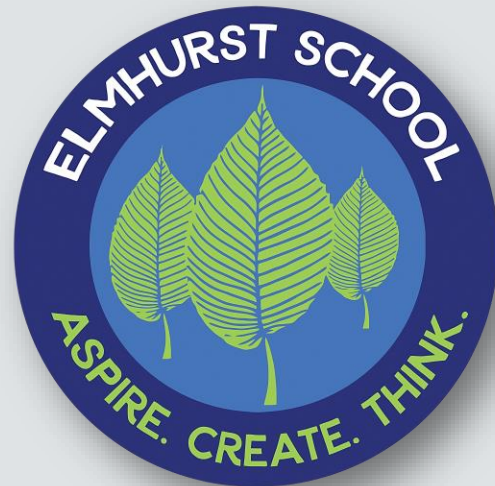


Maths Learning Journeys

Elmhurst School



Contents

Click on subject information button to link to the appropriate page. Once there use the forward arrow to scroll additional pages for that unit.

- Place value 
- Addition & Subtraction 
- Multiplication & Division 
- Fractions 
- Decimals 
- Fractions, Decimals and Percentages 
- Ratio & Proportion 
- Algebra 
- Measurement 
- Geometry 
- Statistics 



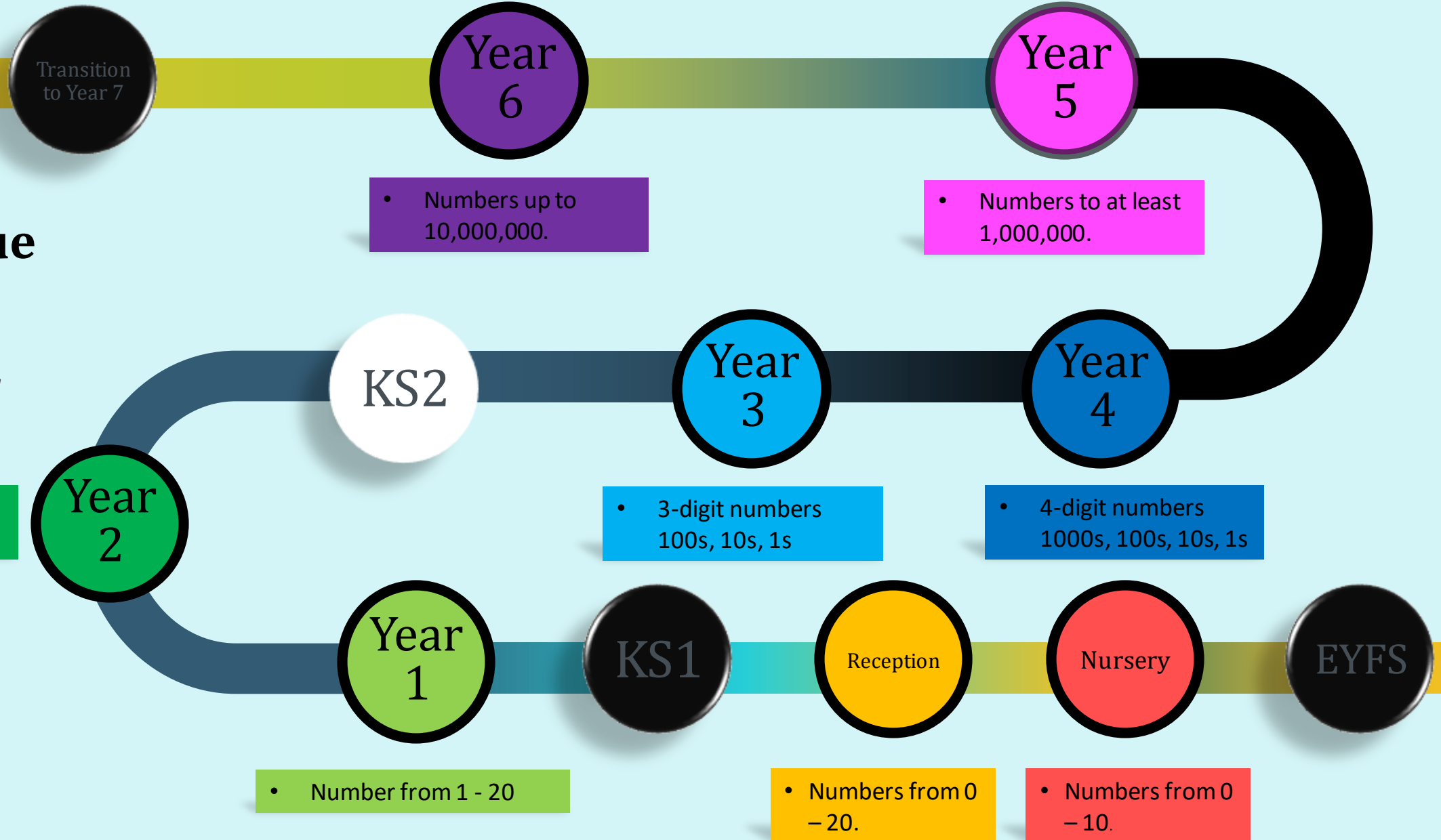
In Maths, every digit in a number has a place value. Place value can be defined as the value represented by a digit in a number on the basis of its position in the number.



Place Value

EYFS – YEAR 6
Elmhurst School

- 2-digit numbers
10s, 1s



In Maths, every digit in a number has a place value. Place value can be defined as the value represented by a digit in a number on the basis of its position in the number.

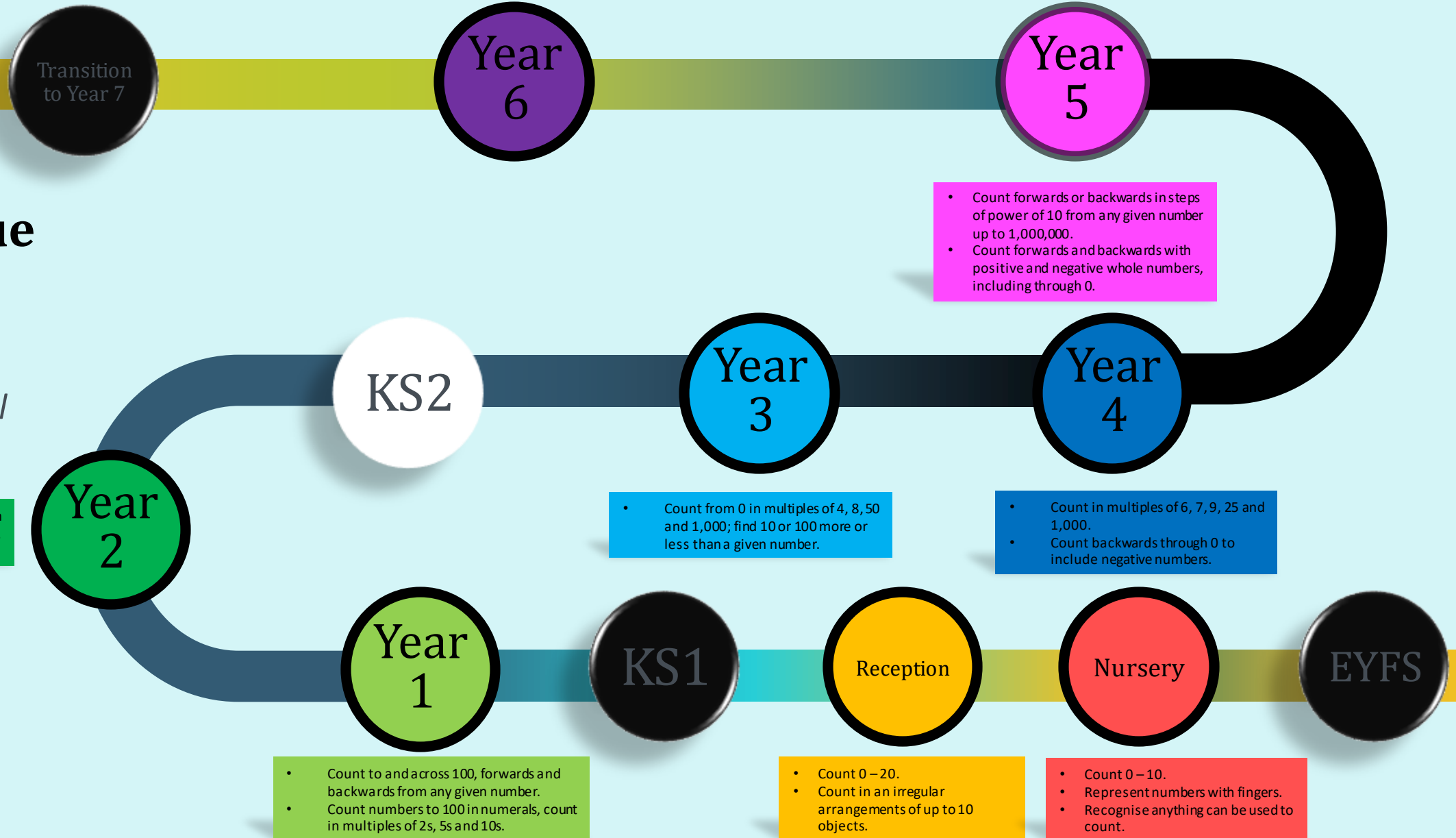


Place Value

Counting

EYFS – YEAR 6
Elmhurst School

- Count in steps of 2, 3 and 5 from 0, and in tens from any number, forwards and backwards.



