

Varied Fluency

Step 4: Circles

National Curriculum Objectives:

Mathematics Year 6: (6G5) [Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius](#)

Differentiation:

Developing Questions to support recognising and finding the radius and diameter of circles, where the radius is directly divisible by 2. Measurements given in whole mm, cm and m.

Expected Questions to support recognising and finding the radius and diameter of circles, where the radius or diameter is not always a whole number. Measurements given in whole mm, cm and m.

Greater Depth Questions to support recognising and finding the radius and diameter of circles, where the radius or diameter is not always a whole number, and is sometimes presented as a fraction. Measurements given in whole mm, cm and m and may need converting.

More [Year 6 Statistics](#) resources.

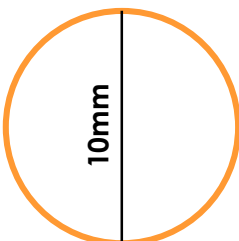
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Circles

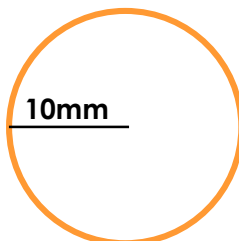
Circles

1a. Tick the circle which has a radius of 10mm.

A



B



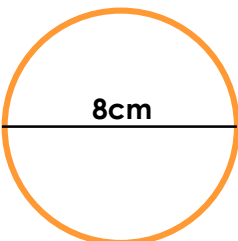
★

D

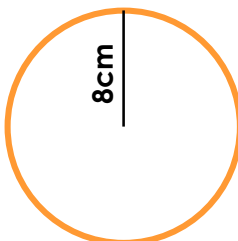
VF

1b. Tick the circle which has a diameter of 8cm.

A



B



★

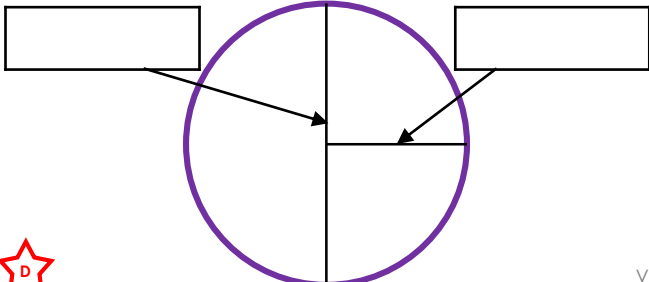
D

VF

2a. Use the measurements below to label the radius and diameter.

6cm

12cm



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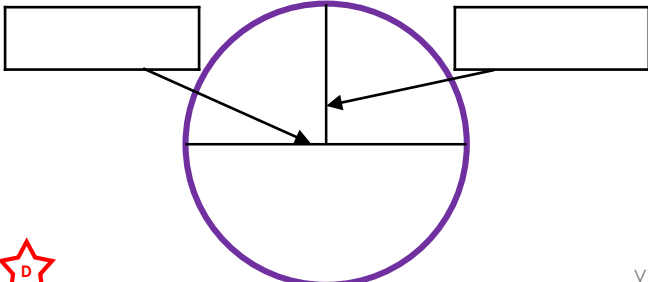
D

VF

2b. Use the measurements below to label the radius and diameter.

10mm

5mm



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D

VF

3a. Match each diameter to its radius.

16m

4m

8m

8m

4m

7m

14m

2m

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D

VF

3b. Match each radius to its diameter.

3m

24m

1m

18m

12m

6m

9m

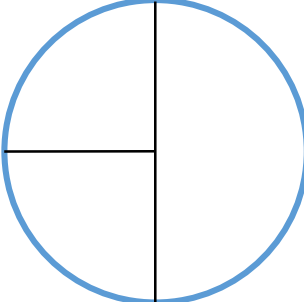
2m

★

D

VF

4a. Use your ruler to measure the radius and diameter.

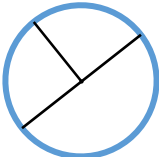


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D

VF

4b. Use your ruler to measure the radius and diameter.



★

D

VF

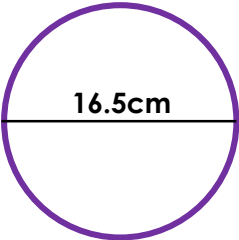
Circles

Circles

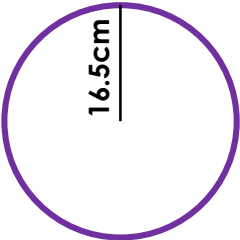
5a. Tick the circle which has a radius of 16.5cm.

