

Wk Progression Focus

- 27 **Revision: fractions; ratio**
Week 27 focuses on revision of: equivalence in fractions; and using this to add, subtract, multiply and divide fractions; and solving ratio problems.

Weekly Summary

Revise equivalence simplifying fractions and changing improper fractions into mixed numbers and vice versa; revise adding and subtracting fractions with different denominators, including those which give answers greater than 1; revise multiplying pairs of fractions and multiplying and dividing fractions by whole numbers; solving problems involving ratios; read intermediate points off scales

Strands

NPV Number and place value; **FRP** Fractions, ratio and proportion; **MEA** Measurement

Objectives

- **NPV.71** Read years using Roman numerals
- **FRP.64** Convert mixed numbers to improper fractions and vice versa
- **FRP.85** Use common multiples to express fractions in the same denomination
- **FRP.90** Use common factors to simplify fractions
- **FRP.79** Use equivalence to add mixed numbers with different denominators
- **FRP.80** Use equivalence to subtract fractions and mixed numbers with different denominators
- **FRP.81** Multiply fractions less than 1 by whole numbers, converting improper fractions to whole numbers
- **FRP.82** Multiply fractions by whole numbers, converting improper fractions to whole numbers
- **FRP.83** Divide proper fractions by whole numbers
- **FRP.84** Multiply simple pairs of proper fractions, writing the answer in its simplest form
- **FRP.87** Describe ratio and use ratio to solve problems
- **FRP.88** Solve problems involving the relative size of two quantities where missing values can be found by using integer multiplication and



28 **Revision**

Week 28 focuses on revision of: properties of 2D shapes; angle types and theorems; perimeter, area and volume; 24-hour clock time intervals; and tables, graphs and charts.

Revise properties and classification of 2D shapes, drawing 2D shapes using ruler, protractor and compasses, parts of a circle and angles in polygons; revise calculating missing angles by knowing angle facts; use a protractor to measure and draw angles in degrees; identify and name acute, right, obtuse and reflex angles; understand perimeter, area and volume; find the perimeter of rectangles, find the area of rectangles, parallelograms and triangles, and find the volumes of cubes and cuboids; revise reading and interpreting different types of data display

GPS Geometry: properties of shapes; **MEA** Measurement; **STA** Statistics

division facts

- **MEA.78** Calculate time intervals
- **MEA.87** Read intermediate points off a variety of scales
- **GPS.81** Draw 2D shapes with ruler, protractor, compass using given dimensions and angles
- **GPS.88** Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- **GPS.82** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
- **GPS.83** Find missing lengths and angles in shapes
- **MEA.79** Convert between miles and kilometres
- **MEA.80** Calculate perimeter of rectangles, triangles, parallelograms and other polygons
- **MEA.81** Calculate area of rectangles and parallelograms including use of formulae
- **MEA.84** Calculate volume of cuboids and cubes using cm^3 and m^3
- **MEA.75** Use, read, write and convert between standard units, converting measurements of length, mass and volume from a smaller to a larger unit of measure and vice versa, using up to 3 decimal places
- **MEA.77** Read and tell the

29 **Further mathematical ideas**

Weeks 29 and 30 focus on exploration of a variety of interesting mathematical concepts and processes, including binary numbers and Napier's bones; playing with numbers, discovering patterns and solving mathematical puzzles.

Use mathematical reasoning to investigate and solve problems, and to estimate and predict; solve problems using doubling, solve calculations with enormous numbers; find out about famous mathematicians including Brahmagupta and John Napier and use their different methods to multiply; use lattice multiplication to solve multiplications of 2-, 3- and 4-digit numbers; begin to compare historical multiplication methods

NPV Number and place value; **PRA** Problem solving, reasoning and algebra; **GPD** Geometry: position and direction; **WMD** Written multiplication and division

30 **Further mathematical ideas**

Weeks 29 and 30 focus on exploration of a variety of interesting mathematical concepts and processes, including binary numbers and Napier's bones; playing with numbers, discovering

Explore binary numbers; solve mathematical puzzles; including using multiplication facts, find digital roots and look for patterns; explore Fibonacci sequences and Pythagoras' theorem

NPV Number and place value; **PRA** Problem solving, reasoning and algebra; **GPS** Geometry: properties of shapes

time using analogue, digital and 24-hour clocks, converting times between the three

- **STA.65** Complete, read and interpret information in timetables
- **STA.71** Solve comparison, sum and difference problems using information presented in line graphs
- **STA.83** Interpret and construct pie charts and use these to solve problems
- **NPV.88** Solve number and practical problems that involve square and cube numbers, numbers up to 10 000 000 and rounding any whole number to a required degree of accuracy
- **PRA.78** Use mathematical reasoning to investigate and solve problems and puzzles, justify their reasoning
- **PRA.81** Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- **GPD.85** Use knowledge of geometry to make tessellating patterns
- **WMD.90** Multiply 2-, 3- and 4-digit numbers using alternative historical methods (Brahmagupta / Napiers Bones / lattice)
- **NPV.89** Understand that numbers can be represented in different ways, including binary
- **NPV.70** Find square and cube numbers, and use the notation



patterns and solving mathematical puzzles.

- for squared and cubed
- **PRA.78** Use mathematical reasoning to investigate and solve problems and puzzles, justify their reasoning
- **PRA.70** Identify patterns, devise and test rules and use them to make predictions
- **GPS.91** Understand Pythagoras theorem (lengths of sides in a right-angled triangle)