In Maths, every digit in a number has a place value. Place value can be defined as the value represented by a digit in a number on the basis of its position in the number.

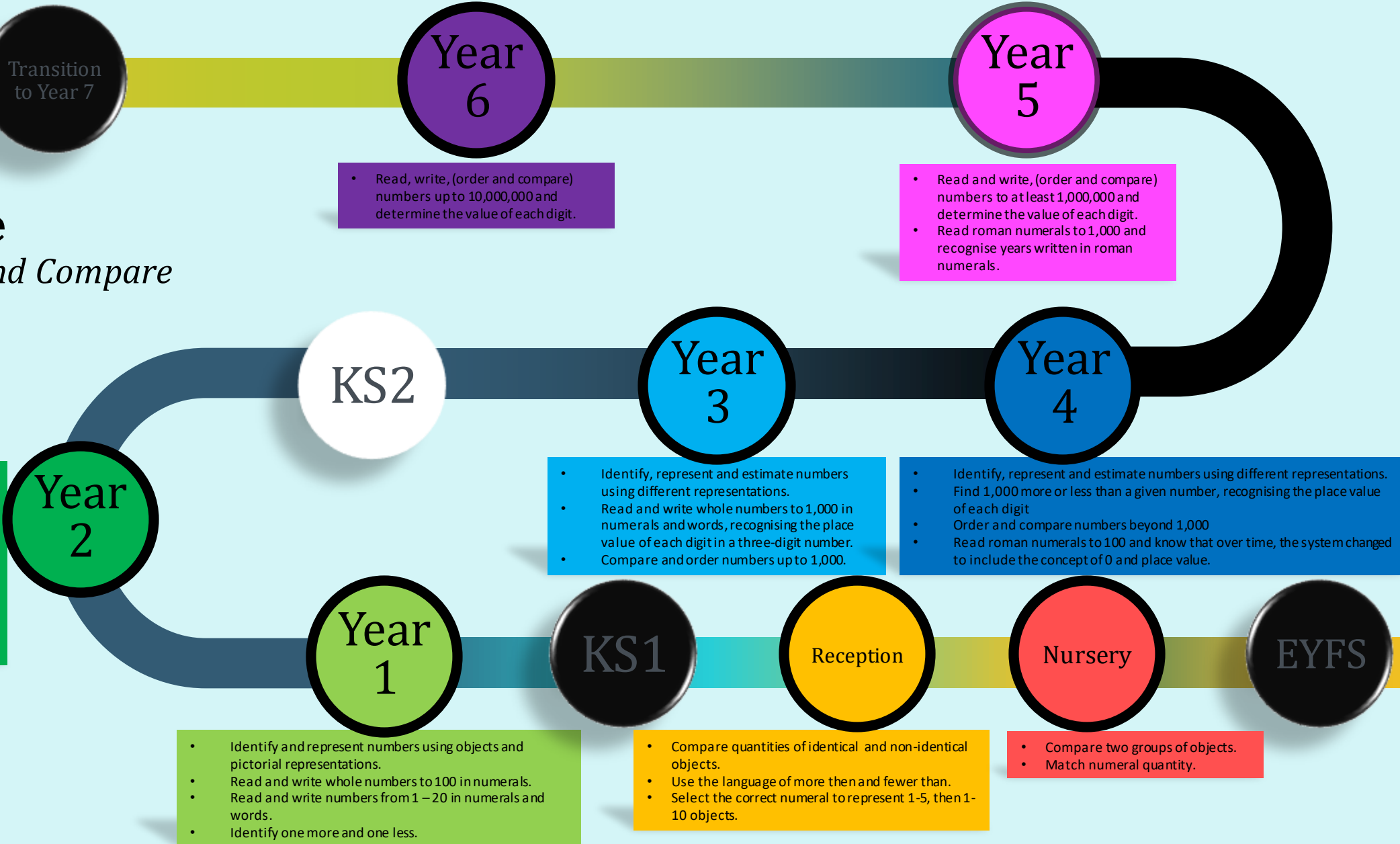


Place Value

Represent, Use and Compare

EYFS – YEAR 6
Elmhurst School

- Read and write numbers to at least 100 in numerals and in words.
- Identify, represent and estimate numbers using different representations including the number line.
- Recognise the place value of each digit in a two-digit number.
- Compare and order numbers from 0 up to 100.
- Use <, > and = signs.



In Maths, every digit in a number has a place value. Place value can be defined as the value represented by a digit in a number on the basis of its position in the number.

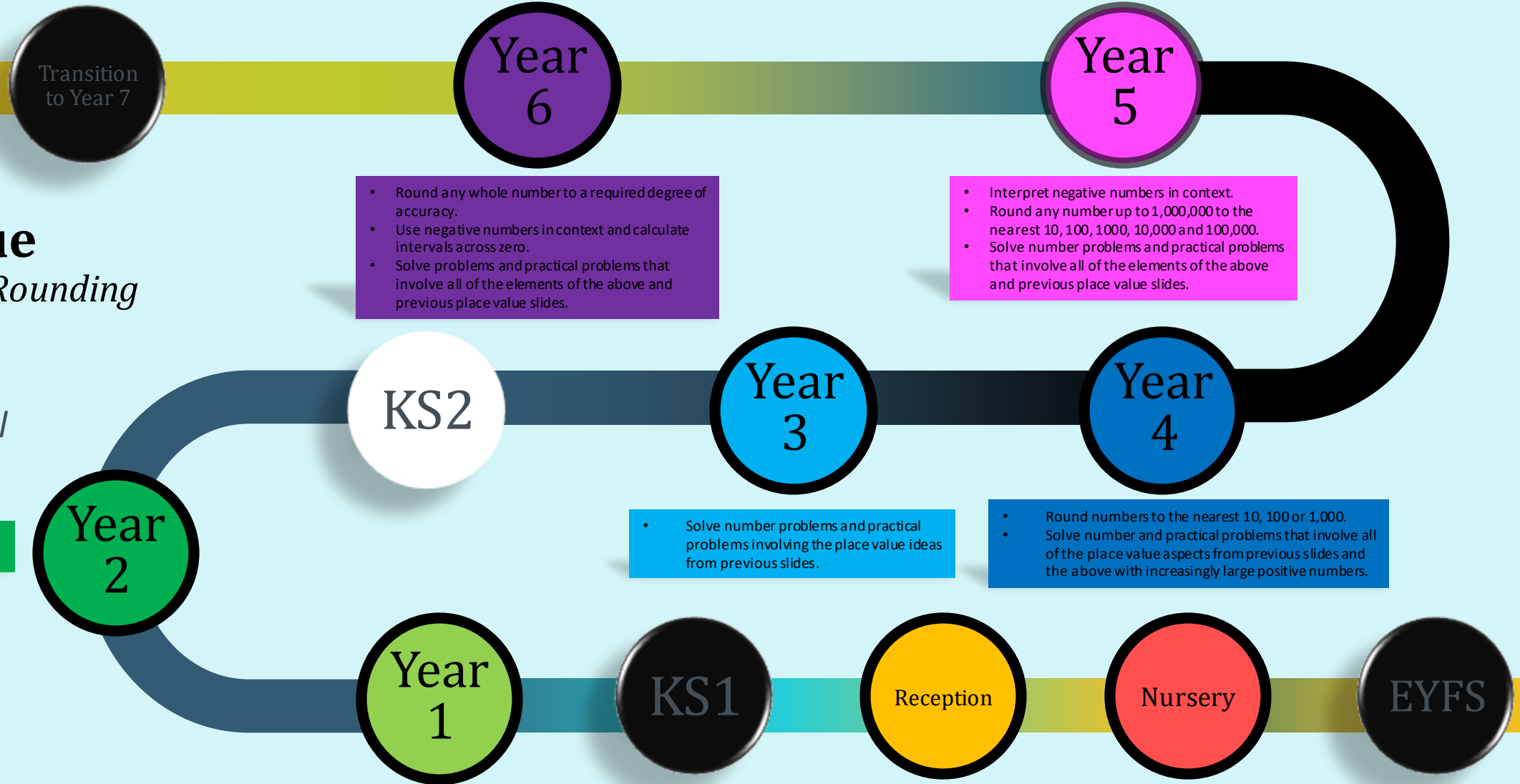


Place Value

Problems and Rounding

EYFS – YEAR 6
Elmhurst School

- Use place value and number facts to solve problems.



