Term 3 Week 8 – Extra for experts

WALT to solve word problems

We know we have achieved it because we can

- Read the problem and highlight/ know the key words
- Use the correct operation
- Solve the problem and write the correct answer.

Read the questions carefully before answering them. Show the working and write the answers in the table given below.

1. How much will it cost you to buy 3 dozen ice-blocks for your class at a cost of $1.75 each?

2. Your class is visiting a fun park. The bus will cost $4.75, the entry fee is $27.00, a packed lunch is $7.50 and a drink is $3.35. How much money will each person have to bring to cover all the costs?

3. Carlo has $50.00 to buy some stationery for school. He needs 3 exercise books at $2.10 each, 2 file folders at $4.95 each and a highlighter at $2.99.
   a. How much will all his stationery cost?

   b. How much change will he get from his $50.00?

4. Sienna has a 1.4 m piece of nylon that she and 3 friends would like to string beads on to make friendship bracelets. If the four friends divide the nylon evenly, how long will each piece be?

5. Ben can do 6 sums per minute.
   a. If he has already done 72 sums, how long has he been working?
   b. If he needs to work for another 5.5 minutes, how many sums has he got left to do?

6. The gas and electricity bill for a flat of 4 people worked out to $87.43 per person for the month. How much was the bill in total?

7. Tom has won a huge fruit cake that weighs 8.72 kg. He gives half to his Mum. How much does each half weigh?

8. Mary, Jane and Lucy have been saving all the coins from their wallets for a month. Mary has saved $15.60, Jane has $17.70 and Lucy has $12.90. How much money have the girls saved in total?

1	
2	
3	
4	
5	
6	
7	
8	

Read the questions carefully, show the working and write the answers in the table given below.

6. Jenny is making skirts for her netball team. She needs 9 pieces of elastic each 0.65 m long. Elastic is sold in multiples of one metre (no parts of a metre allowed).

    a. How much elastic does Jenny need to buy?

    _____

    _____

    b. How much elastic will be wasted?

    _____

    _____

7. Kate uses 2.25 litres of milk when she makes a large lasagne for her restaurant. A small lasagne takes 0.95 L of milk.

If Kate makes 5 large and 8 small lasagnes, how much milk does she need altogether?

_____

_____

8. Rewa lives 3.65 km from school. He cycles to and from school five days a week for 39 weeks of the year. How far does he cycle in the 39 weeks?

_____

_____

9. Potatoes are being sold for $0.85 per kilogram. A marae buys a 28 kg sack of the potatoes. How much do they pay?

_____

_____

10. A school field is in the shape of a rectangle 142.45 m long and 76.25 m wide. Jake runs around the field 5 times for cross-country training. How many kilometres does Jake run altogether? (1 000 m = 1 km.)

_____

_____

Question 6	
Question 7	
Question 8	
Question 9	
Question 10	

Tuesday- MS

L.I: Expressing one quantity as a percentage of another.

S.C: Calculate the percentage according to the given method.

e.g. Express $45 as a percentage of $60

Solution:

The fraction is 45/60 which simplifies to ¾

The percentage is therefore 75%

e.g. Harriet owns a pet shop. She buys a dog collar for $20 and sells it for $27. What percentage profit has she made?

Solution:

Profit is 27-20 = $7

Fraction profit = 7/20 [putting profit over cost price]

$$= 35/100$$

$$= 35\%$$

e.g. What percentage of 48 is 36?

First find the fraction: 36/48 = ¾ = 75%

1. **What percentage is the first quantity of the second?**
   a. 14, 35

   Answer:

   b. 25, 40

   Answer:

   c. 17.5, 35

   Answer:

   d. 72, 60

   Answer:

   e. 2.4, 3.6

   Answer:

   f. 1 ½, 2 ½

   Answer:

   g. 3.5, 2.5

Answer:

h. 0.6, 0.3

2.

Cost price	Selling price	Profit	Percentage profit
$40	$50		
$125	$175		
$400	$550		
	$75	$25	
	$110	$30	
	$720	$80	

3.Sophie used 2.5ml for her 50ml bottle of perfume.

a. What percentage did she use?

Answer:

b. What percentage was left?

Answer:

4. 17 people out of 25 interviewed agreed with a proposal to install a set of traffic lights at a busy intersection.

a. What percentage of people agreed with the proposal?

Answer:

b. What percentage of people disagreed with the proposal?

Answer:

5. In Georgie's netball trials, 7 out of her 10 attempts at goal were successful. Her friend, Hannah, was successful in 3 out of her 4 attempts at goal.

a. What percentage of shots did Georgie get into the goal?

Answer:

b. What percentage of shots did Hannah get in goal?

Answer:

c. Which girl was more successful?

Answer:

Wednesday- Gri

Week 8 Wednesday Extra for Experts

Learning Intention: To learn ways of tackling Word Problems.

