**Year 1**

The rubrics have been developed in three columns. The column ‘beginning’ aligns with the year level below and ‘exceeds expectations’ aligns with the year level above. The middle column combines ‘consolidating’ and ‘meets expectations’ which are both indicators of year level expectations. ‘Consolidating’ indicates that student learning is at year level expectations but is not fully consistent or independently achieved.

The outcomes are written in bold text. The indicators listed under each outcome are there to support understanding of the outcome. These are not in place as an exhaustive list, or exclusively the only indicators. Staff are strongly encouraged to use these indicators as a starting point for discussion and clarification.

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| Key for Levels of Achievement |

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| --- | --- | --- | --- |
| B = Beginning | C = Consolidating | ME = Meets Expectations | EE = Exceeds Expectation |
| The student has begun to demonstrate some evidence of achieving learning outcomes; however applies limited knowledge, skills and understandings. The student’s learning is below year level expectations at this time. | The student has demonstrated evidence of the learning outcomes. The student is practising skills and is developing knowledge and understandings. Learning is at year level expectations but is not fully consistent or independent | The student has demonstrated knowledge of the learning outcomes and is applying knowledge, skills and understandings consistently and independently. Learning is at year level expectations. | The student has demonstrated evidence exceeding the learning outcomes in a variety of ways and applies higher level knowledge, skills and understandings consistently. Learning exceeds year level expectations. |

| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
|  | Share collections into equal parts   * Share, through investigation, equal sized parts of the collection, for example cookies, pens, pencils using a range of strategies, e.g. sharing one by one. | Find equal parts of shapes and collections   * Equally share a collection of objects into 2 or more equal groups for example by sharing 12 balls between 3 bags by using number facts 4+4+4=12. * Discuss possible strategies if the whole parts cannot be shared equally e.g.: 3 people, 5 cakes - how much cake each? * Find equal parts of shapes for example folding paper squares - how many ways can you divide it equally? |
|  | Divide objects into equal parts   * Through investigation, divide an object into equal parts using manipulatives e.g. make 4 equal parts from a lump of play-dough. | Use the language of fractions, for example, half, whole, equal   * Describe amounts using fractional language e.g.: this bottle is half full, there are an equal number of boys and girls in PE... |

**Year 2**

The rubrics have been developed in three columns. The column ‘beginning’ aligns with the year level below and ‘exceeds expectations’ aligns with the year level above. The middle column combines ‘consolidating’ and ‘meets expectations’ which are both indicators of year level expectations. ‘Consolidating’ indicates that student learning is at year level expectations but is not fully consistent or independently achieved.

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| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
| **Share collections into equal parts**   * Share, through investigation, equal sized parts of the collection, for example cookies, pens, pencils using a range of strategies, e.g. sharing one by one. | Find equal parts of shapes and collections   * Equally share a collection of objects into 2 or more equal groups for example by sharing 12 balls between 3 bags by using number facts 4+4+4=12. * Discuss possible strategies if the whole parts cannot be shared equally e.g.: 3 people, 5 cakes - how much cake each? * Find equal parts of shapes for example folding paper squares - how many ways can you divide it equally? | Model, represent, compare and order fractions.   * Model fractions, such as ½ (one-half) and ¼ (one quarter), that have one as a numerator * Model fractions that are several parts of a whole, e.g.: one is not the numerator, such as ¾ (three-quarters) and 2/5 (two-fifths) * Compare and order fractions with the same denominator using shapes. * Know the symbols and words related to models of fractions, e.g., the word one-half is recorded as well as the symbol ½. |
| **Divide objects into equal parts**   * Through investigation, divide an object into equal parts using manipulatives e.g. make 4 equal parts from a lump of play-dough. | Use the language of fractions, for example, half, whole, equal   * Describe amounts using fractional language e.g.: this bottle is half full, there are an equal number of boys and girls in PE... | Use the language of fractions, for example, numerator, and denominator.   * Explain fractions using the mathematical vocabulary: part, whole, denominator, and numerator. * Describe what the numbers represent in a fraction symbol. The bottom number (denominator) indicates how many pieces make up the whole. The top number (numerator) tells us how many pieces there are. |
|  |  | Find fractions of shapes and quantities   * Find fractional parts of a whole. * Find the whole using one or more fractional parts. * Describe the link between symmetry and equal parts of shapes e.g.: folding in half makes two symmetrical pieces that are equal. * Divide a shape into equal parts that have the same area but do not look the same e.g.: using grid paper. |
|  |  | Model equivalent fractions   * Use manipulatives or pictorial representations to show when two different fractions are equivalent e.g.: 2/6 and 1/3. |
|  |  | Add and subtract fractions with the same denominator using concrete materials and pictorial representations   * Use fraction kits and student produced kits to add and subtract fractions, recording using informal notation. |

