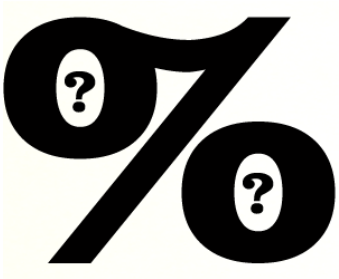
Week 1
Term 1
2021

HAWKER COLLEGE
Engage | Inspire | Achieve

Learning Brief

MA1

Goals



Unit goals

- Understand the concepts and techniques introduced in consumer arithmetic, algebra, matrices and shape and measurement.
- Apply reasoning skills and solve practical problems arising in these topics.

This week the work is on

- Percentage review
- Percentage 'of' and percentage 'off'

Theoretical Components

Resources:
PDF file: Week 1 Notes & Exercises
On-line resources: linked in the notes

Knowledge Checklist

- Meaning of percentage
- Percentages as fractions
- 50%, 25% and 10% as benchmarks
- Percentages 'of' amounts
- Percentage 'off' amounts

Order

1. Look at the Investigation.
2. Work through the booklet and online resources to develop the skills necessary to complete the Investigation
3. Complete the Investigation.
4. Complete the quizes on Mathspace
5. Show your completed booklet to Toby/Jacqueline and submit the Investigation for marking.

Practical Components

There are questions to be answered in the booklet *Week 1 Notes & Exercises*

An important resource for us this year is *Mathspace.*
This is an online resource.
For our 'class' the curriculum is *Mathematical Applications 11.*
For this week the topic is *Rates and Percentages.*
The two lessons that will help you with this week's work are *Percentage of a Quantity* and *Percentage Problems*

Investigation

On the last page of your booklet

Mathspace Quiz

There is a quiz on Mathspace to check your progress against the Knowledge Checklist

MATHEMATICAL APPLICATIONS 1

WEEK 1 NOTES & EXERCISES

PERCENTAGES

Start by watching this 1min video on Why Percentages

(http://www.bbc.co.uk/skillswise/topic/percentages)

Percentage means out of 100. In fractions it means $something/100$

$$42\% = \frac{42}{100}$$

$$95.3\% = \frac{93.5}{100}$$

$$61\% = \frac{61}{100}$$

This also means:

100% $= \frac{100}{100}$ = 1 whole – which is the whole amount. So 100% of something is ALL OF IT!

10% $= \frac{10}{100} = \frac{1}{10}$ which is one tenth (divide by 10)

25% $= \frac{25}{100} = \frac{1}{4}$ which is one quarter (divide by 4)

50% $= \frac{50}{100} = \frac{1}{2}$ which is one half (divide by 2)

