OXFORD
UNIVERSITY PRESS

PRIMARY MATHEMATICS 2

STUDENTS' COURSE BOOK

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ADDENDUM

ARMY PUBLIC SCHOOLS & COLLEGES SYSTEM

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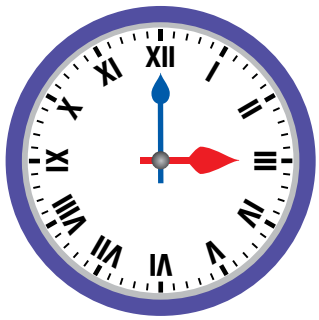
Students' Learning Outcome:
- Read and write Roman numbers up to 12.

ROMAN NUMERALS

IN FOCUS



What do the letters on the clock represent?

LET'S LEARN

1. The letters on the clock are Roman numerals. Write the Roman numerals for 1 to 8.

I = 1	IV = 4
II = 2	V = 5
III = 3	VI = 6
	VII = 7
	VIII = 8

2. Write the Roman numerals for 9 and 10.

IX = 9
X = 10

3. Write the Roman numerals for 11 and 12.

XI = 9
XII = 10

PRACTICE

1. What numbers do these represent?

(a) X = ____ (b) V = ____

(c) VII = ____ (d) IX = ____

(e) XI = ____ (f) IV = ____

2. Write the Roman numerals for these numbers.

(a) ____ = 9 (b) ____ = 12

(c) ____ = 3 (d) ____ = 8

3. Write the numbers given in question 2 in words.

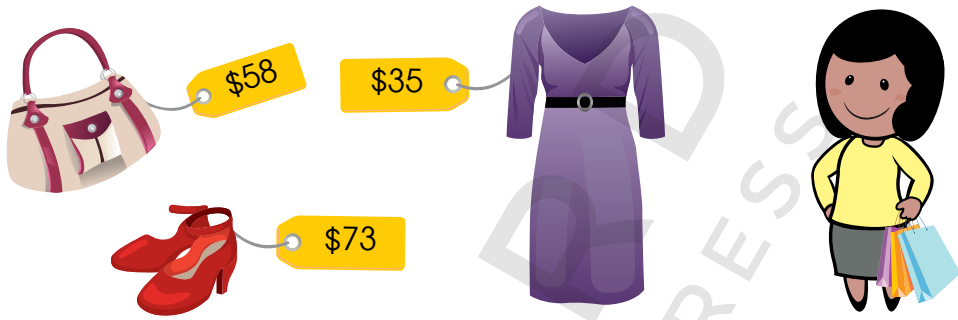
(a) ____ (b) ____

(c) ____ (d) ____

Students' Learning Outcome:
- Round numbers to the nearest tens using different concrete objects and pictorial representations.

ROUNDING NUMBERS

IN FOCUS

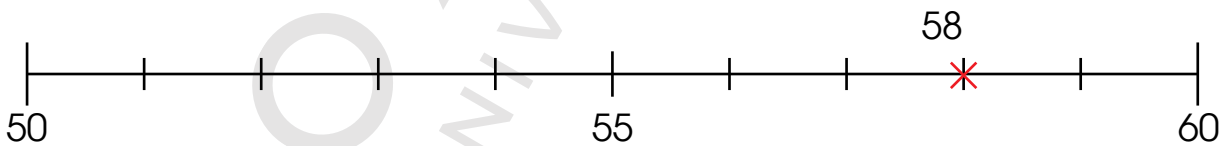


Mrs Ali went shopping.
She bought a handbag for $58, a pair of shoes for $73 and a dress for $35.
What is the cost of each item rounded to the nearest ten dollars?

LET'S LEARN

Rounding numbers to the nearest ten

1. The handbag cost $58.

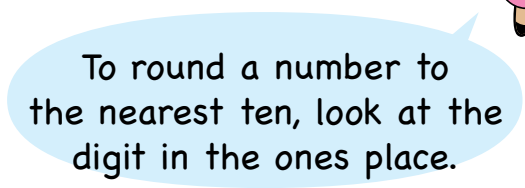


58 is between 50 and 60.
58 is nearer to 60 than to 50.
We get 60 when we round 58 to the nearest ten.

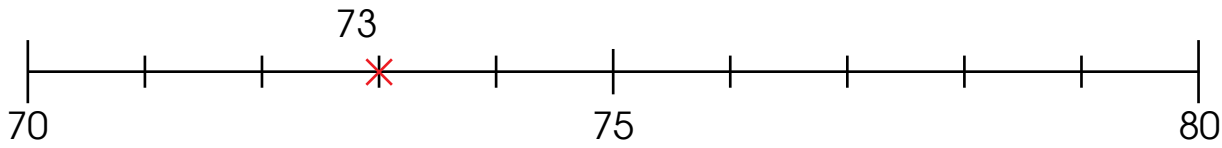
58 is **approximately** equal to 60.

58 ≈ 60

The handbag cost about $60.



2. The pair of shoes cost $73.



73 is between 70 and 80.
73 is nearer to 70 than to 80.

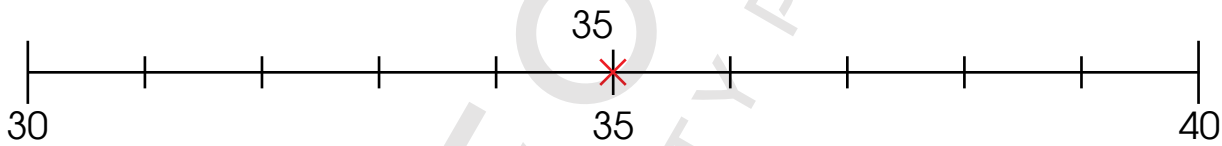
We get ____ when we round 73 to the nearest ten.

73 ≈ ____

The shoes cost about $____.

We round down a number when the digit in the ones place is less than 5.

3. The dress cost $35.



35 is exactly halfway between 30 and 40.

We get 40 when we round 35 to the nearest ten.

35 ≈ 40

The dress cost about $40.

We round up a number when the digit in the ones place is 5 or greater.

4. Round 437 to the nearest ten.

437 is between 430 and 440.
437 is nearer to ____ than to ____.

437 ≈ ____

5. Round each number to the nearest ten.

(a) 63 ≈ ____ (b) 48 ≈ ____

(c) 967 ≈ ____ (d) 591 ≈ ____

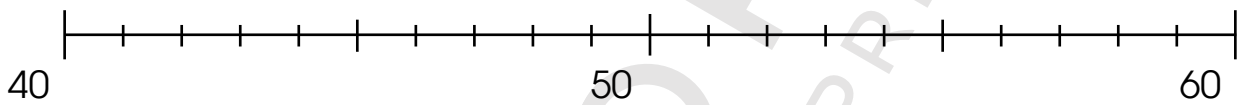
(e) 324 ≈ ____ (f) 655 ≈ ____

6*. A number rounded to the nearest ten is 50.
What could the original number be?

(a) What are the possible answers?

(b) What is the smallest answer?

(c) What is the greatest answer?



PRACTICE

Round each number to the nearest ten.

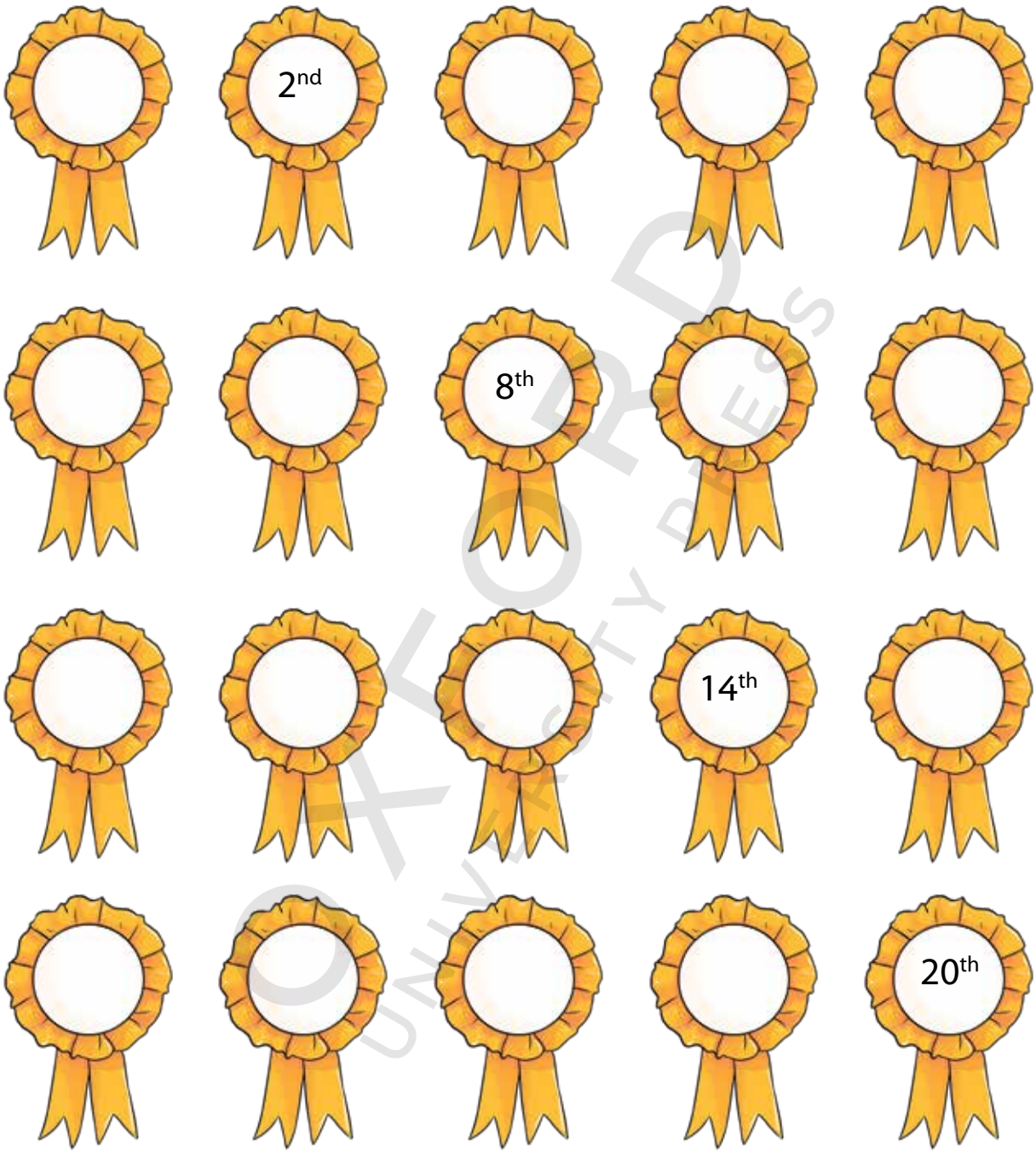
(a) 93 (b) 26

(c) 125 (d) 897

(e) 435 (f) 955

Students' Learning Outcome:

- Recognise the position of objects and write it using ordinal numbers up to 20.



Let the students fill in the **missing values** in the victory ribbons. Then have the students arrange themselves by their birth month, giving the youngest student first **position**, and so on.
Change the attribute to make the activity more interesting.

Students' Learning Outcome:
- Estimate the answer to an addition and subtraction question. (using various approaches).

ESTIMATION

LET'S LEARN

1. 521 adults and 785 children attended a carnival.
Find the total number of people at the carnival.
Estimate to check if your answer is reasonable.

$$521 + 785 = 1306$$

Method 1

$521 \approx 500$

$785 \approx 800$

$521 + 785 \approx 500 + 800$
$= 1300$

1306 is close to 1300, so the answer is reasonable.

Method 2

$521 \approx 520$

$785 \approx 790$

$521 + 785 \approx 520 + 790$
$= 1310$

1306 is close to 1310, so the answer is reasonable.

There were 1306 people at the carnival.

2. Find the value of 469 – 78.
Estimate to check if your answer is reasonable.

$$469 - 78 = 391$$

Method 1

$469 \approx 500$

$78 \approx 100$

$469 - 78 \approx 500 - 100$

$= 400$

391 is close to 400, so the answer is reasonable.

Method 2

$469 \approx 470$

$78 \approx 80$

$469 - 78 \approx 470 - 80$

$= 390$

391 is close to 390, so the answer is reasonable.

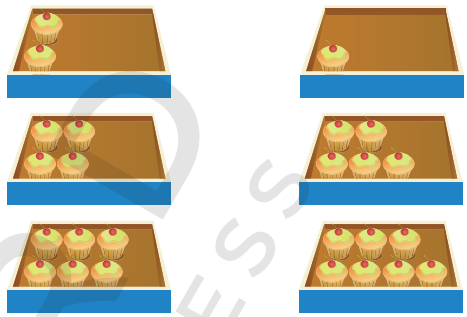
3. Estimate and find the value of each of the following.
(a) 642 + 568
(b) 264 – 13

Can you estimate in more than one way to check the reasonableness of your answers?

Students' Learning Outcome:
- Recognise even and odd numbers.

ODD AND EVEN NUMBERS

IN FOCUS

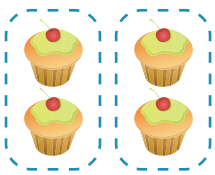


Set A Set B

Compare the boxes of cupcakes in Sets A and B.
What do you notice?

LET'S LEARN

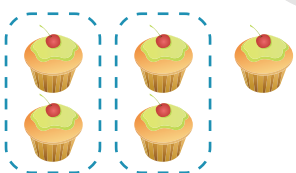
1.



4 cupcakes

Are the cupcakes in the other boxes in Set A evenly paired?

The cupcakes in a tray from Set A are evenly paired.
The number 4 is an **even** number.

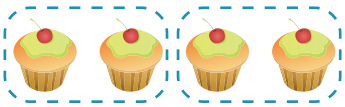


5 cupcakes

The cupcakes from Set B are not evenly paired.
One cupcake is the odd one out.
The number 5 is an **odd** number.

Do you know other odd and even numbers?

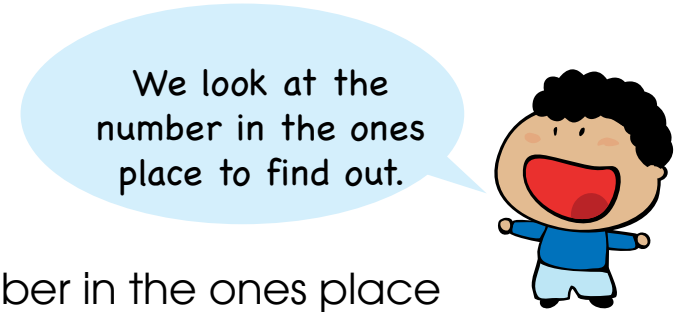
2.