**Year 3**

The rubrics have been developed in three columns. The column ‘beginning’ aligns with the year level below and ‘exceeds expectations’ aligns with the year level above. The middle column combines ‘consolidating’ and ‘meets expectations’ which are both indicators of year level expectations. ‘Consolidating’ indicates that student learning is at year level expectations but is not fully consistent or independently achieved.

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| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
| **Find equal parts of shapes and collections**   * Equally share a collection of objects into 2 or more equal groups for example by sharing 12 balls between 3 bags by using number facts 4+4+4=12. * Discuss possible strategies if the whole parts cannot be shared equally e.g.: 3 people, 5 cakes - how much cake each? * Find equal parts of shapes for example folding paper squares - how many ways can you divide it equally? | Model, represent, compare and order fractions.   * Model fractions, such as ½ (one-half) and ¼ (one quarter), that have one as a numerator * Model fractions that are several parts of a whole, e.g.: one is not the numerator, such as ¾ (three-quarters) and 2/5 (two-fifths) * Compare and order fractions with the same denominator using shapes. * Know the symbols and words related to models of fractions, e.g., the word one-half is recorded as well as the symbol ½ | Read, write, compare, and order fractions   * Understand and use equivalent fractions (e.g. 2/4 = 4/8). * Sequence and order fractions. * Order fractions where there is a range of numerator and denominator values (e.g. 1/10, ½, ¾, 9/10, 4/4). |
| **Use the language of fractions, for example, half, whole, equal**   * Describe amounts using fractional language e.g.: this bottle is half full, there are an equal number of boys and girls in PE... | Use the language of fractions, for example, numerator, and denominator.   * Explain fractions using the mathematical vocabulary: part, whole, denominator, and numerator. * Describe what the numbers represent in a fraction symbol. The bottom number (denominator) indicates how many pieces make up the whole. The top number (numerator) tells us how many pieces there are. | Use the language of fractions, for example, numerator, denominator   * Explain fractions using the mathematical vocabulary: part, whole, denominator, numerator, improper fraction, mixed number, equivalent fraction and simplified fraction (renamed). |
|  | Find fractions of shapes and quantities   * Find fractional parts of a whole. * Find the whole using one or more fractional parts. * Describe the link between symmetry and equal parts of shapes e.g.: folding in half makes two symmetrical pieces that are equal. * Divide a shape into equal parts that have the same area but do not look the same e.g.: by using grid paper. | Find fractions of shapes, numbers and quantities   * Find fractional parts of whole numbers. * Use number knowledge to find fractions of quantities (e.g. ½ of 12 is 6). * Find fractions of the whole, given the fractional part (e.g. if ¼ of the whole is 10, what is the whole). * Find a fraction of a number when a numerator is more than 1 (e.g. ¾, 6/10). |
|  | Model equivalent fractions   * Use manipulatives or pictorial representations to show when two different fractions are equivalent e.g.: 2/6 and 1/3. | Investigate equivalent fractions used in context   * Understand and uses equivalent fractions (e.g. 2/4 = 4/8) by creating and using an equivalent fractions chart. * Rename fractions using manipulatives and images (e.g. 6/10 = 3/5) may not be to the lowest term. * Use shaded paper rectangles to model equivalent common fractions (e.g. a shaded rectangle of ⅗ can be folded in three to create a model of 9/15. |
|  | Add and subtract fractions with the same denominator using concrete material and pictorial representations   * Use fraction kits and student produced kits to add and subtract fractions, recording using informal notation. | Model addition and subtraction of fractions with related denominators   * Add and subtract common fractions where the denominator is 10 (3/10 + 4/10 = 7/10) by shading a rectangle model * Shade a model to show the addition and subtraction of common fractions where the denominators are the same (like fractions - e.g. ⅖ + ⅕ = ⅗). |
|  |  | Model and compare improper fractions and mixed numbers   * Rename simple mixed numbers as improper fractions and vice versa using materials such as rectangular paper model (e.g. 1 ¼ = 5/4) |
|  |  | Count in quarters, halves and thirds, including mixed numbers   * Use a rectangular paper model to count in fractional parts e.g. ¼ 2/4, ¾ 1, 1 ¼ 1 2/4 * Identify the next term in a fractional counting sequence e.g. in thirds the term after 2 ⅓ is 2 ⅔ . |

