Year 10 – Maths – Home Learning 11

Focus for this week: Entry Level: Add units of measure   GCSE: Circles

Essential learning:	• Measure or a draw a length using a ruler
Practising:	• Add lengths, capacities and weights • Compare lengths, capacities and weights in different units
Learning about:	• Identify the diameter, radius and circumference of a circle
Extension:	• Find the area and circumference of circles

Contents:

Worksheet 1	Measure or a draw a length using a ruler
Worksheet 2	Add lengths, capacities and weights
Worksheet 3	Compare lengths, capacities and weights in different units
Worksheet 4	Circumference of circles
Worksheet 5	Area of circles

Tasks:

- Look at the learning objectives, reflect on what you are already confident with, what you would like to practise and what you would like to learn this week
- Choose 2-3 worksheets to complete this week and email them to jcoleman@bower-grove.kent.sch.uk
- Login to MyMaths and complete MyMaths tasks
- Spend 10 minutes a day on Times Table Rock Stars; Numbots OR Sumdog
- Please email a photo of any worksheets or poster you complete to the email address below.
  This will earn you a golden token.

Additional activities:

- Measure the hand span of each member of your family. Record them and then put in to order from the smallest to the largest.
- It may be easier to draw around each hand and then measure the drawing.
- **Extension:** Circumference of a circle practise questions (& video): https://corbettmaths.com/wp-content/uploads/2013/02/circumference-pdf2.pdf
- **Extension:** Area of a circle practise questions (& video): https://corbettmaths.com/wp-content/uploads/2017/12/area-of-a-circle.pdf

If you have queries about this work, please contact me at jcoleman@bower-grove.kent.sch.uk

1   Measure each of the following lines, in cm.

   a)   ————————————   …………….cm

   b)   ——————————————————   …………….cm

   c)   ————————————————————————————   …………….cm

   d)   ———————————————————   …………….cm

2   Measure each of the following lines, in mm.

   a)   ——————————————   …………….mm

   b)   ——————————————————————   …………….mm

   c)   ————————   …………….mm

3   Draw lines of the following lengths

   a)   7 cm

   b)   33 mm

   c)   8.5 cm

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Worksheet 2   Add lengths, capacities and weights

1   Add together the following measures.

a)   300 g + 250 g + 75 g = ...

....

b)   600 ml + 15 ml + 420 ml = ...

....

c)   85 m + 480 m + 160 m = ...

....

2   Josh has some books he wants to post.

Gone : 350 g   **Kings : 190 g**   **Time Waits : 450 g**   **Stars : 150 g**

The total weight of his parcel must be less than 700g

Which 3 books can he post?

Show how you decide.

....

....

3   Aaron is training for a cycle race. He plans to cycle a total of at least 250 km per week.

During one week he did 3 training sessions.

Session 1 : 72 km   **Session 2 : 80 km**   **Session 3 : 90 km**

Has he reached his target of 250 km?

Show how you decide.

....

....

....

1   Write each list of measures in order starting with the **smallest**.

   a)   5 cm, 6 m, 35 mm

   ....

   b)   400 ml, 30 cl, 0.5 litres

   ....

   c)   9 kg, 900 g, 0.95 kg

   ....

2   For each pair circle the **largest** measure.

a)	3 cm	35 mm		b)	300 ml	2 litres
c)	420 cm	5 m		d)	200 ml	2 cl
e)	28 mm	3 cm		f)	90 cl	2 litres
g)	3 m	250 cm		h)	1500 g	2 kg
i)	100 g	10 kg		j)	0.3 kg	30 g
k)	500 ml	0.6 litres		l)	0.7 kg	800 g

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Worksheet 4   Circumference of a Circle

Task 1

Circle A shows the radius of the circle. This is a line from the centre to the edge of the circle.
Circle B shows the diameter of the circle. This is a line from one edge to the other, that goes through the centre.

