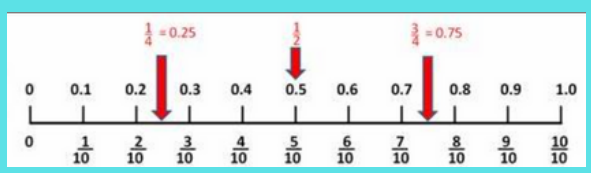
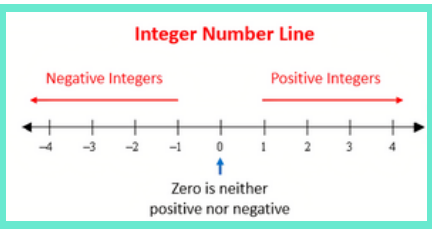
MATHS EXPECTATIONS END OF YEAR 8

BOOST YOUR LEARNING

PLACE VALUE	EXAMPLES
Know that multiplying a number between 0 and 1 will result in a number smaller than the original number	5 x 5 = 25 5 x 0.5 = 2.5 5 x 0.05 = 0.25
Convert between fractions, decimals and percentages	1/5 = 20% = 0.2 3/8 = 37.5% = 0.375
Read, write, compare, order and represent numbers as fractions, decimals and percentages	Order these values from smallest to largest: 25% 3/8 and 0.07 0.07, 25%, 3/8
Say, forward and backwards, decimal number sequences by thousandths, hundredths and tenths	1.96, 1.97, 1.98, 1.99, 2.00, 2.01 etc 3.122, 3.121, 3.120, 3.119, 3.118 etc
Order decimals to 3 decimal places	Order these decimals smallest to largest: 4.078, 4.9, 4.718, 4.071 4.071, 4.078, 4.718, 4.9
Round whole numbers and decimals to the nearest whole number or tenth	Round 38.45 Whole number: 38 Tenth: 38.5
On a number line, recognise fractions and decimals sit between integers	
On a number line, recognise that negative numbers sit left of zero	

MATHS EXPECTATIONS END OF YEAR 8

BOOST YOUR LEARNING

ADDITION AND SUBTRACTION	EXAMPLES
Add and subtract decimals using the most appropriate strategy (e.g. 3.9 - 1.17 = 2.73)	Round and compensate (+0.1) 4-1.17 = 2.83 Then (-0.1) = 2.73
Add and subtract decimals using the most appropriate strategy (e.g. 1.75 + 2.1 = 2.95)	Add the ones: 1 + 1 = 2 Add the tenths: 0.7 + 0.2 = 0.9 Add the hundredths: 0.05 + 0 = 0.05
Know that addition and subtraction are the inverse of each other.	13.83 + ? = 20.1 is the same as 20.1 -13.83
Use standard column methods to add and subtract using whole numbers and decimals	4.84 - 3.05
Know that subtraction can produce negative numbers	38 - 47 = -11
Add and subtract fractions with like denominators	$\frac{1}{8} + \frac{5}{8}$
Add and subtract fractions with unlike denominators by making an equivalent fraction on one side	$\frac{2}{5} - \frac{2}{10}$

Apply addition and subtraction skills to solve worded problems in a range of mathematical contexts

MATHS EXPECTATIONS END OF YEAR 8

NUMBER KNOWLEDGE

- Multiply and divide by 10, 100, 1000 with any whole number or decimal
- Identify the factors of whole numbers up to 100
- Use divisibility rules for 2, 3, 4, 5, 6, 8, 9 effectively when solving problems

MULTIPLICATION AND DIVISION	STRATEGY EXAMPLES
Use standard place value to solve two and three digit multiplication problems	32.5 x 6 (6 x 30) + (6 x 2) + (6 x0.5)
Use proportional adjustment like doubling and halving, thirding and trebling, to solve multiplication problems	4 x 84 = 2 x 168
Use tidy numbers to solve multiplication problems	48 x 7 = (50 x 7) - (2x7) = 336
Simplify division problems by changing both numbers	÷4 (208 ÷ 8 / 52 ÷ 2) ÷4 is same as
Know standard column methods to multiply whole numbers and decimals, and written division methods to divide one or two digit whole numbers or decimals	255 x 26 4⟌5.32
Use place value to solve division problems	96 ÷ by 8 solved as (80 ÷ by 8) + (16 ÷ by 8) = 12

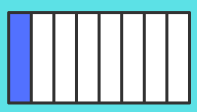
MATHS EXPECTATIONS END OF YEAR 8

BOOST YOUR LEARNING

FRACTIONS AND PROPORTIONS	STRATEGY EXAMPLES
Find equivalent fractions by proportionally adjusting numerator and denominator	$\frac{1}{2} \xrightarrow{\times 6} \frac{6}{12}$
Use equivalent fractions to identify which fraction is the largest or smallest	$\frac{1}{3} \xleftarrow{\div 4} \frac{4}{12} < \frac{2}{3}$
Find fractions of whole numbers using multiplication	2/3 of 36 as 2/3 x 36/1
Multiply fractions by other fractions and simplify your answer	$\frac{2}{3} \times \frac{1}{8} = \frac{2}{24} = \frac{1}{12}$
Divide fractions by other fractions and simplify your answer	$\frac{2}{3} \div \frac{1}{8}$ $\frac{2}{3} \times \frac{8}{1}$ $\frac{16}{3} = 5\frac{1}{3}$
Convert between improper and mixed fractions	$(8 \div 5)\ \frac{8}{5} = 1\frac{3}{5}$

MATHS EXPECTATIONS END OF YEAR 8

BOOST YOUR LEARNING

PROPORTIONAL REASONING	STRATEGY EXAMPLES
Estimate and find percentages of whole number amounts using a benchmark technique	20% of 400 x2 (10% of 400 = 40) x2 20% of 400 = 80
Solve simple rate problems using multiplication	x3 (7 boxes of applies = 1/2 hour 21 boxes of apples = 1 ½ hr) x3
Find equivalent ratios using multiplication and division and express them as equivalent fractions	÷8 (16 : 8 2 : 1) ÷8
Calculate percentage discounts using a benchmarking technique	30% off $2400 x3 (10% of $2400 = $240 30% of $2400 = $720) x3 Apply discount $2400- $720 = $1680
Solve ratio problems by sharing in a ratio	Share $320 in the ratio 1 : 7 1) Add the parts:  **There are 8 parts** 2) Share the total between the parts: 1/8 : 7:8 1/8 of $320 = $40 7/8 of $320 = $280

MATHS EXPECTATIONS END OF YEAR 8

BOOST YOUR LEARNING

ALGEBRA

STRATEGY EXAMPLES

Find relationships in repeated simple number patterns using simple formula

5, 8, 11, 14... 3n+2

Use formula to identify a term in a sequence Such as name the 10th term in the sequence

3n + 2

3(10) + 2 = 32

Use equations to model situations

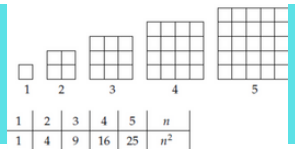
Sarah has 3 times as many apples as Tom. Together, they have 48 apples. How many apples does each person have?

Tom= x

Sarah = 3x

12 ÷4 4x = 48 x = 12 ÷4 36

Find relationships in powers and square numbers



1	2	3	4	5	n
1	4	9	16	25	n^2

Solve simple linear equations

2x + 6 = 28

−6 2x = 22 −6

÷2 x = 11 ÷2

Use Linear Graphs to represent simple equations

For example: What is the equation shown by the graph?

D = 20T