**Year 4**

The rubrics have been developed in three columns. The column ‘beginning’ aligns with the year level below and ‘exceeds expectations’ aligns with the year level above. The middle column combines ‘consolidating’ and ‘meets expectations’ which are both indicators of year level expectations. ‘Consolidating’ indicates that student learning is at year level expectations but is not fully consistent or independently achieved.

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| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
| **Model, represent, compare and order fractions.**   * Models fractions, such as ½ (one-half) and ¼ (one quarter), that have one as a numerator. * Models fractions that are several parts of a whole, e.g.: one is not the numerator, such as ¾ (three-quarters) and 2/5 (two-fifths). * Compare and order fractions with the same denominator using shapes. * Know the symbols and words related to models of fractions, e.g., the word one-half is recorded as well as the symbol ½. | Read, write, compare, and order fractions   * Understand and use equivalent fractions (e.g. 2/4 = 4/8). * Sequence and order fractions. * Order fractions where there is a range of numerator and denominator values (e.g. 1/10, ½, ¾, 9/10, 4/4) | Read, writes compares and orders common fractions and decimal fractions to hundredths or beyond     * Order decimals to at least two decimal places using place value knowledge, models or number-lines. * Order decimals that have a mixture of at least one, two decimal places. * Explain the relationship between fractions and decimals using a model (both are parts of a whole). |
| **Use the language of fractions, for example, numerator and denominator.**   * Explain fractions using the mathematical vocabulary: part, whole, denominator, and numerator. * Describe what the numbers represent in a fraction symbol. The bottom number (denominator) indicates how many pieces make up the whole. The top number (numerator) tells us how many pieces there are. | Use the language of fractions, for example, numerator and denominator.   * Explain fractions using the mathematical vocabulary: part, whole, denominator, numerator, improper fraction, mixed number, equivalent fraction and simplified fraction (renamed). | Understand the relationship and convert between common fractions and decimal fractions   * Convert between common fractions and decimals (e.g. ½ = 0.5, ¼ = 0.25. ¾ = 0.75) * Use equivalence between fractions, e.g. convert fractions such as ⅖ into tenths or hundredths and express them as decimals or percentages and vice versa. * Convert tenths and hundredths to decimals (e.g. 3/10 = 0.3) and the reverse. * Use a hundredths grid to model converting between decimal and common fractions. |
| Find fractions of shapes and quantities   * Find fractional parts of a whole. * Find the whole using one or more fractional parts. * Describe the link between symmetry and equal parts of shapes e.g.: folding in half makes two symmetrical pieces that are equal. * Divide a shape into equal parts that have the same area but do not look the same e.g.: using grid paper. | Find fractions of shapes, numbers and quantities   * Find fractional parts of whole numbers. * Use number knowledge to find fractions of quantities (e.g. ½ of 12 is 6). * Find fractions of the whole, given the fractional part (e.g. if ¼ of the whole is 10, what is the whole). * Find a fraction of a number when a numerator is more than 1 (e.g. ¾, 6/10). | Model and solve simple problems involving fractions   * Uses division and models to find fractions of quantities when solving problems. * Finds the whole given the fractional part (e.g. if 2/3 of the whole is 18, what is the whole?). * Uses number knowledge to find fractions of quantities (e.g. 2/3 of 21 is 14). |
