

Maths for 5th and 6th class

We're going to look at the circle for this week and no mental maths!

A few things to help you. Look carefully at all the information you're given in the boxes above the questions.

Radius: a line from the centre of a circle to any point on the circle. It is half the diameter.

Diameter: A line from any point on a circle **passing through the centre** to the point opposite. It is twice the radius.

Sector: a slice of a circle made by an arc and two radii

Quadrant: a quarter of a circle

Circumference : The perimeter of a circle

Pie Chart: This is a way of representing (showing) data. Different things will be represented by the way the circle is divided into different sectors (parts). N.B. $\frac{1}{2}$ a circle is 180 degrees, $\frac{1}{4}$ of a circle is 90 degrees, $\frac{1}{3}$ of a circle is 120 degrees (360 degrees divided by 3 = 120 degrees) and $\frac{1}{8}$ of a circle is 45 degrees.

E.g. a full circle is divided into two halves, one half is boys and the other half is girls. We are told that there are 30 children altogether.

- How many are boys? We know that half of the pie chart represents boys and that there are 30 children altogether. Therefore there are 15 boys because $\frac{1}{2}$ of 30 = 15

How to draw a circle: (You will need a ruler, pencil, compass and your copy)

- To draw a circle you need to know the radius first (**N.B. we know that the radius is half the diameter so if we're given the diameter we will have to find the radius first**)
- To draw a circle that has a radius of 2cm
- Stretch your compass to measure 2cm on a ruler first
- Make a centre point on your page. Place the sharp point of the compass on it (Illustrations are in your book)
- Holding the top of the compass firmly, gently swivel the compass around making a circle

Answering questions on Pie Charts 5th class:

- Remember to bring each sector to a fraction of the circle e.g. if $\frac{1}{2}$ of the pie chart love sweets and 200 people were surveyed then the amount that love sweets is $\frac{1}{2}$ of 200 = 100
- Remember $\frac{1}{2}$ of a $\frac{1}{4}$ = $\frac{1}{8}$

6th class to find the circumference of a circle the formula (method) is diameter \times 3.14

- E.g. find the circumference of a circle with a diameter of 2 cm
- Formula is diameter \times 3.14 (we've been told that the diameter is 2cm)
- $2\text{cm} \times 3.14 = 6.28\text{cm}$ so the circumference of a circle with a 2cm diameter is 6.28cm
- Read your question carefully because **if you're given the radius instead of the diameter** then you'll have to find the diameter first by multiplying the radius \times 2

6th class to find the area of circle:

- Rule: the area of a circle is approximately $\frac{3}{4}$ of its own square
- For page 149 q.2(a) we have to find the approximate area of a circle
- We need to find the area of the square first so that is $8\text{cm} \times 8\text{cm} = 64\text{ cm squared}$
- We now need to find $\frac{3}{4}$ of 64
- Find $\frac{1}{4}$ first which is 64 divided by 4 = 16
- Then find $\frac{3}{4} = 16 \times 3 = 48\text{cm squared}$
- Note the measurements they give you for part b and c of this question