**Curriculum Overview for Mathematics**

**Year 8**

|  |  |  |
| --- | --- | --- |
| **Half Term 5: Percentages****Declarative Knowledge:*** draw a picture to represent a fraction greater than 1

**Procedural Knowledge:*** calculate a unit fraction of an amount
* calculate the whole amount when given a unit fraction of it
* calculate a fraction of an amount
* decrease an amount by a fraction
* increase an amount by a fraction
* find equivalent improper fractions and mixed numbers
* find an improper fraction (or mixed number) of an amount
* find equivalent percentages, fractions and decimals
* find a 1% of an amount
* use 1% to find other whole number percentages
* use 1% to find a percentage less than 1%
* increase an amount by a given percentage
* decrease an amount by a given percentage
* use a multiplier to find a percentage of an amount
* use a multiplier to increase by a percentage
* use a multiplier to decrease by a percentage
* calculate simple interest
* calculate compound interest

**Conditional Knowledge:*** calculate a unit fraction when given a fraction of an amount
* calculate the whole amount when given a fraction of it
* calculate a fraction of the amount from a different fraction
* calculate the whole amount when given 1% of it
* calculate the whole amount when given 10% of it
* calculate the whole amount when given a percentage of it
* calculate the whole amount when given the amount after it has been decreased
* calculate the whole amount when given the amount after an increase
 | 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 | Proper fraction, improper fraction, mixed numberSimplify, cancel, lowest termsPercent, percentagePercentage changeOriginal amountMultiplier(Simple) interestExactIncrease/ decrease  |
| 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: Transformations****Declarative Knowledge:**Know the meaning of rotation, translation, enlargement and reflection**Procedural Knowledge:**Identify rotational symmetryDescribe a rotationRotate a shape 1800 Rotate a shape 900 in any directionShow any rotation on a coordinate gridDescribe a translationDescribe a translation with a column vectorDemonstrate how to translate (including with a column vector)Describe a reflection, describing the mirror lineShow a reflection in the a vertical or horizontal lineShow a reflection in y = x or y = -xDescribe a positive enlargementShow a positive enlargement on a gridShow a positive enlargement using ray lines and a centreShow a positive fractional enlargement using ray linesShow a negative enlargement using ray lineDemonstrate how to move the object through more than 1 transformationDescribe and object moved through more than 1 transformation**Conditional Knowledge:**Identify invariant points | 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 | (Cartesian) coordinates Axis, axes, x-axis, y-axis Origin Quadrant Translation, Reflection, Rotation Transformation Object, Image Congruent, congruence Mirror line Vector Centre of rotation, invariant point, Enlarge, enlargement Scaling Scale factor Centre of enlargement Object Image |
| 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: Financial Maths****Declarative Knowledge:**Have an awareness of where money can come from.Understand and use common financial terminologyUnderstand the role of Income Tax and National Insurance **Procedural Knowledge:**Be able to interpret a bank statement.Be able to interpret and create a budget, with an awareness of accuracy and estimated valuesCalculate VAT at different ratesBe able to calculate profit and loss for business contextsCalculate percentage profit and lossMove freely between hourly, weekly, monthly and annual payCalculate gross income for a variety of wage schemes Calculate bonus income using percentage commissionCalculate Taxable PayCalculate Net Income**Conditional Knowledge:** Apply tax and national insurance rates correctly by income bandCalculate total deductions (tax and national insurance) Compare and analyse impact of changes to rates and pay schemes | 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 | To credit To debit Expenditure Income Salary Wage Inheritance Rent Mortgage Utilities Tax Budget VAT ‘Value Added Tax’ Interest Simple Interest Compound Interest Debt Appreciation Depreciation Per Annum. Expenditure, Profit. |
| 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. |