Parents' Workshop 2020

Primary 4 Mathematics

Objectives of this workshop:

- To share new Mathematics concepts (Decimals and Fractions) introduced at the Primary 4 level
- To share the application of the different heuristic strategies used in problem solving

Singapore Mathematics Syllabus

"Mathematics is a largely hierarchical in nature. Higher concepts and skills are built upon the more foundational ones and have to be learned in sequence. ***A spiral approach is adopted in the building up of content across levels****."*

https://www.moe.gov.sg/docs/default-source/document/education/syllabuses/sciences/files/mathematics_syllabus_primary_1_to_6.pdf

Topics taught at different levels

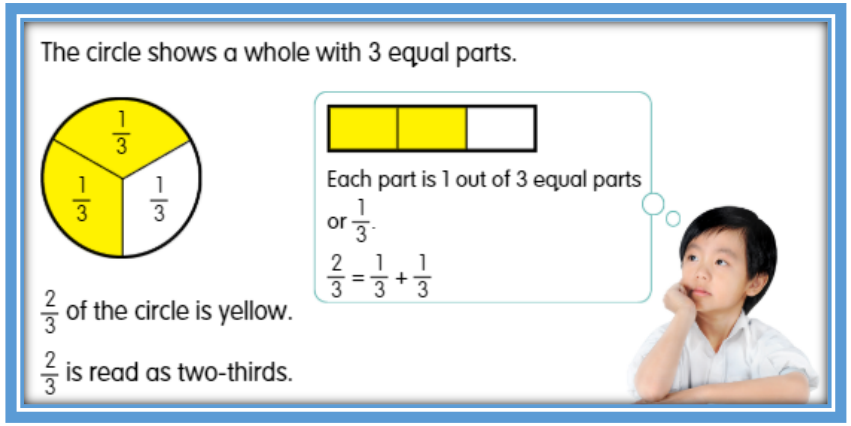
Primary 1	Primary 2	Primary 3	Primary 4	Primary 5	Primary 6
Whole Numbers	Whole Numbers	Whole Numbers	Whole Numbers	Whole Numbers	Whole Numbers
Measurement	Measurement	Measurement	Measurement	Measurement	Measurement
Geometry	Geometry	Geometry	Geometry	Geometry	Geometry
Data Analysis	Data Analysis	Data Analysis	Data Analysis	Data Analysis	Data Analysis
	Fractions	Fractions	Fractions	Fractions	Fractions
			Decimals	Decimals	Decimals
				Percentage	Percentage
				Ratio	Ratio
				Rate	Rate
					Speed

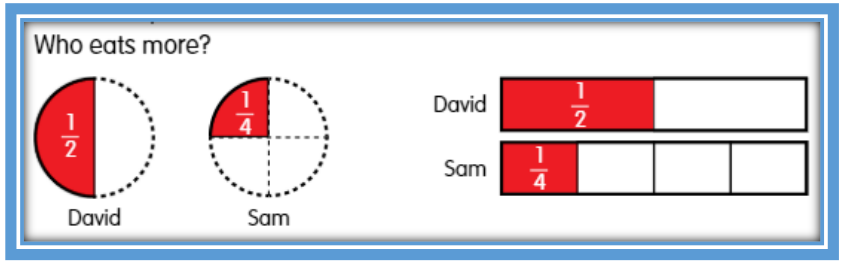
Fractions

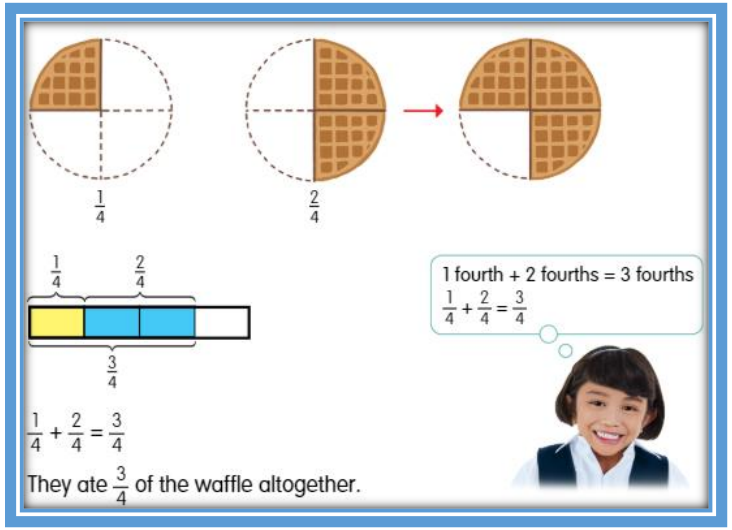
Prerequisite Knowledge

In **Primary 2**, students have learnt to:

