

# IB Primary Years Programme Mathematics Scope and Sequence by Haese Mathematics

Last updated: 26 May 2025

This document summarises how our **Mathematics PYP** books align with the International Baccalaureate Primary Years Programme Mathematics learning continuums.

**Yellow** text indicates material which only appears in the Teacher Resource.

**Green** text indicates material in the United States currency worksheet.

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
Data handling					
Conceptual understandings					
<b>Phase 1:</b> <ul style="list-style-type: none"><li>We collect information to make sense of the world around us.</li><li>Organising objects and events helps us to solve problems.</li><li>Events in daily life involve chance.</li></ul>	<b>Chapter 8: Data handling</b> Theory: page 103 Exercise: 1, 2, 6 Activity: page 106 Group Activity: page 105  <b>Chapter 12: Chance</b> Activity: page 133, 134	<b>Chapter 8: Data handling</b> Theory: page 123 Exercise: 1, 2, 7 Discussion: page 123 Group Activity: 127	<b>Chapter 10: Data handling</b> Theory: page 149	<b>Chapter 5: Data handling</b> Theory: page 85 Discussion: page 85	25A: Categorical data
<b>Phase 2:</b> <ul style="list-style-type: none"><li>Information can be expressed as organised and structured data.</li><li>Objects and events can be organised in different ways.</li><li>Some events in daily life are more likely to happen than others.</li></ul>	<b>Chapter 12: Chance</b> Discussion: page 136	<b>Chapter 8: Data handling</b> Theory: page 125  <b>Chapter 12: Chance</b> Theory: page 159 Exercise: 1 – 3 Activity: page 160 Class Activity: page 162	<b>Chapter 10: Data handling</b> Theory: page 149, 153, 158, 160 Exercise: 1, 9  <b>Chapter 16: Chance</b> Exercise: 1 Discussion: page 216, 220 Activity: page 214, 219, 221	<b>Chapter 2: Addition</b> Puzzle: page 24  <b>Chapter 21: Probability</b> Theory: page 305	24A: Describing probability 24E: Experimental probability
<b>Phase 3:</b> <ul style="list-style-type: none"><li>Data can be collected, organised, displayed and analysed in different ways.</li><li>Different graph forms highlight different aspects of data more efficiently.</li><li>Probability can be based on experimental events in daily life.</li><li>Probability can be expressed in numerical notations.</li></ul>			<b>Chapter 10: Data handling</b> Discussion: page 157  <b>Chapter 16: Chance</b> Discussion: page 218 Activity: page 218, 219	<b>Chapter 5: Data handling</b> Theory: page 85, 89, 92, 96, 98 Activity: page 95  <b>Chapter 21: Probability</b> Theory: page 305, 308	24B: Using numbers to describe probabilities 24E: Experimental probability  25A: Categorical data 25B: Bar graphs 25C: Circle graphs 25D: Line graphs 25E: Numerical data
<b>Phase 4:</b> <ul style="list-style-type: none"><li>Data can be presented effectively for valid interpretation and communication.</li><li>Range, mode, median and mean can be used to analyse statistical data.</li><li>Probability can be represented on a scale between 0–1 or 0%–100%.</li><li>The probability of an event can be predicted theoretically.</li></ul>			<b>Chapter 10: Data handling</b> Discussion: page 157	<b>Chapter 5: Data handling</b> Theory: page 85  <b>Chapter 21: Probability</b> Theory: page 308 – 311	24B: Using numbers to describe probability 24C: Outcomes 24D: Theoretical probability  25A: Categorical data 25B: Bar graphs 25C: Circle graphs 25F: The mean of a data set 25G: The median of a data set 25H: The range of a data set
Constructing meaning					
<b>Phase 1:</b> <ul style="list-style-type: none"><li>understand that sets can be organised by different attributes</li><li>understand that information about themselves and their surroundings can be obtained in different ways</li><li>discuss chance in daily events (impossible, maybe, certain).</li></ul>	<b>Chapter 8: Data handling</b> Theory: page 103, 104 Exercise: 1, 2  <b>Chapter 12: Chance</b> Theory: page 135 Exercise: 1 – 4 Activity: page 133, 134	<b>Chapter 8: Data handling</b> Theory: page 124 Exercise: 1, 2, 8, 9 Discussion: page 126			

