Rounding Numbers

You need to be able to use 3 different rounding methods.
We'll do decimal places first, but there's the same basic idea behind all three.

Decimal Places (d.p.)

To round to a given number of decimal places:

If you're rounding to 2 d.p. the last digit is the second digit after the decimal point.

① Identify the position of the 'last digit' from the number of decimal places.
② Then look at the next digit to the right — called the decider.
③ If the decider is 5 or more, then round up the last digit.
   If the decider is 4 or less, then leave the last digit as it is.
④ There must be no more digits after the last digit (not even zeros).

EXAMPLE: What is 21.84 correct to 1 decimal place?

$$21.84 = 21.8$$

LAST DIGIT to be written (1st decimal place because we're rounding to 1 d.p.)

DECIDER

The LAST DIGIT stays the same because the DECIDER is 4 or less.

7.2 = 0

EXAMPLE: What is 39.7392739 to 2 decimal places?

$$39.7392739 = 39.74$$

LAST DIGIT to be written (2nd decimal place because we're rounding to 2 d.p.)

DECIDER

The LAST DIGIT rounds UP because the DECIDER is 5 or more.

Watch Out for Pesky Nines

If you have to round up a 9 (to 10), replace the 9 with 0, and add 1 to digit on the left.

EXAMPLE: Round 48.897 to 2.d.p:

$$48.897 \longrightarrow 48.8\overset{9\ 0}{9} \longrightarrow 48.90 \text{ to 2 d.p.}$$

LAST DIGIT   DECIDER

The question asks for 2 d.p. so you must put 48.90 not 48.9.

Ordering Decimals

1) Do the whole number bit first, then the bit after the decimal point.
2) With numbers between 0 and 1, first group them by the number of 0s at the start. The group with the most 0s at the start comes first.

EXAMPLE: Write these numbers in order, from smallest to largest:

11.9   13.56   7.143   11.6   7.7   2.6   8.91

1) First order them by the whole number bit from smallest to largest.

2.6   7.143   7.7   8.91   11.9   11.6   13.56

2) If two numbers have the same whole number bit, then order them by the size of the decimal.

2.6   7.143   7.7   8.91   11.6   11.9   13.56

In decimals, like in whole numbers, the value of the digits decreases from left to right.

0.256
tenths / hundredths / thousandths

EXAMPLE: Write these numbers in order, from smallest to largest:

0.1   0.022   0.53   0.0011   0.027   0.023   0.0023

1) These are all between 0 and 1, so group them by the number of 0s at the start:

2 initial 0s	1 initial 0	no initial 0s
0.0011 0.0023	0.022 0.027 0.023	0.1 0.53

2) Once they're in groups, just order them by comparing the first non-zero digits.
(If the first non-zero digits are the same, look at the next digit along instead.)

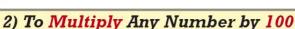0.0011   0.0023   0.022   0.023   0.027   0.1   0.53

Multiplying by 10, 100, etc.

This stuff is easy peasy — I'm sure you'll have no problem flying through this page.

1) To Multiply Any Number by 10

Move the decimal point ONE place BIGGER and if it's needed, ADD A ZERO on the end.

E.g.   1.6 × 10 = 1 6
6213 × 10 = 6 2 1 3 0
672.12 × 10 = 6 7 2 1. 2

2) To Multiply Any Number by 100

Move the decimal point TWO places BIGGER and ADD ZEROS if necessary.

E.g.   3.5 × 100 = 3 5 0
78 × 100 = 7 8 0 0
3.7734 × 100 = 3 7 7. 3 4

How do we use Knowledge Organisers in Mathematics?

How can you use knowledge organisers at home to help us?

- **Retrieval Practice**: Read over a section of the knowledge organiser, cover it up and then write down everything you can remember. Repeat until you remember everything.
- **Flash Cards**: Using the Knowledge Organisers to help on one side of a piece of paper write a question, on the other side write an answer. Ask someone to test you by asking a question and seeing if you know the answer.
- **Mind Maps**: Turn the information from the knowledge organiser into a mind map. Then reread the mind map and on a piece of paper half the size try and recreate the key phrases of the mind map from memory.
- **Sketch it**: Draw an image to represent each fact; this can be done in isolation or as part of the mind map/flash card.
- **Teach it**: Teach someone the information on your knowledge organiser, let them ask you questions and see if you know the answers.

How will we use knowledge organisers in Mathematics?

Knowledge organisers will be used before I complete a Learning Check or Common Assessment. I will spend part of the lesson looking over each of the key topics of the half term before completing the Learning Check or Common Assessment.

I will also use these at home to complete my own independent learning and revision of these key topics.

GLUE HERE