



Crossflatts
PRIMARY SCHOOL

Learn by Heart Facts

Year 3

Autumn 1

I can recall facts about durations of time

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.

- There are 60 seconds in a minute.
- There are 60 minutes in an hour.
- There are 24 hours in a day.
- There are 7 days in a week.
- There are 12 months in a year.
- There are 365 days in a year.
- There are 366 days in a leap year.

Number of Days in Each Month

January = 31 Days
February = 28/29 Days
March = 31 Days
April = 30 Days
May = 31 Days
June = 30 Days
July = 31 Days
August = 31 Days
September = 30 Days
October = 31 Days
November = 30 Days
December = 31 Days

You also need to know the order of the months in a year.

You should be able to apply these facts to answer questions, such as:

What day comes after 30th April?

What day comes before 1st February?

Top Tips

- The secret to success is practising little and often. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Use rhymes and memory games– The rhyme, 'Thirty days hath September', can help you to remember which months have 30 days. Or you could use your knuckles to help you remember (ask your teacher!).
- There are poems describing the months of the year in order.
- Use calendars – If you have a calendar for the new year, you could be responsible for recording the birthdays of friends and family members in it. You could even make your own calendar.
- How long is a minute? – Sit with your eyes closed for exactly one minute while your adult times you. Can you guess the length of a minute? 2 minutes etc?
- Carry out different activities for one minute. How many times can you jump in sixty seconds?
- Calculate durations of time. E.g. How many days until Grandma's birthday?



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Learn by Heart Facts

Year 3

Autumn 2

I know all my number facts for the 3, 4, 8 times tables.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.

3 Times Table	Division Facts
$1 \times 3 = 3$	$3 \div 3 = 1$
$2 \times 3 = 6$	$6 \div 3 = 2$
$3 \times 3 = 9$	$9 \div 3 = 3$
$4 \times 3 = 12$	$12 \div 3 = 4$
$5 \times 3 = 15$	$15 \div 3 = 5$
$6 \times 3 = 18$	$18 \div 3 = 6$
$7 \times 3 = 21$	$21 \div 3 = 7$
$8 \times 3 = 24$	$24 \div 3 = 8$
$9 \times 3 = 27$	$27 \div 3 = 9$
$10 \times 3 = 30$	$30 \div 3 = 10$
$11 \times 3 = 33$	$33 \div 3 = 11$
$12 \times 3 = 36$	$36 \div 3 = 12$

Key Questions

- What is 3 lots of 5?
- What is the product of 3 and 4?
- How many 4 are there in 12?
- Can you group 15 into groups of 3 with no remainders?

You can find posters like these for the other times tables online or in school.

Example of a fact family	$3 \times 5 = 15$	$5 \times 3 = 15$	$15 \div 3 = 5$	$15 \div 5 = 3$
Examples of other facts	$8 \times 6 = 48$	$48 \div 6 = 8$	$4 \times 12 = 48$	48

Top Tips

- The secret to success is practising little and often.
- Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Buy one get three free - If you know one fact (e.g. $3 \times 5 = 15$), can you recall the other three facts in the same fact family?
- Use doubles and near doubles – If you know that $3 \times 4 = 12$, how can you work out 6×4 ? What about 12×4 ?
- Play games – There are missing number questions at www.conkermaths.com. See how many questions you can answer in just one minute. OR Make your own (dominoes, snap).
- Create a 'guide' or a poster teaching someone about number bonds and fact families.



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Year 3

Spring 1

I can calculate change from £1 and £5 in multiples of 10.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.

Recognise the relationship between pence and pounds- $100\text{p} = £1$

Understand decimal notation

$350\text{p} = 3 \text{ pounds and } 50\text{p} = £3.50$

Use different combinations of coins and notes to make amounts up to £5.

Key Vocabulary

Estimate, count, calculate, compare, add, subtract, round.

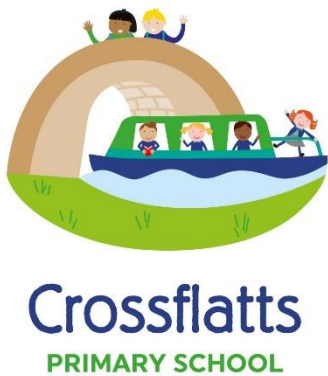
Pence/ penny (p), pound (£), coin, note, exchange, expensive, more, less, pay, buy, earn, cost, change.

Calculate simple purchases and identify change.

Round amounts of money and change to the nearest 10p and £1.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact family of the day.
- Do the shopping! Either online or in person. Calculate change for certain items whilst out and about.
- Calculate cost of ingredients for a meal and calculate change.
- Role play shops with friends or family.
- Create your own coins/ money to play/ practise with.



Learn by Heart Facts

Year 3

Spring 2

I can count up and down in tenths (and know tenths come from dividing a number by 10).

I can find fractions of objects.

