

CONTENTS

page

Planning Springboard 7 25

AUTUMN TERM, FIRST HALF

Oral and mental work 27
Unit 1 **Number** 28
Unit 2 **Number** 28
Unit 3 **Measures and properties of shapes** 29
Unit 4 **Handling data** 29
Assess and review 29

AUTUMN TERM, SECOND HALF

Oral and mental work 30
Unit 5 **Fractions, decimals and percentages** 31
Unit 6 **Number** 31
Unit 7 **Probability** 32
Unit 8 **Coordinates and shapes** 32
Assess and review 32

SPRING TERM, FIRST HALF

Oral and mental work 33
Unit 9 **Number** 34
Unit 10 **Number** 34
Unit 11 **Measures** 35
Unit 12 **Handling data** 35
Assess and review 35

SPRING TERM, SECOND HALF

Oral and mental work 36
Unit 13 **Fractions, decimals and percentages,
ratio and proportion** 37
Unit 14 **Shape and space** 37
Unit 15 **Number** 38
Assess and review 38

PART 2 PLANNING

PLANNING SPRINGBOARD 7

Planning, showing the topics and objectives, is organised to cover the four half terms from September to Easter.

Each block starts with the oral and mental work that should be practised during that half term (during the 'oral and mental starter' part of the lesson). This is followed by the topics and objectives that are covered in the teaching materials for each unit for that half term.

The order of units can be changed to fit in with your own scheme of work. While some units can be moved easily, others are dependant on previous units. Units 2, 6, 9, 10, 15 cover number work and calculations. Units 5 and 13 are both on fractions.

At the end of each block there is an 'Assess and review' session, designed to monitor pupils' progress on the work so far. If you change the order of the units you may need to make consequent changes to mental work and questions in the 'Assess and review' tests.

 indicates a key objective.

SPRINGBOARD 7

Objectives for oral and mental activities

- Read and write whole numbers in figures and words.
- Use the vocabulary of comparing, ordering, estimating and approximating.
- Give one or more numbers lying between two others.
- Round large positive numbers to the nearest 10, 100 or 1000.

- Recall addition and subtraction facts for each number up to 20.
- Find pairs of whole numbers with a sum of 100; derive multiples of 50 with a sum of 1000.
- Add several single-digit numbers.
- Add/subtract any pair of two-digit numbers.

- Recall facts in $\times 2$, $\times 3$, $\times 4$, $\times 5$, $\times 10$ tables and derive division facts.
- Begin to recall facts in $\times 6$, $\times 7$, $\times 8$ and $\times 9$ tables.
- Multiply a two-digit number by 3, 4, or 5.
- Double any number up to 100, find corresponding halves.
- Multiply and divide integers by 10, 100.

- Know simple fractions as percentages.

- Count on/back in steps of 0.2, 0.25...

- Convert £ to p, m to cm, kg to g.

- Read time on 24-hour clock.

4 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Know squares to at least 10×10 .
- Find a difference by counting up through next multiple of 10, 100, 1000. 
- Add and subtract two-digit whole numbers.
- Recognise and extend number sequences formed by counting from any number in steps of constant size, extend beyond zero when counting back.
- Generate terms of a number sequence given a rule.

6 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Read and write whole numbers in figures and in words, and know what each digit represents.
- Multiply and divide any positive whole number up to 10 000 by 10 or 100 and understand the effect. 
- Order positive and negative integers (number line, temperature). 
- Calculate temperature rises across 0°C .
- Approximate first and use informal pencil and paper methods to support, record or explain addition and subtraction.
- Extend written methods to addition and subtraction of two integers less than 10 000. 
- Extend written methods to addition of more than two integers less than 10 000.
- Develop calculator skills and use a calculator effectively, interpret the display in different contexts.
- Solve word problems.

**UNIT
3****MEASURES
PROPERTIES OF SHAPES****5 hours****AUTUMN**
first half**TEACHING OBJECTIVES***Pupils will be taught to:*

- Suggest suitable units to measure length.
- Measure and draw lines to the nearest millimetre.
- Understand, measure and calculate the perimeter of rectangles and regular polygons.
- Use, read, and write metric units of length, and convert between units.
- Record estimates and measurements from scales to a suitable degree of accuracy.
- Understand area measured in square centimetres.
- Use formula in words for the area of a rectangle. 
- Use all four operations to solve measurement word problems. 
- Visualise 3D shapes from 2D drawings and identify nets of an open cube.

