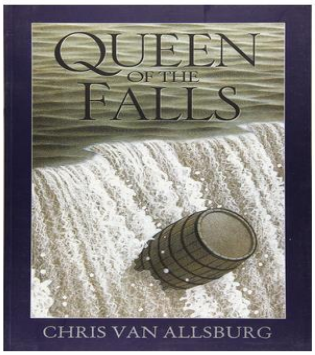
Hillside Maths Key Learning Overview

Year 5

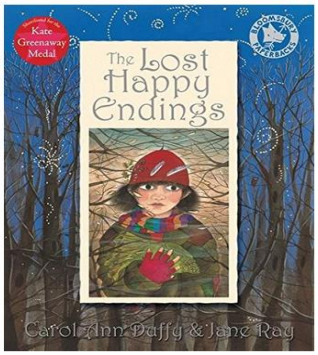
Y5 Autumn Term

Text – Queen of the Falls by Chris Van Allsburg



Opportunities to link text:

Text – The Lost Happy Endings by Carol Ann Duffy



Opportunities to link text:

Number: Place Value

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each.

Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.

Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero.

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

Solve number problems and practical problems that involve all of the above.

Read Roman numerals up to 1,000 (M) and recognise years written in Roman numerals.

Number: Addition and Subtraction

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Estimate and use inverse operations to check answers to a calculation.

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

Statistics

Solve comparison, sum and difference problems using information presented in a line graph.

Complete, read and interpret information in tables including timetables.

Number: Multiplication and Division

Multiply and divide numbers mentally drawing upon known facts.

Multiply and divide whole numbers by 10, 100 and 1,000.

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Recognise and use square numbers and cube numbers and the notation for squared (^{2}) and cubed (^{3}).

Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.

Know and use the vocabulary of prime numbers, prime factors and composite (no-prime) numbers.

Establish whether a number up to 100 is prime and recall prime numbers up to 19.

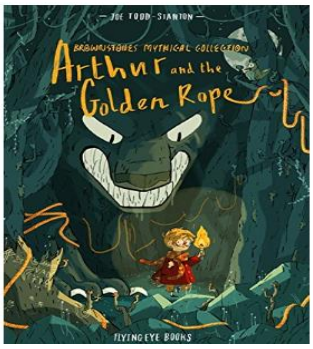
Measurement: Perimeter and Area

Measure and calculate the perimeter of composite rectilinear shapes in cm and m.

Calculate and compere the area of rectangles (including squares), and including using standard units, cm^2, m^2 estimate the area of irregular shapes.

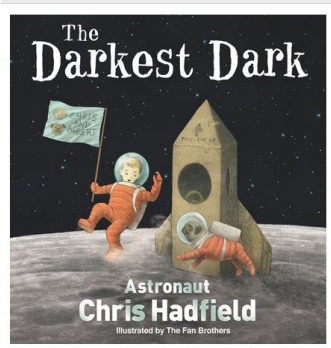
Y5 Spring Term

Text – Arthur and the Golden Rope by Joe Todd Stanton



Opportunities to link text:

Text – The Darkest Dark by Chris Hadfield



Opportunities to link text:

Number: Multiplication and Division

Multiply and divide numbers mentally drawing upon known facts.

Multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for 2-digit numbers.

Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, understanding the use of the equals sign.

Number: Fractions

Compare and order fractions whose denominators are multiples of the same number.

Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number [for example $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Read and write decimal numbers as fractions [for example 0.71 = $\frac{71}{100}$]

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Number: Decimals and Percentages

Read, write, order and compare numbers with up to three decimal places.

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.

Round decimals with two decimal places to the nearest whole number and to one decimal place.

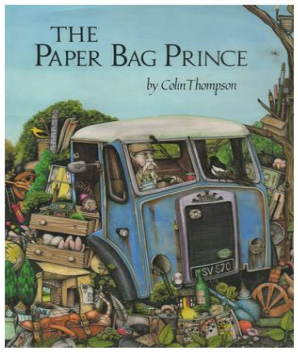
Solve problems involving number up to three decimal places.

Recognise the percent symbol (%) and understand that per cent relates to ‘number per parts per hundred’, and write percentages as fractions with denominator 100, and as a decimal.

Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

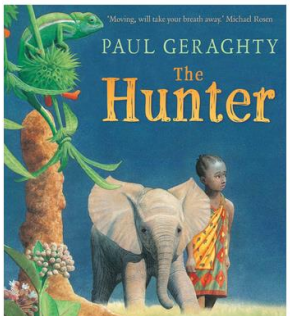
Y5 Summer Term

Text – The Paper Bag Princess by Colin Thompson



Opportunities to link text:

Text – The Hunter by Paul Geraghty



Opportunities to link text:

Number: Decimals

Recognise and write decimal equivalents of any number of tenths or hundredths.

Find the effect of dividing a one or two-digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths.

Solve simple measure and money problems involving fractions and decimals to two decimal places.

Convert between different units of measure [for example, kilometre to metre].

Geometry: Properties of Shape

Identify 3D shapes, including cubes and other cuboid, from 2D representations.

Use the properties of rectangles to deduce related facts and find missing lengths and angles.

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.

Draw given angles, and measure them in degrees.

Identify: angles at a point and one whole turn (total 360^{o}), angles at a point on a straight line and ½ a turn (total 180^{o}) other multiples of 90^{o}.

Geometry: Position and Direction

Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Measurement: Converting Units

Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml].

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.

Solve problems involving converting between units of time.

Measurement: Volume

Estimate volume [for example using $1cm^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water].

Use all four operations to solve problems involving measure.