Tenths

Understand that tenths come from dividing a number by 10. E.g. $1 \div 10 = 1/10$. This can also be written as 0.1. Count up and down in tenths in both fraction and decimal form.

0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1. 1 whole = 10/10.

Fractions of Objects

In school, your child will be learning to calculate fractions of objects and amounts using bar models.

Example: Finding 1/3 of 12

First, you need to understand that you are dividing or sharing 12 between 3. Draw a bar split into the denominator. You equally share 12 into these 3 boxes. This can be done using cubes, counters, objects or just your times tables knowledge.

4	4	4
---	---	---

Secondly, how many parts do you need (the numerator)? In this example, it is 1. Shade one section.

4	4	4
---	---	---

1/3 of 12 = 4

To find 2/3 of 12, you need to shade 2 sections.

4	4	4
---	---	---

Key Vocabulary

Tenths, Whole Number, Fraction, Decimal, Numerator, Denominator, Divide/share, Equal

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact family of the day.
- Use objects to begin with (sweets, pasta, tins etc). Can you show me ...? Find a fraction of any household objects. E.g. Show me one sixth of the apples in the bag. Your parents should encourage you to count the total and then ask for a fraction of them.
- Play 'ping pong' with your parents. You say a number. They say the next one. You reply with the next. Start from different numbers to develop your understanding.



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Year 3

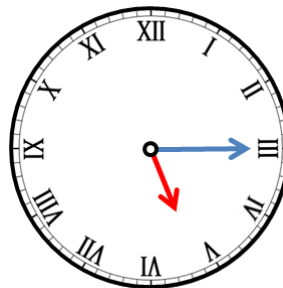
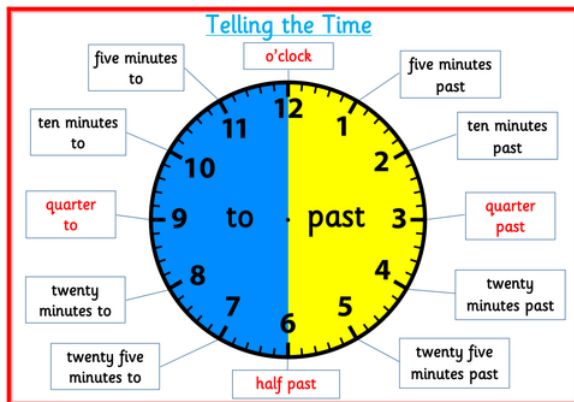
Summer 1

I can tell the time.

By the end of this half term, you should be able to know key time vocabulary and be able to tell the time (O'clock, half and quarters) on an analogue clock with either numbers, Roman Numerals or line markings only.

This target can be broken down into several steps.

- I can tell the time to the nearest hour.
- I can tell the time to the nearest half hour.
- I can tell the time to the nearest quarter hour.
- I can tell the time to the nearest five minutes.
- I can tell the time to the nearest minute.



Key Vocabulary

Twelve o'clock
Half past
Quarter past
Quarter to
Five past/ five to
Ten to/ ten past
Twenty to/ twenty past
Twenty-five to/ twenty-five past
Second/ minute/ hour

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact family of the day.
- Talk about time - Discuss what time things happen. When do you wake up? What time do you eat breakfast?
- Make sure that you have an analogue clock visible in your house or that you wear a watch with hands.
- Once you are confident telling the time, see if you can find more challenging clocks e.g. with Roman numerals or no numbers marked.
- Get your parents to ask you the time regularly.
- Take responsibility for watching the clock... "The cakes need to come out of the oven at twenty-two minutes past four exactly." Or "We need to leave the house at twenty-five to nine." Be the boss of the house!



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Learn by Heart Facts

Year 3

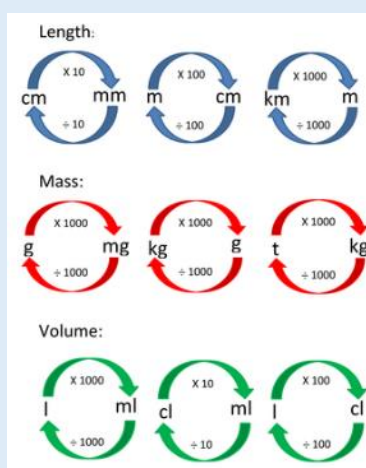
Summer 2

I know units of measure for length, mass and capacity.

By the end of this half term, you should know a variety of units of measurements and start to understand the relationships between these.



Converting Measures (Super Challenge!)



Step 1- Know the facts in column 1 by heart.

Step 2 (challenge)- Convert measures by multiplying/ dividing by 10, 100 and 1000.

