YEAR 7 — PLACE VALUE AND PROPORTION

@whisto maths

Ordering integers and decimals

What do I need to be able to do?

Bu the end of this unit you should be able to:

- Understand place value and the number sustem including decimals Understand and use place value for decimals,
- integers and measures of any size Order number and use a number line for
- positive and negative integers, fractions and
- use the symbols $=, \neq, \leq, \geq$
- Work with terminating decimals and their corresponding fractions
- Round numbers to an appropriate accuracy
- Describe, interpret and compare data distributions using the median and range

Keywords

Opproximate: To estimate a number, amount or total often using rounding of numbers to make them easier to calculate with

Integer: a whole number that is positive or negative

Interval: between two points or values Median: O measure of central tendency (middle, average) found by putting all the data values in order and finding the middle value of the list.

Negative: Only number less than zero; written with a minus sign.

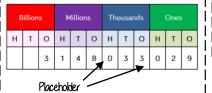
Place holder: We use 0 as a place holder to show that there are none of a particular place in a number

Place value: The value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right

Range: The difference between the largest and smallest numbers in a set

Significant figure: O digit that gives meaning to a number. The most significant digit (figure) in an integer is the number on the left. The most significant digit in a decimal fraction is the first non-zero number after the decimal point

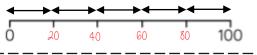
Integer Place Value



Three billion, one hundred and forty eight million, thirty three thousand and twenty nine

I billion 1, 000, 000, 000 I million 1 000, 000

Intervals on a number line



Divide the difference by the number of intervals (gaps)... Eq $100 \div 5 = 20$

If the number is halfway between we "round up"

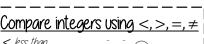
Rounding to the nearest power of ten

5495 to the nearest 1000 5475 to the nearest 100

5475 to the nearest 10

(5000) 6000 5400

5480



> greater than 300 000 000 = equal to ≠ not equal to Six thousand and eighty

Three billion 68 000

Spread of the values

Difference between the biggest and smallest

Range: Biggest value — Smallest value

Range = 9

Two and a half million 2 500 000



tenths hundredths

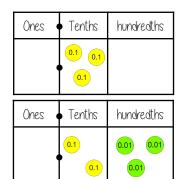
0 ones, 5 tenth and 2 hundredths $(\underline{0},\underline{0}) + (\underline{0},\underline{0}) + (\underline{0},\underline{0}) + (\underline{0},\underline{0}) + (\underline{0},\underline{0}) + (\underline{0},\underline{0}) + (\underline{0},\underline{0})$ = 0 + 0.5 + 0.02

hundreaths

Comparing decimals

Which the largest of 0.3 and 0.23?

П



0.3 > 0.23

"There are more counters in the furthest column to the left"

0.30 0.23

Comparing the values both with the same number of decimal places is another way to compare the number of tenths and hundredths

Median The middle value

Example 1 Median: put the in order 3 8 find the middle number 3 4 (8) 9 12

Example 2 Median: put the in order 150 154 148

137 160 158 There are 2 middle numbers

137 148 (150 154)58 160 Find the midpoint ______

Decimal intervals on a number line

One whole spit into 10 parts makes tenths = 0.1 One tenth split into 10 parts makes hundredths = 0.01

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9

0.02 0.06 0.08 0.04

0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8

Round to the first non

zero number

Round to I significant figure

370 to I significant figure is 400

37 to I significant figure is 40 3.7 to I significant figure is 4

0.37 to I significant figure is 0.4

0.0000037 to 1 significant figure is 0.0000004

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FDP equivalence

What do I need to be able to do?

By the end of this unit you should be able

Convert fluently between fractions, decimals & percentages

ii Keuwords

Fraction: how many parts of a whole we have

Decimal: a number with a decimal point used to separate ones, tenths, hundredths etc.

Percentage: a proportion of a whole represented as a number between 0 and 100

Place value: the numerical value that a digit has decided by its position in the number

Placeholder: a number that occupies a position to give value Interval: a range between two numbers

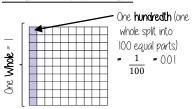
Tenth: one whole split into 10 equal parts

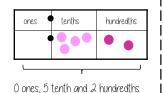
Hundredth: one whole split into 100 equal parts

Sector: a part of a circle between two radius (often referred to as looking like a piece of pie)

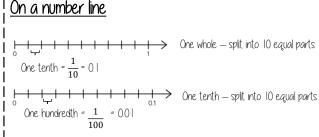
Recurrina: a decimal that repeats in a given pattern

Tenths and hundredths

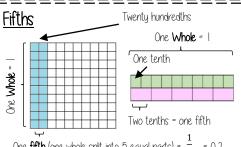


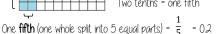


0 + 0 | + 0 | + 0 | + 0 | + 0 | + 0 | + 0 | | = 0 + 0.5 + 0.02 = 0.52

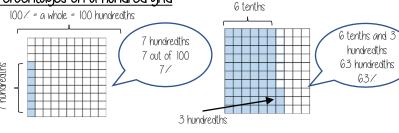


One tenth (one whole split into 10 equal parts) =



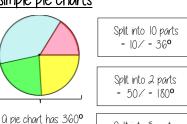


Percentages on a hundred grid



Quarters One **quarter** (one whole split into 4 equal parts) = $\frac{1}{4}$ Twenty five hundreaths Whole One half



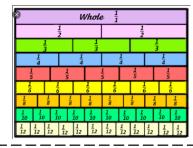


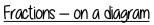
Split into 5 parts

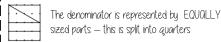
= 20% = 72°

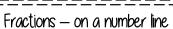


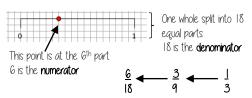
Represent equivalence with fraction walls











Convert FDP

are out of 360

so all FDP calculations