The National Curriculum aims to make sure that children are fluent in the maths necessary for everyday life. A good understanding of addition and subtraction, and how they relate to each other, is essential for solving all sorts of calculations and problems.

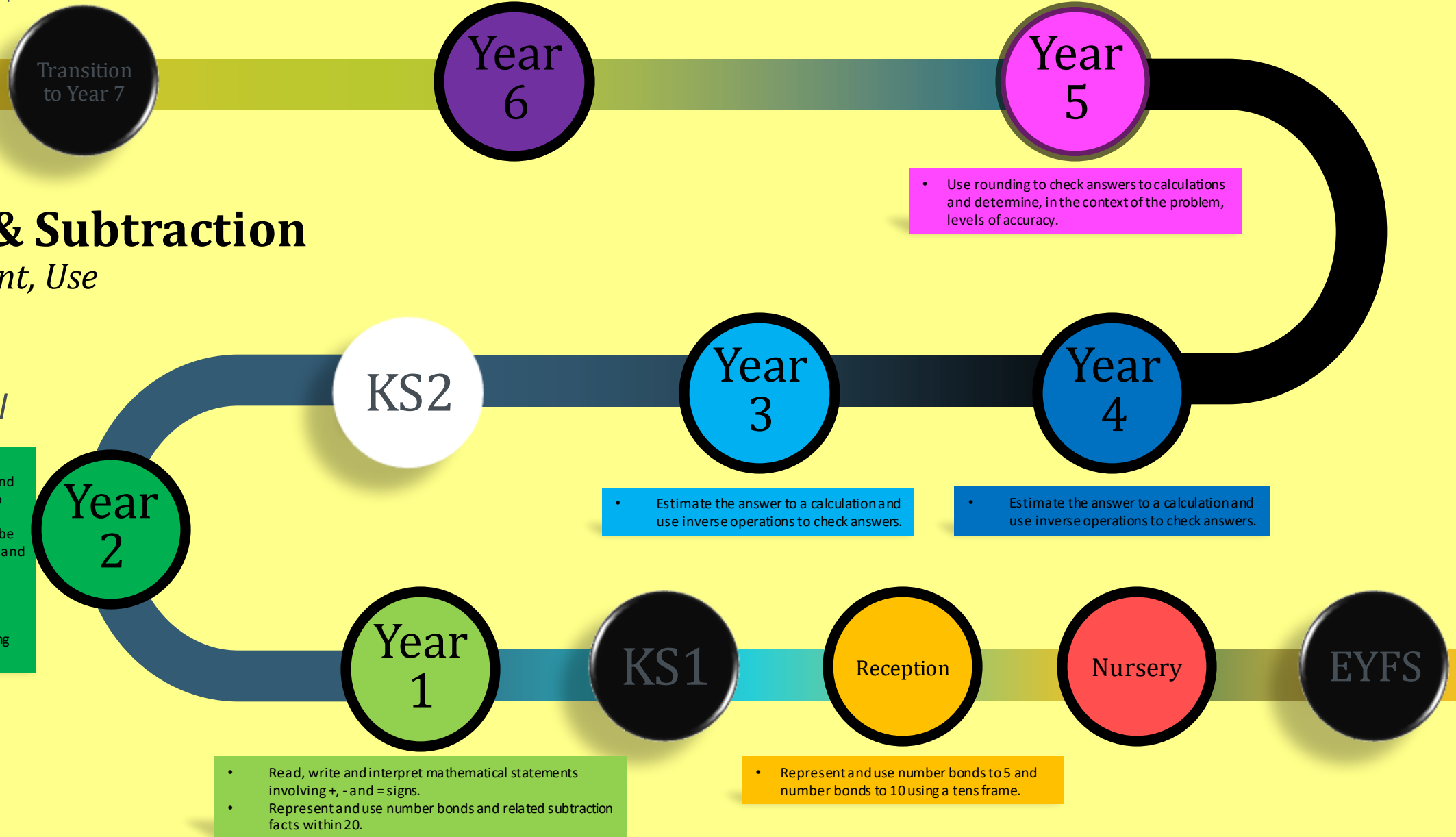


Addition & Subtraction

Recall, Represent, Use

EYFS – YEAR 6
Elmhurst School

- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- Show that + of two numbers can be done in any order (commutative) and - of one number from another cannot.
- Recognise and use the inverse relationship between + and - to check calculations and solve missing number problems.



The National Curriculum aims to make sure that children are fluent in the maths necessary for everyday life. A good understanding of addition and subtraction, and how they relate to each other, is essential for solving all sorts of calculations and problems.



Addition & Subtraction Calculations

EYFS – YEAR 6
Elmhurst School

- Add and subtract numbers using concrete objects, pictorial representations and mentally, including:
 - ❖ 2-digit numbers and ones;
 - ❖ a 2-digit number and tens;
 - ❖ two 2-digit numbers;
 - ❖ adding three 1-digit numbers.



Transition to Year 7

Year 6

- Perform mental calculations, including with mixed operations and large numbers.
- Use their knowledge of the order of operations to carry out calculations involving four operations.

Year 5

- Add and subtract numbers with up to 4 digits, including using more formal written methods (columnar addition and subtraction).
- Add and subtract numbers mentally with increasingly large numbers.

KS2

Year 3

- Add and subtract numbers mentally, including:
 - ❖ a 3-digit number and ones;
 - ❖ a 3-digit number and tens;
 - ❖ a 3-digit number and hundreds.
- Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction.

Year 4

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

Year 2

Year 1

- Add and subtract 1-digit and 2-digit numbers to 20, including zero.

KS1

Reception

- Find one more and one less.
- Combine two groups to find the whole.
- Add by counting on.
- Subtract by counting back.

Nursery

EYFS

The National Curriculum aims to make sure that children are fluent in the maths necessary for everyday life. A good understanding of addition and subtraction, and how they relate to each other, is essential for solving all sorts of calculations and problems.

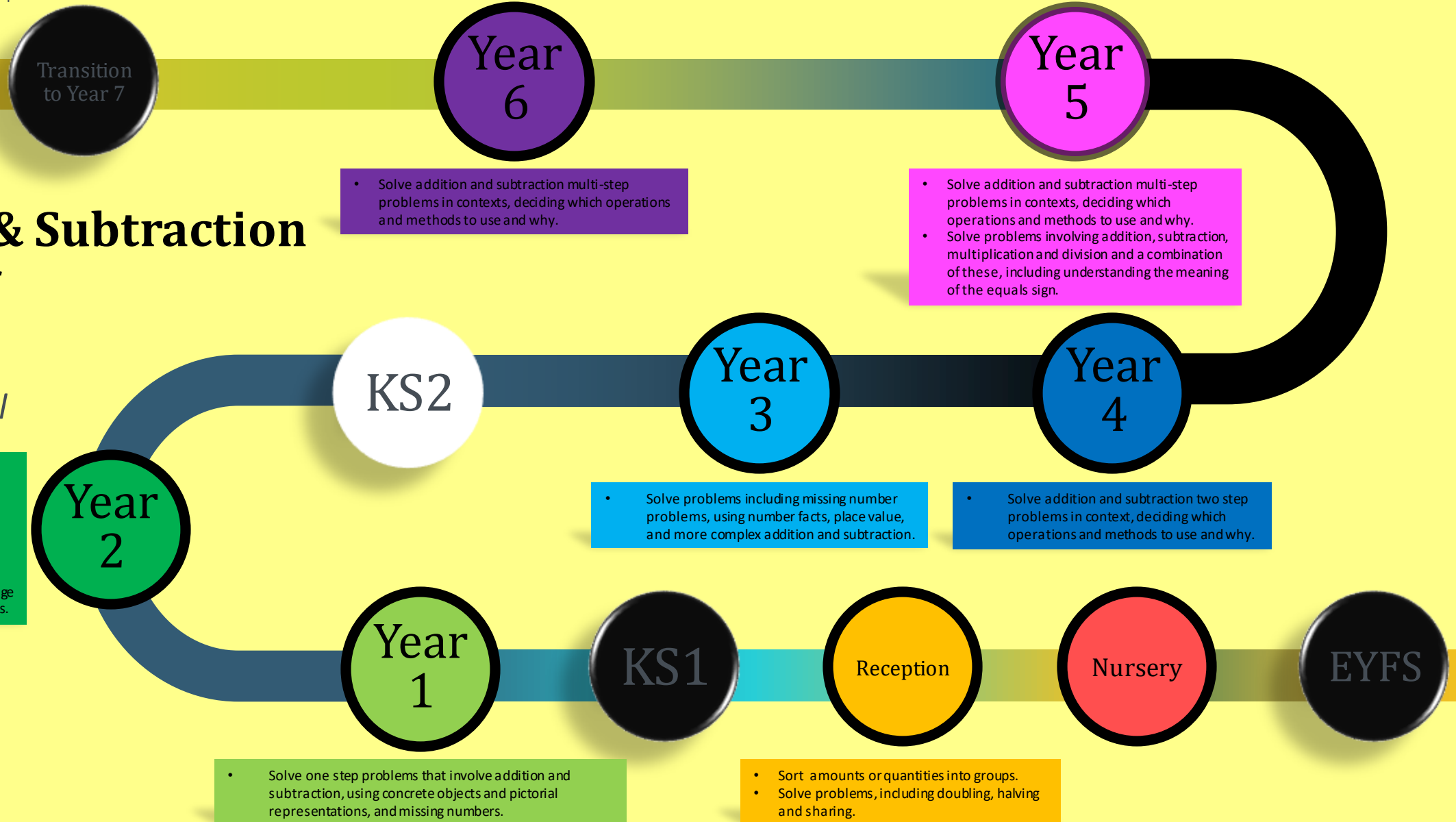


Addition & Subtraction

Solve Problems

EYFS – YEAR 6
Elmhurst School

- Solve problems with addition and subtraction:
 - ❖ using concrete objects and pictorial representations, including those involving numbers, quantities and measures;
 - ❖ apply their increasing knowledge of mental and written methods.