- Express fractions of a whole
- Compare and order unit fractions and like fractions
- Add and subtract fractions within one whole





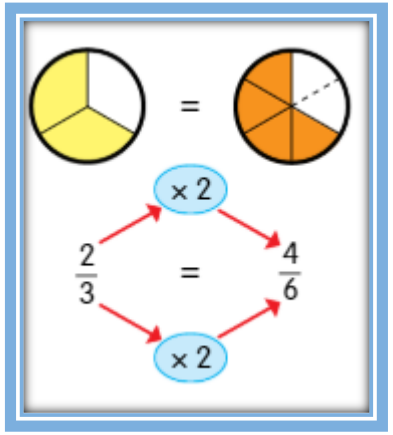


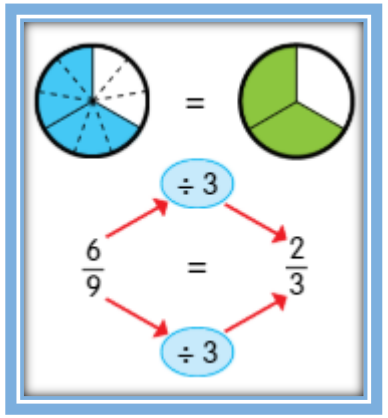
Images extracted from MPAH! Maths Pupil's Book 2B

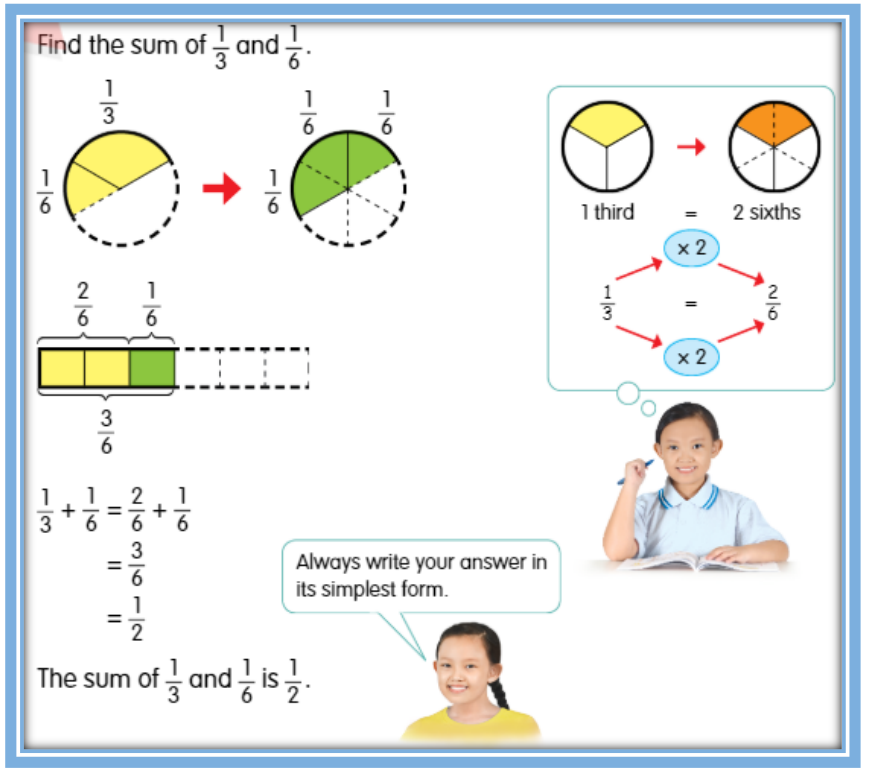
Prerequisite Knowledge

In **Primary 3**, students have learnt to:

- Multiply and divide within the multiplication tables of 2 to 10
- Find equivalent fractions
- Express a fraction in its simplest form
- Add and subtract unlike fractions within a whole