| **Model equivalent fractions**   * Use manipulatives or pictorial representations to show when two different fractions are equivalent e.g.: 2/6 and 1/3. | Investigate equivalent fractions used in context   * Understand and uses equivalent fractions (e.g. 2/4 = 4/8) by creating and using an equivalent fractions chart. * Rename fractions using manipulatives and images (e.g. 6/10 = 3/5) may not be to the lowest term. * Use shaded paper rectangles to model equivalent common fractions (e.g. a shaded rectangle of ⅗ can be folded in three to create a model of 9/15). | Simplify fractions to the lowest common denominator   * Simplify or reduce a fraction by renaming (e.g. 6/10 = 3/5) using models, folded/shaded paper and diagrams. * Express two fractions with a common denominator in order to decide which is bigger; e.g. 2/5 is smaller than 3/7 because the first is 14/35 and the second is 15/35. * Find and express the next equivalent fraction in a sequence by multiplying or using a model (e.g. ⅖, 4/10, 6/15 etc…) |
| **Add and subtract fractions with the same denominator using concrete material and pictorial representations**   * Use fraction kits and student produced kits to add and subtract fractions, recording using informal notation. | Model addition and subtraction of fractions with related denominators   * Add and subtract common fractions where the denominator is 10 (3/10 + 4/10 = 7/10) by shading a rectangle model. * Shade a model to show the addition and subtraction of common fractions where the denominators are the same (like fractions - e.g. ⅖ + ⅕ = ⅗). | Model addition and subtraction of fractions with related denominators where there is a range of numerator and denominator values.   * Use knowledge of factors to show the addition and subtraction of common fractions where the denominators are different need renaming (e.g. ⅔ + ¼ = 11/12) |
|  | Model and compare improper fractions and mixed numbers   * Rename simple mixed numbers as improper fractions and vice versa using materials such as rectangular paper model (e.g. 1 ¼ = 5/4). | Model, read, write and compare improper fractions and mixed numbers   * Use knowledge of multiplication and fractions to rename simple mixed numbers as improper fractions and vice versa (e.g. 1 ¼ = 5/4) |
|  | Count in quarters, halves and thirds, including mixed numbers   * Use a rectangular paper model to count in fractional parts e.g. ¼ 2/4, ¾ 1, 1 ¼ 1 2/4 * Identify the next term in a fractional counting sequence e.g. in thirds the term after 2 ⅓ is 2 ⅔. | Model, read, write and compare percentages understanding them as the number of parts in every 100   * Explain what percentages are, using the vocabulary: *part, whole, fraction*. * Model percentages using hundred squares and base 10 materials. * Explain the relationship between percentages, decimals and common fractions e.g. by using a hundredths grid (1/10 = 0.1 = 10%). * Order percentages on a number-line. |
|  |  | Model and solve simple problems involving ratio and proportion   * Begin to show understanding of using simple ratio strategies, for example draw diagrams to represent ratios of parts to parts; e.g. they can mark a drawing of a paint can to represent the ratio of red paint to white paint as 2 to 3; or mark a picture of 30 students to represent a ratio of 2 girls to 3 boys. * Model solving ratio problems using manipulatives. |

**Year 5**

The rubrics have been developed in three columns. The column ‘beginning’ aligns with the year level below and ‘exceeds expectations’ aligns with the year level above. The middle column combines ‘consolidating’ and ‘meets expectations’ which are both indicators of year level expectations. ‘Consolidating’ indicates that student learning is at year level expectations but is not fully consistent or independently achieved.