Understanding how to multiply and divide numbers is essential to be able to solve maths problems quickly. The multiplication and division skills your child learns at primary school will go on to help them in everyday life.

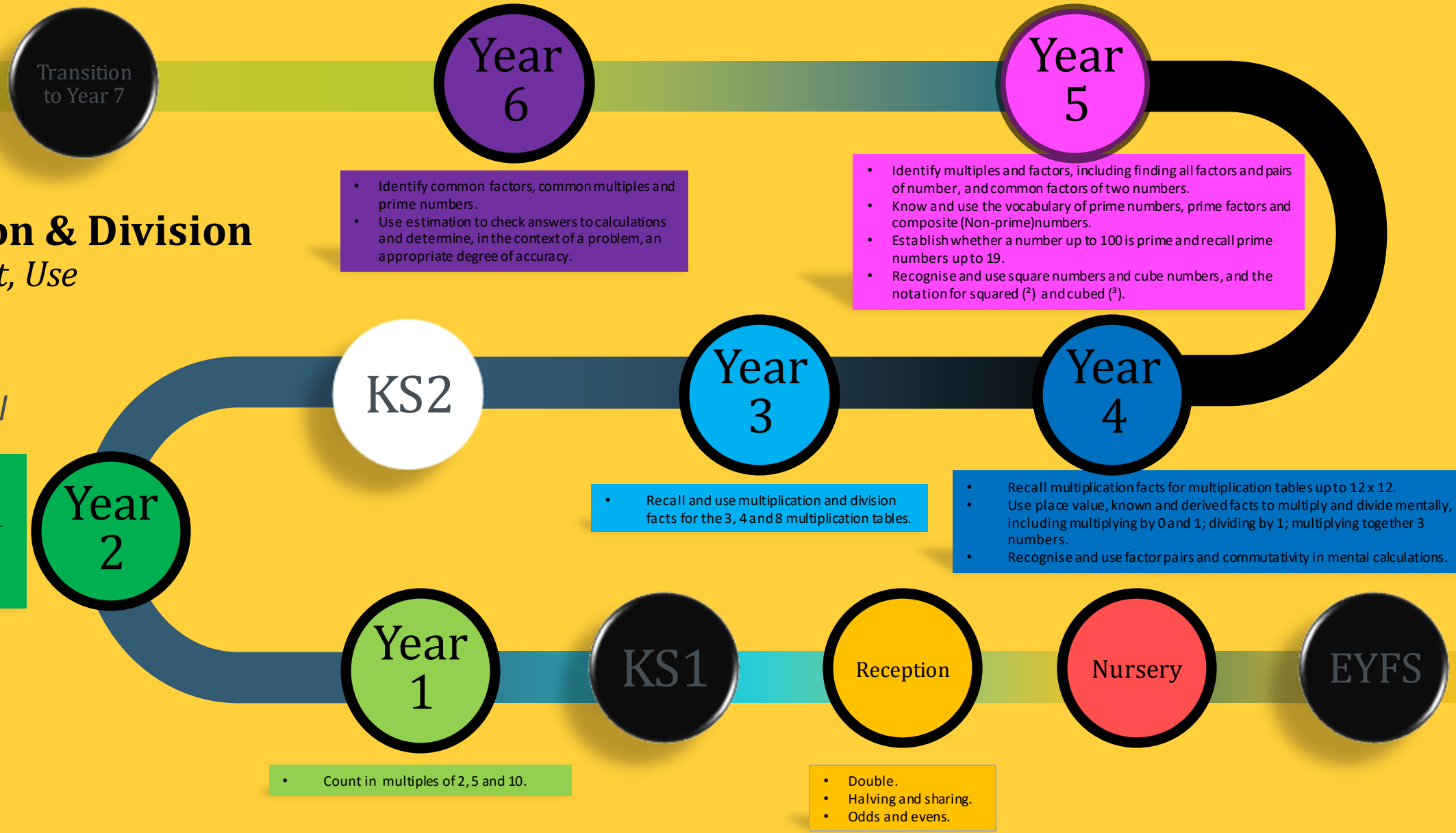


Multiplication & Division

Recall, Represent, Use

EYFS – YEAR 6
Elmhurst School

- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.



Understanding how to multiply and divide numbers is essential to be able to solve maths problems quickly. The multiplication and division skills your child learns at primary school will go on to help them in everyday life.

- Multiply multi-digit numbers up to 4 digits by a 2 digit whole number using the formal written method of long multiplication.
- Divide 4 digits by a 2 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.



Transition
to Year 7

Year
6

Year
5

- Divide numbers up to 4 digits by a 2 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.

- Multiply numbers up to 4 digits a 1 or 2 digit number using a formal written method, including long multiplication for 2 digit numbers.
- Multiply and divide numbers mentally drawing upon known facts.
- Divide numbers up to 4 digits by a 1 digit number using the formal method of short division and interpret remainders appropriately for the context.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.

KS2

Year
3

Year
4

Year
2

- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.

- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2 digit numbers times 1 digit numbers, using mental and progressing to formal written methods.

- Multiply 2 digit and 3 digit numbers by a 1 digit number using formal written layout.

Year
1

KS1

Reception

Nursery

EYFS



Multiplication & Division Calculations

EYFS – YEAR 6
Elmhurst School

Understanding how to multiply and divide numbers is essential to be able to solve maths problems quickly. The multiplication and division skills your child learns at primary school will go on to help them in everyday life.



Multiplication & Division

Solve Problems & Combined Operations

EYFS – YEAR 6
Elmhurst School

- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.



Transition
to Year 7

Year
6

- Solve problems involving addition, subtractions, multiplication and division.
- Use their knowledge of the order of operations to carry out calculations involving the four operations.

Year
5

- Solve problems involving multiplication and division including using their knowledge of facts and multiples, squares and cubes.
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals signs.

KS2

Year
3

- Solve problems including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Year
4

- Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Year
2

Year
1

- Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of a teacher.

KS1

Reception

Nursery

EYFS

A fraction represents a part of a whole or, more generally, any number of equal parts. When spoken in everyday English, a fraction describes how many parts of a certain size there are. A common or simple fraction consists of a numerator displayed above a line (or before a slash), and a non-zero denominator, displayed below (or after) that line. Numerators and denominators are also used in fractions that are not common, including compound fractions, complex fractions, and mixed numerals.



Transition
to Year 7

Year
6

Year
5

- Use common factors to simplify fractions; use common multiples to express fractions in the same denominator.
- Compare and order fractions, including fractions >1 .

- 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$).
- Compare and order fractions whose denominators are all multiples of the same number.

KS2

Year
3

Year
4

Year
2

- Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
- Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

- Count up and down in $\frac{1}{10}$ s; recognise that they arise from dividing an object into 10 equal parts and in dividing 1 digit numbers or quantities by 10.
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
- Recognise and show, using diagrams, equivalent fractions with small denominators.
- Compare and order unit fractions, and fractions with the same denominator.

- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- Recognise and show, using diagrams, families of common equivalent fractions.

Year
1

KS1

Reception

Nursery

EYFS

- Recognise, find and name a half as one of the two equal parts of an object, shape or quantity.



Fractions

Recognise, Write, Compare

EYFS – YEAR 6
Elmhurst School

A fraction represents a part of a whole or, more generally, any number of equal parts. When spoken in everyday English, a fraction describes how many parts of a certain size there are. A common or simple fraction consists of a numerator displayed above a line (or before a slash), and a non-zero denominator, displayed below (or after) that line. Numerators and denominators are also used in fractions that are not common, including compound fractions, complex fractions, and mixed numerals.



Transition
to Year 7

Year
6

Year
5

- 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, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$.
- Divide proper fractions by whole numbers, for example, $\frac{1}{3} \div 2 = \frac{1}{6}$.

- 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.

KS2

Year
3

Year
4

Year
2

- Write simple fractions for example, $\frac{1}{2}$ of 6 = 3.