	1	Odd
	2	Even
	3	Odd
	4	Even
	5	Odd
	6	Even
	7	Odd
	8	Even
	9	Odd
	10	Even

What do you notice about even and odd numbers?

3. How do you find out if 11 is an odd or even number?

11



For odd numbers, the number in the ones place can be 1, 3, 5, 7 or 9.

For even numbers, the number in the ones place can be 0, 2, 4, 6 or 8.

1 is an odd number.
So 11 is an odd number.

4.

12	13	14	15	16	17

☐, ☐ and ☐ are odd numbers.

☐, ☐ and ☐ are even numbers.

PRACTICE

1. Look at the numbers given.
Which are even numbers? Which are odd numbers?

158 3 54 109 625 21 12 96 210 887

Even numbers: ☐, ☐, ☐, ☐, ☐

Odd numbers: ☐, ☐, ☐, ☐, ☐

Students' Learning Outcome:

- Identify international currency and denominations (for instance, dollars).

How much money is Bina giving to the cashier?

RECOGNISING OUR COINS AND NOTES

IN FOCUS

Bina is holding one hundred rupees.
We write it as Rs 100.

LET'S LEARN

1. Here are some Pakistani coins and notes.

Coins

Re 1
1 rupee

Rs 2
2 rupees

Rs 5
5 rupees

Rs 10
10 rupees

Notes

Rs 10
10 rupees

Rs 20
20 rupees

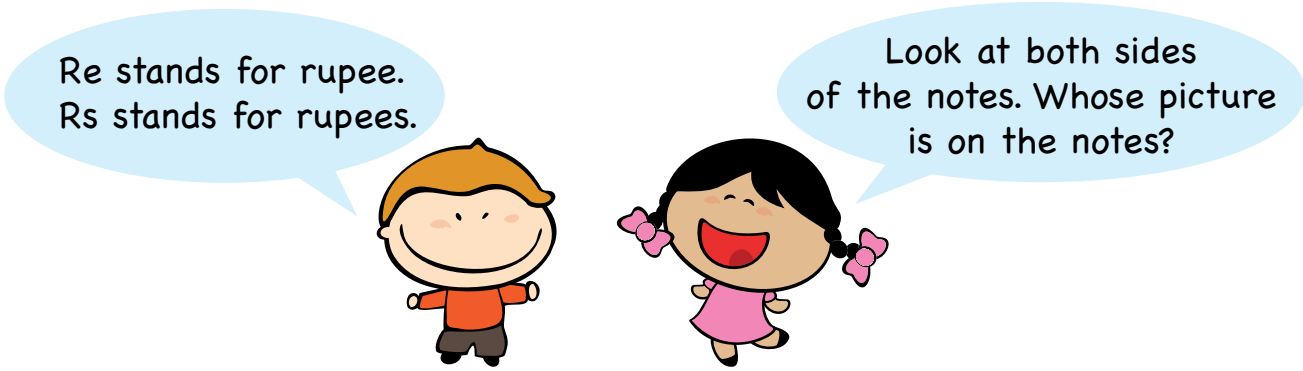
Rs 50
50 rupees

Rs 100
100 rupees

Rs 500
500 rupees

Rs 1000
1000 rupees

Rs 5000
5000 rupees



2. Here are some of the coins and notes that are used in the United States of America.

1¢
one cent

5¢
five cents

$1
one dollar

$5
five dollars

$10
ten dollars

$20
twenty dollars

$50
fifty dollars

$100
one hundred dollars

¢ stands for **cents**. **$** stands for **dollars**.
Dollars and cents are also used in countries such as Canada and Singapore.

ACTIVITY TIME

Work in pairs.

What you need:

1. Name the coin. Tell your partner what you can buy with each coin from a bookshop.

2. Name the note. Tell your partner what you can buy with each note from a supermarket.

1. Count.

Re 1 coins

Rs 2 coins

Rs 5 coin

Rs 10 notes

Rs 20 notes

Rs 50 notes

2. Count.

1¢ coins

5¢ coin

$1 notes

$10 notes

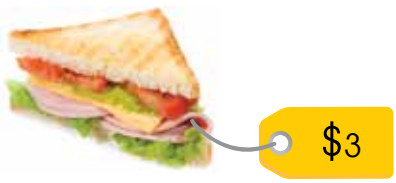
$20 notes

$100 notes

Students' Learning Outcome:
Solve money problems involving addition and subtraction of Pakistani money and a few selected international currency notes. (for instance Dollars)

SOLVING WORD PROBLEMS

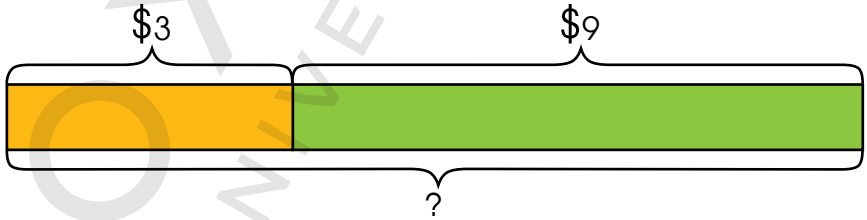
IN FOCUS



What is the total cost of the sandwich and the toy?

LET'S LEARN

1. Ahmed buys a sandwich for $3.
He also buys a toy for $9.
How much does Ahmed pay in all?



$3 + $9 = $12

Ahmed pays $12 in all.

How can we check our answer?

$12 - $9 = $3
$12 - $3 = $9
Our answer is right!

2. Anum saves Rs 40 on Monday.

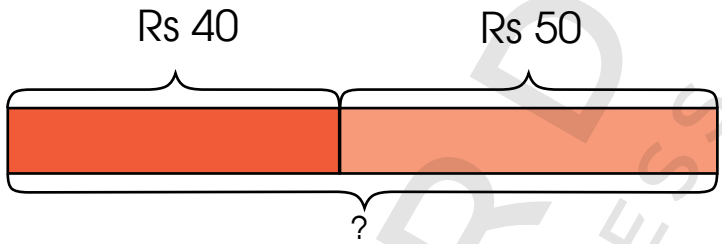
She saves Rs 50 on Tuesday.

She saves Rs 30 on Wednesday.

(a) How much does Anum save on Monday and Tuesday?

(b) How much does Anum save on the three days?

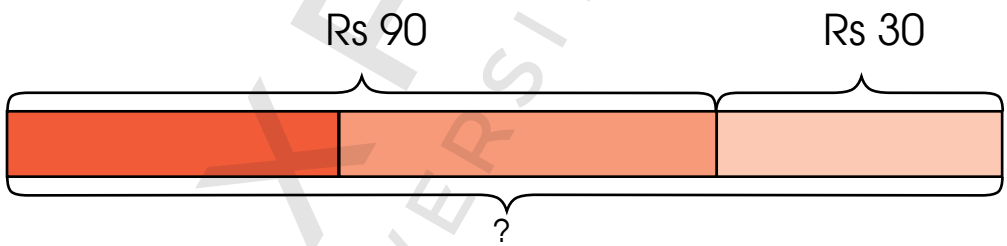
(a)



Rs 40 + Rs 50 = Rs 90

Anum saves Rs ____ on Monday and Tuesday.

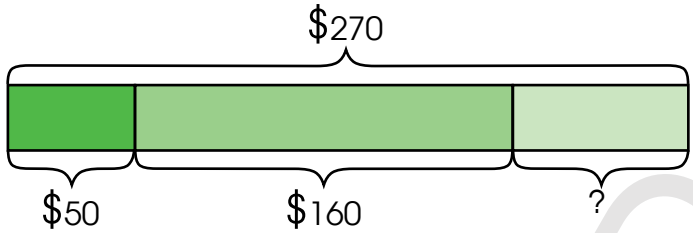
(b)



Rs 90 + Rs 30 = Rs 120

Anum saves Rs ____ on the three days.

3. Bala has $270.
He buys a cake which costs $50.
He buys a pair of shoes which costs $160.
How much money does he have left?

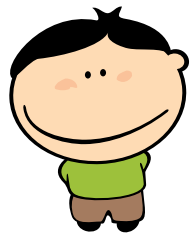


$ ☐ ○ $ ☐ = $ ☐

Bala spends $ ☐ altogether.

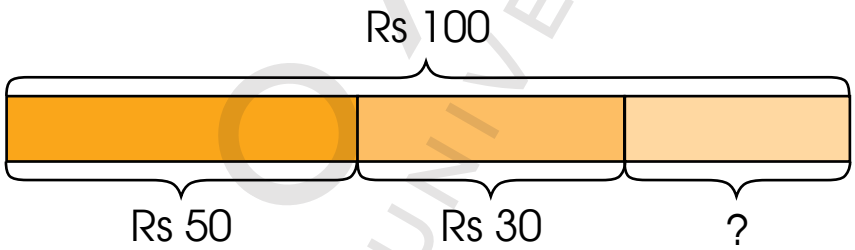
$ ☐ ○ $ ☐ = $ ☐

Bala has $ ☐ left.



First, we should find how much money Bala spends altogether.

4. Nora buys a pair of scissors for Rs 50.
She buys a ruler for Rs 30.
She gives the cashier Rs 100.
How much change does Nora get?



Rs ☐ ○ Rs ☐ = Rs ☐

Nora spends Rs ☐ in all.

Rs ☐ ○ Rs ☐ = Rs ☐

Nora gets Rs ☐ change.

What should we find first?

'Change' is the amount of money Nora gets back.

ACTIVITY TIME

Work in groups of 4.

What you need:

1. Choose one pupil to be the shopkeeper.
2. Look at the objects.

SUPERMARKET

Easel $17

Building blocks $29

Sports shoes $48

Teddy bear $13

Train set $35

3. Choose two objects.
4. Use  to show the cost of each object.
5. Add and tell how much the two objects cost altogether.
6. Use  or  to pay for the objects.
   Get change from the shopkeeper.
7. Ask your group members to check your answers.
8. Repeat 1 to 7.

Solve.

1. A snack costs 65¢.
A sweet costs 15¢ less than the snack.
How much does the sweet cost?

2. Mr Saad bought a fan for $127.
He also bought a digital camera that costs $422 more than the fan.
   (a) What was the cost of the digital camera?
   (b) How much did Mr Saad spend altogether?

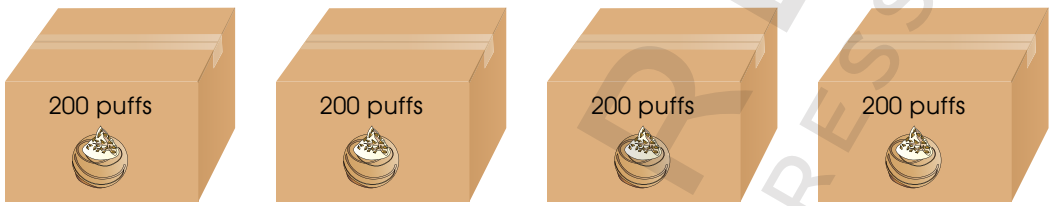
3. A pair of slippers costs Rs 663.
It costs Rs 43 more than a book.
   (a) How much does the book cost?
   (b) How much do the pair of slippers and book cost altogether?

Students' Learning Outcome:

- Multiply mentally and in written form using the multiplication tables that they know: 2-digit number by a 1-digit number using a multiplication grid.

MULTIPLICATION WITHOUT REGROUPING

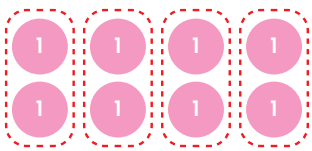
IN FOCUS



How many puffs are there in the 4 boxes altogether?

LET'S LEARN

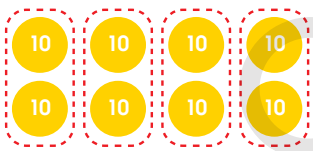
1.



$2 \times 4 = 8$

Multiply 2 ones by 4.

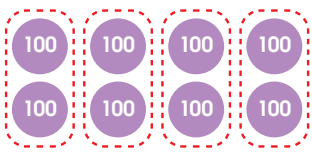
$$\begin{array}{r} 2 \\ \times\ 4 \\ \hline 8 \end{array}$$



$20 \times 4 = 80$

Multiply 2 tens by 4.

$$\begin{array}{r} 2\ 0 \\ \times\ \ 4 \\ \hline 8\ 0 \end{array}$$



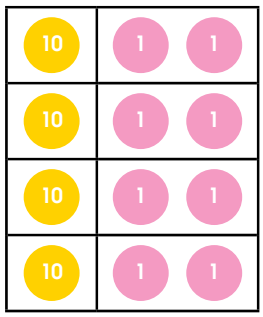
$200 \times 4 = 800$

Multiply 2 hundreds by 4.

$$\begin{array}{r} 2\ 0\ 0 \\ \times\ \ \ 4 \\ \hline 8\ 0\ 0 \end{array}$$

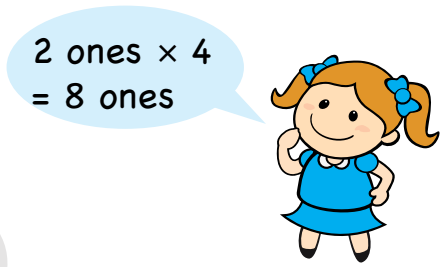
There are 800 puffs in the 4 boxes altogether.

2. Find the product of 12 and 4.



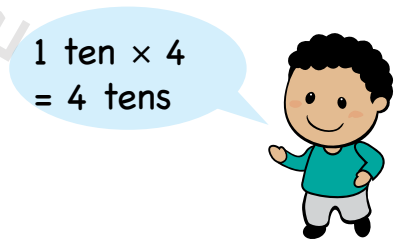
Step 1 Multiply the ones by 4.

$$\begin{array}{r} 1\ 2 \\ \times\quad 4 \\ \hline 8 \end{array}$$



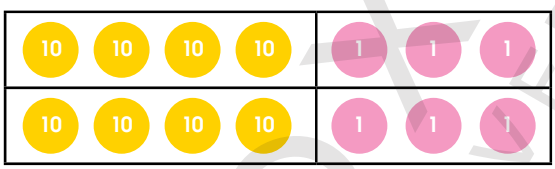
Step 2 Multiply the tens by 4.

$$\begin{array}{r} 1\ 2 \\ \times\quad 4 \\ \hline 4\ 8 \end{array}$$



$12 \times 4 = 48$

3. Multiply 43 by 2.



Step 1 Multiply the ones by 2.

$$\begin{array}{r} 4\ 3 \\ \times\quad 2 \\ \hline \square \end{array}$$

Step 2 Multiply the tens by 2.

