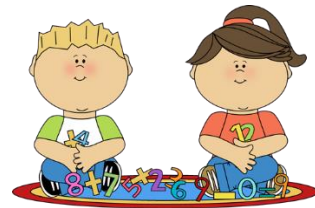
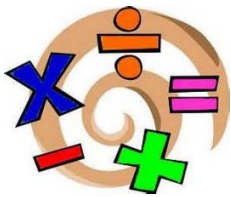


# Learn Its



## Year 6

## Autumn term 1

The aim of these 'Learn Its', which are focused on in school and for **Home Learning** is to give the children **regular** but **short practice** at key maths facts and skills. This will help them develop their **confidence** and **recall**, which will in turn help the children to apply them in their maths learning.

Wherever we can we want to make this **practice fun**, but with opportunities to record their thinking using **visual models** and **written methods**. Most importantly there should continue to be lots of opportunities to **talk** about the maths, for your child to **explain** their thinking and to show that we as adults **enjoy** it too.

### **Round write, order and compare numbers up to 10,000,000 (10 million)**

- Look at scores on computer games that they play. Can they write them in words? Can they put them in order from highest to lowest (i.e. Top 5 or Top 10)? Which two scores are the closest? Which two scores have the biggest gap?
- "Largest / smallest number" Roll a dice 8 times, recording the digit each time. Using the 8 digits, which is the largest and smallest number they can make? What's the difference between these two numbers? What's the mid-point between the two numbers, and using the 8 digits which number can you create closest to that mid-point.
- "Target 5 million" Take it turns to roll a dice / select cards, until you both have 7 digits. Who can create a number closest to 5 million?

### **Round any whole number**

- Discuss when and why it is helpful to round numbers in your daily life.
- Rounding grid. Using a dice or cards generate a 7 digit number. Then ask your child to round it to the nearest 10, 100, 1000, 10000 and 100000. E.g.

Number	10	100	1,000	10,000	100,000
4,372,915	4,372,920	4,372,900	4,373,000	4,370,000	4,400,000

### **Use negative numbers on context**

- Google the highest and lowest temperatures of different countries, cities or islands. What is the gap between the highest and lowest temperatures for each? How many lowest temperatures are below zero?
- "Calculator tennis". A game for two. Start at zero. The first player rolls two dice, they subtract that number on the calculator. The second player rolls two dice, and estimates what the answer on the calculator will be once that 2 digit number is added. The first player rolls again, estimates the new answer and then subtracts using the calculator. Keep going until one of the players gets the total score on the calculator above 50 or below 50

### **Multiply up to 4 digits by 2 digits**

- Generate numbers using dice, cards... Round the numbers to make an estimation. Then ask your child to use the short or long multiplication method below, and to use a grid method to check the answer. Can they explain their working out / thinking process to you? Can they teach you the methods?

### **Divide up to 4 digits by 2 digits**

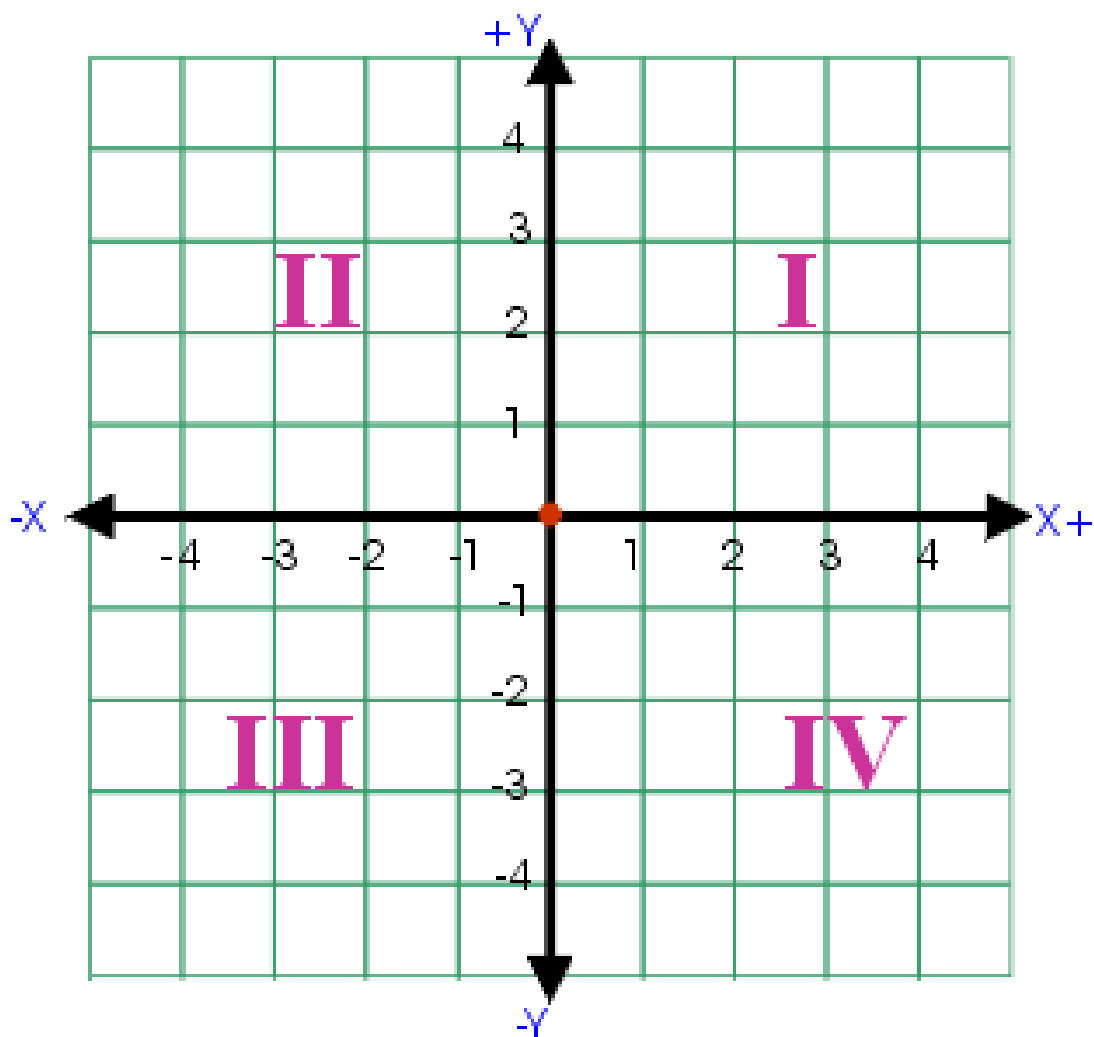
- Generate numbers using dice, cards... Round the numbers to make an estimation. Then ask your child to use the short or long division method below, and to use a chunking method on a numberline to check the answer. Can they explain their working out / thinking process to you? Can they teach you the methods?

