

ACTIVITY TWO: WATERY WORD SUMS, NUMBER SENTENCES AND FRACTIONS

Read the facts, then do the sums!! This MATHEMATICS lesson focuses on word sums, number sentences, fractions, time and measurement – all with a watery wet focus!

WATER FACT FILE

Water disguises

- 70% of the Earth's surface is covered in water. The water comes in 3 forms: liquid water droplets, a gas called water vapour, and solid ice crystals. It changes form by melting, freezing, evaporating or condensing.



Underwater cities?

- If all the Earth's ice sheets and glaciers melted, the sea would rise by 60 to 70 metres and flood our coastal cities.

Water power

- Running water wears away soil and rocks. The Niagara River between Canada and the United States of America plunges over a waterfall nearly 55m high, and is cutting into the soft rock at a rate of one metre a year! The falls have moved 11km upstream over the last 10 000 years! In many countries waterpower is used to generate electricity.

Alien water wasters

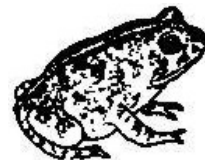
- Alien trees like wattles and pines growing in our river catchments absorb and use as much as 61% of the rain that falls on them. Indigenous fynbos plants use only 6% and the rest is left to seep into our rivers. So ... grow indigenous!

Dams make us wobble!

- The dams and canals built over the last 100 years have altered the distribution of freshwater on our planet. This has led to a small change in the wobble of the Earth as it spins!

Amazing animals

- A frog that lives in the Central Australian Desert hibernates underground and only comes out every 5 to 6 years when it rains. Then it drinks half its weight in water so that it looks like a small balloon!



Making cars, and even eggs, uses water

Making goods and growing food uses lots of water:

- 450 000 litres to make one small car
- 1 000 litres for one Sunday paper
- 9 500 litres to grow half a kilogram of beef
- 1 000 litres for a kilogram of maize
- 150 litres for an egg!

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ACTIVITY: SOLVE THE NUMBER SENTENCES

Example: $2 \times \square - 4 = 16$ Answer: 10

Remember: Brackets, multiplication and division are always done **BEFORE** addition and subtraction.

- A**
- 1) $7 \div \square - 1 = 0$
 - 2) $18 \times 2 - 6 + \square = 31$
 - 3) $8 \div 4 \div \square = 1$
 - 4) $17 \times 2 \div 1 \times 3 = \square$
 - 5) $1 \times \square + 999 = 999$
 - 6) $54 \div \square \div 9 = 3$
 - 7) $110 - \square + 25 = 128$
 - 8) $1000 - \square + 3 = 10$
 - 9) $67 \times \square + 5629 = 6299$
 - 10) $536 \div \square - 65 = 2$
 - 11) $(17 \times 2) - 18 + (6 \div 2) + 9 = \square$
 - 12) $4 \times 8 \times 1 \div 2 \div 8 \times \square = 2$
 - 13) $(15 \times 3) + 22 - (29 \times 1) - (8 \div \square) = 34$
 - 14) $\square + 50 - (50 \div 50) - 49 + (50 \times 2) = 200$
 - 15) $\square + 9 - 7 \times 22 - 11 = 0$

- B** The area below represents a river catchment. You read earlier that nearly two thirds of the rain that falls where alien plants have grown, is used up by these alien plants. Using a coloured pencil or highlighter, shade in the amount of water left over to seep into our rivers and streams.

- C** The following activity focuses on word sums and their corresponding number sentences. Two examples of word sums and their number sentences are given below.

Example 1 **Word sum:** An adult needs 2 litres of water each day. How many litres of water will she need in a week?

Number sentence: $2 \times 7 = 14$

Example 2 **Word sum:** A woman walks to a river to collect water for washing her family's clothes, for drinking and for cooking. On the first day she walks $2\frac{1}{8}$ km. On the second day, she sees a crocodile at the same place so walks another $5\frac{3}{8}$ km to collect water from a safer spot. On day 3, the water tanker arrives in her village so she does not need to fetch water. On day four she decides to walk in the opposite direction to see if there is a water source closer to her. If the total distance she walked in the four days was 12km, how far did she walk on the fourth day and was this water source closer?

Number sentence: $2\frac{1}{8} + 2\frac{1}{8} + 5\frac{3}{8} + 0 + 2\frac{3}{8} = 12$ km and no, the water source was not closer, the first water source was.