5b. Tick the circle which has a diameter of 49mm.

A



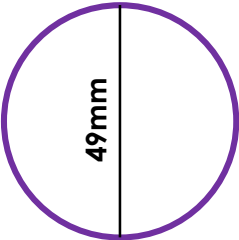
B



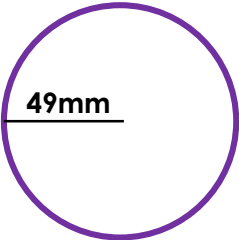
★ E

VF

A



B



★ E

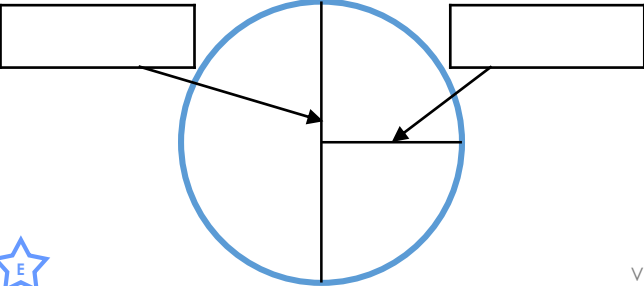
VF

6a. Use the measurements below to label the radius and diameter.

6b. Use the measurements below to label the radius and diameter.

54mm

27mm

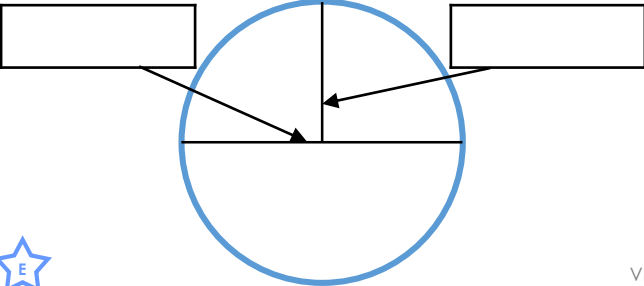


★ E

VF

9.5cm

19cm



★ E

VF

7a. Match each diameter to its radius.

7b. Match each radius to its diameter.

91m

43.5m

87m

37.5m

63m

45.5m

★ E 75m

31.5m

VF

49.5m

107m

53.5m

99m

25.5m

83m

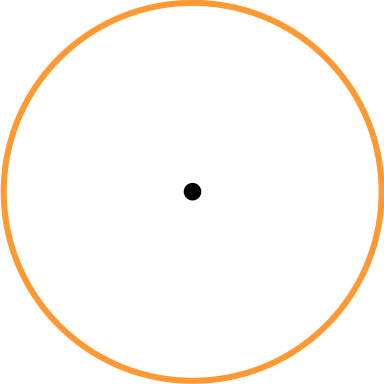
★ E 41.5m

51m

VF

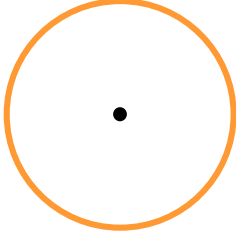
8a. Use your ruler to draw and measure the radius and diameter.

8b. Use your ruler to draw and measure the radius and diameter.



★ E

VF

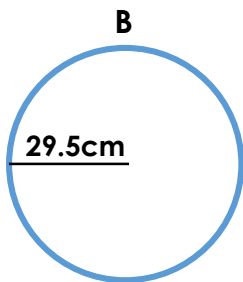
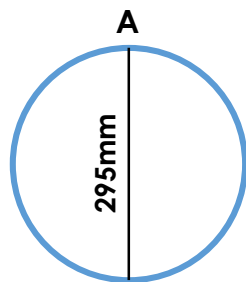


★ E

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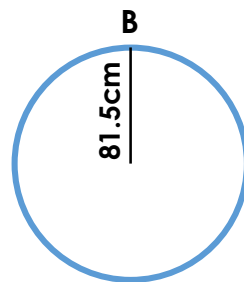
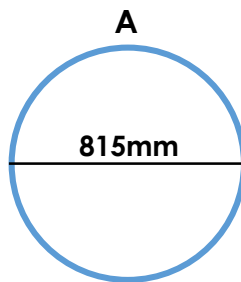
Circles

9a. Tick the circle which has a radius of 295mm.



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9b. Tick the circle which has a diameter of 81.5cm.