### **Describe position on a 4 quadrant grid**

- Play Battleships (on paper or on computer), but using a grid where the numbers show the lines not the squares between the lines
- "10 questions". On a 5 to -5 4 quadrant grid (*see below*). One player places a dot on a specific point. The other player(s) asks 10 questions to try and guess the co-ordinates. The questions can only be answered yes or no. They might start with questions like: is it in the first quadrant? Once they know which quadrant they might then move onto questions like is the x-axis lower than -5?

### Reflect and translate simple shapes on a 4 quadrant grid

- Your child draws a square, rectangle or triangle on a 4 quadrant grid. Tell them to imagine each axis is a mirror line (*it's best if you have a small mirror that they can place on the axis*). Can they draw the reflected shape in each of the other 3 quadrants?
- Your child draws a square, rectangle or triangle on a 4 quadrant grid. Give them an instruction to move the shape (translate). This involves telling them to move the shape left or right a certain number and then up and down a certain number. *E.g. "Right two, down 3"*. You can then build on this by giving them a number for the x axis and then a number for the y-axis. *The same e.g. would be x-axis +2 and y-axis -3. This could then be shortened to (+2, -3).*



## National Curriculum Calculation methods

### Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline 1 \quad 1 \end{array}$$

Answer: 1431

874 - 523 becomes

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

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

932 - 457 becomes

$$\begin{array}{r} 1 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

### Short multiplication

24 × 6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ \hline 2 \end{array}$$

Answer: 144

342 × 7 becomes

$$\begin{array}{r} 342 \\ \times 7 \\ \hline 2394 \\ \hline 2 \quad 1 \end{array}$$

Answer: 2394

2741 × 6 becomes

$$\begin{array}{r} 2741 \\ \times 6 \\ \hline 16446 \\ \hline 4 \quad 2 \end{array}$$

Answer: 16 446

### Long multiplication

24 × 16 becomes

$$\begin{array}{r} 24 \\ \times 16 \\ \hline 240 \\ 144 \\ \hline 384 \end{array}$$

Answer: 384

124 × 26 becomes

$$\begin{array}{r} 124 \\ \times 26 \\ \hline 2480 \\ 7440 \\ \hline 3224 \end{array}$$

Answer: 3224

124 × 26 becomes

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

Answer: 3224

### Short division

98 ÷ 7 becomes

$$\begin{array}{r} 14 \\ 7 \overline{) 98} \\ \underline{7} \phantom{0} \\ 28 \\ \underline{28} \\ 0 \end{array}$$

Answer: 14

432 ÷ 5 becomes

$$\begin{array}{r} 86 \text{ r } 2 \\ 5 \overline{) 432} \\ \underline{40} \phantom{0} \\ 32 \\ \underline{30} \\ 2 \end{array}$$

Answer: 86 remainder 2

496 ÷ 11 becomes

$$\begin{array}{r} 45 \text{ r } 1 \\ 11 \overline{) 496} \\ \underline{44} \phantom{0} \\ 56 \\ \underline{55} \\ 1 \end{array}$$

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

### Long division

432 ÷ 15 becomes

$$\begin{array}{r} 28 \text{ r } 12 \\ 15 \overline{) 432} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

Answer: 28 remainder 12

432 ÷ 15 becomes

$$\begin{array}{r} 28 \\ 15 \overline{) 432} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{120} \\ 12 \end{array}$$

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

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

432 ÷ 15 becomes

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{30} \phantom{0} \\ 132 \\ \underline{120} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

Answer: 28.8