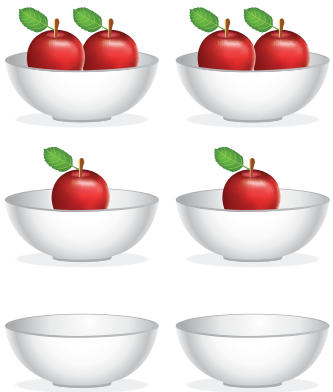
$$\begin{array}{r} 4\ 3 \\ \times\quad 2 \\ \hline \square\square \end{array}$$

$43 \times 2 = \square$

Students' Learning Outcome:
- Multiply a number with 0 and 1.

MULTIPLY A NUMBER WITH 0 AND 1

1. Multiply.



$2 \times 2 =$ ☐

$2 \times 1 =$ ☐

$2 \times 0 =$ ☐

Try to multiply other numbers by 0. What do you notice about each product?

2. Complete the following.

(a) $5 \times 1 =$ ☐

(b) $3 \times 0 =$ ☐

(c) $4 \times 0 =$ ☐

(d) $4 \times 1 =$ ☐

(e) $5 \times 0 =$ ☐

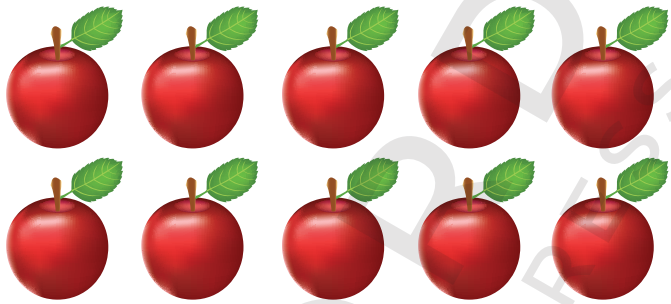
(f) $3 \times 1 =$ ☐

Students' Learning Outcome:

- Recognise using concrete and pictorial representation that the division of one number by another cannot be done in any order.

DIVISION OF ONE NUMBER BY ANOTHER CANNOT BE DONE IN ANY ORDER

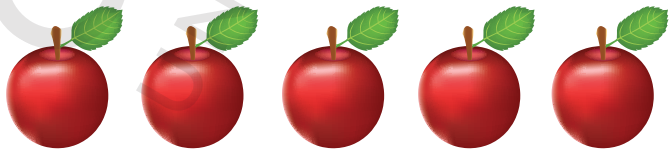
1. Make 5 groups of these 10 apples.



How many apples are there in each group?

$10 \div 5 =$

2. Can you make 10 groups of 5 apples?



Division of 1 number by another cannot be done in any order.

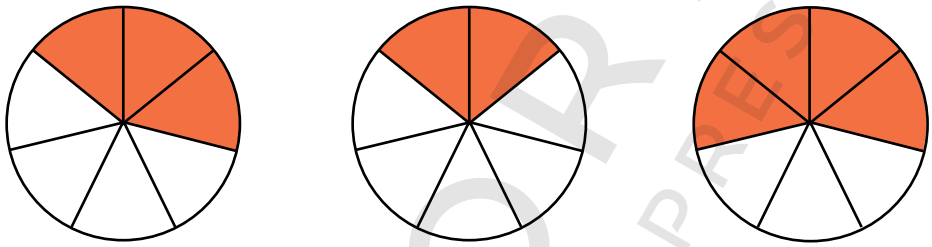
Students' Learning Outcome:

- Identify, name, and write;

- unit fractions
- non-unit fractions
- like fractions
- unlike fractions of a discrete set of objects using pictorial representations.

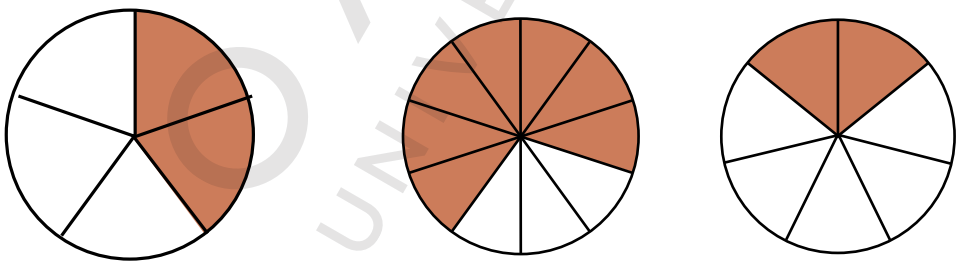
LIKE FRACTIONS AND UNLIKE FRACTIONS

1. The fractions with same denominators are called like fractions



$\frac{3}{7}$ $\frac{2}{7}$ $\frac{4}{7}$

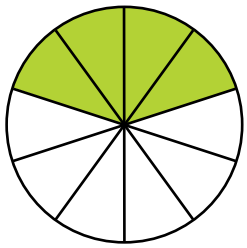
2. The fractions with different denominators are called unlike fractions

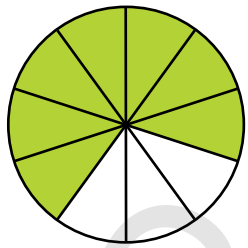


$\frac{2}{5}$ $\frac{7}{10}$ $\frac{2}{7}$

1. Write the fraction and choose the correct option.

(a)





like fractions/unlike fraction s

(b)

like fractions/unlike fractions

(c)

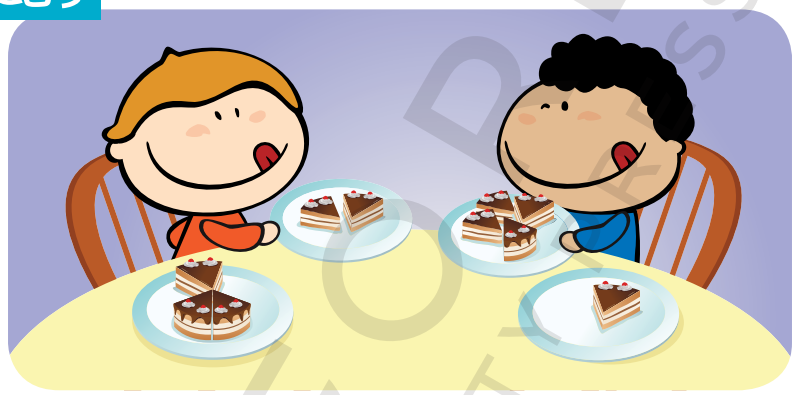
like fractions/unlike fractions

Students' Learning Outcome:

- Compare and order unit fractions and like fractions (with denominators up to 10) using <, >, and = sign

COMPARING AND ORDERING FRACTIONS

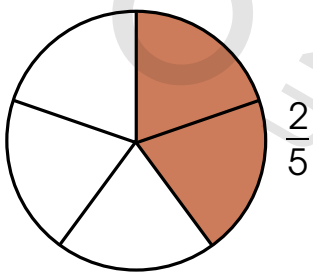
IN FOCUS



Saif and Farhan each has a cake of the same size.
Saif eats 2 out of 5 equal parts of the cake.
Farhan eats 4 out of 5 equal parts of the cake.
Who eats more?

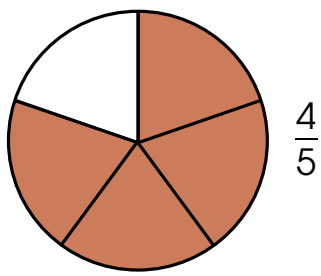
LET'S LEARN

1.



$\frac{2}{5}$

Saif



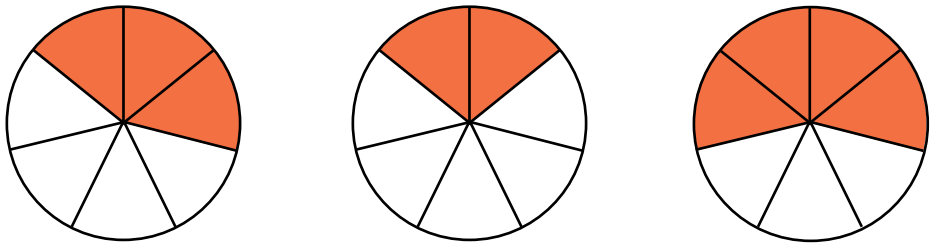
$\frac{4}{5}$

Farhan

$\frac{4}{5} > \frac{2}{5}$.

Farhan eats more than Saif.

2. Arrange the fractions in order.
Start with the greatest.



$\frac{3}{7}$ $\frac{2}{7}$ $\frac{4}{7}$

$\frac{4}{7}$ is the greatest.

$\frac{2}{7}$ is the smallest.

$\frac{4}{7} > \frac{3}{7} > \frac{2}{7}$

greatest → smallest

3. Arrange the fractions in order.
Start with the smallest.

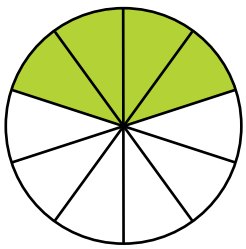
■ is the greatest.
■ is the smallest.

■ < ■ < ■

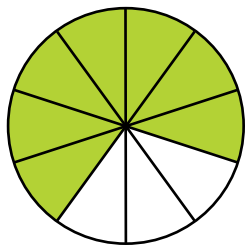
smallest → greatest

1. Compare.

(a)



$\frac{4}{10}$



$\frac{7}{10}$

□ < □ .

2. Arrange the fractions in order.
Start with the greatest.

(a) $\frac{8}{9}$ $\frac{2}{9}$ $\frac{5}{9}$

□ , □ , □

Students' Learning Outcome:
- Add and subtract like fractions within 1 whole.

ADDING AND SUBTRACTING LIKE FRACTIONS WITHIN 1 WHOLE

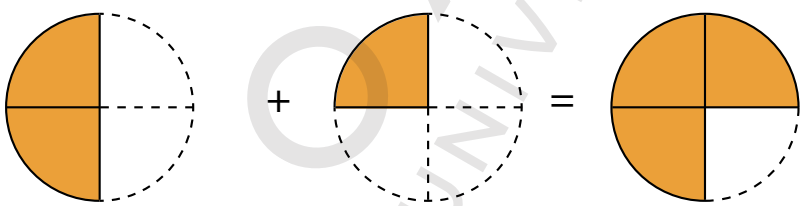
IN FOCUS

A pizza is cut into 4 slices of equal size.
What fraction of the pizza do Iman and Ali eat altogether?

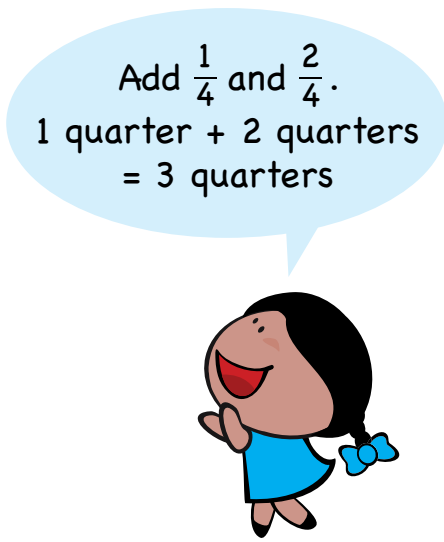
LET'S LEARN

1. Iman ate $\frac{2}{4}$ of a pizza.

Ali ate $\frac{1}{4}$ of the pizza.

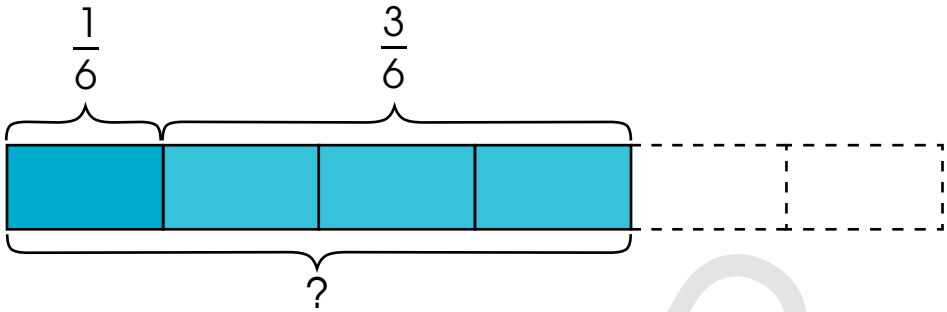


$\frac{2}{4}$ + $\frac{1}{4}$ = $\frac{3}{4}$



Iman and Ali ate $\frac{3}{4}$ of the pizza altogether.

2. Add $\frac{1}{6}$ and $\frac{3}{6}$.



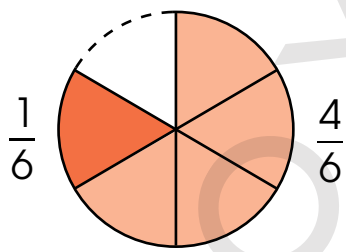
$\frac{1}{6} + \frac{3}{6} = \frac{4}{6}$

1 sixth + 3 sixths = 4 sixths

PRACTICE

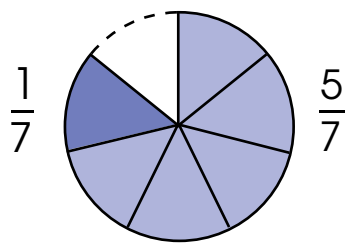
Add.

(a)



$\frac{1}{6} + \frac{4}{6} =$ ☐

(b)



$\frac{1}{7} + \frac{5}{7} =$ ☐

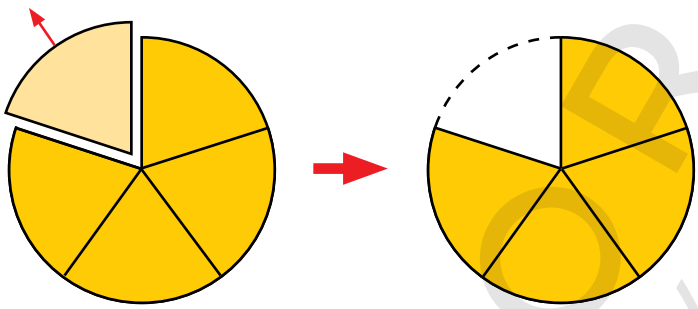
LET'S LEARN

1. There is $\frac{5}{5}$ of a pizza on the table.

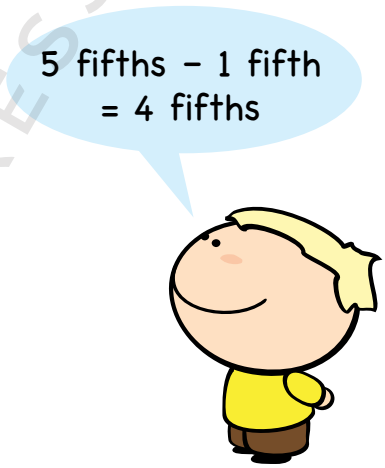
Saim eats $\frac{1}{5}$ of the pizza.