Top Tips

- The secret to success is practising little and often.
- Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Practise measuring the lengths or heights of objects (in metres or centimetres). Ask an adult to help you use different rulers and tape measures correctly. Don't forget to estimate before measuring.
- Help with cooking at home. Measure ingredients accurately using weighing scales or measuring jugs and talk to an adult about what each division on the scale stands for.
- Choose some food items out of the cupboard or gather items from around the house. Try to put the objects in order of weight, by feel alone. Check by looking at the amounts on the packets.
- Play online games.



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Learn by Heart Facts

Year 4

Autumn 1

I know number bonds to 100.

This list includes some examples of facts that you should know. By the end of this half term, you should be able to recall the following facts instantly and be able to calculate number bonds to 100 mentally (including the use of jottings).

$$60 + 40 = 100$$

$$40 + 60 = 100$$

$$100 - 40 = 60$$

$$100 - 60 = 40$$

$$75 + 25 = 100$$

$$25 + 75 = 100$$

$$100 - 25 = 75$$

$$100 - 75 = 25$$

$$37 + 63 = 100$$

$$63 + 37 = 100$$

$$100 - 63 = 37$$

$$100 - 37 = 63$$

$$48 + 52 = 100$$

$$52 + 48 = 100$$

$$100 - 52 = 48$$

$$100 - 48 = 52$$

Key Vocabulary

What do I add to 65 to make 100?

What is 100 take away 6?

What is 13 less than 100?

How many more than 98 is 100?

What is the difference between 89 and 100?

You should also be able to answer questions including missing numbers e.g. $49 + \bigcirc = 100$ or $100 - \bigcirc = 72$.

Think about different methods you can use. For example, using your knowledge of partitioning numbers.

$$100 - 37 =$$

$$100 - 30 = 70$$

$$70 - 7 = 63$$

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact family of the day.
- Buy one get three free - If you know one fact (e.g. $82 + 18 = 100$), can you say the other three facts in the same fact family?
- Use number bonds to 10 - How can number bonds to 10 help you work out number bonds to 100?
- Play games – There are missing number questions at www.conkermaths.com. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.
- Ask your parent to make mistakes when chanting, counting or ordering numbers. Can you spot what they have done wrong?
- **TALK TALK TALK!** Discuss your strategy with family members or friends. Do they do it differently? Which is the fastest/ most accurate? How can jottings help you complete quick mental calculations?



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Learn by Heart Facts

Year 4

Autumn 2

I know Roman Numerals up to 1000.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly. Once you have learnt the basics, you should be able to work out any Roman Numeral by following the 3 rules below.

Roman Numerals			
1 = I	10 = X	100 = C	1000 = M
2 = II	20 = XX	200 = CC	2000 = MM
3 = III	30 = XXX	300 = CCC	3000 = MMM
4 = IV	40 = XL	400 = CD	
5 = V	50 = L	500 = D	
6 = VI	60 = LX	600 = DC	
7 = VII	70 = LXX	700 = DCC	
8 = VIII	80 = LXXX	800 = DCCC	
9 = IX	90 = XC	900 = CM	



Roman Numerals Rules

1. Numerals that are the same are added together...
II = 2 XX = 20 CC = 200
2. Small numerals after big ones are added to the big one...
VI = 6 XII = 12 CIII = 103
3. Small numerals before big ones are subtracted from the big one...
IV = 4 IX = 9 XL = 40
XC = 90 CD = 400 CM = 900

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Make a game of snap starting with the numbers to 10 and their Roman equivalents or play a game of pairs with the numbers and their Roman equivalents.
- When visiting places of interest, look out for Roman Numerals and convert them.
- Use Roman Numeral clocks when telling the time.
- Find matching games online.
- Write a 'beginner's guide to Roman Numerals' to teach someone about the key facts and rules.



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Learn by Heart Facts

Year 4

Spring 1

I can multiply and divide single-digit numbers by 1, 10, 100 and 1000.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly and understand what happens to the place value of digits when you multiply and divide by 10, 100 or 1000.

Multiplying and Dividing by 10, 100 and 1000

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 Questions

What is 5 multiplied by 10?

What is 10 times 0.9?

What is 700 divided by 70?

Vocabulary- hundreds, tens, units
tenths, hundredths.

Fact Families

- | | | | |
|--------------------------|------------------------|----------------------|----------------------|
| • $7 \times 10 = 70$ | $10 \times 7 = 70$ | $70 \div 7 = 10$ | $70 \div 10 = 7$ |
| • $6 \times 100 = 600$ | $100 \times 6 = 600$ | $600 \div 6 = 100$ | $600 \div 100 = 6$ |
| • $30 \times 10 = 300$ | $10 \times 30 = 300$ | $300 \div 30 = 10$ | $300 \div 10 = 30$ |
| • $40 \times 100 = 4000$ | $100 \times 40 = 4000$ | $4000 \div 40 = 100$ | $4000 \div 100 = 40$ |
| • $0.8 \times 10 = 8$ | $10 \times 0.8 = 8$ | $8 \div 0.8 = 10$ | $8 \div 10 = 0.8$ |
| • $0.2 \times 10 = 2$ | $10 \times 0.2 = 2$ | $2 \div 0.2 = 10$ | $2 \div 10 = 0.2$ |

These are just examples of the facts for this term. Children should be able to answer these questions in any order, including missing number questions e.g. $10 \times \bigcirc = 5$ or $\bigcirc \div 10 = 60$.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Think about it in context. Money often helps! If I had ten lots of 50p (0.50×10), I would have £5.00. Draw a place value chart so that you can see what is happening to each number.
- Find online games to play or create your own quiz, guide or matching game for you and your family to play.
- When you are really confident with this, you could convert real life problems such as converting measurements (e.g. grams to kilograms).