1. <mark>Read the question carefully. Every word matters. What answer is being asked for? It may not be what you think.</mark>

Example:

A   Mary and Rua together weigh 55kg.

B   Mary, Rua and Joe weigh 85kg.

C   Mary and Joe together weigh 65kg.

Answer needed: What does Rua weigh?

Steps: From A and B we see that Joe weighs 30kg. (85-55=30)

From C we see that Mary weighs 35kg (65-30)

From A we find the answer: Rua weighs 20kg (55-35=20)

DO NOT PUT down Mary 's and Joe's weights in your answer.

2. <mark>After you answer, ask yourself: Is this answer sensible? Does it work for all the statements in the problem?</mark>

Example:

A   When added together three whole numbers give a total of 10.

B   When multiplied together, the same numbers give a product of 30.

Answer needed: What are the three numbers?

Steps: 1 + 2 + 7 =10 This works for A.

Check for B. 1 x 2 x 7 = 14 does not equal 30. Fails for B

Try again: 2 + 4 + 4 (No, 2 numbers are the same – 2 x 4 x4 = 32, not 30

Try again: 2 + 3 + 5 = 10 Works for A

2 x 3 x 5 = 30 Works for B.

Then LIST the numbers: 2,3,5

Do not put the working as the answer – it was not required.

Example

Maths is not Magic. You just need to take one step at a time.

Your turn:

1. Sam's parents bought a bicycle shop with many broken bicycles and tricycles. Sam counted 43 wheels (all the same size). There were 17 frames. His father said all the wheels would fit on the frames. How may bicycles will result? How many tricycles?
2. The average of four numbers is 11. If 6 is added to the four numbers, what will the new average be?
3. A chemist can only pack perfumes in boxes of 6 and boxes of 8. What is the **least** number of full boxes needed to package 44 perfumes?
4. If a box half full of apples weighs 18 kg, and the same box one third full of apples weighs 14kg, what does the box weigh when empty?
5. I opened my dictionary at the middle and discovered that the two consecutive page numbers when multiplied together gave a product of 1056. What are the two page numbers?
6. June was given a box of chocolates for her birthday. She ate one third of her chocolates after breakfast. She had a second feast when she ate one-third of the remainder. There were now only 16 chocolates left. How many were in the box when she first opened it?
7. 9 cricket teams played in a tournament. In the first round, every team had to play every other team once. How many games were in this first round?
8. Three friends travelled on an AirNZ plane before lockdown. They noticed their boarding passes were numbered in a consecutive order. (e.g. 7,8,9) When multiplied the numbers multiply to make 42840.
9. Ben and Carl ran a 50 m race. Ben won by 10 metres. Next they ran a 60 m race at the same speed as the first race. By how many metres would Ben have won the second race?
10. If a father is five times as old as his daughter, how many years ago was the daughter 2 years old and the father 38?

Thursday- RM

Magic Squares

Fill in the spaces so that every row, column and diagonal adds up to the same number.

		7	
16	9	13	4
	8		
3		10	15

17		1	8	15
	5		14	16
4		13	20	
10	12			3
11				9

Problem solving techniques.

Using a table or chart.

Example.   Jane and Ben both go to the same dancing centre that operates 7 days a week. Jane goes every third day while Ben attends every second day. If they meet at the school on Sunday, when would they meet again?

Strategy. Read all the problems, be aware of unstated factors(e.g. operates only during the weekdays?.)

Create a table to help

Table

S	M	T	W	T	F	S
J			J			J
B		B		B		B

Answer They would meet again on Saturday

Now try these.

1) Jenny and Johnny are six and eight years old respectively. The sum of their birthdays add up to 14.(Jenny is 6) How old will Johnny be when the sum of their ages is 28?

2) A factory worker is bored with his job, so he decides to make it more interesting while filling his 30 bottles of cordial. He decides to put the lid on every fourth bottle, the flavour in every fifth and label on every sixth bottle. If he started at the 1st bottle, how many bottles would have:

        A) lids on?

        B) lids and flavours?

        C) flavours and lids?

        D) lids, flavours and labels?

3) In his secret cod book, Ima Snoop kept the answers to his code on a special page. The page number was a three digit number, woth one of the digits being three. The total of all the digits was ten. The book contained less than 160 pages. What page was the code on?

STRATEGY.   COMPILING AN ORGANISED LIST

1) Four boys, Danny, David, Don and Duane, always line up first at the canteen. How many different combinations of order could they line up in?

2) In a tennis tournament, six players are left. In order to find the winner, everyone has to play everyone else. How many games would this take?

STRATEGY. LOOKING FOR A PATTERN

Supply the next three numbers or words in these sequences.

1000, 520, 280, 160,   ___, ____, ____.

 A, At, All, Arms, ____, _____, _____,

3, 6, 11, 6, 9, ___, ___, ____.

3, 6, 4, 7, 5, ____,____, _____.