QUESTION 1

Find these percentage amounts of the figures listed

100% of 42 = all of 42

= 42

50% of 50 = _____

= _____

25% of 72 = _____

= _____

10% of 20 = _____

= _____

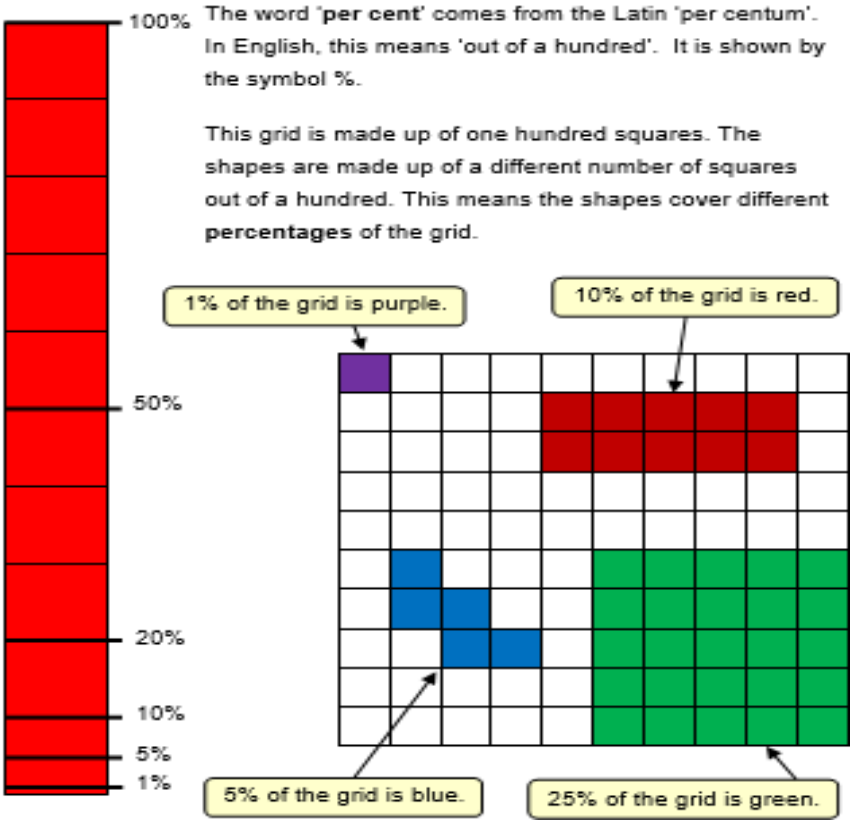
50% of 150 = _____

_____

25% of 12 = _____

= _____

What is a percentage?



Why compare Fractions and percentages? Watch the video here http://www.bbc.co.uk/skillswise/topic/comparing-fractions

QUESTION 2

Find these percentage amounts of the figures listed (do as many as you can in your head, otherwise use a calculator).

a) 100% of 48 =_____= _____

b) 100% of 36=_____= _____

c) 50% of 52= half of 52 = 26

d) 50% of 38=_____= _____

e) 50% of 112=_____= _____

f) 50% of 1680=_____ = _____

g) 25% of 48=_____= _____

h) 25% of 56=_____= _____

i) 25% of 100=_____= _____

j) 10% of 80=_____= _____

k) 10% of 860=_____= _____

l) 10% of 56=_____= _____

m) 10% of 11460=_____= _____

n) 1% of 1100=_____= _____

o) 1% of 2500=_____= _____

QUESTION 3

First find 10% of the following amounts, then find the amount listed. (try to do these in your head as much as possible)

AMOUNT	10%	20%	40%	80%
4420				
380				
100				
10				
940				
200				
56				

QUESTION 4

Use a calculator to find the percentages of the following

a) 13% of 279=_____= _____

b) 18% of 492=_____= _____

c) 99% of 990=_____= _____

d) 54% of 260=_____= _____

e) 12.5% of 1145.70=_____= _____

f) 21.2% of 68203.42=_____= _____

PERCENTAGE OFF

Percentage OFF something – Most often used with regards to money, sales and discounts

Percentage OFF something means find that percentage and take it off the original price. This is a two-step calculation.

EXAMPLE

What is 12% **off** 480

12% 'of' $480 = $\frac{12}{100} \times 480$

= $57.60

So, 12% 'off' becomes $480 - $57.60

= $422.40

QUESTION 5

(a) A tennis racquet is on special at an 8% discount. If it normally costs $150, how much does Maryanne save?

(b) After a fire, smoke-damaged goods are sold at a mark-down of 20% to clear stock.

(i) What is the marked price of a tracksuit with an original price of $175 (remember, this is a two-step process)?

Step 1 Find the discount.

Step 2 Find the new price.

(ii) What would a dress that originally cost $240 sell for?

(c) A clothing store offers 6% discount for cash sales. A customer who paid cash purchased the following items: One pair of jeans $95.95
A leather belt at $29.95
Two jumpers at $45 each

Calculate:
(i) the total saving

(ii) the actual amount paid for the goods

(d) A hardware store is having a 15% off sale.
(i) How much would you pay for a router worth $282?

(ii) Bob also gets 10% off the discounted price as a builder's discount. How much would he pay for the router?

(iii) The cashier didn't know how to ring up two discounts, so she just gave Bob a 25% discount. Was Bob happy with this? Explain

Week 1 Investigation

Layla is buying a book that is 25% off. Before Layla pays, the seller tells her that if she pays by cash, she will get extra 10% discount on the 25% discounted price. Is this same as 35% discount on the initial price? Use mathematics to verify your answer.