- Add and subtract fractions with the same denominator within one whole for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$.
- Solve problems that involve all aspects of previous fraction slides and the above.

- Add and subtract fractions with the same denominator.
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

Year
1

KS1

Reception

Nursery

EYFS



Fractions

Calculate & Solve Problems

EYFS – YEAR 6
Elmhurst School

In algebra, a decimal number can be defined as a number whose part and the fractional part is separated by a decimal point. The dot in a decimal number is called a decimal point. The digits following the decimal point show a value smaller than one.



Transition
to Year 7

Year
6

Year
5

- Identify the value of each digit in a number to three decimal places.

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

Decimals

Recognise, Write, Compare

EYFS – YEAR 6
Elmhurst School

KS2

Year
3

Year
4

- Recognise and write decimal equivalents of any number of tenths or hundredths.
- Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.
- Round decimals with one decimal place to the nearest whole number.
- Compare numbers with the same number of decimal places up to two decimal places.

Year
2

Year
1

KS1

Reception

Nursery

EYFS



In algebra, a decimal number can be defined as a number whose part and the fractional part is separated by a decimal point. The dot in a decimal number is called a decimal point. The digits following the decimal point show a value smaller than one.



Transition
to Year 7

Year
6

Year
5

- Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.
- Multiply 1-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

- Solve problems involving numbers up to three decimal places.

Year
3

Year
4

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

KS2

Year
2

Year
1

KS1

Reception

Nursery

EYFS

Decimals

Calculate & Solve Problems

EYFS – YEAR 6
Elmhurst School



Fractions, decimals and percentages are relevant to many more areas of maths, from probabilities to number problems and algebra, so recognising equivalent fractions, decimals and percentages is an important skill to learn.



Transition
to Year 7

Year
6

Year
5

- Associate a fraction with division and calculate decimal fraction equivalents (for example 0.375) for a simple fraction (for example $\frac{3}{8}$).
- Recall and use equivalence between simple fractions, decimals and percentages, including in different contexts.

- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.
- Solve problems which require knowing percentages 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.

KS2

Year
3

Year
4

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

Year
2

Year
1

KS1

Reception

Nursery

EYFS

Fractions, Decimals & Percentages

EYFS – YEAR 6
Elmhurst School



Ratio and proportion are now an important part of the KS2 maths curriculum. Ratios are simply a way to compare numbers or quantities. They tell us how much there is of one thing compared to another. We use the : symbol to separate the numbers being compared. Proportion tells us how many of one thing there is out of the whole number.



Transition
to Year 7

Year
6

Year
5

- 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.

Ratio & Proportion

EYFS – YEAR 6
Elmhurst School

Year
2

KS2

Year
3

Year
4

Year
1

KS1

Reception

Nursery

EYFS



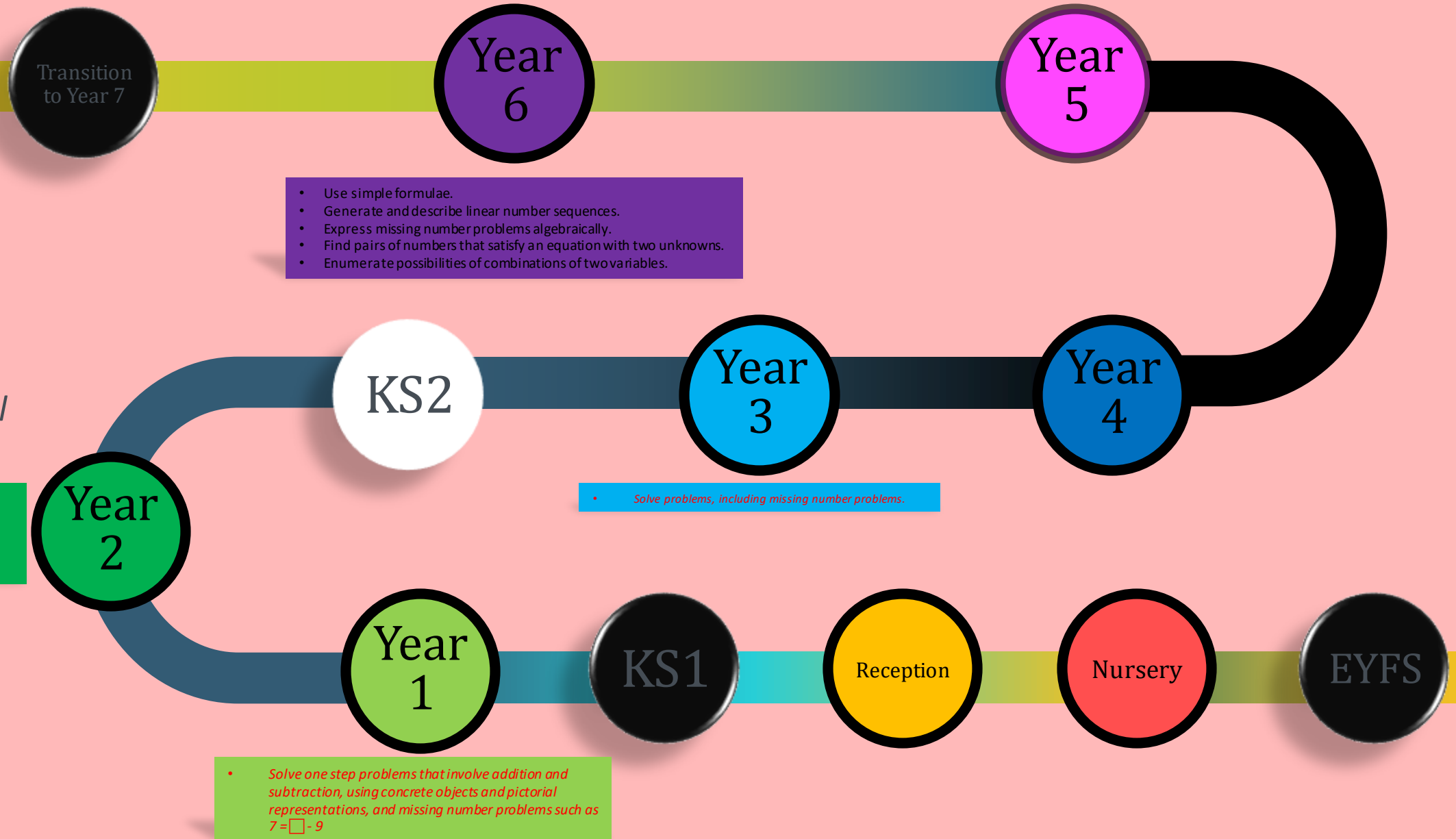
NOTE – although algebraic notation is not introduced until Year 6, algebraic thinking starts much earlier as exemplified by the ‘missing number’ objectives from Years 1, 2 and 3.



Algebra

EYFS – YEAR 6
Elmhurst School

• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.



Measurement tools and skills have a variety of uses in everyday life. The ability to use measuring tools and to estimate with these tools are necessary skills that enable us to quantify the world around us. Measurement is important in providing links between strands of mathematics. For example, it provides a rich and meaningful context for the use of number skills and of spatial concepts. Measurement also provides links between mathematics and other school subjects.