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| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
| **Read, write compare, and order fractions**   * Understand and use equivalent fractions (e.g. 2/4 = 4/8). * Sequence and order fractions. * Order fractions where there is a range of numerator and denominator values (e.g. 1/10, ½, ¾, 9/10, 4/4). | Read, writes compares and orders common fractions and decimal fractions to hundredths or beyond   * Order decimals to at least two decimal places using place value knowledge, models or number-lines. * Order decimals that have a mixture of at least one, two decimal places. * Explains the relationship between fractions and decimals using a model (both are parts of a whole). |  |
| **Use the language of fractions, for example, numerator, denominator**   * Explain fractions using the mathematical vocabulary: part, whole, denominator, numerator, improper fraction, mixed number, equivalent fraction and simplified fraction (renamed). | Understand the relationship and convert between common fractions and decimal fractions   * Convert between common fractions and decimals (e.g. ½ = 0.5, ¼ = 0.25. ¾ = 0.75. * Use equivalence between fractions, e.g. convert fractions such as ⅖ into tenths or hundredths and express them as decimals or percentages and vice versa. * Convert tenths and hundredths to decimals (e.g. 3/10 = 0.3) and the reverse. * Use a hundredths grid to model converting between decimal and common fractions. | Understand the relationship and convert between common fractions, decimal fractions and percentages.   * Recognise approximate proportions of a whole and use simple fractions and percentages to describe these. * Explain and model the relationship between fractions, decimals and percentages. * Read, write, order, and compare decimals, percentages and fractions * Convert between fractions, decimals, and percentages. * Use the more common equivalences between common fractions and percentages when comparing quantities; e.g. 50% is the same as a half. One third off is better than 30% off. * Recognise simple equivalence between fractions, decimals and percentages, e.g.1/4 = 0.25 = 25% * Relates percentages over 100% to improper fractions and mixed numbers (e.g. 275% = 2 ¾) |
| **Find fractions of shapes, numbers and quantities**   * Find fractional parts of whole numbers. * Use number knowledge to find fractions of quantities (e.g. ½ of 12 is 6). * Find fractions of the whole, given the fractional part (e.g. if ¼ of the whole is 10, what is the whole). * Find a fraction of a number when a numerator is more than 1 (e.g. ¾, 6/10). | Model and solve simple problems involving fractions   * Use division and models to find fractions of quantities when solving problems. * Finds the whole given the fractional part (e.g. if 2/3 of the whole is 18, what is the whole?). * Uses number knowledge to find fractions of quantities (e.g. 2/3 of 21 is 14). |  |
| **Investigate equivalent fractions used in context**   * Understands and uses equivalent fractions (e.g. 2/4 = 4/8) by creating and using an equivalent fractions chart. * Renames fractions using manipulatives and images (e.g. 6/10 = 3/5) may not be to the lowest term). * Uses shaded paper rectangles to model equivalent common fractions (e.g. a shaded rectangle of ⅗ can be folded in three to create a model of 9/15). | Simplify fractions to the lowest common denominator   * Simplify or reduce a fraction by renaming (e.g. 6/10 = 3/5) using models, folded/shaded paper and diagrams. * Express two fractions with a common denominator in order to decide which is bigger; e.g. 2/5 is smaller than 3/7 because the first is 14/35 and the second is 15/35. * Can find and express the next equivalent fraction in a sequence by multiplying or using a model (e.g. ⅖, 4/10, 6/15 etc…). | Simplify fractions in mental and written form   * Use known facts to rename fractions to the lowest term mentally (e.g. ¼ = 3/12 ) * Use knowledge of factors and sequence of fractions to rename fractions as their lowest term (e.g. 24/36 = 2/3) |
