पुष्पना International School
Shree Swaminarayan Gurukul, Zundal

# Class -IV

# MATH-MAGIC

# Study material

# Month - October and November

# Ch-8

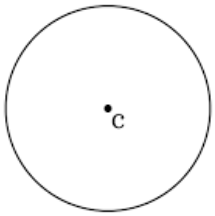
# Carts and Wheels

## ❖Key points to remember:

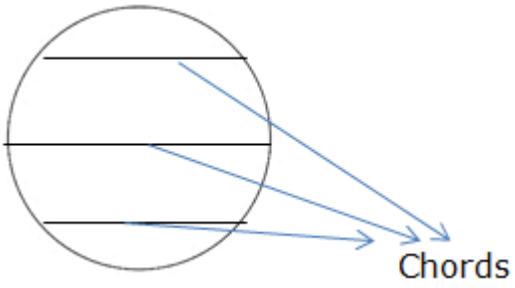
- Introduction
- Find the diameter
- Find the radius
- Fill in the blanks.
- Using rounder draw a circleof the given radius.
- Look at the figure and answer the following questions.
- Activity

❖ **Introduction:-**

- **Circle: A circle is a round shaped figure that has no corners or edges. A circle is a closed curve.**
- The fixed point is called the **centre of the circle.**

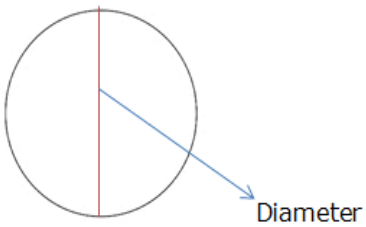



- **Chord: A chord is a line segment joining any two points on the circle.**

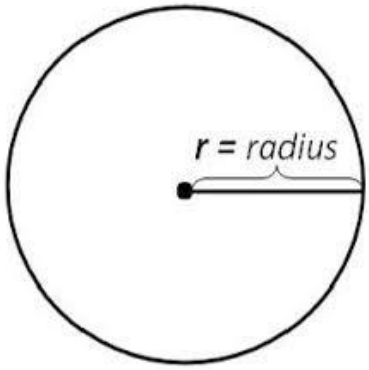



- Diameter: **The longest chord which pass through the centre is called diameter.**

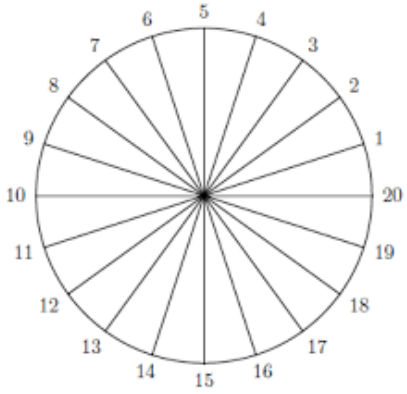
All diameter of the given circle is equal in length.



- Radius: **The line segment joining the centre of the circle to any point on the circle is called the radius of the circle.**




- Radii of a circle are of equal lengths.
- Radii is plural of radius. (example)




- Each diameter is formed of two radii.

❖ **Find the diameter:-**

Formula: **Diameter** = 2 x radius

a) Radius = 4 cm

**Diameter = 2 x radius**

**= 2 x 4 cm**

**= 8 cm**

b) Radius = 3 cm

**Diameter = 2 x radius**

**= 2 x 3 cm**

**= 6 cm**

c) Radius = 5 cm

**Diameter = 2 x radius**

**= 2 x 5 cm**

**= 10 cm**

d) Radius = 6 cm

**Diameter = 2 x radius**

**Diameter = 2 x 6 cm**

**= 12 cm**

❖ **Find the radius:-**

Formula: **Radius** = Diameter/2

a) Diameter = 18 cm

**Radius = $\frac{18}{2}$ (division)**

**= 9 cm**

b) Diameter = 12 cm

**Radius = Diameter/2**

**= $\frac{12\ cm}{2}$**

**= 6 cm**

c) Diameter = 16 cm

**Radius = Diameter/2**

**= $\frac{16\ cm}{2}$**

**= 8 cm**

d) Diameter = 8 cm

**Radius = Diameter/2**

**= $\frac{8\ cm}{2}$**

**= 4 cm**

- **Fill in the blanks.**

a. Diameter is the longest chord of the circle.

b. A circle is a simple closed curve shape.

