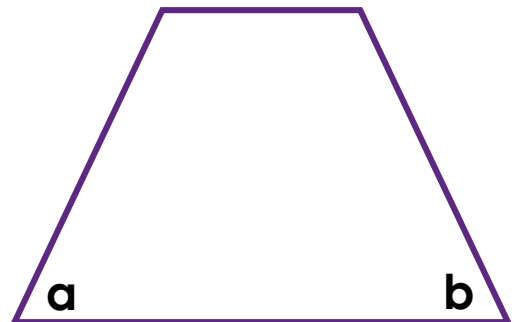
7a. Estimate, then measure the size of the angles a and b.

a   b

E   VF

7b. Estimate, then measure the size of the angles a and b.

a   b

E   VF

8a. Fill in the blanks:

An obtuse angle is more than _____° and less than _____°.

E   VF

8b. Fill in the blanks:
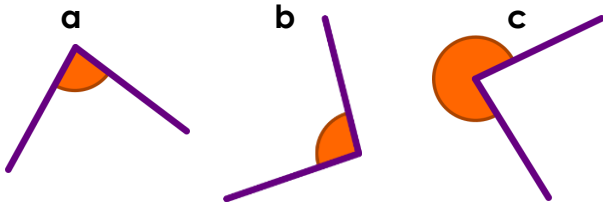
An acute angle is between _____° and _____°.

E   VF

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Varied Fluency – Measure with a Protractor – Year 6 Expected
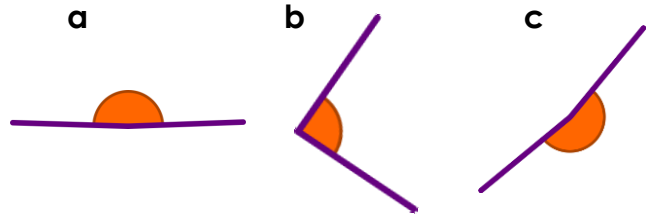
Measure with a Protractor

9a. What types of angles are these?

a   b   c
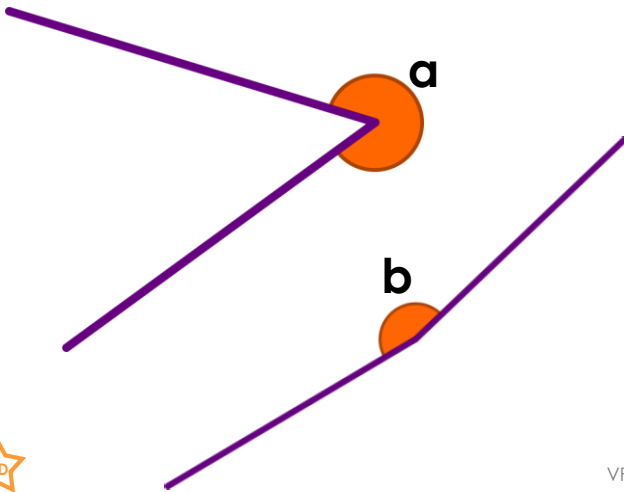
VF

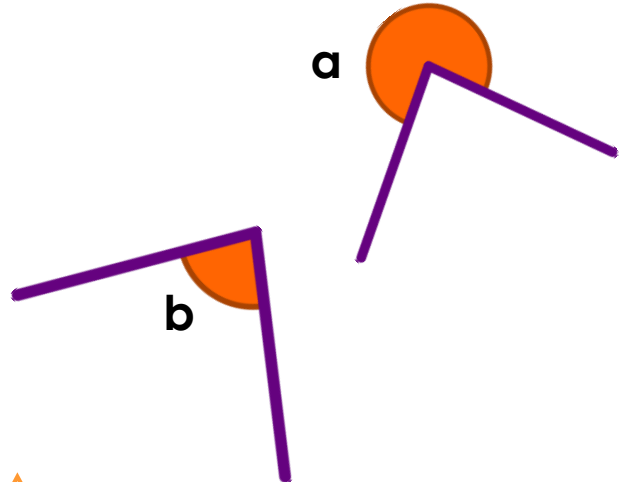**9b. What types of angles are these?**

a   b   c

VF

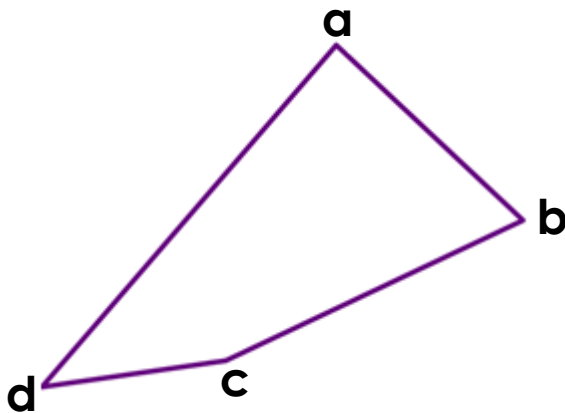**10a. Estimate, then measure these angles.**

a

b

VF

10b. Estimate, then measure these angles.
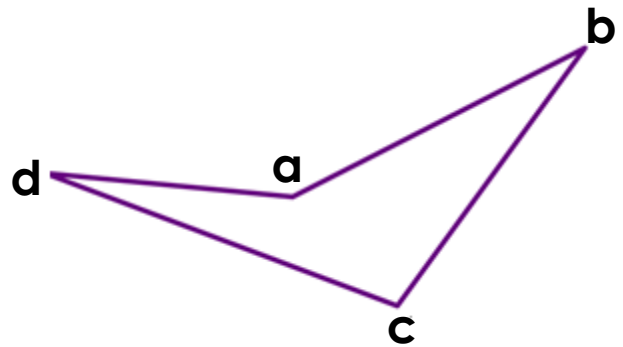
a

b

VF

11a. Estimate, then measure the size of each of the internal angles.

a

b

d   c

VF

11b. Estimate, then measure the size of each of the internal angles.

b

d   a

c

VF

12a. Complete the sentence to describe the angle:

A reflex angle is…

VF

12b. Complete the sentence to describe the angle:

An obtuse angle is…

VF

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Varied Fluency
Measure with a Protractor

Developing
1a. a – acute, b – right, c – obtuse
2a. 100°
3a. Estimations can be up to 20° either side of the answer. Correct measurement is 30°.
4a. less

Expected
5a. a – obtuse, b – reflex, c – acute
6a. Estimations can be up to 20° either side of the answer. a – 35°, b – 135°
7a. Estimations can be up to 20° either side of the answer. a – 75°, b – 105°
8a. 90°, 180°

Greater Depth
9a. a – acute, b – obtuse, c – reflex
10a. Estimations can be up to 20° either side of the answer. a – 307°, b – 167°
11a. Estimations can be up to 20° either side of the answer. a – 88°, b – 68°, c – 163°, d – 41°
12a. between 180° and 360°.

Developing
1b. a – right, b – obtuse, c – acute
2b. 40°
3b. Estimations can be up to 20° either side of the answer. Correct measurement is 150°.
4b. less

Expected
5b. a – reflex, b – acute, c – obtuse
6b. Estimations can be up to 20° either side of the answer. a – 315°, b – 75°
7b. Estimations can be up to 20° either side of the answer. a – 65°, b – 65°
8b. 0°, 90°

Greater Depth
9b. a – obtuse, b – acute, c – reflex
10b. Estimations can be up to 20° either side of the answer. a – 276°, b – 82°
11b. Estimations can be up to 20° either side of the answer. a – 212°, b – 27°, c – 106°, d – 15°
12b. between 90° and 180°.