



KS2 Maths

Year 5 - Information for Teachers

National Curriculum objectives:

Number and Place Value

- Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.

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

Multiplication and division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- 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.

Fractions

- Compare and order fractions whose denominators are all multiples of the same number.
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- Read and write decimal numbers as fractions [for example, $0.71 = 71/100$].

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).
- 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.

Geometry

- Identify 3-D shapes.
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
- Identify: angles at a point and one whole turn (total 360°) angles at a point on a straight line and $1/2$ a turn (total 180°) other multiples of 90° .

Mother Shipton's

Activities:

Mother Shipton trail - to be used as children go through the park:

Children go through the park using their surroundings to work out mathematical calculations and problems which include:

- * Work out the area of rectilinear shapes including the café door.
- * Complete multiplication and division problems on the benches near the café.
- * Estimation of the height of the Viaduct.
- * Right, obtuse, acute and reflex angle hunt with challenge of calculating the missing angles.
- * Addition, subtraction and multiplication linking to the steps to the cave and Petrifying Well.
- * 2D and 3D shape hunt linking to symmetry and number of vertices of 3D shapes.
- * Decimal, equivalent and adding/subtracting fractions questions.
- * Multiplication and division calculations linking to the number of teddies hanging up under the Petrifying Well with challenge of showing remainder as mixed number and a decimal.
- * Coin identification and money problems (decimals) linking to the Wishing Well.
- * Estimation and measurement of bench along Beech Avenue with matching of length conversions.
- * Mathematical vocabulary word search.

Resources needed:

- *Pencils*
- *Paper for working out*
- *Rubbers*
- *Possibly 2D and 3D shape examples*
- *Any mathematical supporting resources normally used for each area*

Answers:

1. Café Calculations:

✧ 16,000 ✧✧ Pupils should measure the length and width of the door then multiply together

✧✧✧ 60cm²

2. Picnic Puzzles:

✧ 12 people ✧✧ 7 will be left standing ✧✧✧ 103 benches would be needed

3. Eerie Estimation: The Viaduct stands at 23m.

Mother Shipton's

4. Angle Hunt: a) dependent on angles seen. b) $X=65$ degrees c) $Y=67$ degrees, $X=133$ degrees
5. Tree Tester:
 ✧ 3555 ✧✧ 71 ✧✧✧ 4792
6. Shape Hunt: Grid – a) dependent on shapes seen b) isosceles, scalene and equilateral
7. Cackling Calculations: steps answers
 ✧ $21=1,3,7$ ✧✧ 1471 ✧✧✧ Number placed accurately on number line
8. Fearsome Fractions:
 ✧ 0.75 ✧✧ 2 and 6 ✧✧✧ $4/5 - 3/10 = 5/10$ and $4/5 + 7/10 = 15/10$ or $3/2$
9. Petrifying Puzzles:
 ✧ 3.5 years ✧✧ 95 ✧✧✧ 65 can be hung with 4 left over
10. Wishing Well Wealth:
 ✧ coins – dependent on what is seen ✧✧ £1, 50p, 20p, 10p, 5p, 2p, 1p
 ✧✧✧ £30.24 and £30.20
11. Mystical Measuring: you would use metres to measure the distance
 a) dependent on estimation
 b) $40\text{cm}=0.4\text{m}$, $4000\text{mm}=400\text{cm}$, $4\text{mm}=0.4\text{cm}$, $4\text{m}=400\text{cm}$, $40\text{km}=40,000\text{m}$, $4000\text{m}=4\text{km}$