ESSENTIAL MATHEMATICS 1

WEEK 3 NOTES AND EXERCISES

PART 1 ESTIMATION

We use estimation when we don't want to, don't need to, or can't get the exact answer. It has recently been proven in a research paper that grown adults use MORE ESTIMATION in everyday life, then they do EXACT answers.

Estimation is something you need to practice to get good at. Things we estimate often include cost, distance, temperature, length, weight, height and time.

FIRSTLY, TRY THESE QUESTIONS.

QUESTION 1

Money

Imagine you go to the shops and buy the following items. Box of cereal, 2lt carton of milk and a loaf of bread.
How much do you think this will cost?

Distance

How far do you think it is if you were to walk from the college to the Hawker Shops and back?

Temperature

How much hotter or colder than yesterday is it?

Length

How long do you think the whiteboard wall is in the learning commons?

Weight

How heavy do you think a netbook computer is?

Height

How tall do you think your math teacher is? (Which teacher have you estimated?)

Time

How long do you think it would take you to walk from the Maths staffroom over to the school gym?

PART 2 BIG AND LITTLE THINGS

QUESTION 2 - ESTIMATE THE FOLLOWING:

a) The weight of this pumpkin….

b) The weight of this giant onion…

c) The height of this giant carrot statue..

Explain how you worked this out……

d) The length of this watermelon float…
(how did you do this?)

e) This is the worlds smallest horse – how tall do you think it is?

The dog is 70cm tall.

f) Recently in Madagascar, a whole selection of miniature lizard species were discovered. This Chameleon lizard fits on the head of a match – how long do you think it is?

PART 3 ESTIMATION OF WRITTEN MATH PROBLEMS

Often a good way of estimating when doing problems in maths is to ROUND the numbers.

Rounding can be done to round decimals off a calculator, you might ROUND UP to OVER ESTIMATE, or ROUND DOWN to UNDER ESTIMATE.

Intro video on rounding
http://www.youtube.com/watch?v=Y7FekoVid54&list=PL4E3C90726B1F37F0

PLAY THESE GAMES

Play these games, a minimum of 5-10 minutes on each.

Play this game until you can get through with no mistakes!
http://www.softschools.com/math/rounding/game/

Play this game until you are a math millionaire http://mrnussbaum.com/mathmillions/

PART 4

Estimate the value of these questions, don't work out the exact answer. Indicate as you go if you think the EXACT answer will be MORE or LESS than the answer you have estimated.

QUESTION 3

Subtraction
Example 168 – 97.
Firstly I round and change the question to 170 – 100, then I get the rounded answer of 70.

a) 91-47
b) 104 - 56
c) 1194 - 583
d) 23,770 – 14,789
e) 452,335 – 233,667

QUESTION 4

Addition
Example 168 +97
Firstly I round and change the question to 170 + 100, then I get the rounded answer of 270.

a) 98+49
b) 105 + 68
c) 2105 + 901
d) 4287 + 4265
e) 401,698 + 298,032

QUESTION 5

Multiplication
Example 224 x 3
Firstly I round and change the question to 200 x 3, then I get the rounded answer of 600.

a) 198 x 5
b) 987 x 43
c) 87 x 39
d) 29 x 5699
e) 99,987 x 99

QUESTION 6

Division
Example 285 ÷ 2
Firstly I round and change the question to 300 ÷ 2, then I get the rounded answer of 150.

a) 198 ÷ 5
b) 98 ÷ 51
c) 81 ÷ 39
d) 29,840 ÷ 3
e) 99,987 ÷ 99