Circle B

Circle C

Circle D
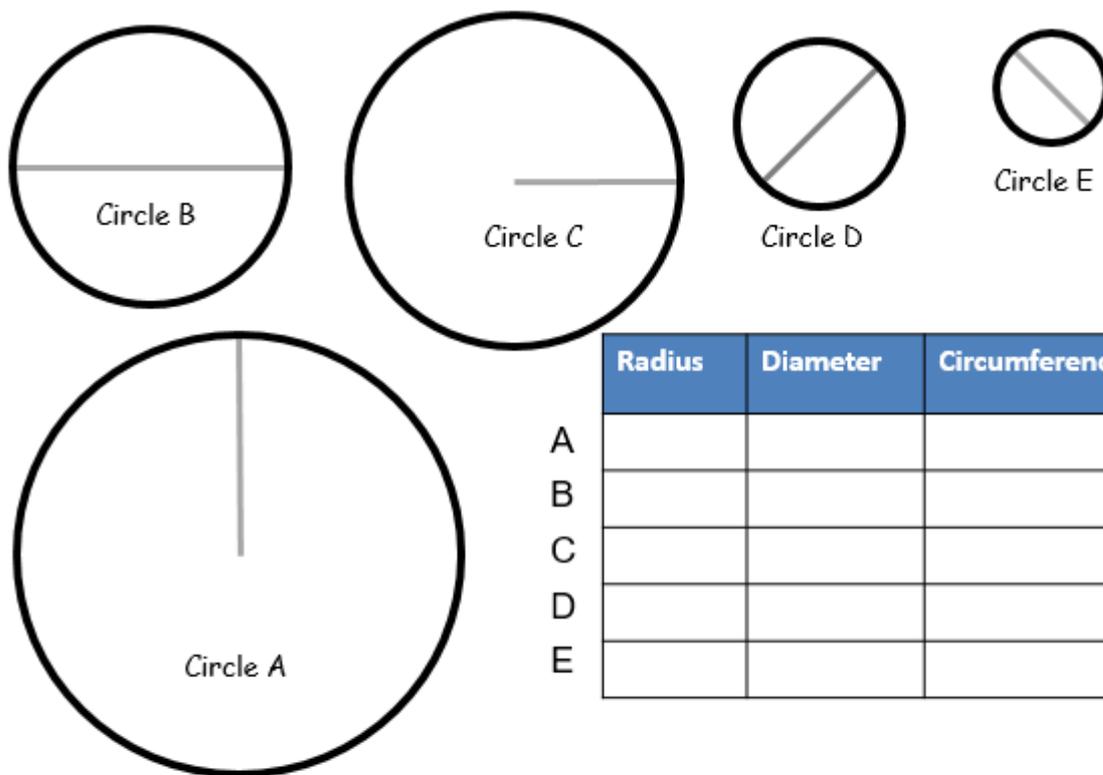
Circle E

Circle A

	Radius	Diameter	Circumference	Circumference ÷ Diameter
A				
B				
C				
D				
E				

Place your piece of string on the diameter or radius of any of these circles and make a mark on the string to show the length – measure this with a ruler

Then place your piece of string all the way around the same circle and make a mark for the length of its circumference – measure this with a ruler

How many times longer is the circumference? Try with a different circle

Task 2   Your answers on the right hand column of task 1 were probably about 3.
Use the formula 3.14 x diameter to find the circumference of the following circles.

a)
8 cm

b)
1m

c)
50mm

d)
9cm

e)
11.2cm

f)
12.8cm

g)
7.5cm

h)
4.8cm

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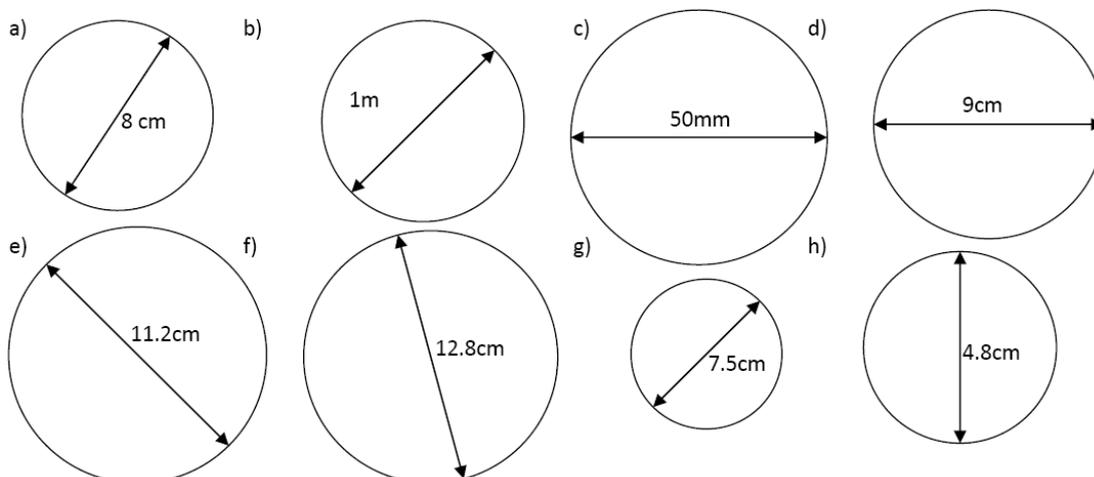
Worksheet 5   Area of a Circle