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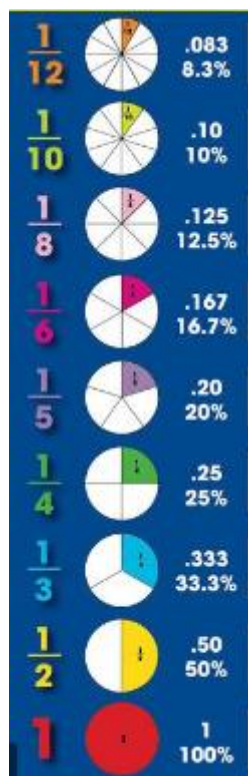
Year 4

Spring 2

I can recognise decimal equivalents of fractions including tenths and hundredths.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.

You should be able to convert between decimals and fractions for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$ and any number of tenths and hundredths.



Fractions	Decimals	Diagram	Out of 100	Percentages
1/10	0.1		10/100	10%
2/10	0.2		20/100	20%
3/10	0.3		30/100	30%
4/10	0.4		40/100	40%
5/10	0.5		50/100	50%

Key Questions

How many tenths is 0.8?

How many hundredths is 0.12?

Write 0.75 as a fraction.

Write $\frac{1}{4}$ as a decimal.

Vocabulary

Fraction, tenths, hundredths, half, quarter, third, fifth, sixth, seventh, eighth, numerator, denominator.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Play games - Make some cards with pairs of equivalent fractions and decimals. Use these to play the memory game or snap. Or make your own dominoes with fractions on one side and decimals on the other.
- Think real life... When sharing a pizza, cake or something equally tasty, talk about what fraction, decimal and percentage you are having.
- Get a grown up to quiz you. Although we want you to understand the relationship between these facts, you need to know them off by heart so a quick fire quiz might do the trick!



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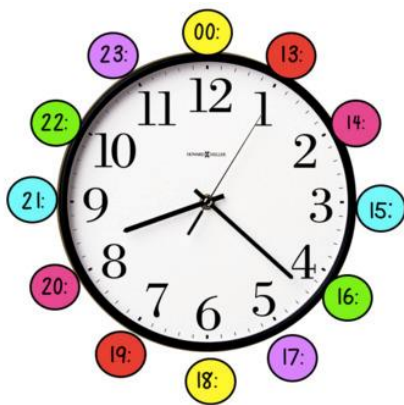
Learn by Heart Facts

Year 4

Summer 1

I can convert between the 12 and 24-hour clock.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.



Key Vocabulary

Noon
Midday
Midnight
Convert
12/ 24-hour clock

Twelve o'clock, Half past, Quarter past, Quarter to, Five past/ five to, Ten to/ ten past, Twenty to/ twenty past, Twenty-five to/ twenty-five past, Second/ minute/ hour.

24 Hour Clock 'Learn by Heart' Facts

1 am = 01:00	1 pm = 13:00
2 am = 02:00	2 pm = 14:00
3 am = 03:00	3 pm = 15:00
4 am = 04:00	4 pm = 16:00
5 am = 05:00	5 pm = 17:00
6 am = 06:00	6 pm = 18:00
7 am = 07:00	7 pm = 19:00
8 am = 08:00	8 pm = 20:00
9 am = 09:00	9 pm = 21:00
10 am = 10:00	10 pm = 22:00
11 am = 11:00	11 pm = 23:00
12 noon/midday = 12:00	12 midnight = 00:00

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- **Talk about time all the time!** Discuss what time things happen. When do you wake up? What time do you eat breakfast?
- Make sure that you have digital clock visible in your house or that you wear a watch without hands.
- Get your parents to ask you the time regularly. What time will you get to ... if it is ... now? If we set off at ... and arrive at ..., how long is the journey? If I need to be at work by 9 and the journey takes 48 minutes, what time do I need to set off?
- Take responsibility for watching the clock... "The cakes need to come out of the oven at twenty-two minutes past four exactly." Or "We need to leave the house at twenty-five to nine." Be the boss of the house!



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Learn by Heart Facts

Year 4

Summer 2

I know the names and properties of 2D shapes and know the different types of quadrilaterals and triangles.