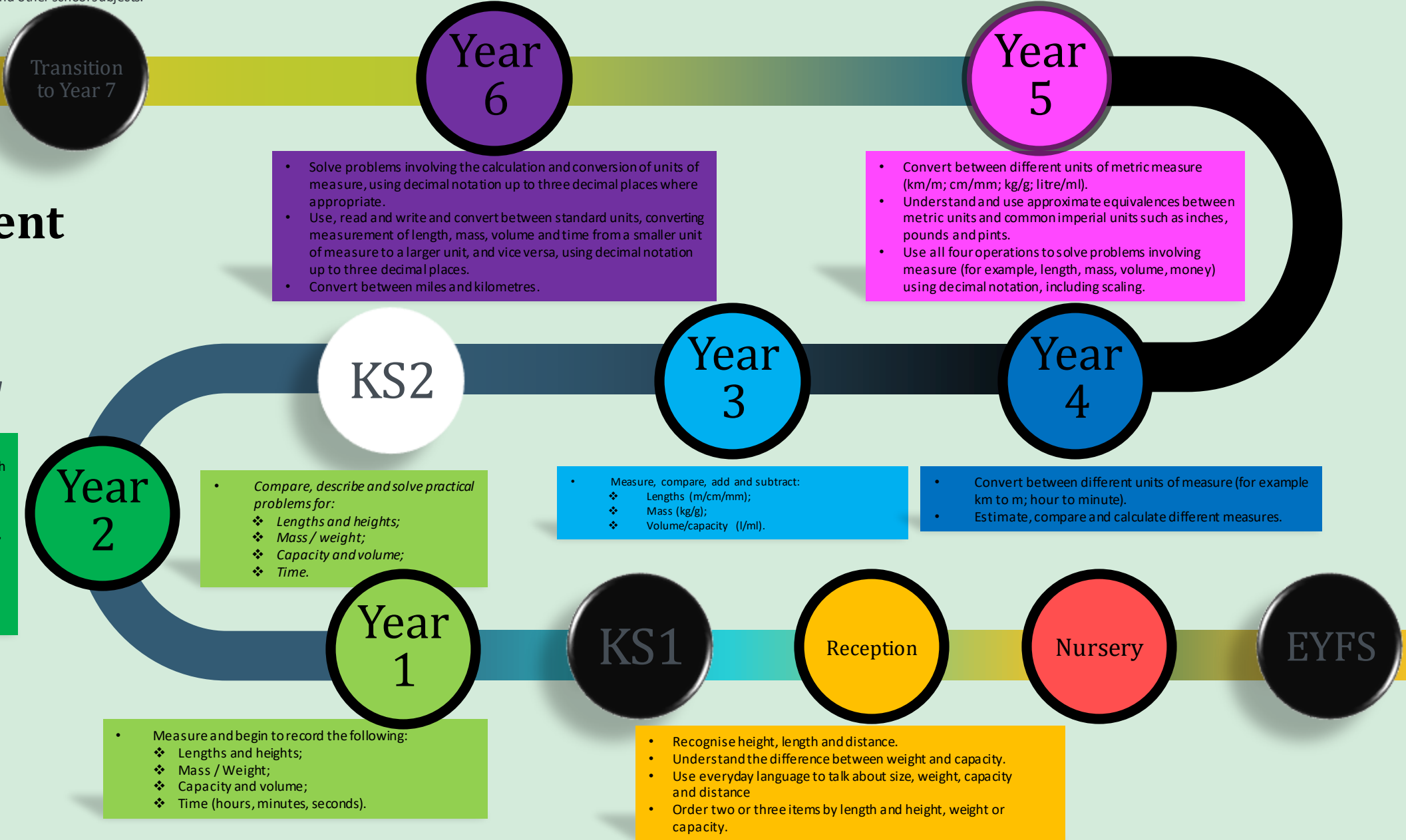


Measurement

Using Measures

EYFS – YEAR 6
Elmhurst School

- Chose and use appropriate standard units to estimate and measure length / height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.
- Compare and order length, mass, volume/capacity and record the results using >, < and =.



Measurement tools and skills have a variety of uses in everyday life. The ability to use measuring tools and to estimate with these tools are necessary skills that enable us to quantify the world around us. Measurement is important in providing links between strands of mathematics. For example, it provides a rich and meaningful context for the use of number skills and of spatial concepts. Measurement also provides links between mathematics and other school subjects.

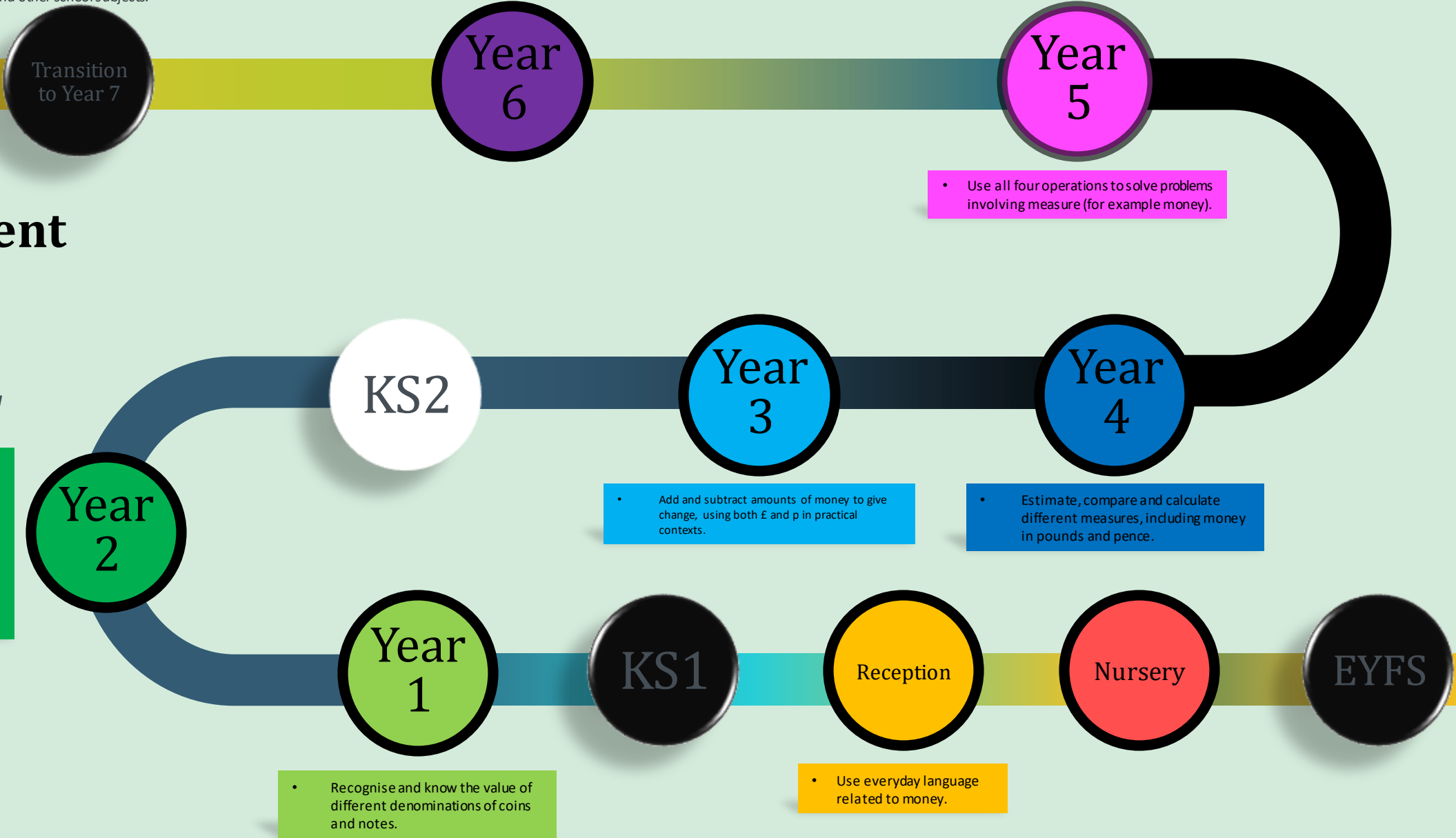


Measurement

Money

EYFS – YEAR 6
Elmhurst School

- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
- Find different combinations of coins that equal the same amount of money.
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.





Measurement tools and skills have a variety of uses in everyday life. The ability to use measuring tools and to estimate with these tools are necessary skills that enable us to quantify the world around us. Measurement is important in providing links between strands of mathematics. For example, it provides a rich and meaningful context for the use of number skills and of spatial concepts. Measurement also provides links between mathematics and other school subjects.

Measurement Time

EYFS – YEAR 6
Elmhurst School

- Compare and sequence intervals of time.
- Tell and write the time to five minutes, including quarter past/to the hour and draw hands on a clock face to show these times.
- Know the number of minutes in an hour and the number of hours in a day.



Transition
to Year 7



Year
6

- Use, read, write and convert between standard units, converting measurement of time from a smaller unit of measure to a larger unit, and vice versa.



Year
5

- Solve problems involving converting between units of time.



Year
3

- Tell and write the time from an analogue clock, including using roman numerals from I to XII, and 12-hour and 24-hour clocks.
- Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon, midnight.
- Know the number of seconds in a minute and the number of days in each month, year and leap year.
- Compare durations of events.



Year
4

- Read, write and convert time between analogue and digital 12 and 24 hour clocks.
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.



Year
2

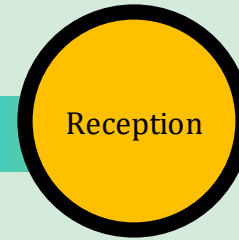


Year
1

- Sequence events in chronological order using language (for example, before, after, first, next, today, yesterday, etc.).
- Recognise and use language relating to dates, including days of the week, weeks, months and years.
- Tell the time to the hour and half past the hour and draw hands on a clock face to show these times.

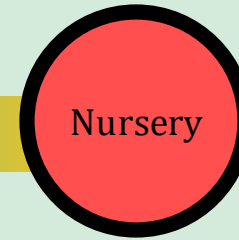


KS1



Reception

- Order and sequence events.
- Measure short periods of time.
- Use everyday language related to time.