**UNIT
4****HANDLING DATA****2 hours****TEACHING OBJECTIVES***Pupils will be taught to:*

- Solve problems by representing and interpreting data on a bar chart and bar line graph: axes in 2s, 5s, 10s, 20s, 100s.
- Extract information from tables and charts.
- Find the mode of a small data set.
- Find and use the range of a set of values.

**ASSESS AND REVIEW****1 hour****Consolidate work to date**

■ SPRINGBOARD 7

Objectives for oral and mental activities

- Read and write whole numbers to at least 100 000.
 - Count on/back in equal steps (25, 100, 0.1), including beyond zero.
 - Round any three- or four-digit number to the nearest 10 or 100.

 - Recall addition and subtraction facts for each number up to 20.
 - Recall positive integer complements to 100.

 - Add/subtract any pair of two-digit numbers, including crossing 100 boundary.
 - Double any whole number to 100 and multiples of 10 to 1000. Find corresponding halves.

 - Recognise squares to at least 12 x 12.
 - Recall multiplication facts to 10 x 10 and quickly derive associated division facts.

 - Partition to multiply two-digit number by 3, 4, 5 or 6.

 - Find fractions of quantities.

 - Convert between m, cm and mm; km and m; kg and g; l and ml.

 - Read time on 24-hour clock.

 - Visualise, describe and sketch 2D shapes in different orientations.
-

UNIT 5

FRACTIONS DECIMALS PERCENTAGES

6 hours

AUTUMN
second half

TEACHING OBJECTIVES

Pupils will be taught to:

- Use fraction notation, including simple mixed numbers, and vocabulary including numerator and denominator.
- Recognise simple equivalent fractions, including tenths and hundredths.
- Change a simple improper fraction into a mixed number.
- Change a simple mixed number into an improper fraction.
- Use decimal notation for tenths and hundredths, and know what each digit represents in numbers with up to two decimal places. 
- Calculate simple fractions of quantities and measurements.
- Begin to understand percentage as the number of parts per 100.
- Calculate simple percentages.
- Solve problems involving fractions and percentages.

UNIT 6

NUMBER: CALCULATIONS

6 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Understand the effect of, and the relationship between, the four operations and the principles of the arithmetic laws.
- Use repeated doubling and halving; double any two-digit number.
- Partition to multiply mentally, for example, 46×7 .
- Extend written methods to addition and subtraction of a pair of whole numbers and decimals both with 1 or 2 decimal places.
- Extend written methods to $\text{HTU} \times \text{U}$ and $\text{U.t} \times \text{U}$.
- Use all four operations to solve money or 'real life' word problems. 

3 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Discuss chance or likelihood.
- Use vocabulary and ideas of probability drawing on experience.
- Calculate simple probabilities.
- Understand and use the probability scale from 0 to 1.

6 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Recognise parallel and perpendicular lines.
- Identify and recognise properties of rectangles. 
- Classify triangles and recognise lines of symmetry.
- Recognise positions, read and plot coordinates in the first quadrant.
- Recognise where a shape will be after a translation.
- Solve shape puzzles.



ASSESS AND REVIEW

1 hour

Consolidate work to date

SPRINGBOARD 7

Objectives for oral and mental activities

- Read and write whole numbers in figures and words.
- Recall addition and subtraction facts for each number up to 20.
- Add several small numbers.
- Add/subtract any pair of two-digit numbers, including crossing 100 boundary.
- Add/subtract pairs of numbers such as 7.6 ± 3.8 , 760 ± 380 .
- Find multiples of 50 with sum of 1000, and decimals with sum of 1 or 10.
- Use doubling to multiply two-digit numbers by 4.
- Multiply and divide integers by 10, 100, 1000.
- Recall multiplication and division facts to 10×10 . 
- Recognise squares to at least 12×12 .
- Find pairs of factors of 2-digit numbers.
- Multiply and divide a two-digit number by a single-digit number.
- Count on/back in equal steps (25, 100, 0.1, 0.2) including beyond zero.
- Order simple fractions.
- Order decimals in different contexts.
- Round decimals to the nearest whole number.
- Find simple percentages.
- Read time on 24-hour clock.
- Read timetables.
- Convert between m, cm and mm, km and m, kg and g, litres and ml.
- Discuss and interpret graphs.

 Key objective

4 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Use symbols =, <, >, ≥, ≤.
- Order a set of whole numbers less than 1 million.
- Recognise square numbers to 12×12 .
- Recognise multiples of 6, 7, 8, 9 up to the 10th multiple.
- Know and apply tests of divisibility of 2, 4, 5, 10 or 100.
- Identify factors of two-digit numbers.
- Make and investigate a general statement about numbers, by finding examples that satisfy it.