		FACES	SIDES	VERTICES
circle		1	1	0
triangle		1	3	3
rectangle		1	4	4
oval		1	1	0
rhombus		1	4	4
square		1	4	4
pentagon		1	5	5
hexagon		1	6	6
heptagon		1	7	7
octagon		1	8	8
trapezoid		1	4	4

Types of Quadrilateral		
square 4 right angles 4 equal sides Opposite sides are parallel All sides the same length	rhombus 0 right angles 4 equal sides Opposite sides are parallel All sides the same length	kite 0 right angles 2 sets of equal sides No sides are parallel 2 pairs of sides the same length
rectangle 4 right angles 4 equal sides Opposite sides are parallel Opposite sides the same length	parallelogram 0 right angles 2 sets of equal sides Opposite sides are parallel Opposite sides the same length	trapezium 0 right angles 2 sets of equal sides 1 set of sides are parallel sides can be any length

Types of Triangles	
Equilateral triangle All sides the same length All internal angles the same	Isosceles triangle 2 sides the same length 2 internal angles the same
Right-Angled triangle 1 internal angles that is 90° Can be either scalene or isosceles as well	Scalene triangle All the different length All internal angles different

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact/ shape of the day.
- Choose a shape of the week e.g. circle. Look for this shape in the environment (faces of tins, packets etc.) and describe it.
- Play 'guess my shape'. Get an adult to think of a shape. Ask questions to try to identify it but they can only answer 'yes' or 'no' (e.g. Does it have more than 4 corners? Does it have any curved sides?).
- Create a fact book, guide or game to help you practise these facts (e.g. snap or cue cards).
- Play online games.



Crossflatts
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Learn by Heart Facts

Year 5

Autumn 1

I know square numbers up to 12^2 and their square roots and cubed numbers up to 12^3 .

A square number is a number multiplied by itself. Below are the first 12 square numbers.

A cubed number is a number multiplied by itself twice. E.g. $3 \times 3 \times 3 = 27$

$$1^2 = 1 \times 1 = 1$$

$$2^2 = 2 \times 2 = 4$$

$$3^2 = 3 \times 3 = 9$$

$$4^2 = 4 \times 4 = 16$$

$$5^2 = 5 \times 5 = 25$$

$$6^2 = 6 \times 6 = 36$$

$$7^2 = 7 \times 7 = 49$$

$$8^2 = 8 \times 8 = 64$$

$$9^2 = 9 \times 9 = 81$$

$$10^2 = 10 \times 10 = 100$$

1^3	$1 \times 1 \times 1 =$	1
2^3	$2 \times 2 \times 2 =$	8
3^3	$3 \times 3 \times 3 =$	27
4^3	$4 \times 4 \times 4 =$	64
5^3	$5 \times 5 \times 5 =$	125
6^3	$6 \times 6 \times 6 =$	216
7^3	$7 \times 7 \times 7 =$	343
8^3	$8 \times 8 \times 8 =$	512
9^3	$9 \times 9 \times 9 =$	729
10^3	$10 \times 10 \times 10 =$	1000
11^3	$11 \times 11 \times 11 =$	1331
12^3	$12 \times 12 \times 12 =$	1728

Key Questions

What is 8 squared?

What is 7 multiplied by itself?

What is the square root of 144?

Is 81 a square number?

Children should also be able to recognise whether a number below 150 is a square number or not.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Cycling Squares – At <http://nrich.maths.org/1151> there is a challenge involving square numbers. Can you complete the challenge and then create your own examples?
- Use memory tricks – For those hard-to-remember facts, www.multiplication.com has some strange picture stories to help children remember.



Crossflatts
PRIMARY SCHOOL

Learn by Heart Facts

Year 5

Autumn 2

I can identify prime numbers up to 50.

By the end of this half term, you should know the following facts. The aim is for you to recall these facts instantly.

Prime numbers have exactly 1 factor pair.

- The pair is always 1 and the number itself.
- 1 is not a prime number, as it only has one factor: $1 \times 1 = 1$
- 2 is the only even prime number.

You should be able to list the prime numbers to 50:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47

Key Vocabulary

Prime Number

Composite Number

Factor

Common factor

Multiple

A composite number is divisible by a number other than 1 or itself.

- The following numbers are examples of composite numbers: **4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20...**
- You should be able to explain how you know that a number is composite. E.g. 15 is composite because it is a multiple of 3 and 5.

Top Tips

- The secret to success is practising little and often.
- Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- It's really important that you use mathematical vocabulary accurately. Choose a number between 2 and 20. How many correct statements can you make about this number using the vocabulary above?
- Make a set of cards for the numbers from 2 to 20. How quickly can you sort these into prime and composite numbers? How many even prime numbers can you find? How many odd composite numbers?



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Learn by Heart Facts

Year 5

Spring 1

I can convert between decimals, fractions and percentages.