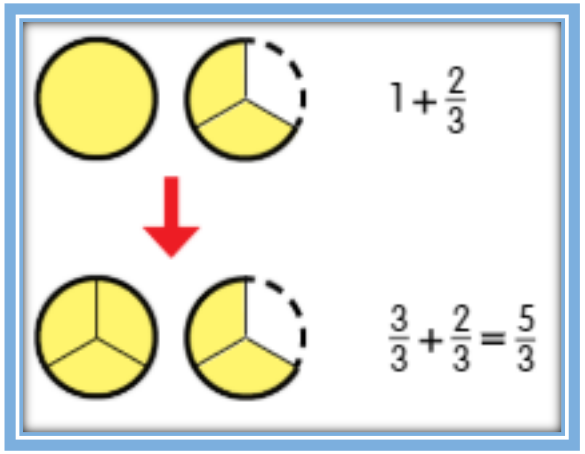


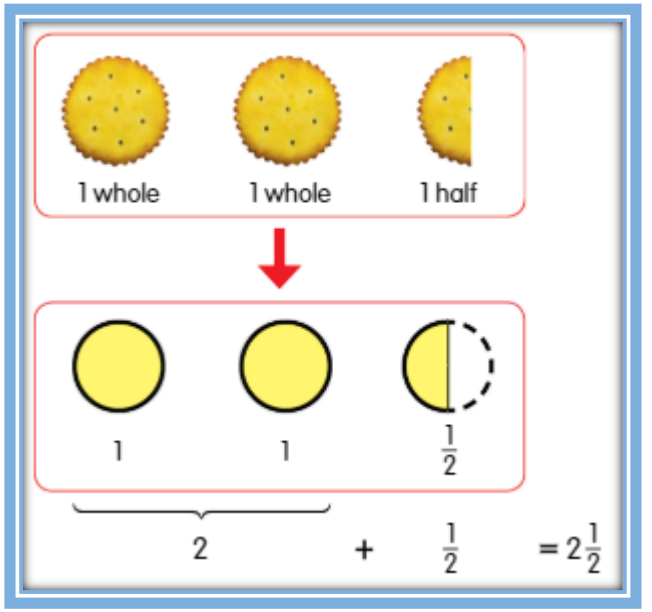
Images extracted from MPAH! Maths Pupil's Book 3B

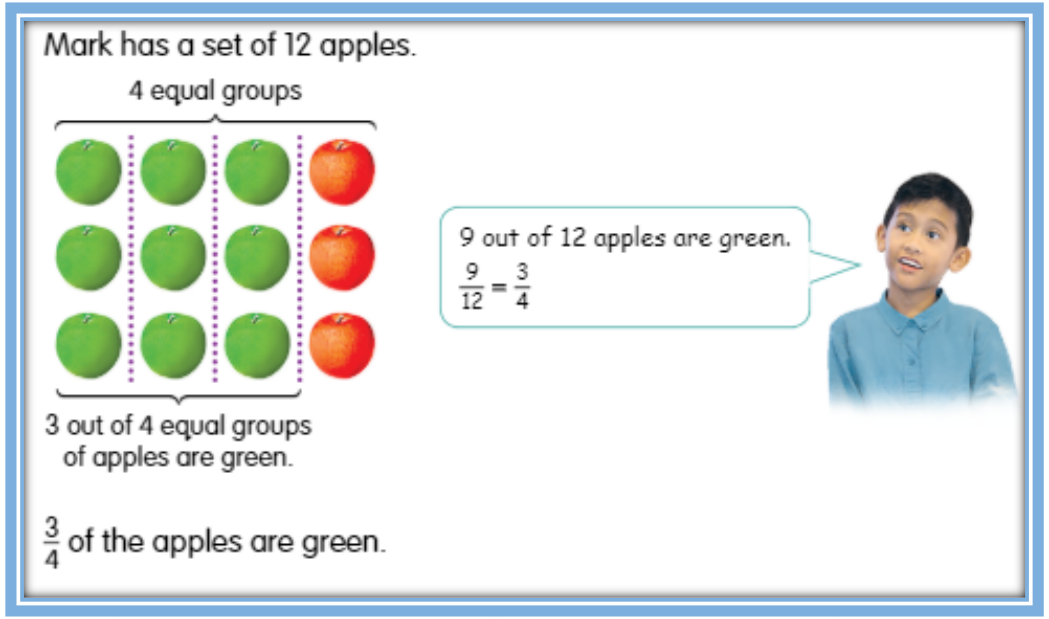
Fractions at Primary 4 Level

Students will learn:

- Mixed numbers and improper fractions
- Fractions of a set
- Addition and subtraction of fractions more than a whole
- Word problems involving fractions