To find the area of a circle:
1. Find the radius of the circle
2. Use the formula: pi (3.14) x radius x radius
3. Remember to include units with your answer (e.g. cm^2)

Example 1:
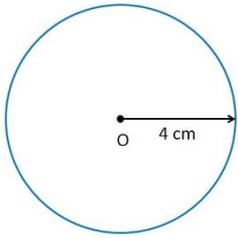
Circle with radius 4cm
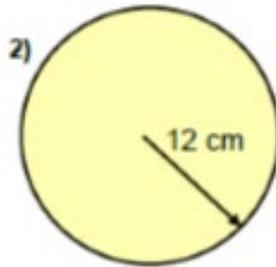1. Radius = 4cm
2. 3.14 x 4 x 4 = 50.24
3. Area = 50.24cm^2

Example 2:
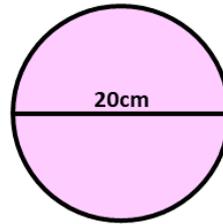
Circle with diameter 20cm
1. Radius = 10cm
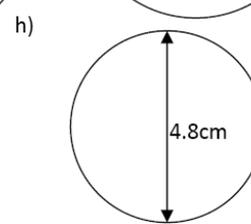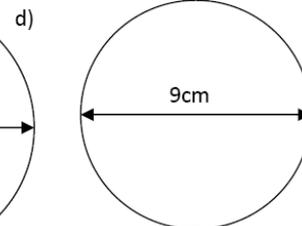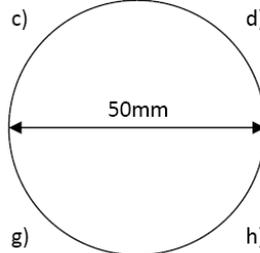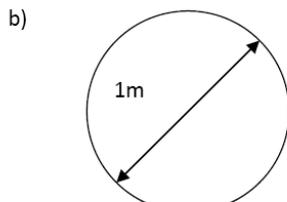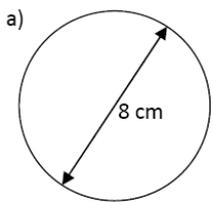2. 3.14 x 10 x 10 = 314
3. Area = 314cm^2

Task 1: Now find the area of the following circles (see example 1).

1) 7 cm

2) 12 cm

3) 8 cm
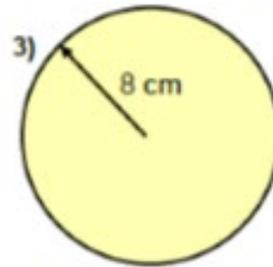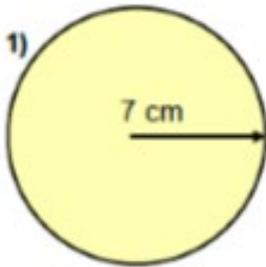
Task 2: Now find the area of the following circles (see example 2).

a) 8 cm

b) 1m

c) 50mm

d) 9cm

e) 11.2cm

f) 12.8cm

g) 7.5cm

h) 4.8cm
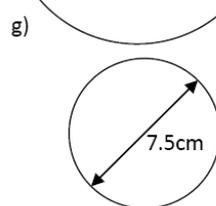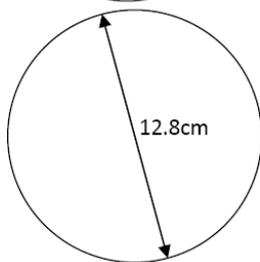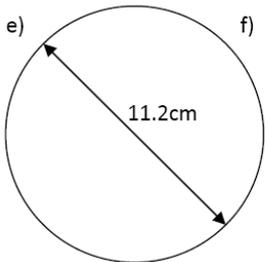
Task 3: Now find the area of the following circles (see examples 1 and 2).

a) 3cm

b) 7cm

c) 2cm

d) 5cm

e) 3cm

f) 1cm

g) 6.5cm

h) 4.5cm

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