6 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Add several numbers.
- Add/subtract a multiple of 10 or 100 and adjust.
- Use relationship between addition and subtraction.
- Extend written methods to $HTU \times U$ and $U.t \times U$.
- Develop and refine written methods for division.
- Extend written methods to $HTU \div U$ (whole number remainder). 
- Use all four operations to solve money or 'real life' word problems. 
- Choose appropriate operations and calculation methods.
- Develop calculator skills and use a calculator effectively.
- Round whole numbers and decimals.
- Check by adding in reverse order, including with calculator.

**UNIT
11****MEASURES****4 hours****TEACHING OBJECTIVES***Pupils will be taught to:*

- Use, read and write standard metric units of mass and capacity.
- Suggest suitable units and equipment to estimate or measure mass, capacity and time.
- Read measurements from scales, including time.
- Know pound (lb), pint, gallon.
- Use all four operations to solve word problems involving measures.
- Choose appropriate operations and calculation methods.
- Convert from one metric unit to another (for example, grams to kilograms).

**UNIT
12****HANDLING DATA****3 hours****TEACHING OBJECTIVES***Pupils will be taught to:*

- Represent and interpret data in a line graph (for example, the weight of a baby at monthly intervals from birth to one year).
- Recognise when points can be joined to show trends.
- Solve a problem by extracting and interpreting information presented in tables, graphs and charts.

**ASSESS AND REVIEW****1 hour****Consolidate work to date**

SPRINGBOARD 7

Objectives for oral and mental activities

- Read and write numbers in figures and in words.
- Round whole numbers to nearest 10, 100 and decimals to the nearest whole number.
- Order set of positive and negative integers, decimals with up to two places.
- Recall addition and subtraction facts for each number up to 20.
- Add/subtract any pair of two-digit numbers, including crossing 100 boundary.
- Find pairs of numbers with sum of 100, multiples of 50 with a sum of 1000, and decimals with a sum of 1 or 10.
- Calculate a temperature rise or fall across 0°C .
- Calculate mentally a difference, for example, $8006 - 2993$.
- Add/subtract pairs of numbers such as 7.6 ± 3.8 , 760 ± 380 .
- Multiply or divide whole numbers up to 10 000 by 10 or 100.
- Double any number up to 100, multiples of 10 and decimals, for example, 3.8×2 , 0.76×2 . Find corresponding halves.
- Use doubling to multiply two-digit numbers by 4.
- Recognise squares to at least 12×12 and multiples of 10, for example, 60×60 .
- Recall multiplication and division facts to 10×10 . 
- Multiply a two-digit number by a single-digit number.
- Recognise factors and primes (less than 100).
- Find simple percentages.
- Convert m to cm, km to m, £ to p, kg to g, l to ml and vice versa.
- Read time on 24-hour clock.
- Read timetables.

UNIT 13

FRACTIONS DECIMALS PERCENTAGES RATIO AND PROPORTION

5 hours

SPRING
second half

TEACHING OBJECTIVES

Pupils will be taught to:

- Relate fractions to division and find simple fractions and simple percentages of whole number quantities. 
- Order a set of fractions and position them on a number line.
- Order a set of numbers or measurements with the same number of decimal places.
- Use a calculator effectively, for example, to convert fractions to decimals and find fractions of numbers.
- Solve simple problems involving ratio and proportion using informal strategies.

UNIT 14

SHAPE AND SPACE

5 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Recognise reflective symmetry and reflect shapes in a mirror line.
- Measure and draw lines to the nearest millimetre.
- Recognise directions, and perpendicular and parallel lines. 
- Understand and use degrees.
- Use a protractor to measure and draw acute and obtuse angles to nearest 1°.
- Calculate angles on a straight line.
- Identify, estimate and order acute and obtuse angles.
- Make patterns from rotating shapes.
- Recognise and explain patterns and relationships, generalise and predict.

4 hours

TEACHING OBJECTIVES

Pupils will be taught to:

- Use closely related facts in mental calculations, for example, derive $\times 19$ from $\times 20$, $\times 12$ from $\times 10$ add $\times 2$.
- Partition to multiply mentally, for example, 47×6 .
- Use factors.
- Begin to use brackets.
- Express a quotient as a fraction or as a decimal when dividing whole numbers or when dividing £ and pence.
- Round up or down after division, depending on the context.
- Extend written methods of addition, subtraction, multiplication and division, including $TU \times TU$  and $ThHTU \div U$.
- Use all four operations to solve money or 'real life' word problems. 
- Choose appropriate operations and calculation methods.
- Explain working. Check results.



ASSESS AND REVIEW

1 hour

Consolidate work to date