**Curriculum Overview for Mathematics**

**Year 7**

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| **Half Term 5:** **Calculating with Fractions, decimals and percentages** **Declarative Knowledge:*** recognise mixed numbers and improper fractions
* understand what a reciprocal is

**Procedural Knowledge:*** convert between mixed numbers and improper fractions
* add and subtract fractions with the same denominator
* add and subtract fractions where the denominator has a common factor
* add and subtract fractions with any denominator
* add fractions including mixed numbers
* subtract fractions including mixed numbers
* multiply proper and improper fractions
* multiply mixed numbers
* find the reciprocal of integers and fractions
* divide a proper fraction by a proper fraction
* divide improper fractions
* divide a mixed number by a proper fraction/mixed number

**Conditional Knowledge:** * use the four operations to solve worded problems
* Use the four operations to solve geometric problems
 | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician Key words on top sheet are shared with children, including syllabification when they appear in the learning Expectation of Mathematical vocabulary used in lessons |
| Speech | Fractions, convert, improper fraction, proper fraction, numerator, denominator, simplify, equivalent, quotient, reciprocal.  |
| Checklist RTL | There will be a formal end of half-unit exam. There is an expectation of revision to take place at home. Children will relearn during an Exam Review lesson after the assessment and complete a Whole Class Feedback sheet.  |
| Home | Knowledge Recall Booklet – a selection of recall questions that is set at the start of the half-term and returned for marking at the end of the half-term.Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school).Revision for end of unit exams. This will include Dr Frost Maths practise, but may also include extra revision set by the teacher, including practising past exam questions, creating revision cards, creating mindmaps, etc.  |

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| **Half Term 6: Investigating Angles Part One****Declarative Knowledge:*** Recall key units of measure and what they represent
* State the units used to measure turn
* Describe a full turn, half a turn and quarter turn using correct units
* Describe different size turns with correct terminology (acute, right angle .... )
* Demonstrate approximate angles by turning (use clockwise turns to build into bearings later)
* State the properties of vertically opposite angles and use to find missing angles
* State clearly the sum of the angles in a full turn
* State clear the sum of the angles that make up half a turn

**Procedural Knowledge:*** Identify clear when multiple angles combine to make a half turn
* Find missing angles in half a turn (two angle, multiple angles one missing, multiple angles one missing and a right angle, multiple angles more than one missing - relationships given - words, algebra, simple ratio.
* Find missing angles where two straight lines cross
* Find missing angle in a full turn (two angles one missing, multiple angles one missing - include right angles and straight line, multiple missing angles - relationships in words, algebra or simple ratio
* State the key features of a bearing (from north, clockwise, three figures)

**Conditional Knowledge:*** Explain the difference between how angles and bearings are measured (relative to fixed point)
* State the bearing with start given
* State bearing by identifying start (angles given)
* Solve problems by selecting from and combining the rules met so far
 | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician.Key words on top sheet are shared with children, including syllabification when they appear in the learning.Expectation of Mathematical vocabulary used in lessons. |
| Speech | Angle, measure, turn, point, circle, missing, unknown, acute, obtuse, reflex, straight line, right angle, arc, notation, vertically opposite clockwise, anticlockwise, north, south, east west, bearing. |
| Checklist RTL | There will be a formal end of half-unit exam. There is an expectation of revision to take place at home. Children will relearn during an Exam Review lesson after the assessment and complete a Whole Class Feedback sheet.  |
| Home | Knowledge Recall Booklet – a selection of recall questions that is set at the start of the half-term and returned for marking at the end of the half-term.Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school).Revision for end of unit exams. This will include Dr Frost Maths practise, but may also include extra revision set by the teacher, including practising past exam questions, creating revision cards, creating mindmaps, etc.  |
| **Half Term 6: Investigating Angles Part Two****Declarative Knowledge:*** Recall the key angle properties of parts of a turn and vertically opposite angles. (360, 90, 180 and vertically opposite angles - recap obtuse, acute and reflex.)
* Understand parallel lines as lines that travel at the same angle as each other
* Identify sets of parallel lines and use correct notation
* Understand and identify a transversal

**Procedural Knowledge:*** Mark corresponding angles where a transversal cuts parallel lines
* Use the properties for a straight line to find other angles that are equal.
* Use the terms corresponding, alternate and co -interior (allied) to describe pairs of angles where you have parallel lines.
* Find missing angles where you have parallel lines.
* Find missing angles and using correct terminology to explain your steps with single transversal.
* Identify corresponding, alternate and co - interior angles with multiple transversals.

**Conditional Knowledge:*** Find missing angles using simple problem-solving strategies and basic algebra models (at a single point and then combined across)
* Solve parallel line problems which involve adding additional lines
* Solve multi step problems reasoning from known facts to unknown facts
* Use parallel lines to find missing angles in bearings problems
* Combine all the angle facts met so far to solve complex problems.
 | Books | Modelling reading of questions by the class teacher – teaching like a Mathematician Key words on top sheet are shared with children, including syllabification when they appear in the learning Expectation of Mathematical vocabulary used in lessons |
| Speech | Angle, measure, turn, point, circle, missing, unknown, acute, obtuse, reflex, straight line, right angle, arc, notation, parallel, gradient, transversal, intersects, corresponding, sector, alternate, vertically opposite, co-interior, allied, multi-step. |
| Checklist RTL | There will be a formal end of half-unit exam. There is an expectation of revision to take place at home. Children will relearn during an Exam Review lesson after the assessment and complete a Whole Class Feedback sheet. Year 7 will complete their formal Year 7 exams during Half-Term 6, which will include content taught from the whole year. |
| Home | Knowledge Recall Booklet – a selection of recall questions that is set at the start of the half-term and returned for marking at the end of the half-term.Dr Frost Maths – practising skills using DrFrost.org (a unique username and password will be provided by the school).Revision for end of unit exams. This will include Dr Frost Maths practise, but may also include extra revision set by the teacher, including practising past exam questions, creating revision cards, creating mindmaps, etc.  |