Supporting your child at home

in Maths



A guide for parents

Year 6

This booklet provides a checklist for parents/carers on the year expectations for children at Joseph Turner. The National Curriculum outlines these expectations as being the minimum requirements your child should meet each year. All of the objectives will be focused on throughout the year as part of your child’s lessons. Any extra support you can provide in helping your child to achieve these expectations is greatly valued. If you have any queries regarding these expectations or would like support in knowing how to help your child with these, please see your child’s class teacher.

**Number – Number and Place Value**

• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.

• Round any whole number to a required degree of accuracy.

• Use negative numbers in context, and calculate intervals across zero

• Solve number and practical problems that involve large numbers, rounding and negative numbers.

**Number – Addition, Subtraction, Multiplication and Division**

• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.

• Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.

• Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context.

• Perform mental calculations, including with mixed operations and large numbers.

• Identify common factors, common multiples and prime numbers.

• Use their knowledge of the order of operations to carry out calculations involving the four operations.

• Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

• Solve problems involving addition, subtraction, multiplication and division.

• Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

**Number – Fractions and decimals**

• Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

• Compare and order fractions, including fractions greater than 1.

• Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

• Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8].

• Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6].

• Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8].

• Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.

• Multiply one-digit numbers with up to two decimal places by whole numbers.

• Use written division methods in cases where the answer has up to two decimal places.

• Solve problems which require answers to be rounded to specified degrees of accuracy.

• Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

**Geometry**

• Draw 2-D shapes using given dimensions and angles.

• Recognise, describe and build simple 3-D shapes, including making nets.

• Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.

• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.

• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

• Describe positions on the full coordinate grid (all four quadrants).

• Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

**Measurement**

• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

• Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

• Convert between miles and kilometres.

• Recognise that shapes with the same areas can have different perimeters and vice versa.

• Recognise when it is possible to use formulae for area and volume of shapes.

• Calculate the area of parallelograms and triangles.

• Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].

**Statistics, Ratio, Proportion and Algebra**

• Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.

• Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.

• Solve problems involving similar shapes where the scale factor is known or can be found.

• Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

• Use simple formulae.

• Generate and describe linear number sequences.

• Express missing number problems algebraically.

• Find pairs of numbers that satisfy an equation with two unknowns.

• Enumerate possibilities of combinations of two variables.

• Interpret and construct pie charts and line graphs and use these to solve problems.

• Calculate and interpret the mean as an average.

**Fun activities to do at home**

**Recipes**

♦ Find a recipe for 4 people and rewrite it for 8 people, e.g.

4 people 8 people

125g flour 250g flour

50g butter 100g butter

75g sugar 50g sugar

30ml treacle 60ml treacle

1 teaspoon ginger 2 teaspoons ginger

♦ Can you rewrite it for 3 people? Or 5 people?

**Sale of the century**

♦ When you go shopping, or see a shop with a sale on, ask your child to work out what some items would cost with:

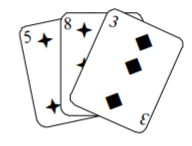
50% off

25% off

10% off

5% off

**Card game**

♦Use a pack of playing cards. Take out the jacks, queens and kings.

♦ Take turns. Take a card and roll a dice.

♦ Multiply the two numbers.

♦ Write down the answer. Keep a running total. The first to go over 301 wins!

**One million pounds**

♦ Assume you have £1 000 000 to spend or give away.

♦Plan with your child what to do with it, down to the last penny.

**Doubles and trebles**

♦ Roll two dice. Multiply the two numbers to get your score.

♦ Roll one of the dice again. If it is an even number, double your score. If it is an odd number, treble your score.

♦ Keep a running total of your score. The first to get over 301 wins.

**Journeys**

♦ Use the chart in the front of a road atlas that tells you the distance between places.

♦ Find the nearest place to you.

♦ Ask your child to work out how long it would take to travel from this place to some other places in England if you travelled at an average of 60 miles per hour, i.e. 1 mile per minute,

e.g. York to Preston: 90 miles 1 hour 30 minutes York to Dover: 280 miles 4 hours 40 minutes

♦ Encourage your child to count in 60s to work out the answers mentally. Extend this by asking questions like “What if you travelled at 30 mph? What if we started at London?

**TV addicts**

♦ Ask your child to keep a record of how long he / she watches TV each day for a week. Then ask him / her to do the following: -

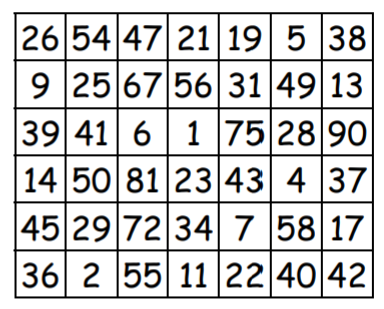
♦ Work out the total watching time for the week.

♦ Work out the average watching time for a day (that is, the total time divided by 7).

Instead of watching TV, you could ask them to keep a record of time spent eating meals, or playing outdoors, or anything else they do each day. Then work out the daily average.

**Four in a line**

♦ Draw a 6 x 7 grid. Fill it with numbers under 100.

♦ Take turns. Roll three dice, or roll one dice three times. Use all three numbers to make a number on the grid.

♦ You can add, subtract, multiply or divide the numbers, e.g. if you roll 3, 4 and 5, you could make 3 x 4 – 5 = 7, 54 ÷ 3 = 18, (4 + 5) x 3 = 27, and so on.

♦ Cover the number you make with a coin or counter. The first to get four of their counters in a straight line wins.