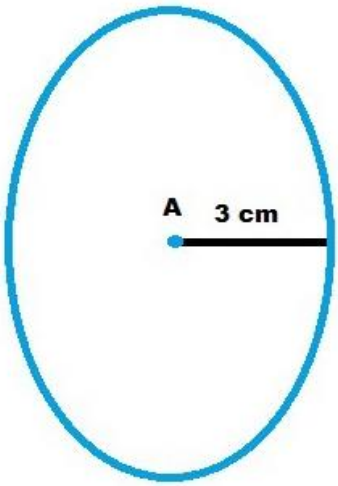
c. Diameter divides the circle into two equal halves.

d. The length of the boundary of a circle is called circumference of a circle.

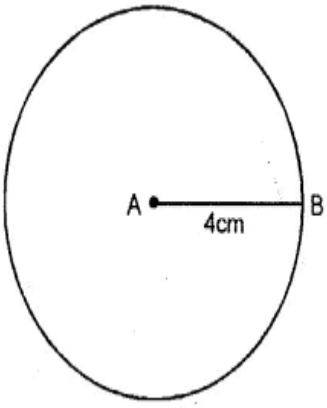
e. Line segment joining any two points on the edge of the circle is called chord.

- **Using rounder draw a circle of the given radius.**( https://www.youtube.com/watch?v=BfR-mphcTvE)

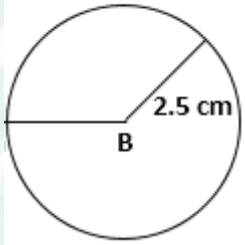
**a) 3cm**



**b) 4 cm**

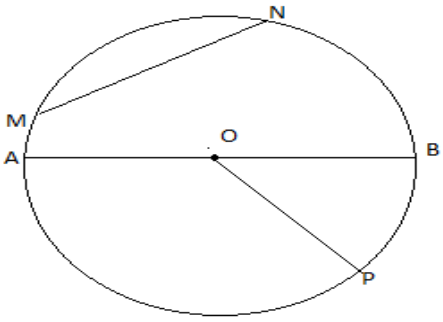



**c) 2.5 cm**




**d) 1 cm ( Hw)**

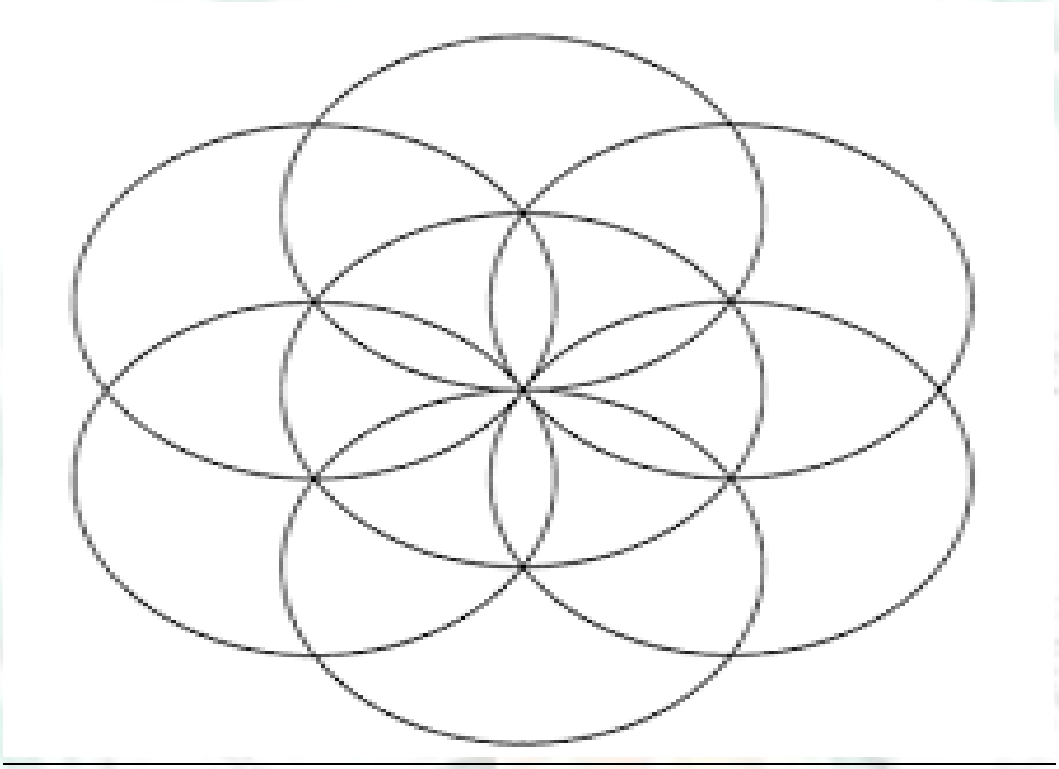
- **Look at the figure and answer the following questions.**