| **Model addition and subtraction of fractions with related denominators**   * Add and subtract common fractions where the denominator is 10 (3/10 + 4/10 = 7/10) by shading a rectangle model * Shade a model to show the addition and subtraction of common fractions where the denominators are the same (like fractions - e.g. ⅖ + ⅕ = ⅗) | Model addition and subtraction of fractions with related denominators where there is a range of numerator and denominator values.   * Use knowledge of factors to show the addition and subtraction of common fractions where the denominators are different and need renaming   (e.g. ⅔ + ¼ = 11/12) | **Solve problems involving addition and subtraction of common fractions with the same or related denominators.**   * Use mental and written strategies for adding and subtracting fractions to solve contextualised problems. * Add and subtract common fractions by changing one denominator   (e.g. ½ + ¾ ) to solve contextualised problems. |
| **Model and compare improper fractions and mixed numbers**   * Rename simple mixed numbers as improper fractions and vice versa using materials such as rectangular paper model (e.g. 1 ¼ = 5/4) | Model, read, write and compare improper fractions and mixed numbers   * Use knowledge of multiplication and fractions to rename simple mixed numbers as improper fractions and vice versa (e.g. 1 ¼ = 5/4). | Convert improper fractions to mixed numbers and vice versa.   * Use division and factors to rename improper fractions as mixed numbers and vice versa. |
| **Count in quarters, halves and thirds, including mixed numbers**   * Use a rectangular paper model to count in fractional parts e.g. ¼ 2/4, ¾ 1, 1 ¼ 1 2/4 * Identify the next term in a fractional counting sequence e.g. in thirds the term after 2 ⅓ is 2 ⅔. | Model, read, write and compare percentages understanding them as the number of parts in every 100   * Explain what percentages are, using the vocabulary: part, whole, fraction. * Model percentages using hundred squares and base 10 materials. * Explain the relationship between percentages, decimals and common fractions e.g. by using a hundredths grid. (1/10 = 0.1 = 10%). * Order percentages on a number-line. | Find percentages of numbers or quantities with and without a calculator   * Find fractions and percentages of shapes, sets and quantities in real life situations. * Explain the use of percentages in real life * Interpret and use percentages to make straightforward comparisons; e.g. say, this morning, in basketball, I got 26 hoops from 50 throws, that’s 52%. This afternoon, I got 24 from 40 throws, that’s 60%. I must be improving. |
|  | Model and solve simple problems involving ratio and proportion   * Begin to show understanding of using simple ratio strategies, for example draw diagrams to represent ratios of parts to parts; e.g. they can mark a drawing of a paint can to represent the ratio of red paint to white paint as 2 to 3; or mark a picture of 30 students to represent a ratio of 2 girls to 3 boys. * Model solving ratio problems using manipulatives. | Read, write and solve problems involving ratio   * Distinguish common fractions that show the ratio of parts to the whole from ratios which describe parts to parts; e.g. the cordial to water ratio was 1 to 4. That is, 1 part of cordial in 5 parts of drink altogether, so the fraction of cordial is one fifth. * Use unitary ratios (i.e. of the form ‘1 part to b parts’) when making comparisons of parts to parts; e.g. in the first lot, the ratio of cordial to water was 1 to 4. That was too strong, so I added more water which made it 1 to 5. |