STRATEGY   WORKING BACKWARDS

1)   In a book balancing competition six contestants fared as follows:

John built his stack five higher than Jenny's stack.

Jerome built his stack three higher than John's.

Joan built her stack two more than Jerome's, while Joseph was six higher than Joan.

If Joe stacked 27 books, this being two books taller than Joseph's stack tell how high each persons stack was?

2) If 1/3 of ½ of ¼ of 1/6 = 3, what would be the starting number?

USE A MIXTURE OF TECHNIQUES TO SOLVE THIS PROBLEM.

     Tripping Out

The "Terrifying Tourist Trip" takes a boat journey to the crocodile infested waters of Lake Dread. Each group is strictly five tourists to every guide, and each boat can only hold twenty people, including the boat's captain. How many boats will be needed to carry the 140 tourists booked to take the trip?

Friday - Azi

For today's task, you **DO NOT** need a calculator!

We are learning to use an appropriate strategy to solve multiplication problems.
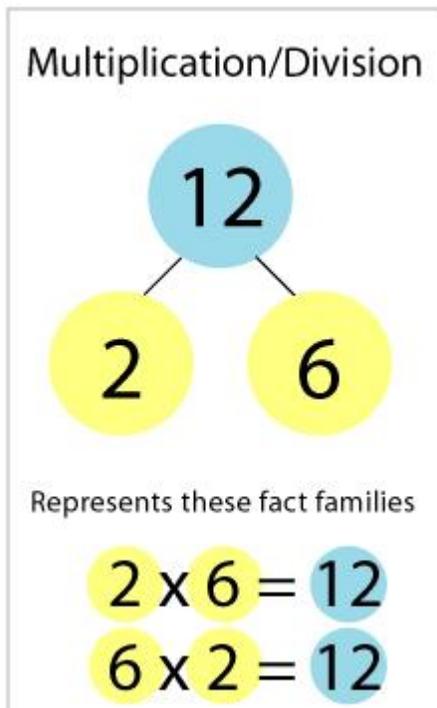
Task 1: Number Bonds
 Number bonds is splitting **numbers** in useful ways. They show how **numbers** join together, and how they break down into component parts.

For example:

12 is the whole

2 and **6** are parts of the whole

Equation: 2 x 6 = 12 **or** 6 x 2 = 12

Task 1:
 Find the parts for the whole numbers below. The first one has been done for you.

Whole number	First Part number	Second Part number	Equation
120	60	2	60 x 2 = 120
240			
420			
810			
480			

960			
360			
160			
500			
240			
420			
770			
182			
100			
160			
144			

Task 2: Multiplying numbers

Find the answers for the following equations.

1. 67 x 19 =
2. 176 x 6 =
3. 638 x 28 =
4. 522 x 46 =
5. 625 x 92 =
6. 299 x 43 =
7. 359 x 56 =
8. 392 x 483 =
9. 427 x 64 =
10. 103 x 48 =
11. 639 x 234 =
12. 178 x 124 =
13. 745x 45 =
14. 425 x 72 =
15. 543 x 12 =
16. 1234 x 45 =
17. 1643 x 68 =
18. 1542 x 923 =
19. 1639 x 654 =
20. 2365 x 432 =

Task 4: Word problems

Find the answers for the following word problems. Write the equation and answers. The first one has been done for you. Do not forget to write the unit at the end of your answers.

1. Sarah has 5 piles of books. Each pile has 6 books. How many books does Sarah have?
   5 x 6 = 30 books

2. Joey has 687 piles of towels. Each pile has 12 towels. How many towels does Joey have?

3. James has a total of 496 boxes. If each box has 56 pens, how many pens does James have?

4. Alana has 648 pens in 683 boxes. How many pens does Alana have?

5. There are 345 biscuits in a packet. A shop orders 756 packets. How many biscuits will be in the 156 packets?

6. A school buys 172 boxes of pencils. Each box has 12 pencils. How many pencils has the school bought?

7. A wholesaler sells apples for 17cents each. A grocer buys 597 apples. How much will they cost?

8. It takes 18 minutes to make a toy car. How many minutes will it take to make 655 cars?

9. A machine makes 16 dice in a minute. A working day is 446 minutes. How many dice are made in 446 minutes?

10. A cinema has 321 screens. Each screen has 497 seats. How many seats are there in the cinema?

11. Eggs are sold in trays of 24. In a week, a farmer sells 639 trays. How many eggs does he sell in one week?

12. A bag of nails contains 613 nails. A hardware store has 263 bags. How many nails are in the 263 bags?

13. There are 257 children in a class. Each child pays $7.49 for a school trip. How much do they pay altogether?

14. A football club has an average attendance of 1859 people to each match. What is the total attendance for the 39 matches played in a season?

15. Santana has 1768 packs of lollies. If there are 289 lollies in each pack, how many lollies does Santana have?

16. Grace has 1872 boxes of shoes. If there are 13 pairs of shoes in each box, how many shoes does Grace have?