1) Center of the circle – **O**
2) Chord of the circle – **MN, AB**
3) Radii of the circle – **OB, OP, OA**
4) Diameter of the circle - **AB**

**Activity**

- Make any design using only rounder or compass. For eg



# CH- 9
# Halves and Quarter

## ❖Key points to remember:

- Introduction of fraction
- Fill in the blanks.
- Addition of Like Fractions
- Subtraction of Like Fractions
- Word problem.
- Activity.

## • Introduction of fraction

Fraction: **A fraction is a small part or proportion of something.**

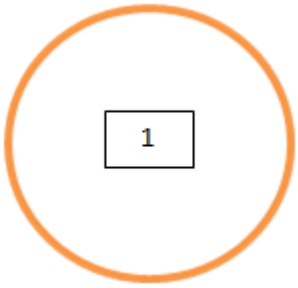
So, fraction for shaded part is 2/5

It can be read as 2 by 5 or 2 upon 5

$\frac{2}{5}$ ⟶ Numerator (represents parts we are taking about, out of total)

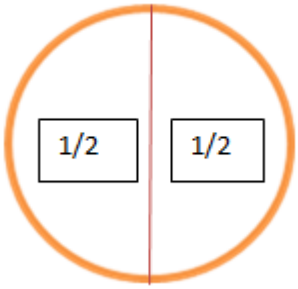
$\frac{2}{5}$ ⟶ Denominator (represents total parts into which whole is divided)

**Whole**



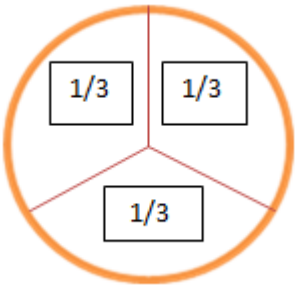

It is 1 whole

**Half**



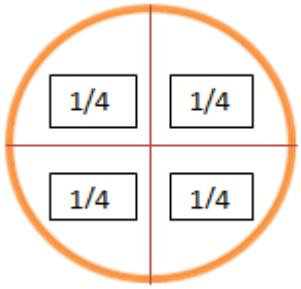

Here we have divided a whole into two equal parts, each is part is called half or ½

**One-third**




Here we have divided a whole into three equal parts; each part is called One-third or 1/3.

**One-fourth or Quarter**




Here we have divided a whole into four equal parts; each part is called One-fourth or ¼.

- **Fill in the blanks**.
  1) A fraction is a small part of something.
  2) Number written above the line in a fraction is called numerator.
  3) Number written below the line in a fraction is called denominator.
  4) In $\frac{2}{5}$, 2 is the numerator and 5 is the denominator.
  5) In $\frac{3}{8}$, 3 is the numerator and 8 is the denominator.
  6) In $\frac{6}{9}$, _____is the numerator and ____ is the denominator.

- **Addition of like fractions**

**Method**

**Step 1:** Add the numerators of the fractions given and write over the common denominator.

$$\text{Sum} = \frac{\text{Sum of numerators}}{\text{Common denominators}}$$

Question: 1

$$\frac{2}{5} + \frac{1}{5}$$

$$= \frac{2+1}{5} = \frac{3}{5}$$

Question: 2

$$\frac{2}{6} + \frac{1}{6}$$

$$= \frac{2+1}{6}$$

$$= \frac{3}{6}$$

3) $\frac{7}{5} + \frac{6}{5} = \frac{7+6}{5} = \frac{13}{5}$

4) $\frac{5}{12} + \frac{1}{12}$ Hw

5) $\frac{7}{11} + \frac{2}{11}$ Hw

- **Subtraction of Like Fractions**

**Method**

**Step 1:** Subtract the numerators of the fractions given and write over the common denominator.

$$\text{Difference} = \frac{\text{Difference of numerators}}{\text{Common denominators}}$$