What fraction of the pizza is left?

Subtract $\frac{1}{5}$ from $\frac{5}{5}$.

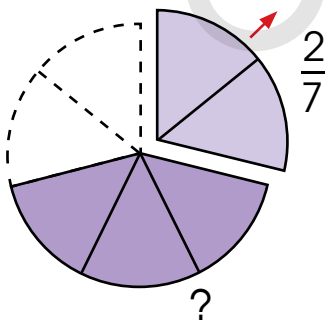


$$\frac{5}{5} - \frac{1}{5} = \frac{4}{5}$$



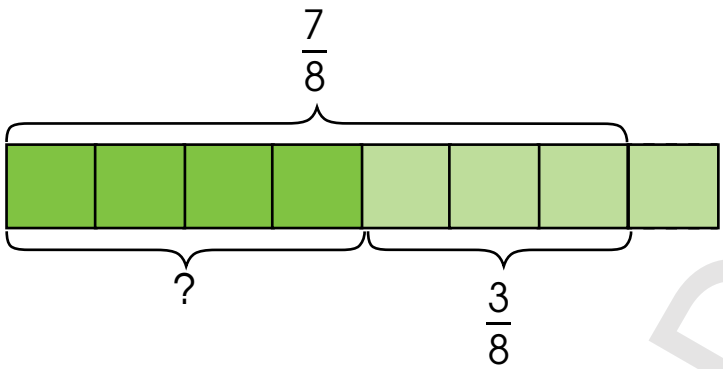
$\frac{4}{5}$ of the pizza is left.

2. Subtract $\frac{2}{7}$ from $\frac{5}{7}$.

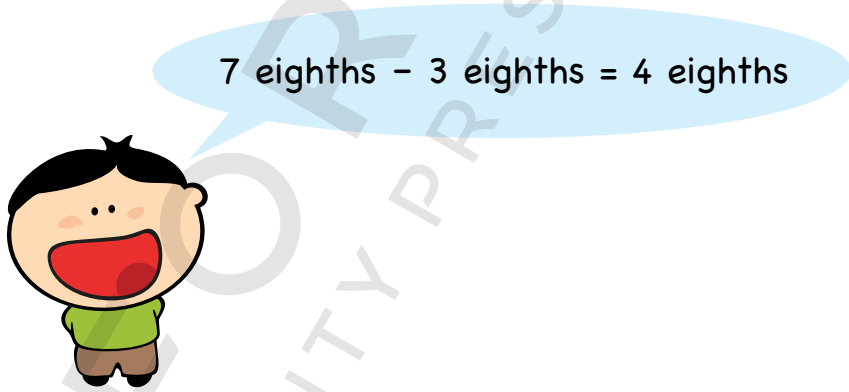


$$\frac{5}{7} - \frac{2}{7} = \frac{3}{7}$$

3. Subtract $\frac{3}{8}$ from $\frac{7}{8}$.



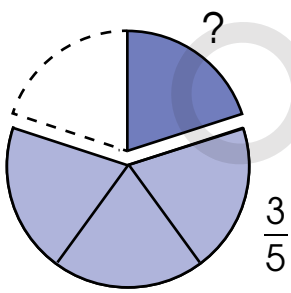
$\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$



PRACTICE

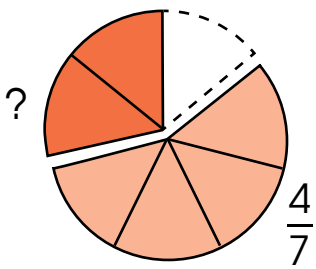
Subtract.

(a)



$\frac{4}{5} - \frac{3}{5} =$ ☐

(b)



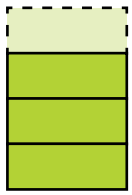
$\frac{6}{7} - \frac{4}{7} =$ ☐

MIND WORKOUT

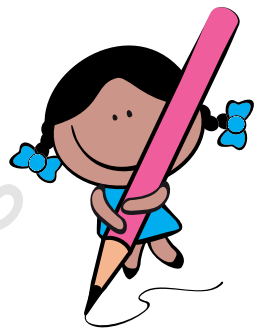
Part A is $\frac{1}{6}$ of a figure.

Which of the following makes 1 whole with Part A?


B


C


D



MATHS JOURNAL

Add or subtract.

(a) $\frac{2}{7} + \frac{3}{7} =$ ☐

(b) $\frac{1}{5} + \frac{2}{5} =$ ☐

(c) $\frac{6}{9} - \frac{2}{9} =$ ☐

(d) $\frac{7}{8} - \frac{1}{8} =$ ☐

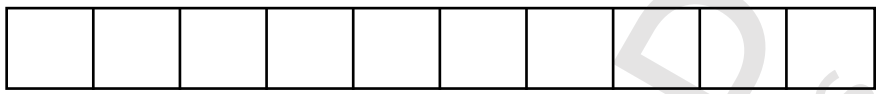
How do the numerators and the denominators change when you add or subtract?

Students' Learning Outcome:

- Know and recognise that tenths arise by dividing an object into ten equal parts and in dividing single digit numbers and quantities by ten (using concrete and pictorial representations).

TENTHS

1. We can divide and object or shape into ten equal parts.



Each part shows the tenth of the whole shape.

1 part out of 10 parts is shaded.
one-tenth is shaded.

2. $\frac{8}{10}$

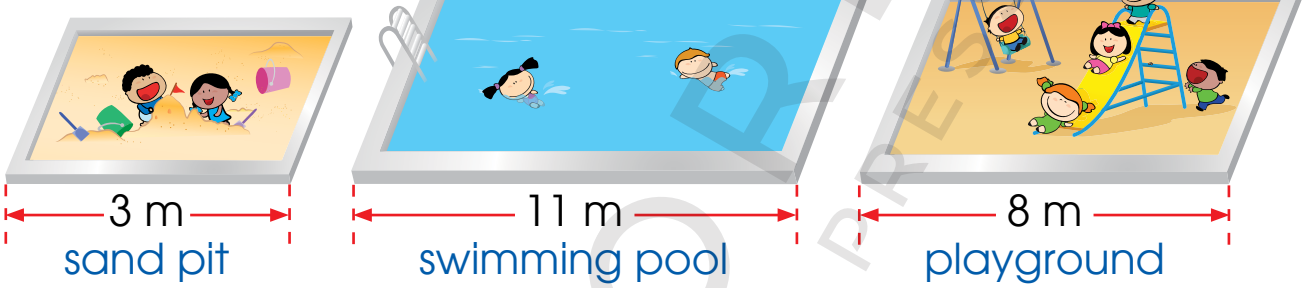
8 parts out of 10 parts are shaded.
eight-tenths is shaded.

Students' Learning Outcome:

- Compare the lengths of different objects using standard units of length (metre and centimetre) using <, >, and = signs.

COMPARING LENGTHS

IN FOCUS



Which is the longest?

LET'S LEARN

1.

11 m > 3 m

The swimming pool is **longer than** the sand pit.

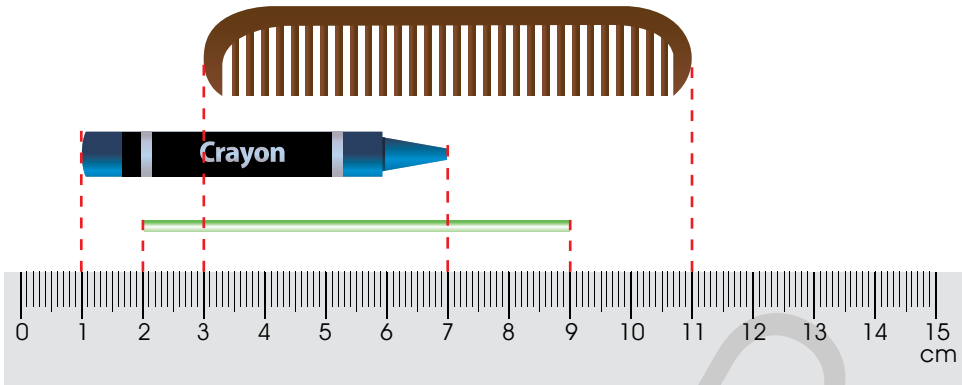
11 m > 8 m

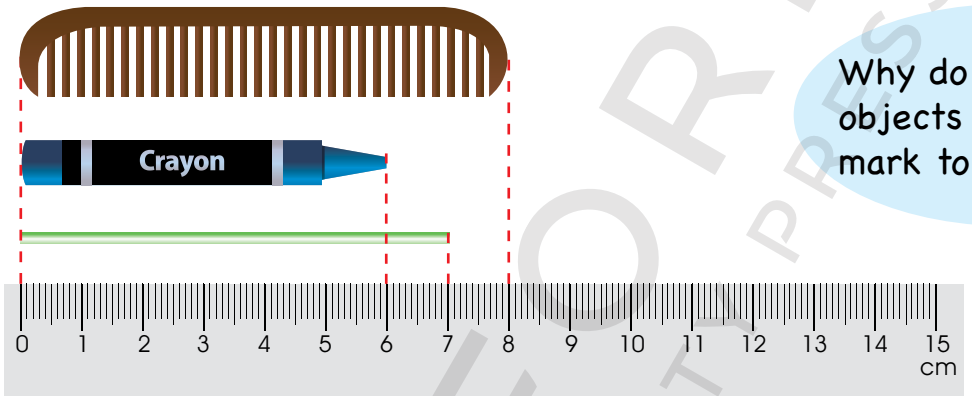
The swimming pool is **longer than** the playground.

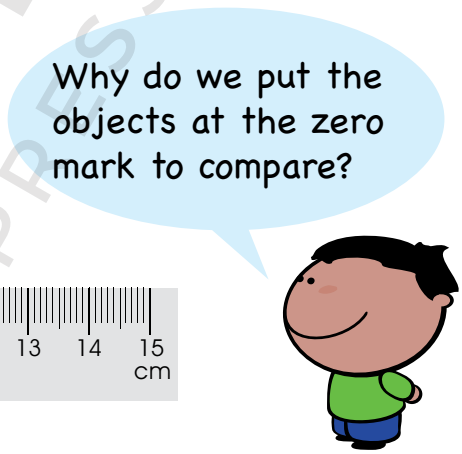
3 m < 8 m

The sand pit is **shorter than** the playground.

2. Compare the lengths of the objects.





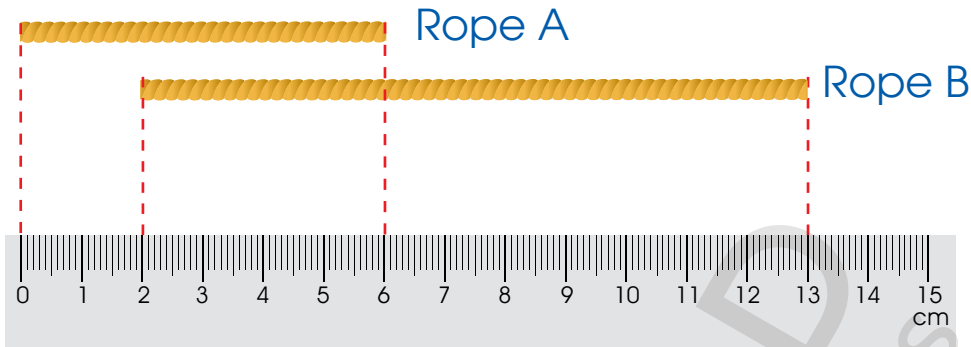


The comb is 8 cm long.
The crayon is 6 cm long.
The straw is 7 cm long.

8 cm ▢ 6 cm
The comb is longer than the crayon.

8 cm ▢ 7 cm
The comb is longer than the straw.

1. Compare the lengths of the ropes.



Rope A is ____ cm long.

Rope B is ____ cm long.

____ cm > ____ cm

Rope ____ is longer.

2. Compare using <, >, and =.

(a) 15 cm ____ 28 cm

(b) 30 cm ____ 17 cm

(c) 62 cm ____ 62 cm

(d) 89 cm ____ 35 cm

Students' Learning Outcome:

- Compare the mass of different objects using standard units of mass (kilogram and gram) using <, >, and = signs.

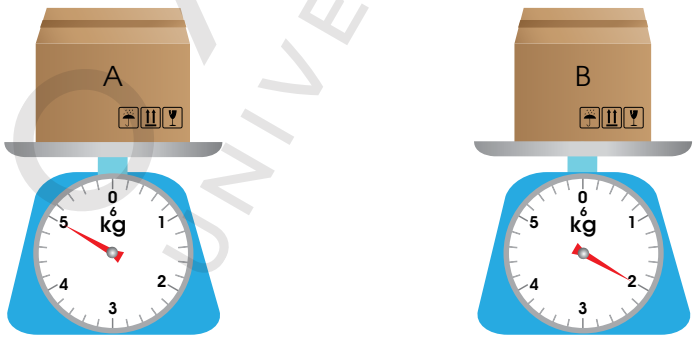
COMPARING MASSES

IN FOCUS

How can we tell which box is heavier?

LET'S LEARN

1. We can use a weighing scale to measure the mass of each box.



The mass of Box A is 5 kg. The mass of Box B is 2 kg.

5 kg > 2 kg

Box A is heavier than Box B

2. The mass of sweets is usually measured in grams.

Lollipop
35 g

Fruit Gums
150 g

Toffees
80 g

Jelly Beans
120 g

The mass of _____ < 40 g

The mass of _____ > 40 g

Jelly beans is heavier than toffees.

_____ g > _____ g

Lollipop is lighter than fruit gums.

_____ g < _____ g

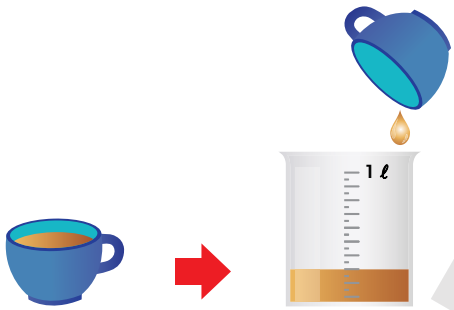
Students' Learning Outcome:

- Compare the capacity of different objects using standard units of capacity (litre and millilitre) using <, >, and = signs.

