

Supporting your child at home

Year 6



A guide for parents

Year 6

By the end of Y6, your child should be fluent in formal written methods for all four operations including long multiplication and division and in working with fractions, decimals and percentages and ratios, and make connections between them.

Your child should be able to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.

Your child is beginning to use the language of algebra as a tool for solving a variety of problems.

Your child should be able to:

- Classify shapes with increasingly complex geometric properties and use the vocabulary needed to describe them; and
- Read, spell and pronounce mathematical vocabulary correctly.

Addition and subtraction formal written methods

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline \end{array}$$

Answer: 1431

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \\ \hline \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 932 \\ - 457 \\ \hline 475 \\ \hline \end{array}$$

Answer: 475

Children still need to be able to choose the appropriate strategy for the size of calculation that they are dealing with.

Children will be using the formal written methods of multiplication and division by the end of year 6

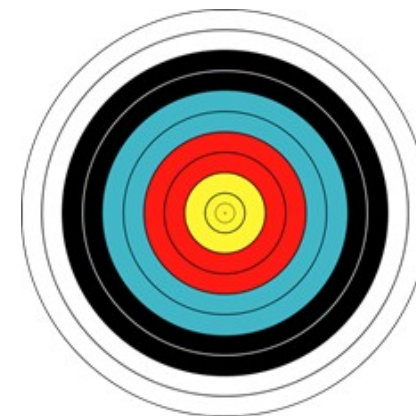
Round 2

Player 1: 3, 6, 8, 1, 4, 7

Player 2: 9, 5, 4, 3, 2, 1

$$\begin{array}{l} \text{player 1: } 3 + 6 = \underline{9} \\ 8 + 1 = \underline{9} \\ 7 - 4 = \underline{3} \end{array}$$

$$\begin{array}{l} \text{Player 2: } \underline{9} \\ 4 + 5 = \underline{9} \\ 2 + 1 = 3 \times 3 = \underline{9} \end{array}$$



Round 3

Player 1: 3, 2, 4, 5, 7, 1

Player 2: 8, 3, 6, 7, 2, 9

$$\begin{array}{l} \text{Player 1: } 3^2 = \underline{9} \\ 4 + 5 = \underline{9} \\ 7 \times 1 = \underline{7} \end{array}$$

$$\begin{array}{l} \text{Player 2: } \underline{9} \\ 3^2 = \underline{9} \\ 7 - 6 = 1 + 8 = \underline{9} \end{array}$$

Player 1	player 2
23	21
21	27
25	27
69	75

Explaining your reasoning...

Solve the following calculations:

Miriam and Alan each buy 12 tins of tomatoes.

Miriam buys 3 packs each containing 4 tins. A pack of 4 costs £1.40

Alan buys 2 packs each containing 6 cans. A pack of 6 costs £1.90

Who gets the most change from a £5 note?

Explain your reasoning?

A scientist measures the depth of some objects below the surface of the sea.

She records her measurements using negative numbers.

Object	Depth
Coral reef	-2 m
Shipwreck	-11 m
Pirate treasure	four times as deep as the coral reef
Sleeping shark	3 metres above the shipwreck

Which object is deepest? Explain your choice.

Is the sleeping shark deeper than the pirate treasure? Explain your reasoning.

A seagull is hovering 1 m above the surface of the sea. How far apart are the seagull and the coral reef?

Explain your reasoning.

I think that...because ...

I noticed...

I know... so I can work out...

I think that... but...

Use these openings to support your child in answering questions.

At home...

Use opportunities for practical experiences of mathematics in the home and everyday life, such as:

- looking for decimal numbers in newspapers or magazines and reading them aloud;
- measuring packets and recording the quantities as decimals then sorting them in order of size.

Using a camera, or ipad, tablet to find different shape properties in the environment.

Look at statistics in real life in newspapers such as footballers salaries

Using websites such <http://www.launchingfilms.com/research-databank/>

to compare statistics of cinema visits. Asking questions about why the figures change and comparing different months and which films were out.

Using recipes and scale it up and down for a different number of people and have a go at cooking them.

Cost out a visit – including the cost of the petrol using the approximate litres per gallon. Miles travelled and conversions to kilometres.

When shopping look for various price tags and ask what if there was 10% off? 15% off? A 1/3 off? 75% off?

Look at phone tariffs – compare bundles, which company has the best deal?

Look at an online water bill what is the cost on average per month? How much does each cubic metre cost?

Aim

To score the highest number of points with 3 arrows.

You will need:

Pack of playing cards (Ace to 9), 3 counters each in the same colour e.g. 3 red, 3 blue and Archery board. This game is for 2 players. Remove the pictures cards and 10s from the pack and shuffle the remaining cards. Deal 6 cards to each player.

How to play

Using the 6 cards dealt to each player the aim is to make the 3 highest totals you can on the playing board.

Looking at your cards make a total and place your counter on the correct ring on the archery board. Using the remaining cards a further 2 totals and place the counters on the board. You must use all the cards in your hand. You then put these cards to one side and deal another 6 to each player and you complete 3 more shots. You then combine the totals and this is your score. The player with the highest score after 3 rounds is the winner.

e.g.

Round 1

Player 1: 4, 6, 2, 7, 8, 1

Player 2: 6, 8, 9, 9, 5, 5

Yellow = 9 points

Red = 7 points

Blue = 5 points

Using these cards the following totals were made.

Player 1: $8 + 1 = \underline{9}$

$\begin{array}{r} 7 \\ (6 \div 2) + 4 = \underline{7} \end{array}$

Player 2: $(6 - 5) \times 9 = \underline{9}$

$\begin{array}{r} 9 \\ 8 - 5 = \underline{3} \end{array}$

24×6 becomes

2 4

342×7 becomes

3 4 2

Long multiplication

124×26 becomes

$$\begin{array}{r} ^1 ^2 \\ 124 \\ \times 26 \\ \hline 744 \\ 2480 \\ \hline 3224 \\ ^1 ^1 \end{array}$$

Answer: 3224

Short division

$98 \div 7$ becomes

$$\begin{array}{r} ^1 ^4 \\ 7 \overline{) 98} \\ \underline{7} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Answer: 14

$432 \div 5$ becomes

$$\begin{array}{r} ^8 ^6 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \\ 32 \\ \underline{30} \\ 2 \end{array}$$

Answer: 86 remainder 2

$496 \div 11$ becomes

$$\begin{array}{r} ^4 ^5 \text{ r } 1 \\ 11 \overline{) 496} \\ \underline{44} \\ 56 \\ \underline{55} \\ 1 \end{array}$$

Answer: $45 \frac{1}{11}$

Long division

$432 \div 15$ becomes

$$\begin{array}{r} ^2 ^8 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{150} \\ 12 \end{array}$$

Answer: 28 remainder 12

$432 \div 15$ becomes

$$\begin{array}{r} ^2 ^8 \\ 15 \overline{) 432} \\ \underline{30} \\ 132 \\ \underline{150} \\ 12 \end{array} \begin{array}{l} 15 \times 20 \\ 15 \times 8 \end{array}$$

$$\frac{12}{15} = \frac{4}{5}$$

Answer: $28 \frac{4}{5}$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144