a) $\frac{2}{5} - \frac{1}{5}$

$= \frac{2-1}{5}$

$= \frac{1}{5}$

b) $\frac{3}{6} - \frac{1}{6}$

$= \frac{3-1}{6}$

$= \frac{2}{6}$

c) $\frac{10}{8} - \frac{4}{8}$

$= \frac{10-4}{8}$

$= \frac{6}{8}$

d) $\frac{11}{2} - \frac{5}{2}$ Hw

e) $\frac{12}{7} - \frac{11}{7}$ Hw

- Word problem:

1) There are 60 blocks and $\frac{3}{4}$ green in colour. How many blocks are not green?

Ans:-

Total blocks = 60

¾ of them are green = $60 \times \frac{3}{4}$

$= 15 \times 3$

= 45 blocks are green

Blocks are not green (60 – 45) = 15

2) Anita counted 12 students in the choir. Three quarters of the students have brown hair. How many students in the choir have brown hair?
Ans:

Total students = 12
Three quarter of (3/4)
Them have brown hair = $12 \times \frac{3}{4}$

$= 3 \times 3$

= 9 students have brown.

## ❖ Activity

### Make a fraction flowers with help of paper plates and colour papers

# Ch-10
# Play with patterns

**Activity based chapter so no need to write**

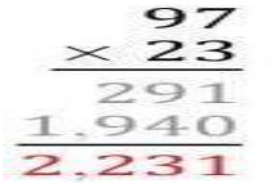
**(Do in text book)**

# CH-11
# Tables and shares

## ❖Key points to remember:

- Multiplication
- Division
- Word problems.

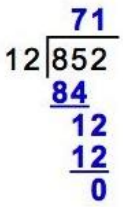
- **Multiplication (Revision of chapter 3)**
  a) 97 x 23



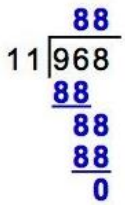

  b) 11 x 17 (Hw)
  c) 45 x 15 (Hw)
  d) 16 x 10 (Hw)

- **Division (Revision of chapter 3)**

  a) 852 ÷ 12




  b) 968 ÷ 11




  c) 312 ÷ 13
  d) 1092 ÷ 14

❖ **Word problem:**

1) There are 18 packets of Rakhis. Each packet has 6 Rakhis in it. How many total Rakhis are altogether?

**Solution : -**

**No. of packets of rakhis = 18**

**No. of rakhis in one packet = 6**

**Total rakhis in all = 18 × 6**

**= 108**

**Total 108 rakhis are altogether in boxes.**

2) There are 10 packets of sugar. Saurabh paid 11 rupees for one packet. How much money need to pay for 10 packets of Sugar?

**Solution: -**

**No. of packets of sugar = 10**
**Cost of one packet = Rs 11**

**Total cost of 10 packets of sugar = 10 × 11**

**= Rs 110**

**Total 110 rupees need to pay for 10 packets of Sugar.**

3) Leela has not gone to school for 21 days. For how many weeks was she away from school?

**Solution:**
**Number of days in one week = 7**

**Leela has not gone to school for 21 days.**

**Number of weeks in 21 days = 21 ÷ 7**

$$\begin{array}{r} 3 \\ 7\overline{)\,21} \\ -21 \\ \hline 00 \\ \hline \end{array}$$

**Thus, Leela was away from school for 3 weeks.**

4) Kajal made a necklace of 25 sea-shells. How many such necklaces can be made using 100 sea-shells?

**Solution**

**No. of sea - shells in one necklace = 25**

**No. of sea – shells Kajal has = 100**

**Total no. of necklaces = 100 ÷ 25**

```
    4
25 | 100
   - 100
   -----
     000
```

**Kajal can make total 4 necklaces.**

5) One carton can hold 25 soap bars. Dhruvi wants to pack 250 soap bars. How many cartons does she need for packing all of them?