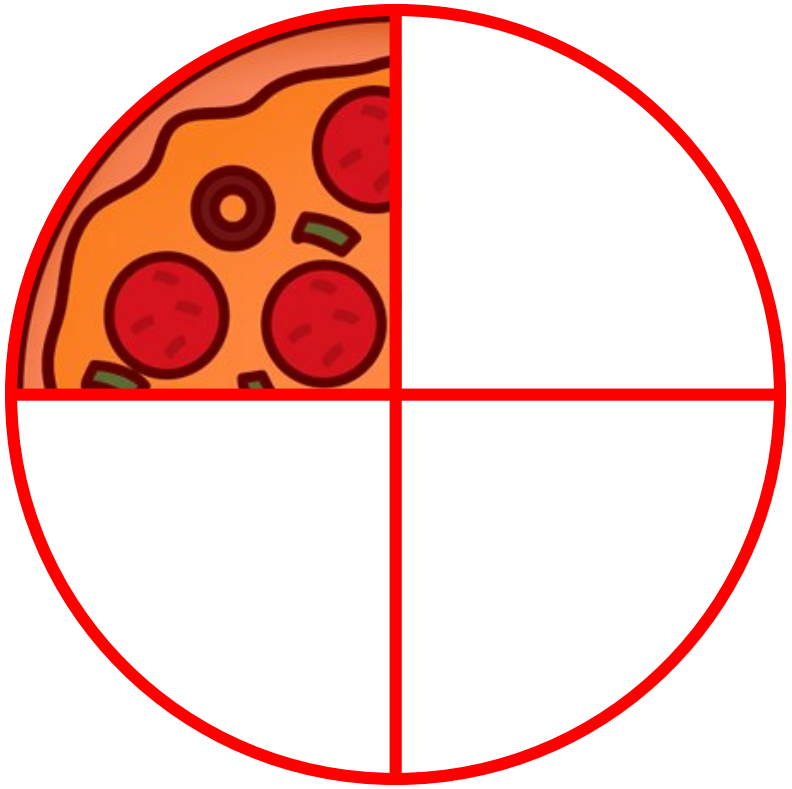




Images extracted from MPAH! Maths Pupil's Book 4B

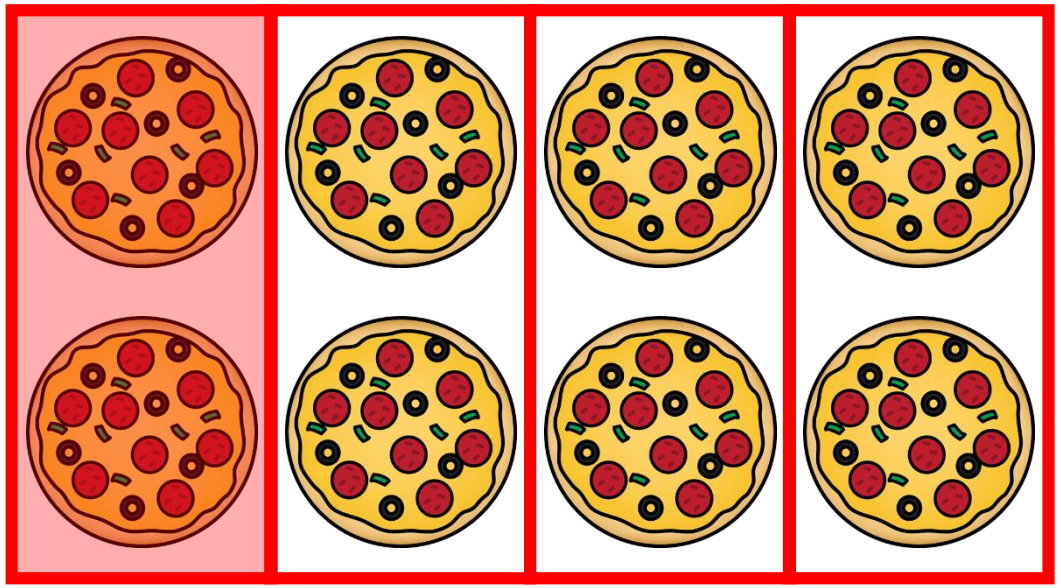
Fraction of a Whole

$\frac{1}{4}$ of a pizza



Fraction of a Set

$\frac{1}{4}$ of 8 pizzas

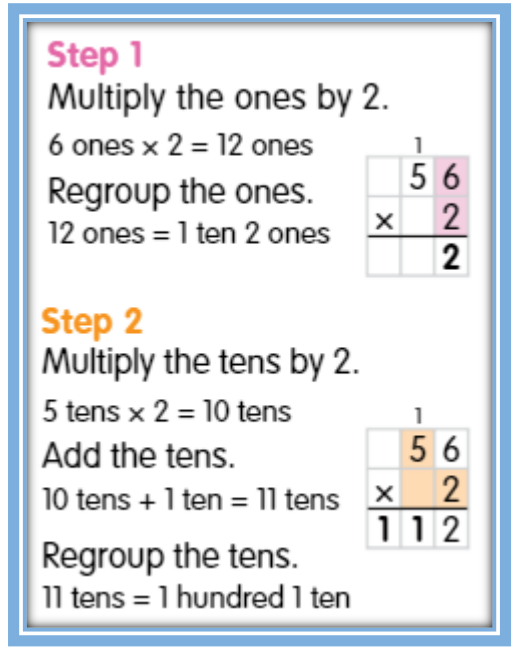


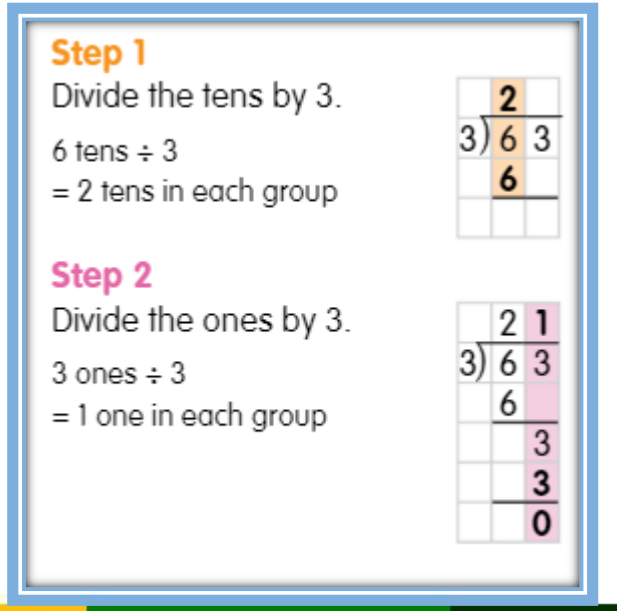
Decimals *New Topic*

Prerequisite Knowledge

In **Primary 2 & 3** , students have learnt to:

- Represent fractions with a denominator of 10
- Represent mixed numbers with a denominator of 10
- Find equivalent fractions
- Add and subtract whole numbers
- Multiply whole numbers using long multiplication
- Divide whole numbers using long division