Fractions			
$\frac{1}{1}$		100% 1	One Whole
$\frac{1}{2}$		50% 0.50	One Half
$\frac{1}{3}$		33.3% 0.333	One Third
$\frac{1}{4}$		25% 0.25	One Quarter
$\frac{1}{5}$		20% 0.20	One Fifth
$\frac{1}{6}$		16.6% 0.166	One Sixth
$\frac{1}{8}$		12.5% 0.125	One Eighth
$\frac{1}{10}$		10% 0.10	One Tenth
$\frac{1}{12}$		8.33% 0.0833	One Twelfth

1	1.0	100%
$\frac{3}{4}$	0.75	75%
$\frac{2}{3}$	0.6	66 $\frac{2}{3}$ %
$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	0.3	33 $\frac{1}{3}$ %
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{1}{8}$	0.125	12 $\frac{1}{2}$ %
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%

Key Questions

How many tenths is 0.8?

How many hundredths is 0.12?

Write 0.75 as a fraction?

Write $\frac{1}{4}$ as a decimal?

Vocab- Equivalence/ equivalent, numerator, denominator, decimal, percentage.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Play games - Make some cards with pairs of equivalent fractions and decimals. Use these to play the memory game or snap. Or make your own dominoes with fractions on one side and decimals on the other.
- When shopping, look out for percentages in the special offer sections. Can you tell an adult how much it will be with 50% or 10% off the item?



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Learn by Heart Facts

Year 5

Spring 2

I know decimal number bonds to 1 and to 10.

Examples

$$0.6 + 0.4 = 1$$

$$0.4 + 0.6 = 1$$

$$0.75 + 0.25 = 1$$

$$0.25 + 0.75 = 1$$

Examples

$$1 - 0.4 = 0.6$$

$$1 - 0.6 = 0.4$$

$$1 - 0.25 = 0.75$$

$$1 - 0.75 = 0.25$$

Examples

$$3.7 + 6.3 = 10$$

$$6.3 + 3.7 = 10$$

$$10 - 6.3 = 3.7$$

$$10 - 3.7 = 6.3$$

$$4.8 + 5.2 = 10$$

$$5.2 + 4.8 = 10$$

Key Questions

What do I add to 0.8 to make 1?

What is 1 take away 0.06?

What is 1.3 less than 10?

How many more than 9.8 is 10?

What is the difference between 0.92 and 10?

What are the other facts in this family?

$$0.8 + 0.2 = 1,$$

$$0.2 + 0.8 = 1,$$

$$1 - 0.8 = 0.2,$$

$$1 - 0.2 = 0.8$$

This list includes some examples of facts that you should know. You should be able to answer questions including missing number questions e.g. $0.49 + \bigcirc = 10$ or $7.2 + \bigcirc = 10$.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day. If you would like more ideas, please speak to your teacher.
- Buy one get three free - If your child knows one fact (e.g. $0.8 + 0.2 = 1$), can they tell you the other three facts in the same fact family? E.g.: $0.2 + 0.8 = 1$, $1 - 0.8 = 0.2$, $1 - 0.2 = 0.8$
- Use number bonds to 10 - How can number bonds to 10 help you work out number bonds to 100?
- When you are working with decimals, think about money! If I take 20p away from £5, how much do I have left?
- Play games – There are missing number questions at www.conkermaths.com. See how many questions you can answer in just 90 seconds. There is also a number bond pair game to play.



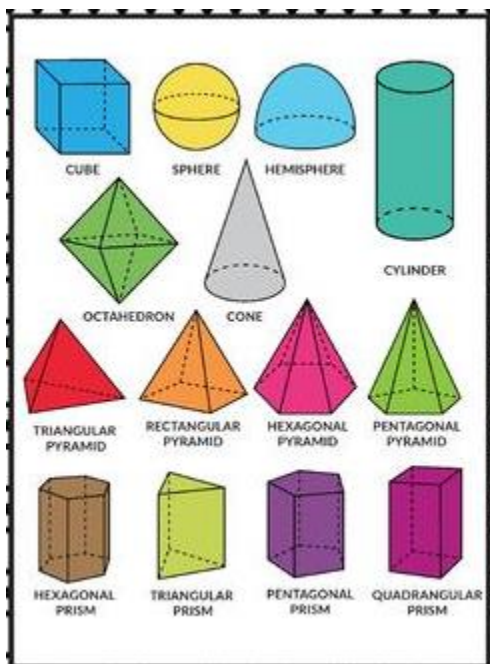
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Learn by Heart Facts

Year 5

Summer 1

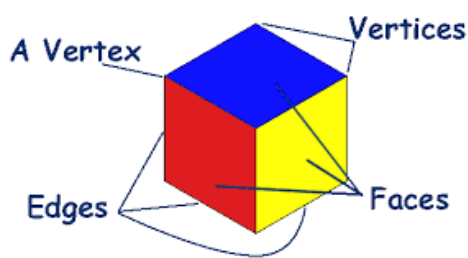
I know the names of 3D shapes and their properties.



