

PLACE VALUE, DECIMALS & USING SCALES

Key Concept

Multiply/Divide by powers of 10

10 000	1000	100	10	1	●	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
					●			

Multiplying

X 10
X 100
X 1000

digits move LEFT 1 space
digits move LEFT 2 spaces
digits move LEFT 3 spaces



Dividing

÷ 10
÷ 100
÷ 1000

digits move RIGHT 1 space
digits move RIGHT 2 spaces
digits move RIGHT 3 spaces



Key Words

Decimal: A number that contains a point.

Metric measure: The unit used to measure length, mass etc.

Scale: The conversion to convert between drawings and real life sizes.

Examples

Ordering Decimals

0.3, 0.21, 0.305, 0.38, 0.209

Add zero's so that they all have the same number of decimal places.

0.300, 0.210, 0.305, 0.380, 0.209

Then they can be placed in order:

0.209, 0.21, 0.3, 0.305, 0.38

Multiplying/Dividing by powers of 10

3.4×100

100	10	1	●	$\frac{1}{10}$
		3	●	4
3	4	0	●	

sparx

M704, M112,
M113, M522,
M487

Tip

- Add digits when ordering decimals.
- The number of zero's tells you the number of places to move the digits.

Questions

- Order 1.52, 1.508, 1.5, 1.05, 1.51
- Work out a) 1.35×10 b) 0.6×100 c) $4.5 \div 100$
- Convert a) 36 mm to cm b) 7 cm to mm c) 450 cm to m
d) 620 g to kg e) 4.2 kg to g f) 0.7 kg to g

ANSWERS: 1) 1.05, 1.5, 1.508, 1.51, 1.52 2) a) 13.5 b) 60 c) 0.045
3) a) 3.6cm b) 70mm c) 4.5m d) 0.62kg e) 4200 f) 700g

ORDER FRACTIONS, DECIMALS & INTEGERS

Key Concept

FDP Equivalence

F	D	P
$\frac{1}{100}$	0.01	1%
$\frac{1}{10}$	0.1	10%
$\frac{1}{5}$	0.2	20%
$\frac{1}{4}$	0.25	25%
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%

Key Words

Integer: Whole number.

Ascending Order:

Place in order, smallest to largest.

Descending Order:

Place in order, largest to smallest.

Inequality: Statement that contains $<$, $>$, \leq , \geq , to show which quantity is greatest/smallest.

Tip

- Convert all numbers to the same form, either fractions, decimals or percentages.

- If using a calculator convert them all to decimals.

Examples

To order these fractions, make the denominators the same.

$\frac{3}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{4}$
↓	↓	↓	↓	↓
$\frac{6}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{7}{8}$	$\frac{2}{8}$
↓	↓	↓	↓	↓
$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$
↓	↓	↓	↓	↓
$\frac{1}{4}$	$\frac{3}{8}$	$\frac{2}{4}$	$\frac{4}{8}$	$\frac{8}{8}$

To order these, convert them all to decimals.

56%	$\frac{3}{4}$	0.871	23%	$\frac{6}{7}$
0.56	0.75	0.871	0.23	0.857...
2	3	5	1	4
23%	56%	$\frac{3}{4}$	$\frac{6}{7}$	0.871

sparx

M527, M522,
M335, M264

Questions

- 1) $\frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{12}$ 2) $\frac{3}{7}, \frac{1}{2}, 0.49, 0.2$ 3) $\frac{7}{32}, 25\%, 0.05, \frac{29}{100}$

ANSWERS: 1) $\frac{12}{12}, \frac{9}{12}, \frac{10}{12}, \frac{8}{12}$ 2) $0.2, \frac{7}{20}, \frac{49}{100}, \frac{1}{2}$ 3) $0.05, \frac{32}{7}, 25\%, \frac{100}{29}$