COMPARING CAPACITIES

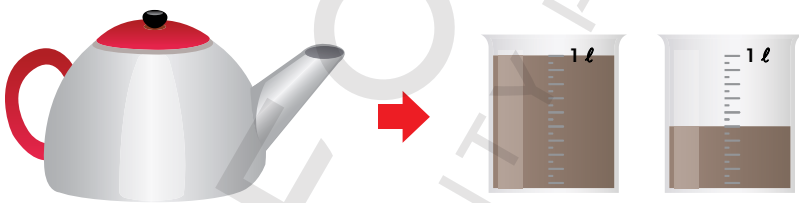
1. Compare using **<** or **>**.

(a)



The capacity of tea in the cup ____ 1 ℓ.

(b)



The pot contains ____ 1 ℓ of coffee.

(c)

5 ℓ ____ 6 ℓ

The bottle has less capacity than the capacity of the bucket.

(d) 13 ml ____ 5 ml

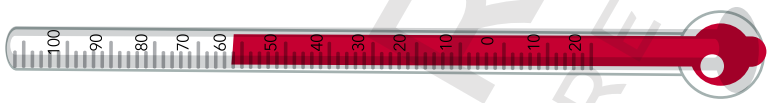
(e) 26 ml ____ 28 ml

Students' Learning Outcome:

- Read and write temperature to the nearest appropriate unit i.e., (°C) using pictorial representations and relating temperature scale to number line.
- Compare and order temperature using <, >, and = signs.

TEMPERATURE

LET'S LEARN

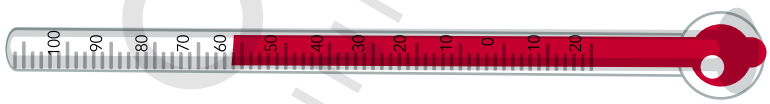


The thermometer shows the temperature 60°C.

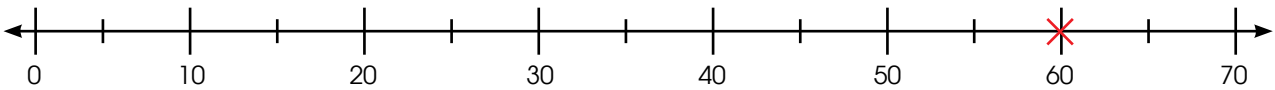
PRACTICE

Mark the temperature on number line.

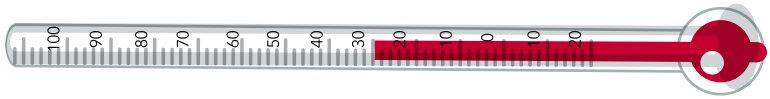
1.



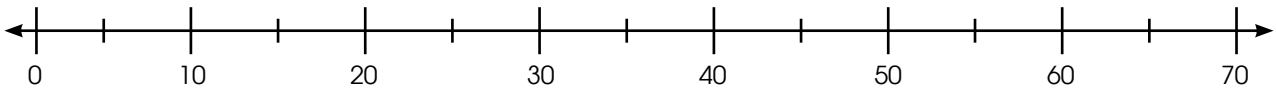
60 °C



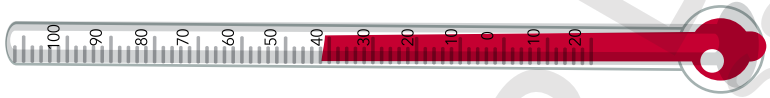
2.



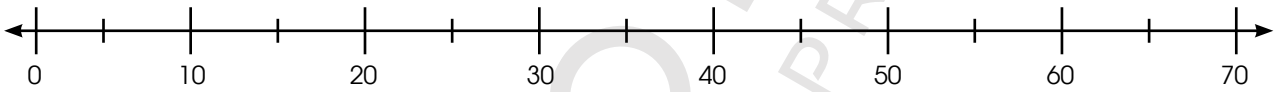
□ °C



3.



□ °C



Compare using < or >.

(a) 20 °C □ 85 °C

(b) 63 °C □ 36 °C

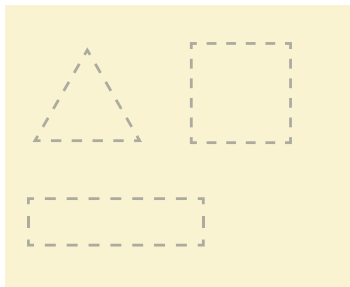
(c) 44 °C □ 72 °C

(d) 51 °C □ 91 °C

Students' Learning Outcome:
- Recognise perimeter and area.

PERIMETER

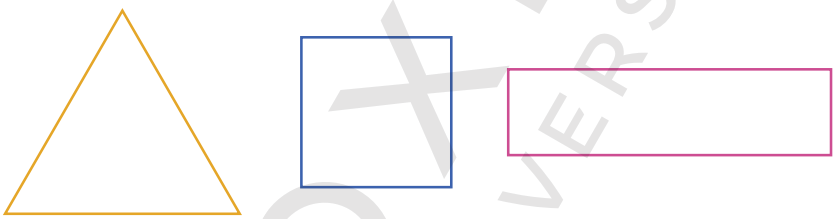
IN FOCUS



Farwa uses yarn to outline each shape.
How can she find the length of yarn she needs for each shape?

LET'S LEARN

1.



Farwa needs to find the **perimeter** of each shape. The perimeter of each shape is the total length around it.

AREA

IN FOCUS

You can use your textbook to measure the area of your desk.

What is the area of your desk?

LET'S LEARN

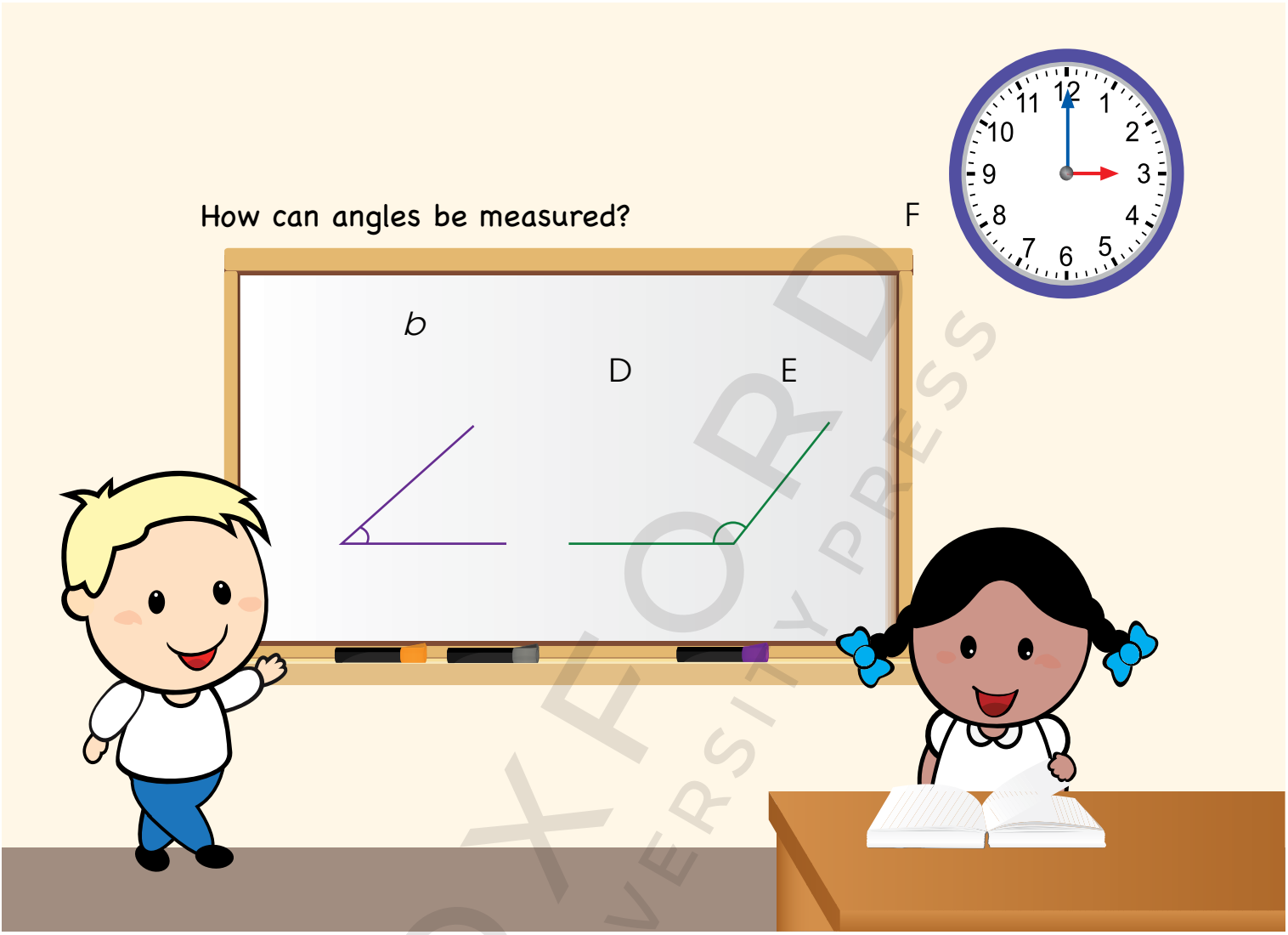
1.

What other objects can you use to measure the area of your desk with?

The amount of surface taken up by a figure is the **area.**

Students' Learning Outcome:

- Identify pairs of perpendicular and parallel lines.



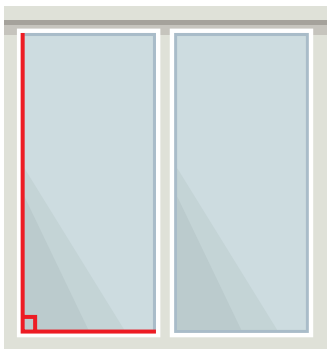
PERPENDICULAR LINES

IN FOCUS

This is an example of a pair of perpendicular lines.
What do you notice about the lines?

LET'S LEARN

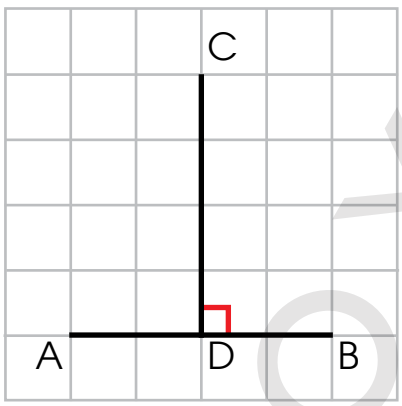
1. Look at the objects.
Can you identify the right angles?



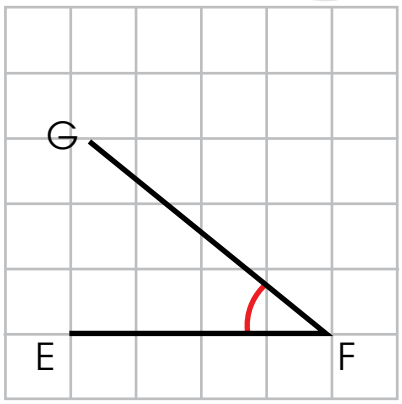
We can use a right-angle tester or the corner of a ruler to identify right angles.

Two straight lines that meet at a right angle are called **perpendicular lines**.
What are some perpendicular lines you can find around you?

2. Some lines are drawn on square grids as shown.



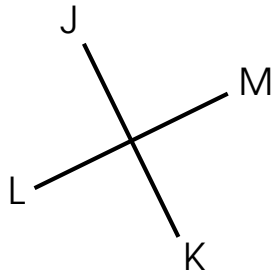
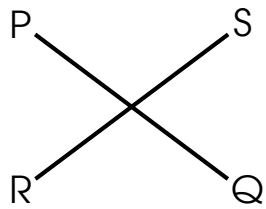
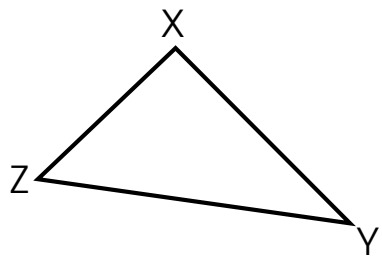
AB and CD meet each other at right angles.
CD **is perpendicular to** AB.
We write CD ⊥ AB or AB ⊥ CD.



⊥ stands for **is perpendicular to**.

Do EF and GF meet at a right angle?
Is EF perpendicular to GF? Why?

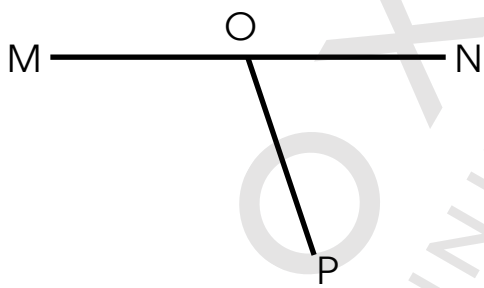
3. Which pairs of lines are perpendicular?

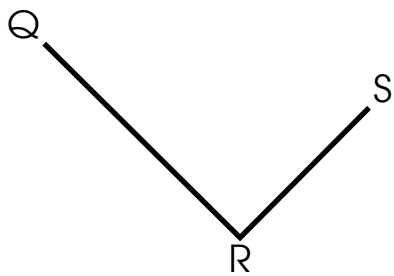
		
JK is perpendicular to LM. JK ⊥ LM	PQ is **not** perpendicular to RS.	ZX is perpendicular to XY. ZX ⊥ XY

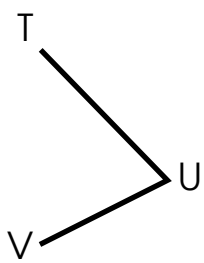
Use a right-angle tester to check for right angles.

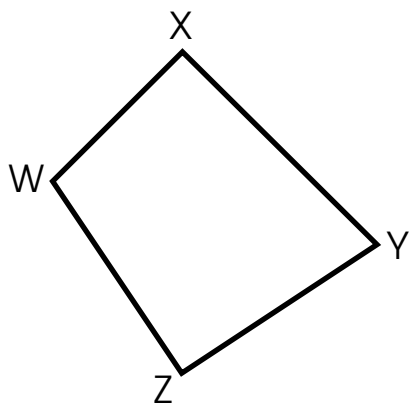
PRACTICE

1. Which pairs of lines are perpendicular?



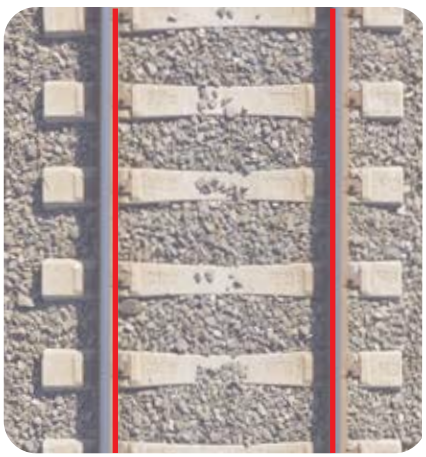






PARALLEL LINES

IN FOCUS



These are examples of parallel lines.
What do you notice about the lines?