Shape	Faces	Vertices	Edges
Cube	6	8	12
Cuboid	6	8	12
Cylinder	3	0	2
Triangular Based Pyramid	4	4	6
Square Based Pyramid	5	5	8
Pentagonal Based Pyramid	6	6	10
Triangular Prism	5	6	9
Hexagonal Prism	8	12	18
Octahedron	8	6	12
Cone	2	1	1
Sphere	1	0	0
Hemisphere	2	0	1
Dodecahedron	12	20	30

Key Vocabulary

Faces
Vertices
Edges
Parallel
Perpendicular
Opposite
Pyramid
Prism



Top Tips

- The secret to success is practising little and often.
- Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.
- Choose a shape of the week e.g. cylinder. Look for this shape in the environment (tins, candles etc.).
- Ask your child to describe the shape to you (2 circular faces, 2 curved edges..)
- Play 'guess my shape'. Your parent thinks of a shape. You ask them questions to try to identify it but they can only answer 'yes' or 'no' (e.g. Does it have more than 4 corners? Does it have any curved sides?)



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Learn by Heart Facts

Year 5

Summer 2

I can recall metric conversions for length, mass and capacity.

You need to know how to convert between metric units:

Length

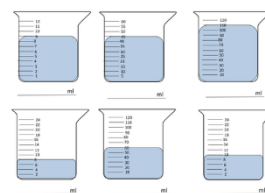
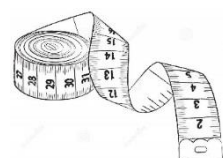
1000m = 1 km
250m = 0.25 km
100 cm = 1m
2cm = 0.02m
10mm = 1cm
2mm = 0.2cm
1000mm = 1m

Mass

1000g = 1kg
1500g = 1.5kg
250g = $\frac{1}{4}$ kg
750 g = $\frac{3}{4}$ kg
500 g = $\frac{1}{2}$ kg

Capacity

1000ml = 1 litre
3000ml = 3 litres
100cl = 1 litre
250 ml = $\frac{1}{4}$ litre
500 ml = $\frac{1}{2}$ litre
750 ml = $\frac{3}{4}$ litre



Key Vocabulary

cl – centilitre	l – litre		
km - kilometre	m - metre	cm - centimetre	mm - millimetre
g - grams	kg - kilogram		

Top Tips

- The secret to success is practising little and often.
- Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.
- Practise measuring the lengths or heights of objects (in metres or centimetres). Help your child to use different rulers and tape measures correctly. Encourage them to estimate before measuring.
- Let your child help with cooking at home. Help them to measure ingredients accurately using weighing scales or measuring jugs. Talk about what each division on the scale stands for.
- Choose some food items out of the cupboard. Try to put the objects in order of weight, by feel alone. Check by looking at the amounts on the packets.



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Learn by Heart Facts

Year 6

Autumn 1

I can add and subtract decimals, including those where place value columns are different.

Example Addition Questions

$$2.7 + 3.014$$

$$5 + 0.05$$

$$19 + 1.7$$

$$28.2 + 0.5$$

$$789 + 7.25$$

Example Subtraction Questions

$$7 - 0.04$$

$$9 - 3.45$$

$$17.5 - 8.2$$

$$35.2 - 3.9$$

$$142 - 20.07$$

Key Questions

Will a formal written method help me here?

How can my place value knowledge help me?

Could I partition the number to make it easier?

How could jottings support my calculation?

What would this look like if it was money? E.g. £7 - £0.04 is £7 take away 4p.

Does your answer make sense? If it is a subtraction, is your answer smaller?

- Sometimes a formal written method is best but often not for subtraction questions where you have a different place value column.
- Jottings are your best friend. Can you do the calculation in steps?
E.g. $28.2 + 1.5$ $28+1= 29$ $0.2+0.5=0.7$ $29+0.7=29.7$
- Remember you need to know the inverse too so you can complete missing number questions.
E.g. $? + 1.7 = 3.5$.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Think about what makes a question like this easier or harder? For each one, look at the questions above. The aim is for you to be able to identify the quickest and most accurate method independently so discuss these at home.
- Think about questions like this in relation to money! Can you add up different decimal amounts when shopping?
- Get your family to quiz you. You could time yourself answering these questions in different ways and see which is faster or most accurate.



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Learn by Heart Facts

Year 6

Autumn 2

I can round any whole number up to 10,000,000.
I can round decimals to the nearest whole number.

STEP 1: Circle the number you are rounding to. E.g Hundreds column.

This is the column that will either CHANGE or STAY THE SAME.

STEP 2: Underline the number you need to look at (e.g. the tens column) to decide whether the hundreds will change or stay the same.

Every number after the one you rounded to MUST BE 0!



Marvellous (but common) Mistakes!