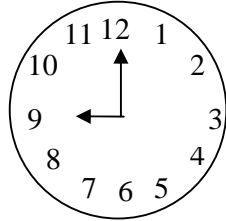
Did you know? $\frac{4}{8}$ can be written as $\frac{1}{2}$.

It is now your turn to write 5 word sums and 5 number sentences about water. Use the information provided at the beginning of this Activity to make up some exciting and interesting word sums!

- D** Time to tell the time!!

Show your answer on the two clock faces below:

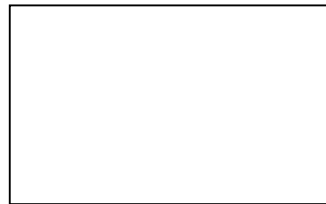
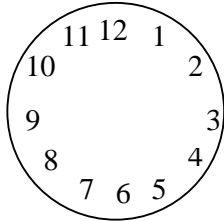
For example, a Midmar Mile swimmer takes 45 minutes and 30 seconds to get across Midmar Dam during the annual water race. If she started the race at quarter past eight in the morning, what time would she get to the other side of the dam and finish the race?



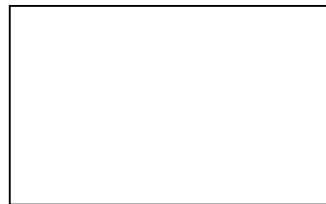
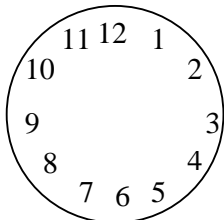
09:00³⁰

Note: The hour hand is always shorter than the minute hand

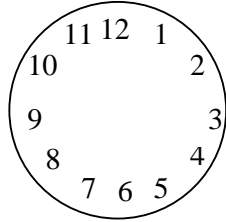
1. It takes five hours, 20 minutes and 10 seconds to walk to the bottom of the Karkloof Waterfalls. If two friends start walking at half past two in the afternoon, what time will they get to the bottom of the falls?



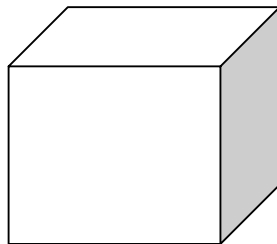
2. A factory owner pumps pollutants into a nearby river at a quarter past one in the morning. Three hours, 15 minutes and 22 seconds later he is caught by the police. At what time is the factory owner caught?



3. A group of adults go on river cruise at 8:35pm. The cruise finishes 9 hours, 12 minutes and 16 seconds later. What time will they get off the boat?



Bonus Question!!!!



The cube above has a length, breadth and height of 5cm

- Calculate the volume of the cube
- Calculate the surface area of the cube

TRY THIS AT HOME!! FUN HOMEWORK ACTIVITIES USING MEASURING INSTRUMENTS:

- **A Bathroom Scale:** Use your scale at home to measure
 1. Your weight
 2. Your brother's / sister's weight and
 3. Your dog's / cat's weight.
 4. Write down your answers in kilograms and next to each write your answer in grams.

ANSWERS TO MATHEMATICS QUESTIONS IN ACTIVITY TWO

A

1) 7
5) 0
9) 10
13) 2

2) 1
6) 2
10) 8
14) 100

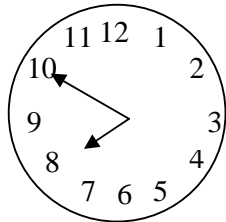
3) 2
7) 7
11) 28
15) 156

4) 102
8) 993
12) 1

B

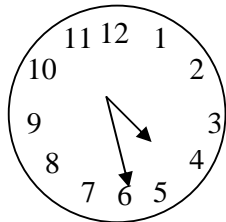
D

1)



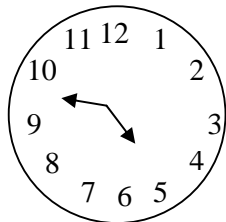
19:50¹⁰

2)



04:30²²

3)



05:47¹⁶

Bonus question:(a) 125cm^3 (b) 150cm^2 **Criteria to assess learners during this mathematics lesson**

Criteria	Exceeded requirements of the Learning Outcome	Satisfied requirements of the Learning Outcome	Partially satisfied requirements of the Learning Outcome	Not satisfied requirements of the Learning Outcome
The learner solved the number sentences				
The learner developed five word sums				
The learner developed five number sentences				
The learner wrote analogue, digital and 24-hour times on the clocks provided				