Nursery



EYFS

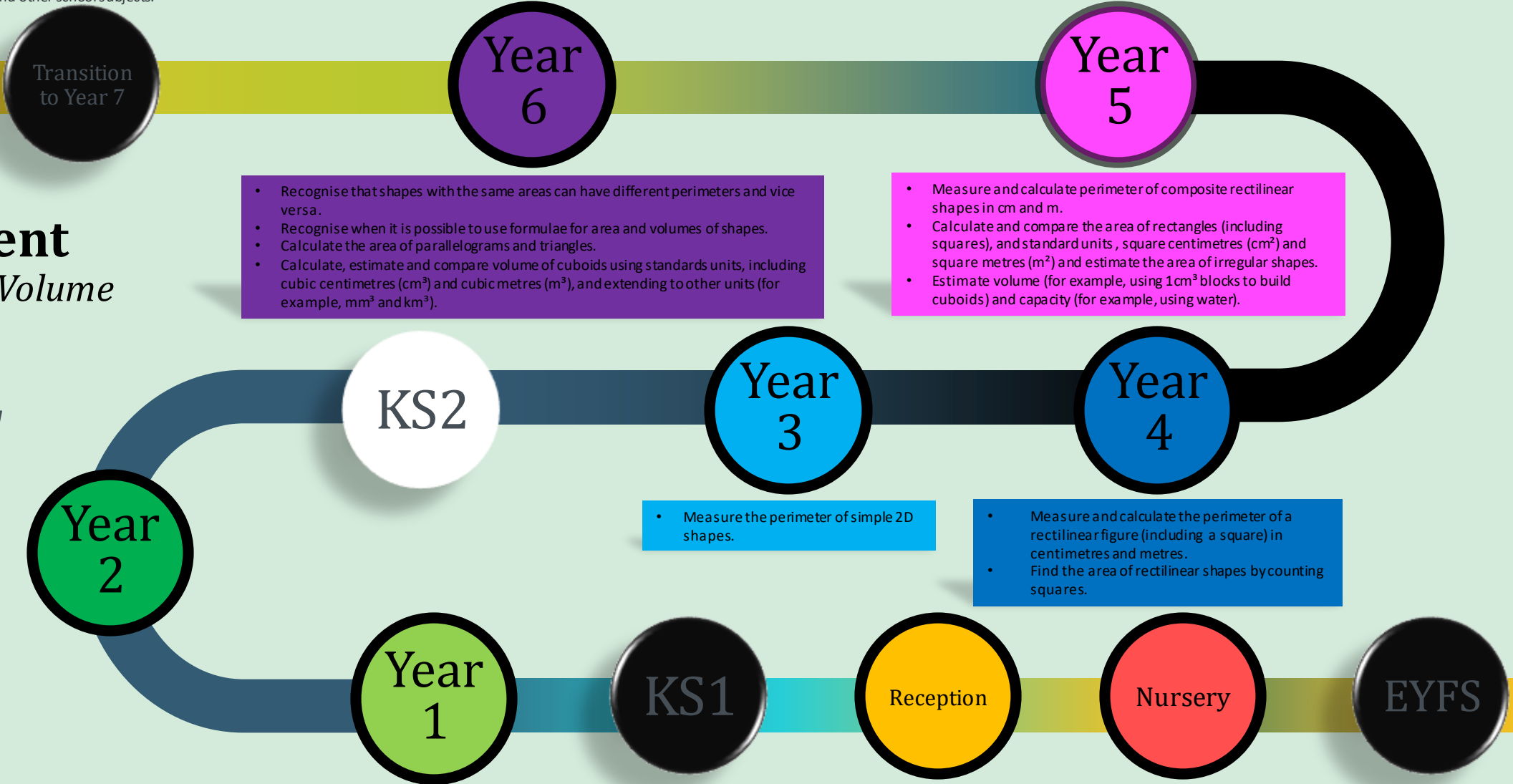
Measurement tools and skills have a variety of uses in everyday life. The ability to use measuring tools and to estimate with these tools are necessary skills that enable us to quantify the world around us. Measurement is important in providing links between strands of mathematics. For example, it provides a rich and meaningful context for the use of number skills and of spatial concepts. Measurement also provides links between mathematics and other school subjects.



Measurement

Perimeter, Area, Volume

EYFS – YEAR 6
Elmhurst School



Pupils will develop their ability to recognise, describe, draw, compare and sort different shapes using appropriate vocabulary. As they progress, pupils will draw shapes with increasing accuracy, develop the mathematical reasoning required to analyse them and their properties, and confidently describe the relationships between them. The study of geometry offers pupils an opportunity to reinforce and extend their understanding of number and measurement, especially as they use measuring instruments with increasing accuracy.

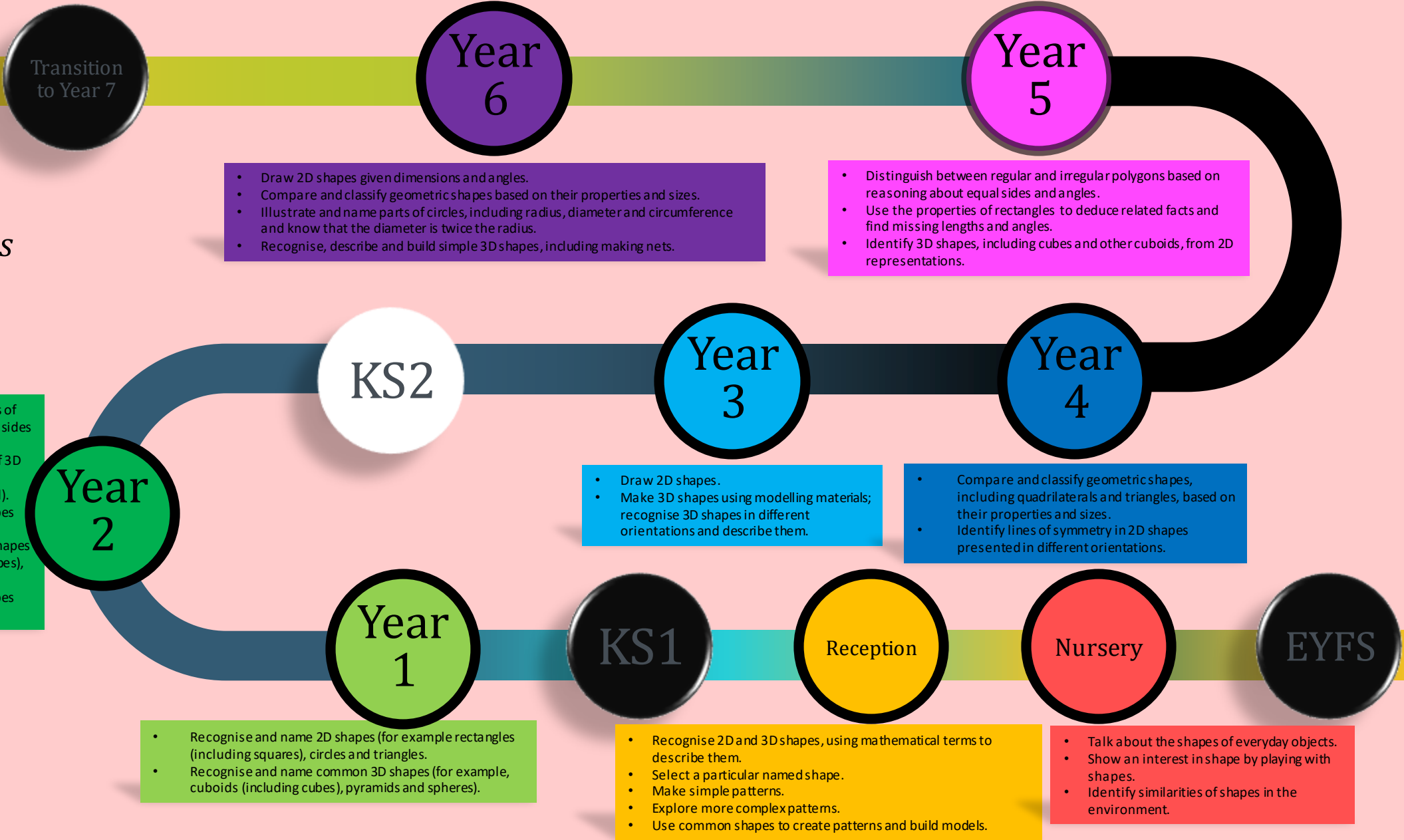


Geometry

2D and 3D shapes

EYFS – YEAR 6
Elmhurst School

- Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.
- Identify 2D shapes on the surface of 3D shapes, (for example, a circle on a cylinder and a triangle on a pyramid).
- Compare and sort common 2D shapes and everyday objects.
- Recognise and name common 3D shapes (for example, cuboids (including cubes), pyramids and spheres).
- Compare and sort common 3D shapes and everyday objects.