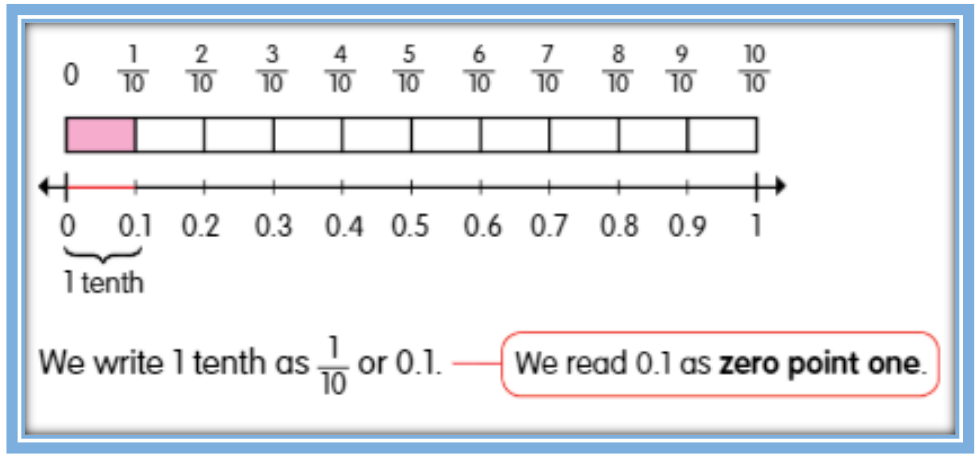


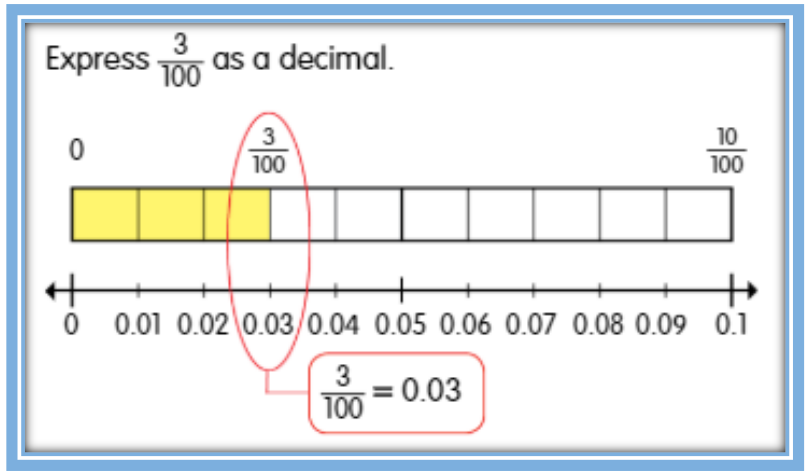
Images extracted from MPAH! Maths Pupil's Book 3B

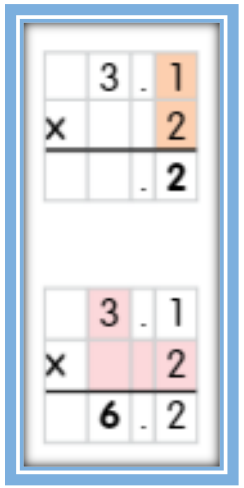
Decimals at Primary 4 Level

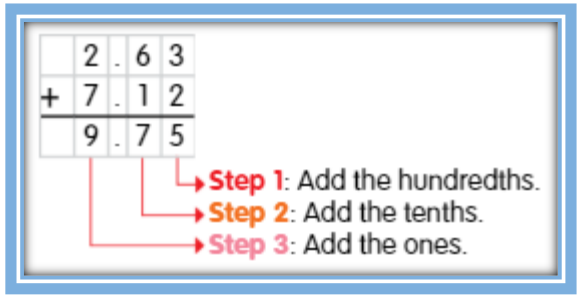
Students will learn to:

- Represent decimals up to 3 decimal places
- Compare and order decimals
- Convert decimals to fractions
- Round decimals
- Add and subtract decimals
- Multiply and divide decimals









Images extracted from MPAH! Maths Pupil's Book 4B

Guess and Check

Question 1

Step 1

Understand

There are 10 animals on a farm. → **Total number of animals = 10**

Some are ducks and the rest are cows. → **Ducks: 2 legs , Cows: 4 legs**

There are 36 legs altogether. → **Total number of (duck and cow) legs = 36**

How many ducks are there? → **Find number of ducks**

Question 1

Step 2

Plan

There are 10 animals on a farm. → **Total number of animals = 10**

Some are ducks and the rest are cows. → **Ducks: 2 legs , Cows: 4 legs**

There are 36 legs altogether. → **Total number of (duck and cow) legs = 36**

How many ducks are there? → **Find number of ducks**

Select a Strategy: **Guess and Check**

Reason: Number of ducks and cows are unknown and we only know the total number of animals and legs.

- Make a logical guess about the number of ducks and cows each and make sure they add up to **10**.
- Check that the total number of legs add up to **36**.

Question 1

Step 3 & 4

Do & Check

There are 10 animals on a farm. → **Total number of animals = 10**

Some are ducks and the rest are cows. → **Ducks: 2 legs , Cows: 4 legs**

There are 36 legs altogether. → **Total number of (duck and cow) legs = 36**

How many ducks are there? → **Find number of ducks**

Ducks	No. of legs	Cows	No. of legs	Total no. of legs	Is the total no. of legs 36?
5	5 x 2 = 10	5	5 x 4 = 20	10 + 20 = 30	✗
3	3 x 2 = 6	7	7 x 4 = 28	6 + 28 = 34	✗
2	2 x 2 = 4	8	8 x 4 = 32	4 + 32 = 36	✓

Let’s try!

Question 2

There are 12 animals on a farm.

Some are chickens and the rest are sheep.

There are 34 legs altogether.

How many chickens are there?

Question 2

Step 1

Understand

There are 12 animals on a farm. → **Total number of animals = 12**

Some are chickens and the rest are sheep. → **Chickens: 2 legs , Sheep: 4 legs**

There are 34 legs altogether. → **Total number of (chicken and sheep) legs = 34**

How many chickens are there? → **Find number of chickens**

Question 2

Step 2

Plan

There are 12 animals on a farm. → **Total number of animals = 12**

Some are chickens and the rest are sheep. → **Chickens: 2 legs , Sheep: 4 legs**

There are 34 legs altogether. → **Total number of (chicken and sheep) legs = 34**

How many chickens are there? → **Find number of chickens**

Select a Strategy: **Guess and Check**

Reason: Number of chickens and sheep are unknown and we only know the total number of animals and legs.