**Year 6**

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| Beginning | Consolidating / Meets Expectations | Exceeds Expectations |
| --- | --- | --- |
| **Read, write, compare and order common fractions and decimal fractions to hundredths or beyond**   * Order decimals to at least two decimal places using place value knowledge, models or number-lines. * Order decimals that have a mixture of at least one, two decimal places. * Explain the relationship between fractions and decimals using a model (both are parts of a whole). |  |  |
| **Understand the relationship and convert between common fractions and decimal fractions.**   * Convert between common fractions and decimals (e.g. ½ = 0.5, ¼ = 0.25. ¾ = 0.75) * Use equivalence between fractions, e.g. convert fractions such as ⅖ into tenths or hundredths and express them as decimals or percentages and vice versa. * Convert tenths and hundredths to decimals (e.g. 3/10 = 0.3) and the reverse. * Use a hundredths grid to model converting between decimal and common fractions | Understand the relationship and convert between common fractions, decimal fractions and percentages.   * Recognise approximate proportions of a whole and use simple fractions and percentages to describe these. * Explains and models the relationship between fractions, decimals and percentages. * Reads, writes, orders, and compares decimals, percentages and fractions * Convert between fractions, decimals, and percentages. * Use the more common equivalences between common fractions and percentages when comparing quantities; e.g. 50% is the same as a half. One third off is better than 30% off. * Recognise simple equivalence between fractions, decimals and percentages, e.g.1/4 = 0.25 = 25% * Relates percentages over 100% to improper fractions and mixed numbers (e.g. 275% = 2 ¾) |  |
| **Model and solve simple problems involving fractions.**     * Use division and models to find fractions of quantities when solving problems. * Finds the whole given the fractional part (e.g. if 2/3 of the whole is 18, what is the whole?) * Uses number knowledge to find fractions of quantities (e.g. 2/3 of 21 is 14) |  |  |
| **Simplify fractions to the lowest common denominator**   * Simplify or reduce a fraction by renaming (e.g. 6/10 = 3/5) using models, folded/shaded paper and diagrams. * Express two fractions with a common denominator in order to decide which is bigger; e.g. 2/5 is smaller than 3/7 because the first is 14/35 and the second is 15/35. * Find and express the next equivalent fraction in a sequence by multiplying or using a model   (e.g. ⅖, 4/10, 6/15 etc…). | Simplify fractions in mental and written form   * Use known facts to rename fractions to the lowest term mentally   (e.g. 3/12 = ¼ )   * Use knowledge of factors and sequence of fractions to rename fractions as their lowest term   (e.g. 24/36 = 2/3) |  |
| **Model addition and subtraction of fractions with related denominators where there is a range of numerator and denominator values.**   * Uses knowledge of factors to show the addition and subtraction of common fractions where the denominators are different and need renaming   (e.g. ⅔ + ¼ = 11/12). | Solve problems involving addition and subtraction of common fractions with the same or related denominators.   * Use mental and written strategies for adding and subtracting fractions to solve contextualised problems. * Add and subtract common fractions by changing one denominator (e.g. ½ + ¾ ) to solve contextualised problems. |  |
| **Model, read, write and compare improper fractions and mixed numbers**   * Uses knowledge of multiplication and fractions to rename simple mixed numbers as improper fractions and vice versa (e.g. 1 ¼ = 5/4) | Convert improper fractions to mixed numbers and vice versa.   * Use division and factors to rename improper fractions as mixed numbers and vice versa. |  |
| **Model, read, write and compare percentages understanding them as the number of parts in every 100**   * Explain what percentages are, using the vocabulary “ part, whole, fraction” * Model percentages using hundred squares and base 10 materials. * Explain the relationship between percentages, decimals and common fractions e.g. by using a hundredths grid. (1/10 = 0.1 = 10%) * Order percentages on a number-line | Find percentages of numbers or quantities with and without a calculator   * Find fractions and percentages of shapes, sets and quantities in real life situations. * Explain the use of percentages in real life * Interpret and use percentages to make straightforward comparisons; e.g. say, this morning, in basketball, I got 26 hoops from 50 throws, that’s 52%. This afternoon, I got 24 from 40 throws, that’s 60%. I must be improving. |  |
| **Model and solve simple problems involving ratio and proportion**   * Begin to show understanding of using simple ratio strategies, for example draw diagrams to represent ratios of parts to parts; e.g. they can mark a drawing of a paint can to represent the ratio of red paint to white paint as 2 to 3; or mark a picture of 30 students to represent a ratio of 2 girls to 3 boys. * Model solving ratio problems using manipulatives. | Read, write and solve problems involving ratio   * Distinguish common fractions that show the ratio of parts to the whole from ratios which describe parts to parts; e.g. the cordial to water ratio was 1 to 4. That is, 1 part of cordial in 5 parts of drink altogether, so the fraction of cordial is one fifth. * Use unitary ratios (i.e. of the form ‘1 part to b parts’) when making comparisons of parts to parts; e.g. in the first lot, the ratio of cordial to water was 1 to 4. That was too strong, so I added more water which made it 1 to 5. |  |