1) Not changing the numbers after your rounded number to 0.

E.g. 32491 to the nearest 100 being 32,591 rather than 32,590.

2) When rounding down, going too far to the number below.

E.g. 4672 to the nearest 10 being 4660. Here I rounded down to 60 when my choice was between down to 4670 or 4680.

3) Forgetting the rest of the number exists!

E.g. 8922.25 to the nearest 10 being 20 rather than 8920.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Play games, watch tutorials or make revision aids and guides to help these steps 'stick'.
- Round numbers in real life! E.g. Round prices in shops to the nearest whole number to estimate the total cost of the items.
- Teach someone else! Tell them your top tips or marvellous mistakes.



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Learn by Heart Facts

Year 6

Spring 1

I can convert between decimals, fractions and percentages.

I can calculate a fraction, decimal or percentage of any given amount.

Fractions of Amounts

Divide by the denominator then multiply by the numerator.

E.g. $\frac{2}{5}$ of 45

$\frac{1}{5} = 45 \div 5 = 9$

$\frac{2}{5} = 9 \times 2 = 18$

1	1.0	100%
$\frac{3}{4}$	0.75	75%
$\frac{2}{3}$	0.6	66 $\frac{2}{3}$ %
$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	0.3	33 $\frac{1}{3}$ %
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%
$\frac{1}{8}$	0.125	12 $\frac{1}{2}$ %
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%

Percentages of Amounts

100%	The whole number
10%	$\div 10$
5%	$\div 10$ and half it
1%	$\div 10$ and $\div 10$ (OR $\div 100$)
Any multiple of 10%	e.g. 20%- find 10% and double it
Any multiple of 5%	25% -find 10% and 5% and add together what you need. 10% + 10% + 5%

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Apply to real life contexts (e.g. sale prices in shops or measurements when following a recipe). You could write your Christmas list or the weekly shopping list doing percentages off prices.
- Play online games or watch tutorials. Could you create your own guide, video tutorial or game? Create a 'beginner's guide to percentages'.
- Get a grown up to quiz you on percentages of amounts.



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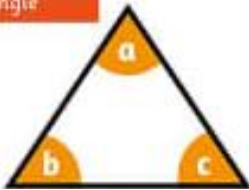
Learn by Heart Facts

Year 6

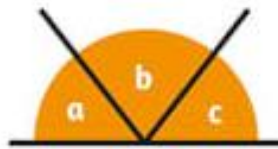
Spring 2

I know angle facts including angles in a line, triangle, round a point, quadrilateral and understand the relationship between opposite angles.

triangle



Angles in a triangle and on a straight line add up to 180° .



Key Vocabulary

Angles

Degrees

Straight Line

Triangle

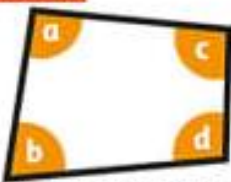
Quadrilateral

Round a Point

Opposite Angles

Acute, Right Angle, Obtuse, Reflex

quadrilateral



Angles in a quadrilateral and around a point add up to 360° .



Opposite Angles are equal.

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Play online games or watch tutorials. Could you create your own guide, video tutorial or game?
- Quiz/ test yourself and your family!
- Look for angles in real life shapes and actions (e.g. a full turn is 360° which is round a point). If turn $\frac{1}{4}$ turn, how many degrees are left to complete a full circle? Can you spot any opposite angles?
- Do drawings and doodles of angles and make shapes. Practise using a protractor and create missing angles.



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Learn by Heart Facts

Year 6

Summer 1

I know the order in which I should carry out operations (BIDMAS).

Understand that in certain calculations, there will be multiple calculations to complete. Answers will be different depending on which you do first. You MUST always follow the rules below.

B	Brackets	$10 \times (4 + 2) = 10 \times 6 = 60$
I	Indices	$5 + 2^2 = 5 + 4 = 9$
D	Division	$10 \div 6 \div 2 = 10 \div 3 = 13$
M	Multiplication	$10 - 4 \times 2 = 10 - 8 = 2$
A	Addition	$10 \times 4 + 7 = 40 + 7 = 47$
S	Subtraction	$10 \div 2 - 3 = 5 - 3 = 2$

Key Vocabulary

Operation/ calculation

Brackets

Indices (squared and cubed numbers)

Division

Multiplication

Addition

Subtraction

Note: division and multiplication calculations are completed in the order they appear in (same rule applies to addition and subtraction).

E.g. $6 + 4 \times 3 - 1 =$

$6 + 12 - 1 =$

$18 - 1 = 17$

Top Tips

- The secret to success is practising little and often. Use time wisely. Can you practise these facts while walking to school or during a car journey? You don't need to practise them all at once; perhaps you could have a fact of the day.
- Play online games or watch tutorials. Could you create your own guide, video tutorial or game?
- Quiz/ test yourself and your family!