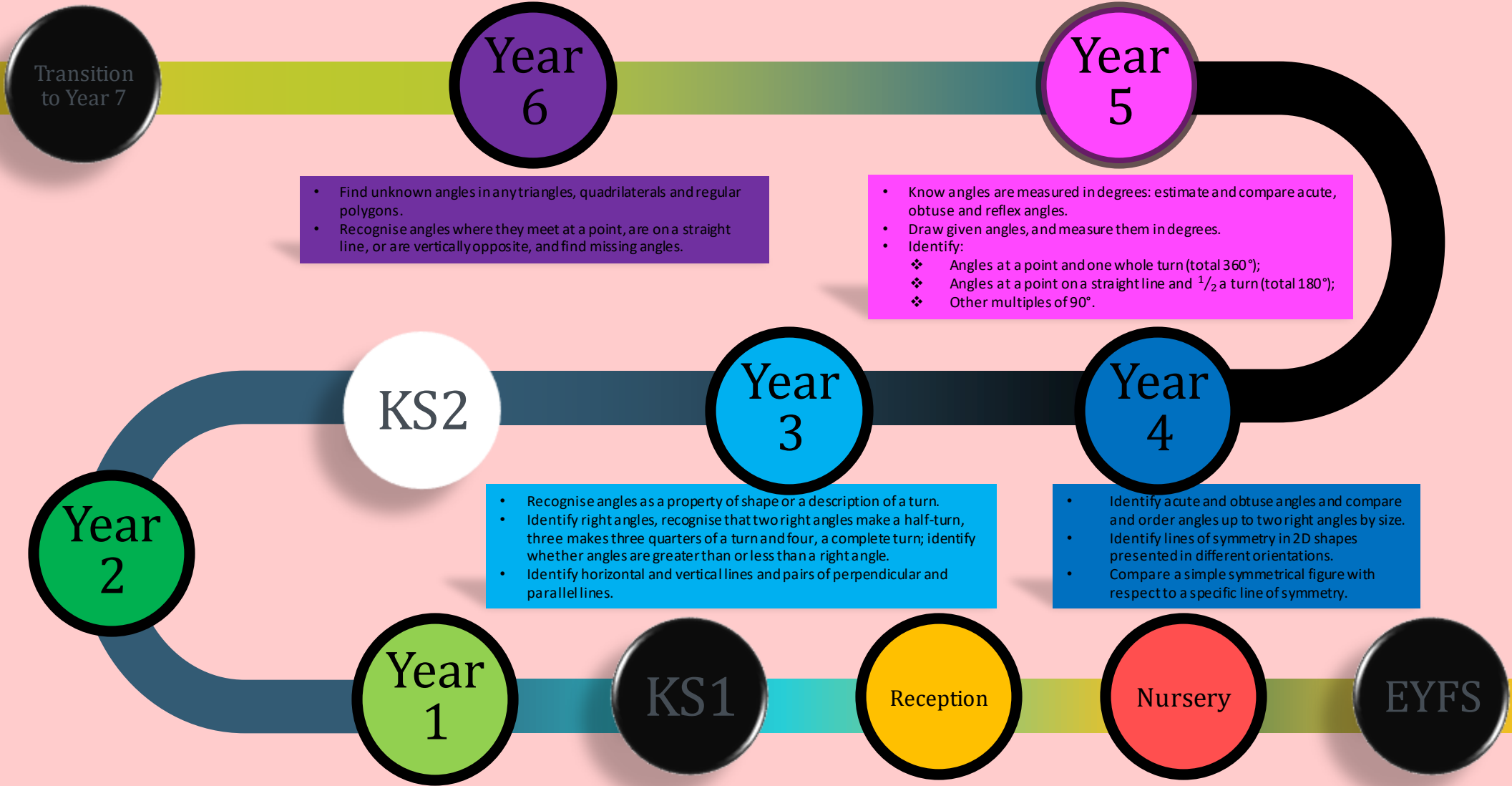
Pupils will develop their ability to recognise, describe, draw, compare and sort different shapes using appropriate vocabulary. As they progress, pupils will draw shapes with increasing accuracy, develop the mathematical reasoning required to analyse them and their properties, and confidently describe the relationships between them. The study of geometry offers pupils an opportunity to reinforce and extend their understanding of number and measurement, especially as they use measuring instruments with increasing accuracy.



Geometry

Angles and Lines

EYFS – YEAR 6
Elmhurst School



Pupils will develop their ability to recognise, describe, draw, compare and sort different shapes using appropriate vocabulary. As they progress, pupils will draw shapes with increasing accuracy, develop the mathematical reasoning required to analyse them and their properties, and confidently describe the relationships between them. The study of geometry offers pupils an opportunity to reinforce and extend their understanding of number and measurement, especially as they use measuring instruments with increasing accuracy.

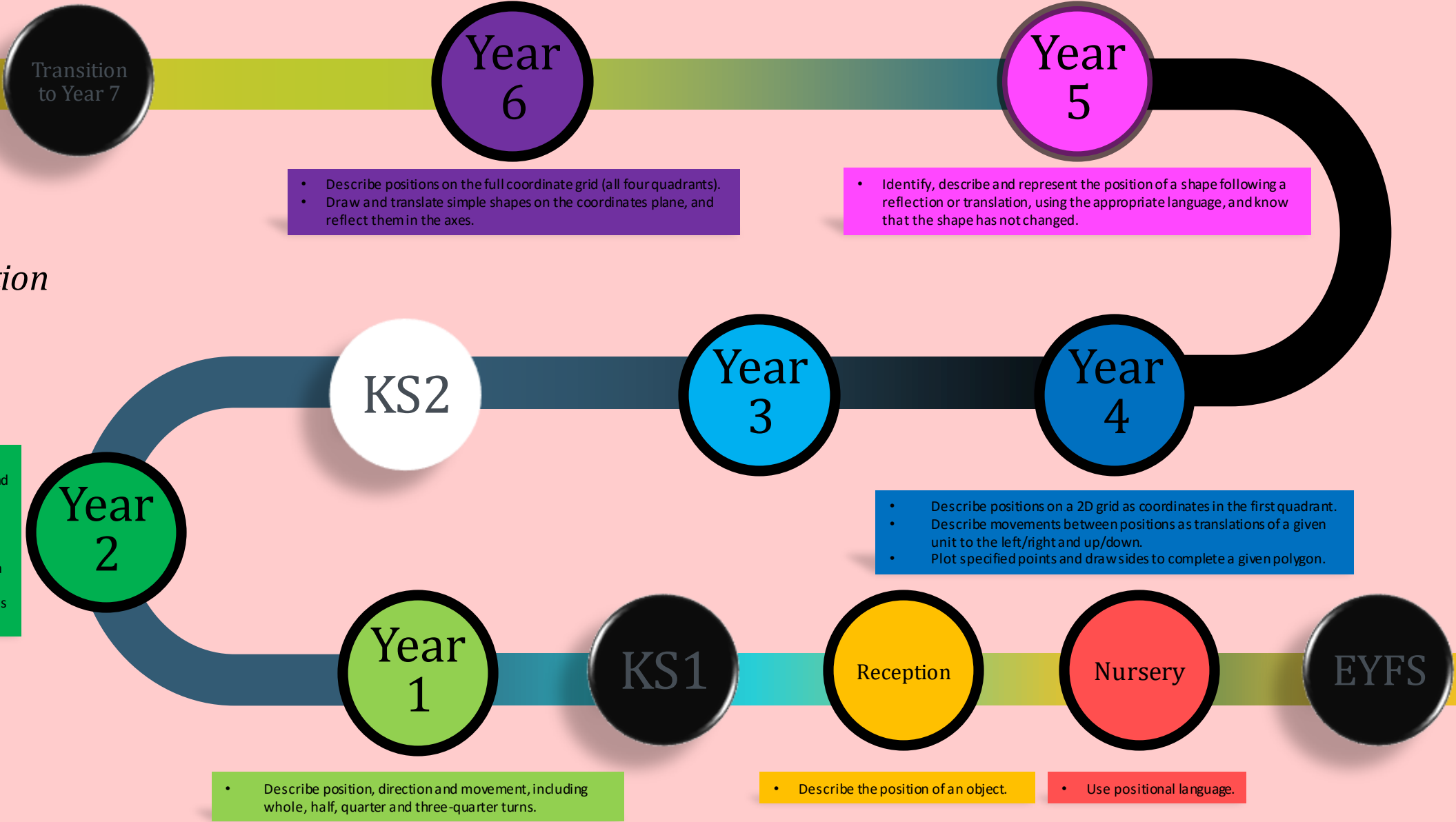


Geometry

Position & Direction

EYFS – YEAR 6
Elmhurst School

- Order and arrange combinations of mathematical objects in patterns and sequences.
- Use Mathematical vocabulary to describe position, direction and movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).



Pupils will develop their ability to recognise, describe, draw, compare and sort different shapes using appropriate vocabulary. As they progress, pupils will draw shapes with increasing accuracy, develop the mathematical reasoning required to analyse them and their properties, and confidently describe the relationships between them. The study of geometry offers pupils an opportunity to reinforce and extend their understanding of number and measurement, especially as they use measuring instruments with increasing accuracy.



Statistics

Present, Interpret, Solve Problems

EYFS – YEAR 6
Elmhurst School

- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.
- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.
- Ask and answer questions about totalling and comparing categorical data.