LET'S LEARN

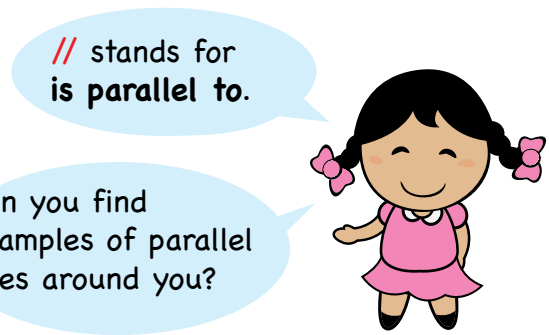
1.

A ——————— B

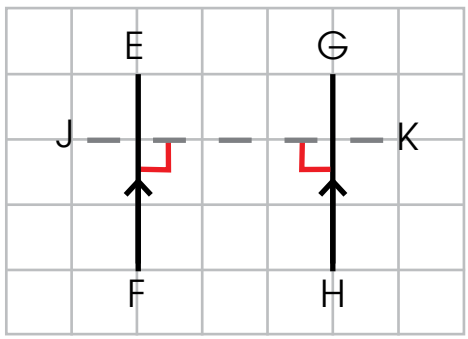
C ——————— D

Two straight lines, AB and CD will never meet, no matter how long they are drawn.

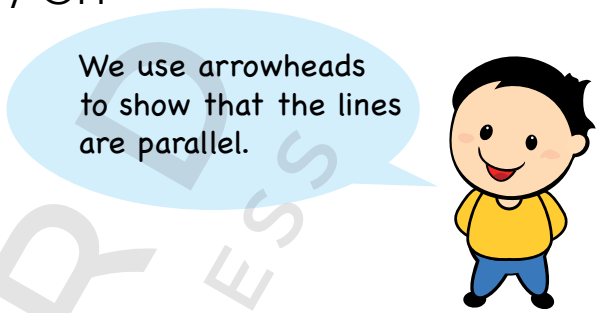
These lines are called **parallel lines**.
AB is parallel to CD.
We write AB // CD or CD // AB.



2. Some pairs of lines are drawn on square grids as shown. Are the lines parallel to each other?

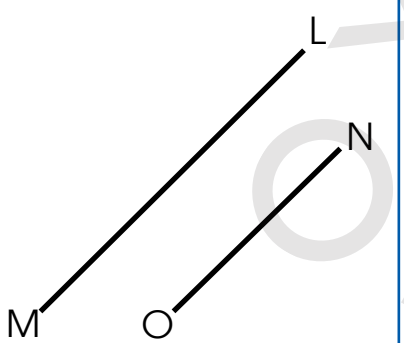
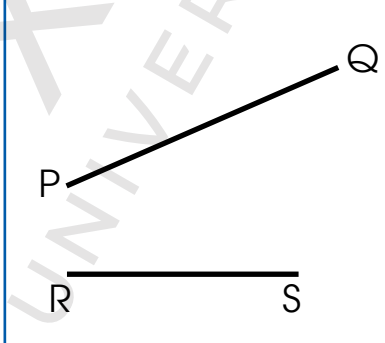
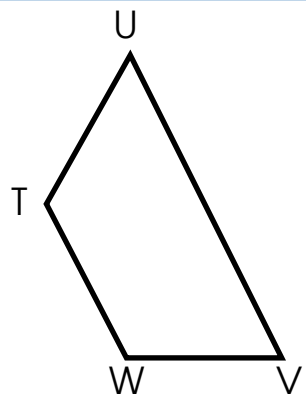


Two lines perpendicular to the same line, JK, are parallel to each other.
EF // GH

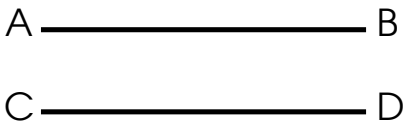


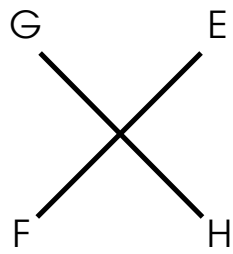
ST and UV are not parallel to each other.

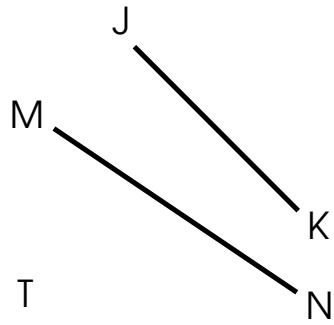
3. Which pairs of lines are parallel?

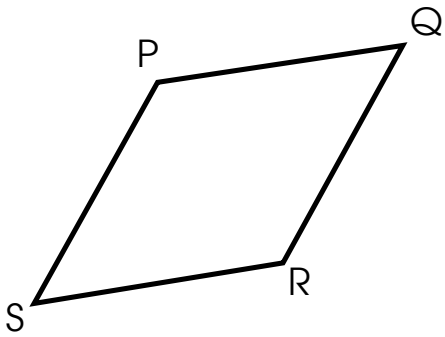
		
LM is parallel to NO. LM // NO	PQ and RS are **not** parallel to each other.	TW is parallel to UV. TW // UV

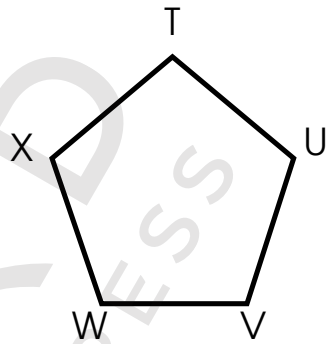
4. Which pairs of lines are parallel? How do you tell?











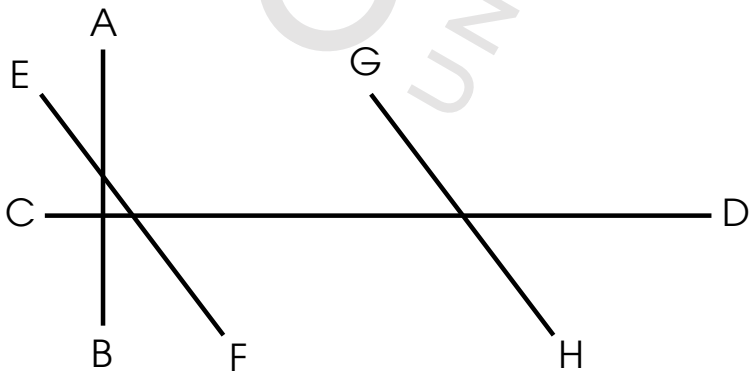
PRACTICE

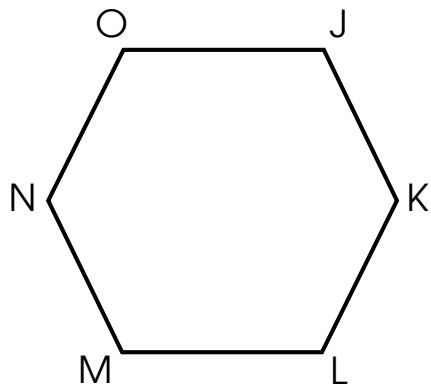
1. Which letters have parallel lines?

V H X Y Z

K L F N O

2. Which pairs of lines are parallel?



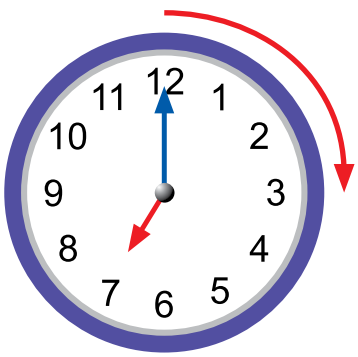


Students' Learning Outcome:

- Describe the position, direction and movement of an object including moving clockwise, anti-clockwise, quarter, half and three quarters turns using appropriate positional language (for instance: inside, outside, above, below, over, under, far, near, before, after, beside, between, left, right and in front of, quarter turn, half turn, three quarter turns, clockwise, anti-clockwise, behind etc).

CLOCKWISE AND ANTICLOCKWISE MOVEMENT

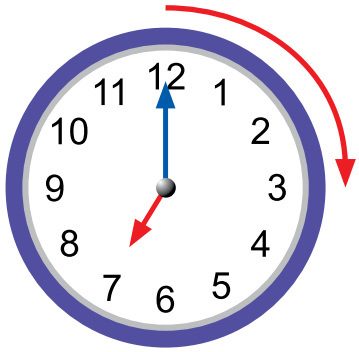
IN FOCUS



Look at the clock.
How does the minute hand turn?
How does the hour hand turn?

LET'S LEARN

1.



The hands of a clock turn in a **clockwise** direction.

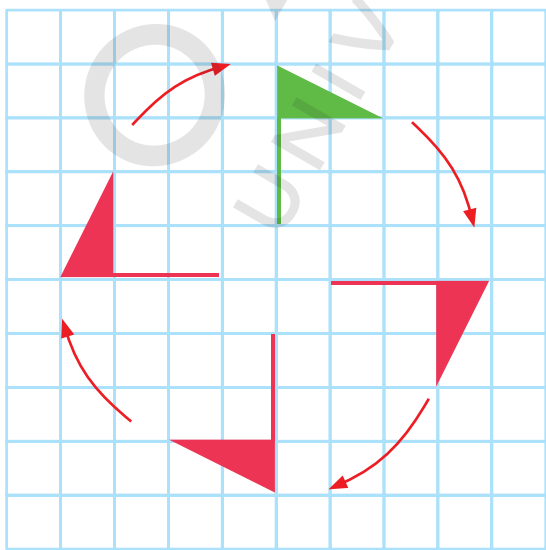
2. anticlockwise clockwise

You can turn the steering wheel of a car **clockwise** or **anti-clockwise**.

3.

Whole clockwise turn

three quarters of a clockwise turn



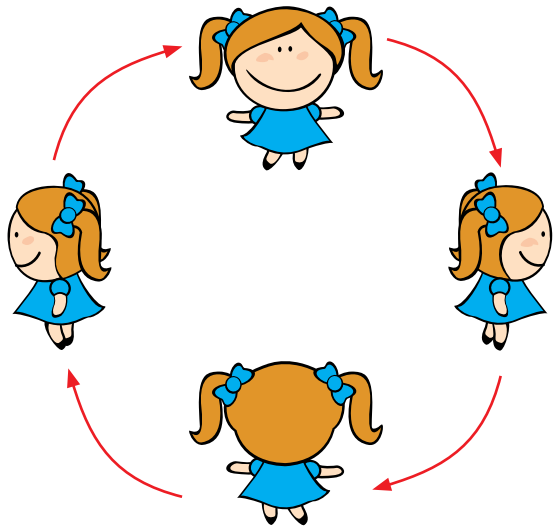
quarter of a clockwise turn

half of a clockwise turn

Three quarters of a clockwise turn is the same as one quarter of an anticlockwise turn.

Four quarters give us one whole turn.

4.



ACTIVITY TIME

Let us dance and learn.

What you need:

1. 4 children stand in a row facing the class. Let the music play.
2. The first time the music stops, make a quarter turn.
3. The second time the music stops, make another quarter turn.
4. Count how many quarter turns you make until you face your class.

Repeat with clockwise and anticlockwise turns.

Look at the picture.

Complete the story.
Use the words below to help you.

half	quarter	clockwise	anticlockwise

Sam jogs to the park.

He then makes _____ turn.

Next, he walks to the shop.

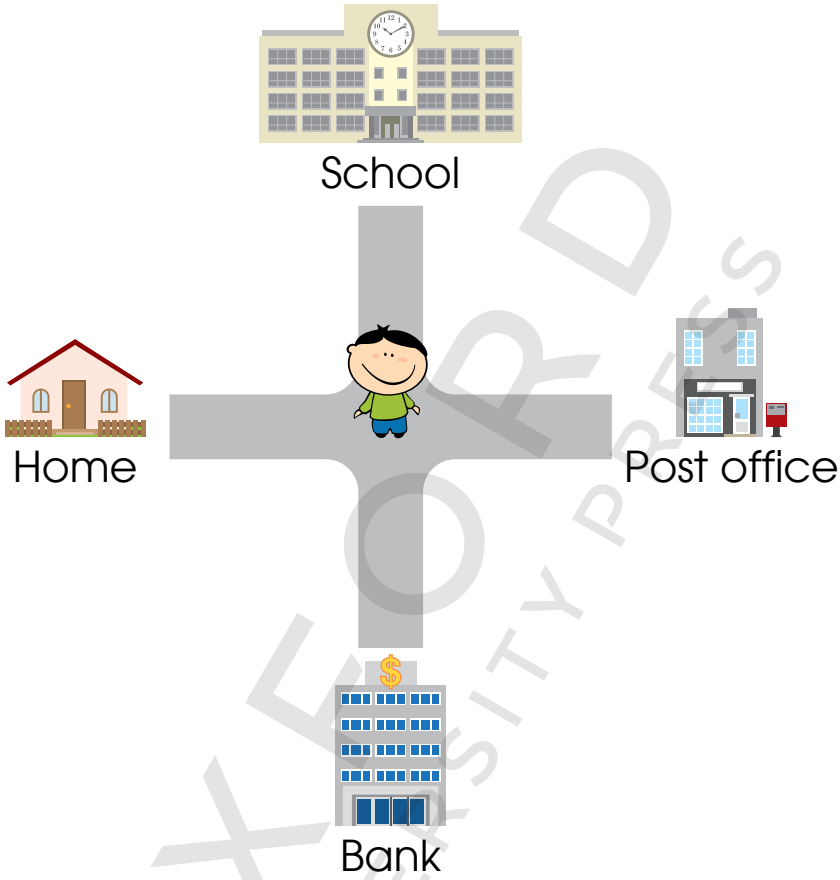
He then makes _____ turn to return to the park.

Finally, he makes _____ turn to walk to the bus.

Is there more than one way to fill each blank?

MIND WORKOUT

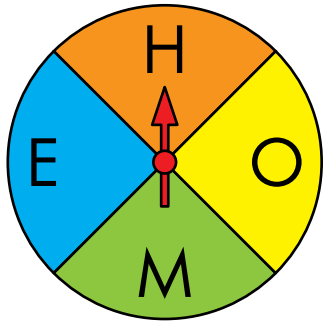
Weiming is standing at a road junction in his neighbourhood. He is facing the bank now.