- Make a logical guess about the number of chickens and sheep each and make sure they add up to **12**.
- Check that the total number of legs add up to **34**.

Question 2

Step 3 & 4

Do & Check

There are 12 animals on a farm. → **Total number of animals = 12**

Some are chickens and the rest are sheep. → **Chickens: 2 legs , Sheep: 4 legs**

There are 34 legs altogether. → **Total number of (chicken and sheep) legs = 34**

How many chickens are there? → **Find number of chickens**

Chickens	No. of legs	Sheep	No. of legs	Total no. of legs	Is the total no. of legs 34?
6	6 x 2 = 12	6	6 x 4 = 24	12 + 24 = 36	✗
7	7 x 2 = 14	5	5 x 4 = 20	14 + 20 = 34	✓

Draw A Diagram

Distance Gap

Question 3

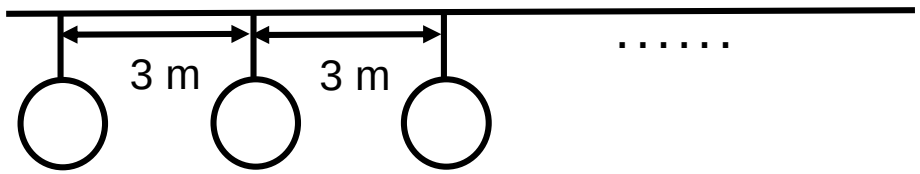
Step 1

Understand

Balloons were hung on a string. → **The balloons form a line**

The balloons were hung 3 m apart. → **3m between 2 balloons**

What is the distance between the 1st and 4th balloon? → **Find the distance between the 1st and 4th balloon**



Question 3

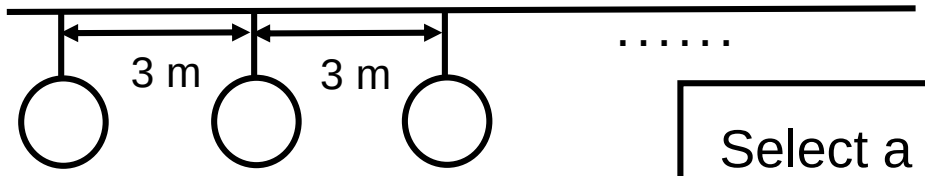
Step 2

Plan

Balloons were hung on a string. → **The balloons form a line**

The balloons were hung 3 m apart. → **3m between 2 balloons**

What is the distance between the 1st and 4th balloon? → **Find the distance between the 1st and 4th balloon**



Select a Strategy: **Draw a Diagram (Distance Gap)**

Reason: I can see the total distance between the 1st and 4th balloons.

- Draw 4 balloons.
- 3m between every balloon.
- Calculate the total distance.

Question 3

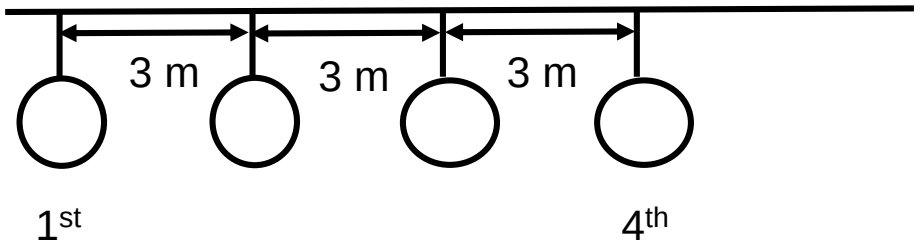
Step 3

Do

Balloons were hung on a string. → **The balloons form a line**

The balloons were hung 3 m apart. → **3m between 2 balloons**

What is the distance between the 1st and 4th balloon? → **Find the distance between the 1st and 4th balloon**



Between **4** balloons, there are **3** gaps.

The distance of each gap is **3 m**.

There are **3 groups of 3m gaps**.

3 × 3 = 9

Ans: 9 m

Question 3

Step 4

Check

Balloons were hung on a string. → **The balloons form a line**

The balloons were hung 3 m apart. → **3m between 2 balloons**

What is the distance between the 1st and 4th balloon? → **Find the distance between the 1st and 4th balloon**

Check:

Look at the diagram you have drawn.

