

CLEE HILL COMMUNITY ACADEMY

Help your child with
mathematics



A booklet for parents

Targets for Age Related
Expectations in Year 5

To reach your age related expectation by the end of Year 5, you should be able to:

Number and Place Value

- read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (32,320,3200,32000)
- interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero (-2, -1, 0, 1, 2, 3)
- round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- solve number problems and practical problems that involve all of the above
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals

Activities to support your child

1	I	14	XIV	27	XXVII	150	CL
2	II	15	XV	28	XXVIII	200	CC
3	III	16	XVI	29	XXIX	300	CCC
4	IV	17	XVII	30	XXX	400	CD
5	V	18	XVIII	31	XXXI	500	D
6	VI	19	XIX	40	XL	600	DC
7	VII	20	XX	50	L	700	DCC
8	VIII	21	XXI	60	LX	800	DCCC
9	IX	22	XXII	70	LXX	900	CM
10	X	23	XXIII	80	LXXX	1000	M
11	XI	24	XXIV	90	XC	1600	MDC
12	XII	25	XXV	100	C	1700	MDCC
13	XIII	26	XXVI	101	CI	1900	MCM

Addition and Subtraction

- add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations
- solve addition and subtraction multi-step problems deciding which operations and methods to use and why.

Activities to support your child

Car numbers

- ◆ Choose a car number.
- ◆ You may add or subtract 10, 20, 30, 40, 50, 60, 70, 80 or 90. ◆ Try to get as close as possible to 555.
- ◆ Who can get closest during a week?

Telephone challenges

- ◆ Challenge your child to find numbers in the telephone directory where the digits add up to 42.
- ◆ Find as many as possible in 10 minutes.
- ◆ On another day, see if they can beat their previous total.

Telephone: 01264 738 281

Target 1000

- ◆ Roll a dice 6 times.
- ◆ Use the six digits to make two three-digit numbers.
- ◆ Add the two numbers together.
- ◆ How close to 1000 can you get?



Dicey subtractions

- ◆ Take turns to roll a dice twice.
- ◆ Fill in the missing boxes. $400\Box - 399\Box$ e.g. $4002 - 3994$
- ◆ Count on from the smaller to the larger number, e.g. 3995, 3996, 3997, 3998, 3999, 4000, 4001, 4002.
- ◆ You counted on 8, so you score 8 points.
- ◆ Keep a running total of your score.
- ◆ The first to get 50 or more points wins.

How much?

- ◆ While shopping, point out an item costing less than £1.
- ◆ Ask your child to work out in their head the cost of 3 items.
- ◆ Ask them to guess first. See how close they come.
- ◆ If you see any items labelled, for example, '2 for £3.50', ask them to work out the cost of 1 item for you, and to explain how they got the answer.



Multiplication and division

- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
- solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Activities to support your child

Dicey division

For this game you need a 1-100 board (a snakes and ladders board will do), a dice and 20 coins or counters.

- ◆ Take turns.
- ◆ Choose a two-digit number. Roll a dice. If you roll 1, roll again.
- ◆ If your two-digit number divides exactly by the dice number, put a coin on your chosen two-digit number. Otherwise, miss that turn.
- ◆ The first to get 10 counters on the board wins.

Times tables

Ask your child a different times-table fact every day, e.g. What is 6 times 8? Can you use this to work out 12×8 ? and: What is 48 divided by 6?

Say together the six times table forwards, then backwards. Ask your child questions, such as: Nine sixes? How many sixes in 42? Six times four? Forty-eight divided by six? Three multiplied by six? Six times what equals sixty? Repeat with the seven, eight and nine times tables.

Make a times-table grid like this.