Weiming needs to make _____ of a clockwise turn to face the post office.

Will Weiming also face the post office if he instead makes half an anticlockwise turn?

If not, where will he be facing after making the turn?



Look at the diagram above. Fill in the blanks below.

The red arrow is now pointing at the letter H.

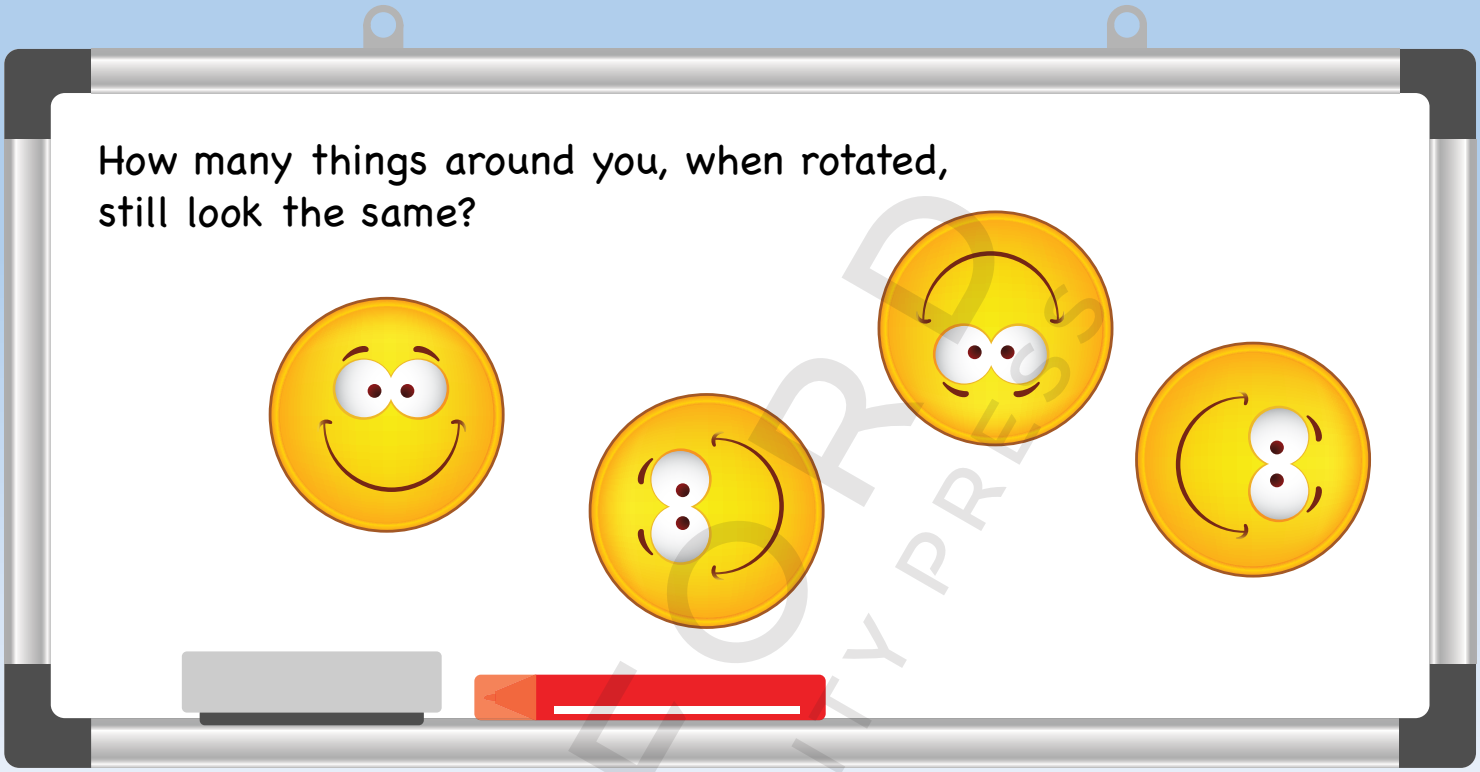
Firstly, the arrow makes half of a clockwise turn to point at the letter ____.

Next, it makes three quarters of an anticlockwise turn to point at the letter ____.

Lastly, the arrow makes one whole anticlockwise turn to point at the letter ____.

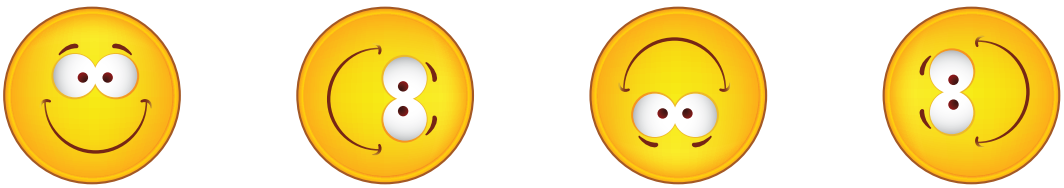
Students' Learning Outcome:

- Recognise turn as a rotation.



ROTATION

IN FOCUS

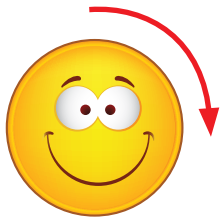


What do you notice about the shapes?

LET'S LEARN

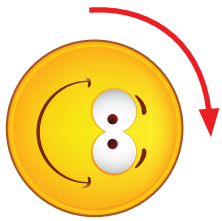
1. Turning an object about a point in a circle is called **rotation**.

   Take a sticker  . Make a quarter rotation in the clockwise direction.



we get: 

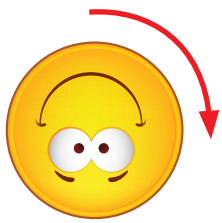
2. Make another quarter rotation in the clockwise direction.



we get: 

This becomes half a rotation.

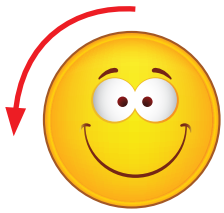
3. Make two more quarter rotations in the clockwise direction.



we get: 

This becomes a whole rotation.

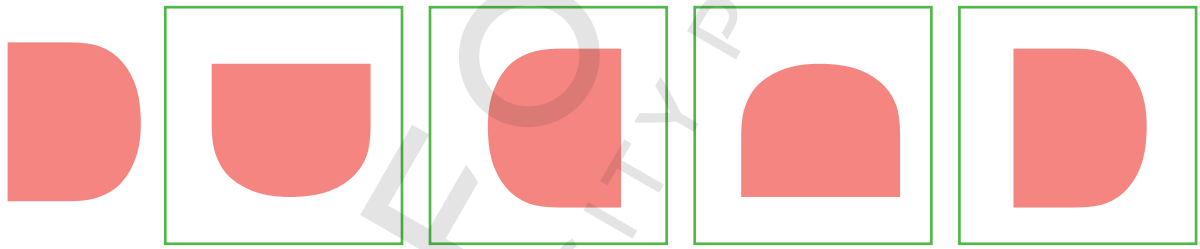
4. Take a sticker  . Make three quarter rotations in the anticlockwise direction.

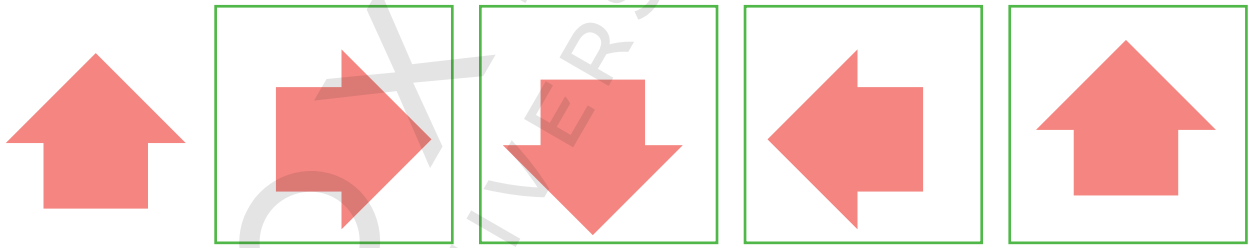


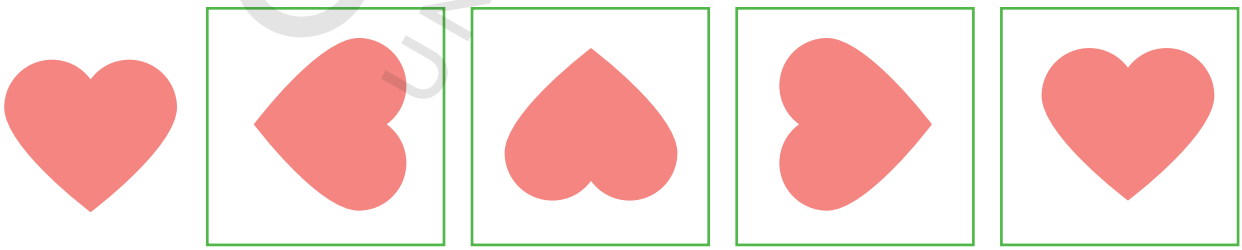
we get: 

PRACTICE

Complete the given shapes by drawing the quarter rotations 4 times until they become a whole turn.

1. 

2. 

3. 

Students' Learning Outcome:

- Read and interpret data using pictographs, bar graphs and tally charts and; represent data using tally charts (including real-world problems).

READING PICTURE GRAPHS

1. The picture graph shows the number of beads of each colour on a bracelet.

Beads on a Bracelet

Red bead	▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
Green bead	▲ ▲ ▲ ▲
Blue bead	▲ ▲ ▲
Yellow bead	▲ ▲ ▲ ▲ ▲

Each ▲ stands for 3 beads.

We can use the information shown on the picture graph to answer the questions below.

(a) There are ____ red beads.

(b) There are ____ green beads.

(c) There are ____ blue beads.

(d) There are ____ yellow beads.

(e) There are ____ more green beads than blue beads.

(f) There are ____ green and blue beads on the bracelet altogether.

READING TALLY CHARTS

1. The tally chart shows the number of cookies eaten by each child.

Child	Tally Marks
 Asad	𝍸 𝍸 /
 Iman	𝍸 //
 Ali	𝍸 ////
 Farwa	////

Use tally chart to complete the following sentences.

(a) Asad ate ____ cookies.

(b) Iman ate ____ cookies.

(c) Ali ate ____ cookies.

(d) Farwa ate ____ cookies.

(e) Ali ate ____ cookies more than Iman.

(f) The children ate ____ cookies altogether.

READING BAR GRAPHS

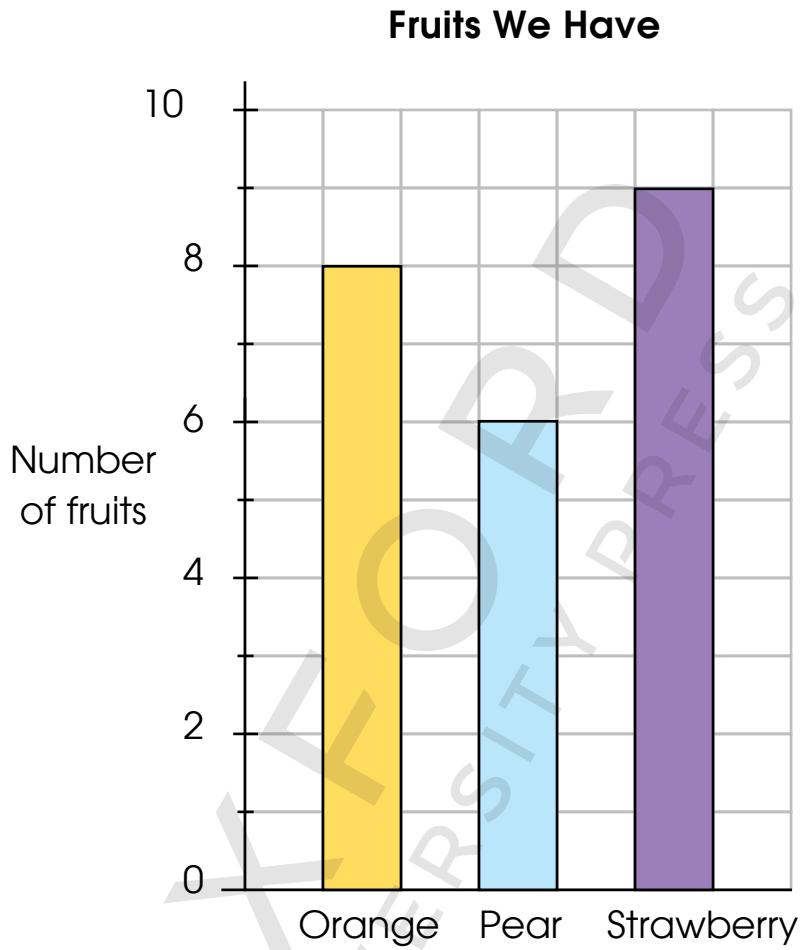
IN FOCUS

Waleed draws a picture graph to show the number of each type of fruit.

Orange	Pear	Strawberry
Each ■ stands for 1 fruit.		