**Solution**

**No. of soap bars in one carton = 25**

**No. of soap bars Dhruvi has = 250**

**Total no. of cartons = 250 ÷ 25**

```
     10
25 | 250
   -  25
   -----
      000
```

**Dhruvi need 10 cartons to pack soap bars.**

# Ch-12

# How heavy and How light?

## ❖ Key points to remember:

- Measuring Mass (weight)
- Conversion of kilogram into gram
- Addition
- Subtraction
- Word Problems

- **Measuring Mass (weight)**
  - Mass is a measure of how heavy something is.
  - We use a balance scales or a weighing scales to measure mass (or weight)
  - Mass is measured in grams (g) and kilograms (kg).
  - We use grams to weight lighter objects and kilograms to weight heavier objects.

    1 kg = 1000g

    Or

    1000g = 1kg
  - The standard unit of measurement of mass is Kilogram.

- **Convert Kilogram into gram.**

  **Note:** In conversion of unit,when we go from higher unit to lower unit; such as from kg to g. we always multiply.

  **1 Kg = 1000 g**

  a) 4 kg.

  = 4kg x 1000g

  = 4000g

  b) 2kg = 2kg x 1000

  = 2000g

  c) 3kg = 3kg x 1000

  = 3000g

  d) 1kg 200g = 1kg x 1000 + 200g

  = 1000g +200g

  = 1200g

  e) 33kg 450g = 33kg x 1000 + 450g

  = 33000g + 450g

  = 33450g

  f) 54kg 23g = 54kg x 1000 + 23g

  = 54000g + 23g

  = 54023g

- **Addition the following**

  **Step1:** Add the gram column

  **Step2:** Add the kg column

  a) 75kg 582g and 13kg 410g

| | kg | g |
|---|---|---|
| | 7 5 | 5 8 2 |
| + | 1 3 | 4 1 0 |
| | 8 8 | 9 9 2 |

  b) 94kg 215g and 6kg 757g

| | kg | g |
|---|---|---|
| | 9 4 | $2\ 1^{1}\ 5$ |
| + | 0 6 | 7 5 7 |
| | 1 0 0 | 9 7 2 |

  c) 55kg 540g + 18kg 479g

| | kg | g |
|---|---|---|
| | 1 1 | 1 |
| | 5 5 | 5 4 0 |
| + | 1 8 | 4 7 9 |
| | 7 4 | 0 1 9 |

  d) 25kg 595g + 15kg 345g (Hw)

- **Subtraction of following**

  **Step1:** Subtract the gram column

  **Step2:** Subtract the kg column

  a) 13kg 410g from 75kg 582g

| | kg | g |
|---|---|---|
| | 7 5 | 5 8 2 |
| - | 1 3 | 4 1 0 |
| | 6 2 | 1 7 2 |

  b) 78kg 654g – 38kg 806g

| | kg | g |
|---|---|---|
| | 6 17 | 16 4 14 |
| | ~~7~~ ~~8~~ | ~~6~~ ~~5~~ ~~4~~ |
| - | 3 8 | 8 0 6 |
| | 3 9 | 8 4 8 |

c) 22kg 500g – 1kg 753g

| | kg | g |
|---|---|---|
| | 1 | 14 9 10 |
| | 2 ~~2~~ | ~~5~~ ~~0~~ ~~0~~ |
| - | 0 1 | 7 5 3 |
| | 2 0 | 7 4 7 |

d) 24kg 570g – 12kg 679g (Hw)

- **Word Problems:**

1) Manu purchased 55kg 300g of a packet of rice and 41kg 200g of a packet of wheat flour. How much is the total weight of both the packets?

**Solution:**

Weight of rice = 5kg 300g

Weight of wheat flour = 4kg 200g

Total weight of both the packets = 5kg 300g + 4kg 200g

| | kg | g |
|---|---|---|
| | 5 | 3 0 0 |
| + | 4 | 2 0 0 |
| | 9 | 5 0 0 |

2) Daksh weighs 39kg 900g. Mani's weight 35kg 600g. Who weighs more and by how much?

**Solution:**

Daksh's weight = 39kg 900g

Mani's weight = 35kg 600g

Daksh weight is more by = 39kg 900g – 35kg 600g

| | kg | g |
|---|---|---|
| | 39 | 900 |
| - | 35 | 600 |
| | 04 | 300 |

3) Rita bought 25 kg 630g of cherries. From that she used 22 kg 700g of cherries. How much cherries left with her? (Hw)