1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

- ◆ Shade in all the tables facts that your child knows, probably the 1s, 2s, 3s, 4s, 5s and 10s.
- ◆ Some facts appear twice, e.g. 7×3 and 3×7 , so cross out one of each.
- ◆ Are you surprised how few facts are left?
 - ◆ There might only be 10 facts to learn. So take one fact a day and make up a silly rhyme together to help your child to learn it, e.g. nine sevens are sixty-three, let's have lots of chips for tea!

Fractions, decimals and percentages

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $5/2 + 5/4 = 10/4 = 2 \frac{2}{4} = 2 \frac{1}{2}$]
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25.

Activities to support your child

Guess my number

- ◆ Choose a number between 0 and 1 with one decimal place, e.g. 0.6.
- ◆ Challenge your child to ask you questions to guess your number. You may only answer 'Yes' or 'No'. For example, he could ask questions like 'Is it less than a half?'
- ◆ See if he can guess your number in fewer than 5 questions.
- ◆ Now let your child choose a mystery number for you to guess. Extend the game by choosing a number with one decimal place between 1 and 10, e.g. 3.6. You may need more questions!

Compare Cards (Ace= 1, no face cards)

- Players take two cards each and set down their cards. One card is the nominator, and the other card is the denominator.
- Each player reads out their fraction.
- The player with the biggest fraction takes all four cards.
- The player to get the most cards wins.

Decimal number plates

- ◆ Each choose a car number plate with three digits.

P645 CJM

- ◆ Choose two of the digits, e.g. 4 and 6. Make the smallest and largest numbers you can, each with 1 decimal places, e.g. 4.6 and 6.4.
- ◆ Now find the difference between the two decimal numbers, e.g. $6.4 - 4.6 = 1.8$.
- ◆ Whoever makes the biggest difference scores 10 points.
- ◆ The person with the most points wins. Play the game again, but this time score 10 points for the smallest difference, or 10 points for the biggest total.

Measurement

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Activities to support your child

Car numbers

- ◆ Try reading a car number as a measurement in centimetres, then converting it to metres, e.g. 456cm, which is 4.56m, or 4m and 56cm.
- ◆ Try this with car numbers that have zeros in them, e.g. 307cm, which is 3.07m or 3m and 7cm; 370cm, which is 3.7m, or 3m and 70cm. These are harder!

Finding areas and perimeters

Perimeter = distance around the edge of a shape
Area of a rectangle = length \times breadth (width)

- ◆ Collect 5 or 6 used envelopes of different sizes.
- ◆ Ask your child to estimate the perimeter of each one to the nearest centimetre. Write the estimate on the back.
- ◆ Now measure. Write the estimate next to the measurement.
- ◆ How close did your child get?
- ◆ Now estimate then work out the area of each envelope.
- ◆ Were perimeters or areas easier to estimate? Why? You could do something similar using an old newspaper, e.g.
- ◆ Work out which page has the biggest area used for photographs.
- ◆ Choose a page and work out the total area of news stories or adverts on that page.

Line it up

You need a ruler marked in centimetres and millimetres.

- ◆ Use the ruler to draw 10 different straight lines on a piece of paper.
- ◆ Ask your child to estimate the length of each line and write the estimate on the line.
- ◆ Now give them the ruler and ask them to measure each line to the nearest millimetre.
- ◆ Ask them to write the measurement next to the estimate, and work out the difference.
- ◆ A difference of 5 millimetres or less scores 10 points.
A difference of 1 centimetre or less scores 5 points.
- ◆ How close to 100 points can she get?

My estimate 8.5 cm



Geometry

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees ($^{\circ}$)
- identify angles at a point and one whole turn (total 360°)
- identify angles at a point on a straight line and $1/2$ a turn (total 180°)
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Activities to support your child

Stringy shapes

Using a piece of string or wool explore what shapes you can make. Discuss the properties of the shapes - are they regular or irregular?

Statistics

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables.

Activities to support your child

Timetables

Share timetables displayed at places you visit such as the swimming pool, train station, museums or even share shop opening hours or TV schedules. How long does the event last for? Is it always the same length of time?