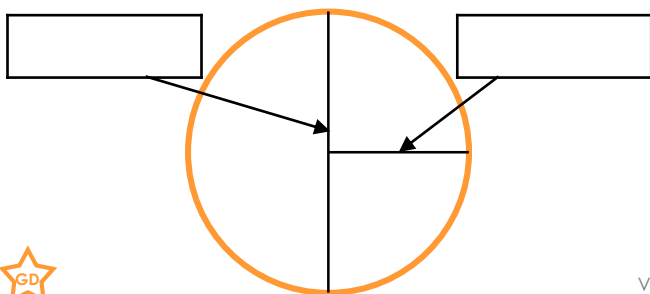


VF

10a. Use the measurements below to label the radius and diameter.

7.5m

375cm

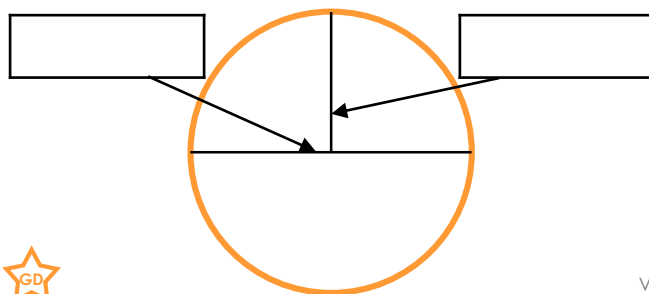


VF

10b. Use the measurements below to label the radius and diameter.

0.9m

450mm



VF

11a. Match each diameter to its radius.

5m

675mm

13.5cm

250cm

94mm

850cm

17m

4.7cm



VF

11b. Match each radius to its diameter.

35cm

83cm

415mm

150cm

0.75m

0.39m

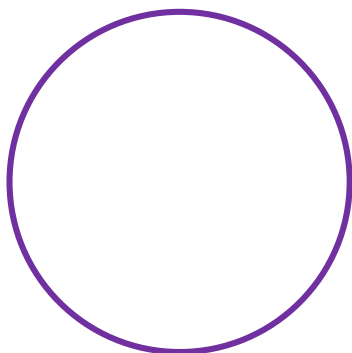
19.5cm

700mm



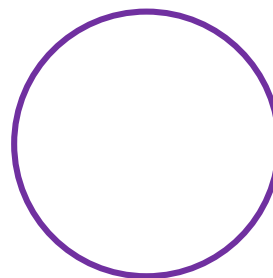
VF

12a. Use your ruler to draw and measure the radius and diameter.



VF

12b. Use your ruler to draw and measure the radius and diameter.



VF

Varied Fluency Circles

Developing

- 1a. **B**
- 2a. **Diameter – 12cm, Radius – 6cm**
- 3a. **16m and 8m, 8m and 4m, 4m and 2m, 14m and 7m**
- 4a. **Radius – 2cm, Diameter – 4cm**

Expected

- 5a. **B**
- 6a. **Diameter – 54mm, Radius – 27mm**
- 7a. **91m and 45.5m, 87m and 43.5m, 63m and 31.5m, 75m and 37.5m**
- 8a. **Radius – 2.5cm, Diameter – 5cm**

Greater Depth

- 9a. **B**
- 10a. **Diameter – 7.5m, Radius – 375cm**
- 11a. **5m and 250cm, 13.5cm and 675mm, 94mm and 4.7cm, 17m and 850cm**
- 12a. **Radius – 2.25cm, Diameter – 4.5cm**

Teaching Note: For questions 4, 8 and 12, measurements are dependant upon printer settings.

Varied Fluency Circles

Developing

- 1b. **A**
- 2b. **Diameter – 10mm, Radius – 5mm**
- 3b. **3m and 6m, 1m and 2m, 12m and 24m, 9m and 18m**
- 4b. **Radius – 1cm, Diameter – 2cm**

Expected

- 5b. **A**
- 6b. **Diameter – 19cm, Radius – 9.5cm**
- 7b. **49.5m and 99m, 53.5m and 107m, 25.5m and 51m, 41.5m and 83m**
- 8b. **Radius – 1.5cm, Diameter – 3cm**

Greater Depth

- 9b. **A**
- 10b. **Radius – 450mm, Diameter – 0.9m**
- 11b. **35cm and 700mm, 415mm and 83cm, 0.75m and 150cm, 19.5cm and 0.39m**
- 12b. **Radius – 1.75cm, Diameter – 3cm**