Did you draw **4** balloons? ✓

Did you indicate **3 m** between each balloon? ✓

Let’s try!

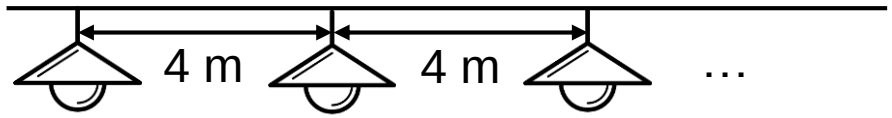
Question 4

Julian hung up a row of lamps.

He could hang up 7 lamps.

Each lamp was 4 m apart.

What is the distance between the 1st and 7th lamp?



Question 4

Step 1

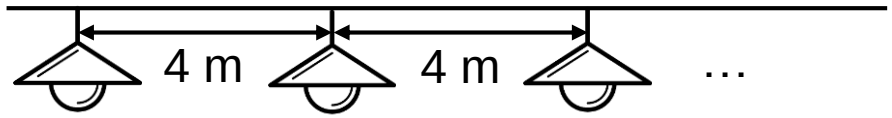
Understand

Julian hung up a row of lamps. → **The lamps form a line**

He could hang up 7 lamps. → **There were 7 lamps**

Each lamp was 4 m apart. → **4 m between 2 lamps**

What is the distance between the 1st and 7th lamp? → **Find the distance between the 1st and 7th lamp**



Question 4

Step 2

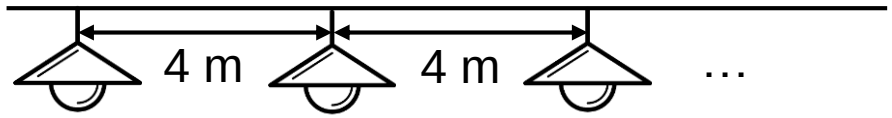
Plan

Julian hung up a row of lamps. → **The lamps form a line**

He could hang up 7 lamps. → **There were 7 lamps**

Each lamp was 4 m apart. → **4 m between 2 lamps**

What is the distance between the 1st and 7th lamp? → **Find the distance between the 1st and 7th lamp**



Plan:

- Draw **7** lamps.
- **4** m between each lamp.

Question 4

Step 3

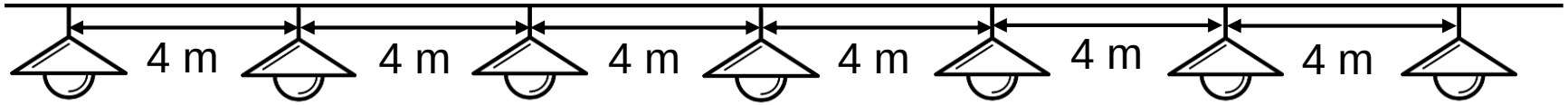
Do

Julian hung up a row of lamps. → **The lamps form a line**

He could hang up 7 lamps. → **There were 7 lamps**

Each lamp was 4 m apart. → **4 m between 2 lamps**

What is the distance between the 1st and 7th lamp? → **Find the distance between the 1st and 7th lamp**



Between **7** lamps, there are **6** gaps.

The distance of each gap is **4 m**.

There are **6** groups of **4m** gaps.

6 × 4 = 24

The distance between the first and seventh lamp is **24 m**.

Question 4

Step 4

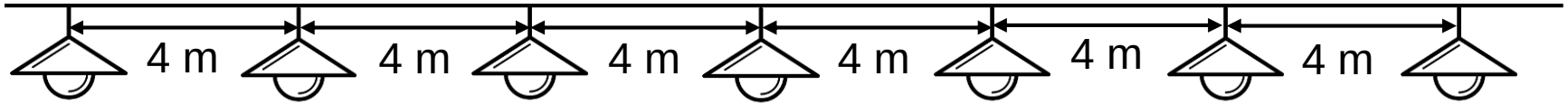
Check

Julian hung up a row of lamps. → **The lamps form a line**

He could hang up 7 lamps. → **There were 7 lamps**

Each lamp was 4 m apart. → **4 m between 2 lamps**

What is the distance between the 1st and 7th lamp? → **Find the distance between the 1st and 7th lamp**



Check:

- Did you draw **7** lamps?
- Did you indicate **4** m between each lamp?

Feedback Form

http://tiny.cc/jquliz