LET'S LEARN

1. We can use a **bar graph** to show the number of each type of fruit.

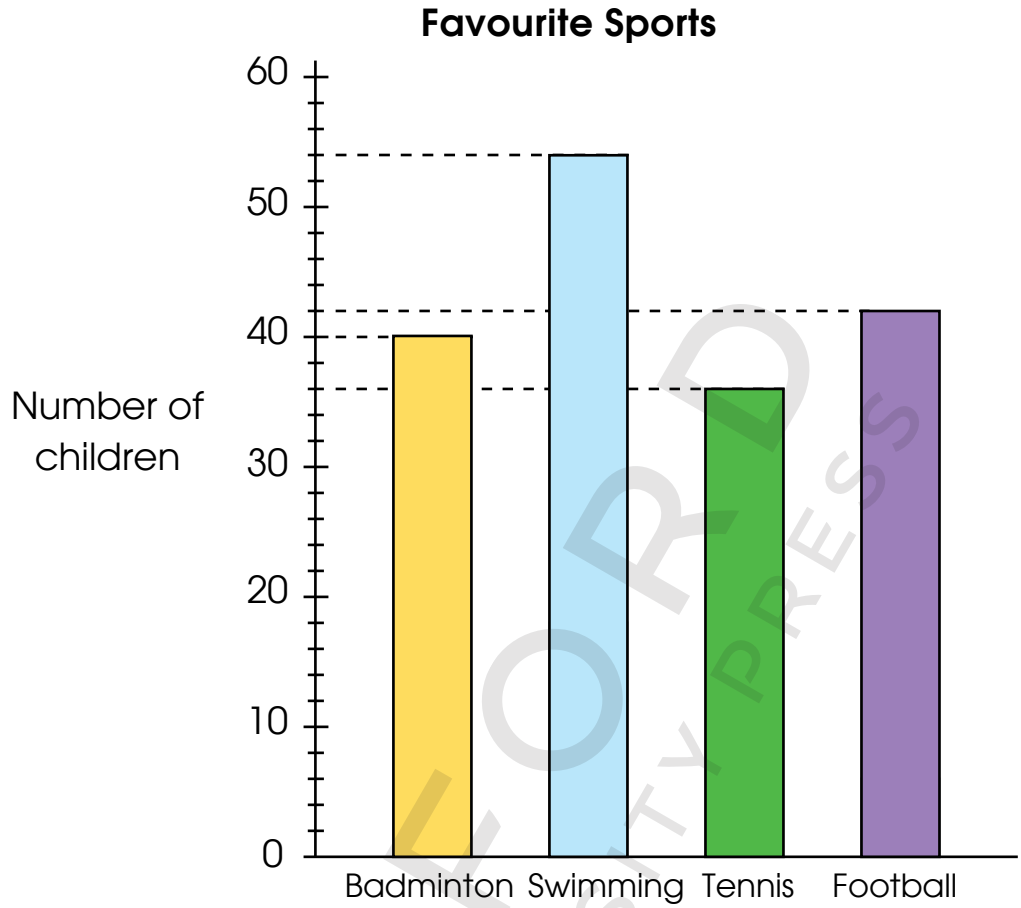


There are 6 pears.
There are 2 more oranges than pears.
The number of strawberries is the greatest.

The number of fruits can be read from the **scale**. How many fruits does each marking stand for?

How many strawberries are there? How can you tell?

2. The bar graph shows the number of children who like different sports.



Three pupils are talking about the graph.
Whose statements are all correct?

Saif

Most of the pupils like swimming.
The number of pupils who like football is the smallest.

Bina

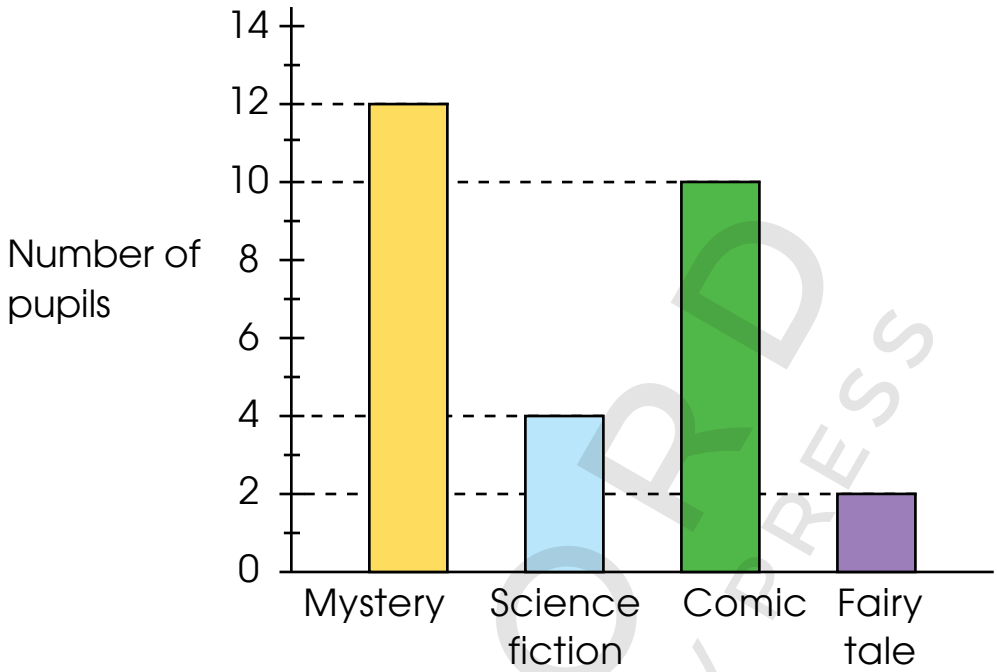
14 more pupils like swimming than badminton.
Fewer than 40 pupils like tennis.

Farhan

38 pupils like tennis.
More pupils like badminton than tennis.

3. The bar graph shows the number of pupils in a class who like to read different types of books.

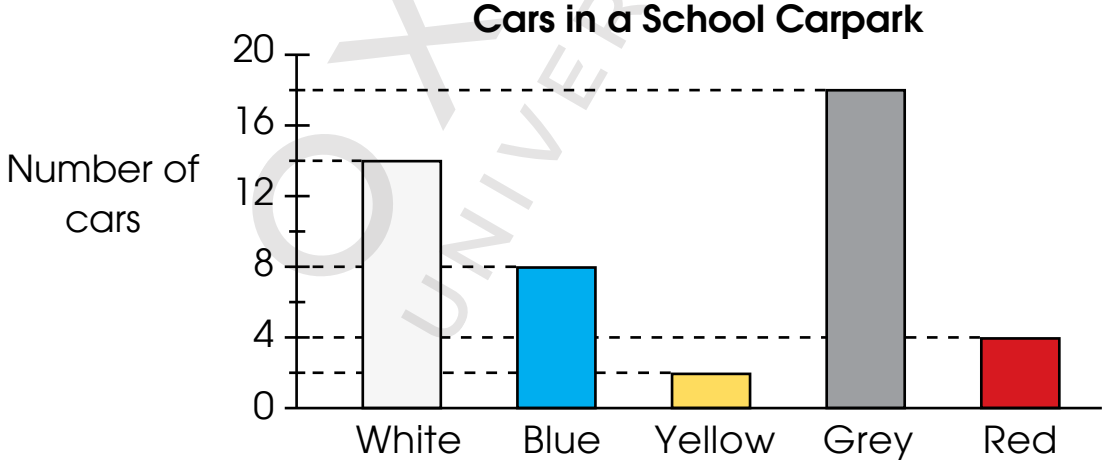
Favourite Types of Books



PRACTICE

1. The bar graph shows the colours of the cars in a school carpark.

Cars in a School Carpark

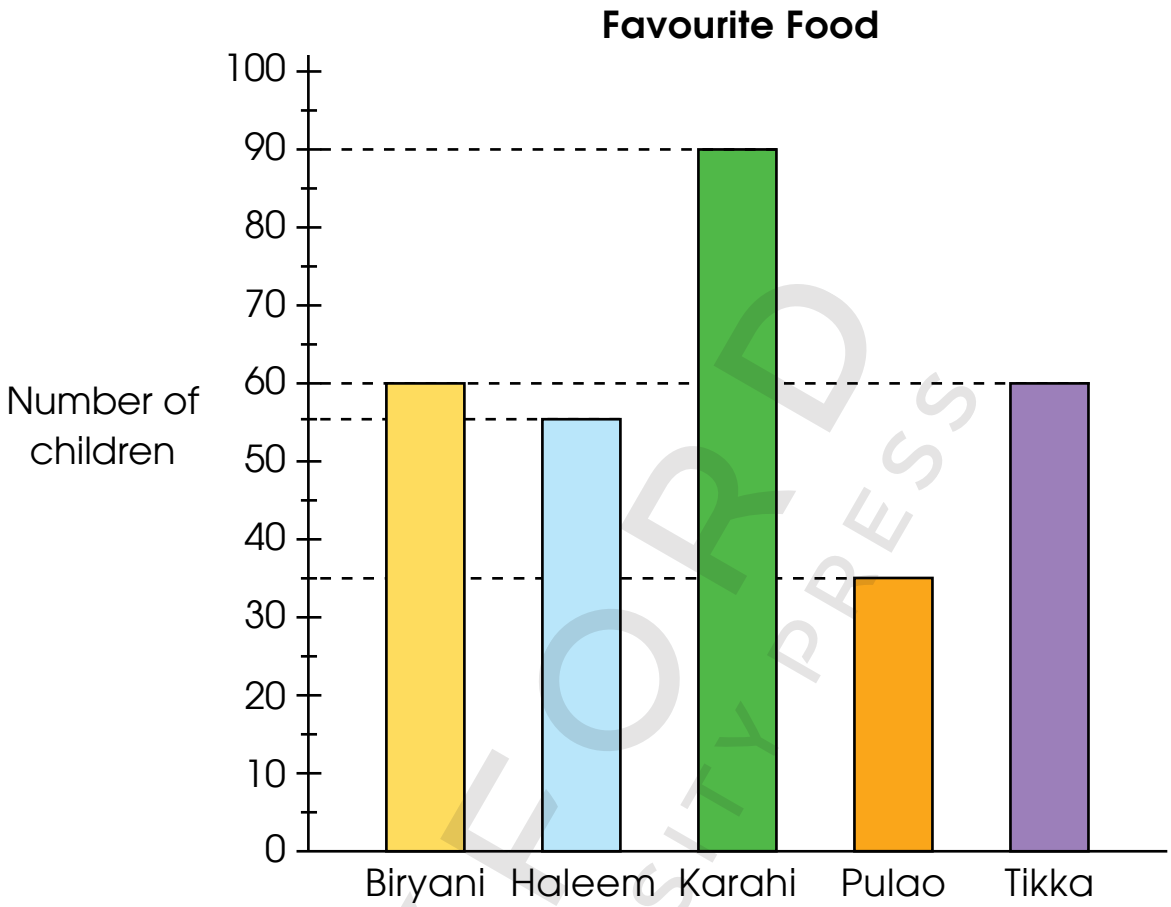


(a) Complete the table.

Colour					
Number of cars					

(b) How many cars were there in the carpark in all?

2. The bar graph shows the number of children who like each type of food.



Look at the bar graph and answer the questions.

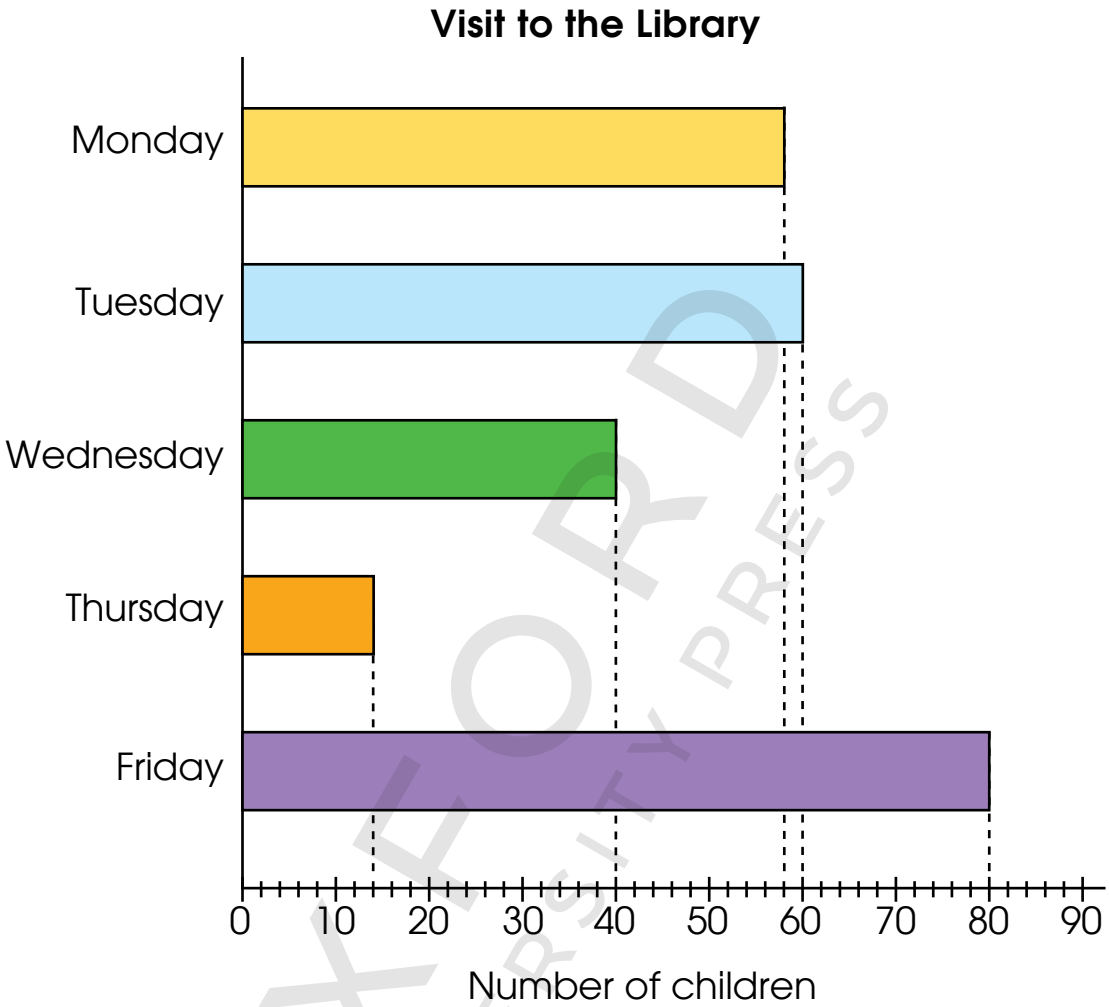
(a) Which type of food is the least popular? _____

(b) How many children like haleem? _____

(c) Do more children like biryani or karahi? _____
How many more?

(d) The same number of children like _____ and _____.

3. The bar graph shows the number of children who visited the library over five days.



Look at the bar graph.

(a) _____ children visited the library on Thursday.

(b) The greatest number of children visited the library on _____.

(c) 18 fewer children visited the library on _____ than on Monday.

(d) Twice as many children visited the library on _____ as on Wednesday.

Students' Learning Outcome:

- Describe the likelihood that everyday events will occur, using mathematical language (i.e., impossible, less likely, more likely, unlikely, and certain).

PROBABILITY

- If an event is sure to happen, then it has a certain probability.
- If an event is less likely to happen than not happen, then it has an unlikely probability.

PRACTICE

Choose the correct likelihood.

1. The chance of the Sun rising in the morning is _____.
   certain / impossible
2. The chance of seeing a flying elephant is _____.
   certain / impossible
3. It is _____ to drink hot chocolate in cold season.
   less likely / more likely
4. It is _____ to see a giraffe walking on the road.
   less likely / more likely
5. It is _____ to see a giraffe walking on the road.
   certain / unlikely