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>understand that sets can be organised by one or more attributes</li> <li>understand that information about themselves and their surroundings can be collected and recorded in different ways</li> <li>understand the concept of chance in daily events (impossible, less likely, maybe, most likely, certain).</li> </ul>		<b>Chapter 8: Data handling</b> Theory: page 125 Exercise: 6 Discussion: page 126  <b>Chapter 12: Chance</b> Theory: page 161 Exercise: 1 – 3, 6 Activity: page 160, 161 Class Activity: page 162	<b>Chapter 10: Data handling</b> Theory: page 149, 153, 158, 160 Exercise: 1, 3, 4 Discussion: page 149 Activity: page 152  <b>Chapter 16: Chance</b> Theory: page 213 Exercise: 1 Discussion: page 214 Activity: page 214	<b>Chapter 5: Data handling</b> Theory: page 85, 89, 96, 98 Exercise: 3 Activity: page 95  <b>Chapter 21: Probability</b> Theory: page 305	24A: Describing probability  25A: Categorical data
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>understand that data can be collected, displayed and interpreted using simple graphs, for example, bar graphs, line graphs</li> <li>understand that scale can represent different quantities in graphs</li> <li>understand that the mode can be used to summarise a set of data</li> <li>understand that one of the purposes of a database is to answer questions and solve problems</li> <li>understand that probability is based on experimental events.</li> </ul>			<b>Chapter 10: Data handling</b> Exercise: 7, 9 Discussion: page 155  <b>Chapter 16: Chance</b> Discussion: page 218 Activity: page 219	<b>Chapter 5: Data handling</b> Theory: page 85, 89, 92 Activity: page 95	24E: Experimental probability  25B: Bar graphs 25D: Line graphs 25E: Numerical data 25H: The range of a data set
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>understand that different types of graphs have special purposes</li> <li>understand that the mode, median, mean and range can summarise a set of data</li> <li>understand that probability can be expressed in scale (0–1) or per cent (0%–100%)</li> <li>understand the difference between experimental and theoretical probability.</li> </ul>				<b>Chapter 21: Probability</b> Theory: page 308	24B: Using numbers to describe probabilities 24E: Experimental probability  25A: Categorical data 25C: Circle graphs 25E: Numerical data 25F: The mean of a data set 25G: The median of a data set 25H: The range of a data set
Transferring meaning into symbols					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>represent information through pictographs and tally marks</li> <li>sort and label real objects by attributes.</li> </ul>	<b>Chapter 8: Data handling</b> Theory: page 104 Exercise: 3 – 8 Discussion: page 107 Activity: page 106 Group Activity: page 105, 108	<b>Chapter 8: Data handling</b> Theory: page 124 Exercise: 3 – 9 Discussion: page 128 Activity: page 127 Group Activity: page 127, 130	<b>Chapter 10: Data handling</b> Theory: page 153 Exercise: 5, 7, 8 Activity: page 152	<b>Chapter 5: Data handling</b> Exercise: 4 – 7 Activity: page 91	
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>collect and represent data in different types of graphs, for example, tally marks, bar graphs</li> <li>represent the relationship between objects in sets using tree, Venn and Carroll diagrams</li> <li>express the chance of an event happening using words or phrases (impossible, less likely, maybe, most likely, certain).</li> </ul>		<b>Chapter 12: Chance</b> Theory: page 161 Exercise: 1 – 10 Discussion: page 160 Activity: page 161, 164 Class Activity: page 162	<b>Chapter 10: Data handling</b> Theory: page 149, 158, 160 Exercise: 2 – 4, 6, 9, 10, 12, 13 Activity: page 152, 159 <b>Practical Activity: page 159, 161, 162</b>  <b>Chapter 16: Chance</b> Theory: page 213, 216 Exercise: 2 – 9 Activity: page 214 Puzzle: page 215	<b>Chapter 5: Data handling</b> Theory: page 85, 96, 98 Exercise: 1 – 3, 5, 9, 11, 12, 14 Discussion: page 87 Activity: page 91, 94 Group Activity: page 88 Puzzle: page 99 Game: page 97 <b>Practical Activity: page 97, 99</b>  <b>Chapter 21: Probability</b> Theory: page 305, 308, 310 Exercise: 1 – 12 Discussion: page 307 Activity: page 306	24A: Describing probability 24B: Using numbers to describe probabilities 24C: Outcomes 24E: Experimental probability  25A: Categorical data

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>collect, display and interpret data using simple graphs, for example, bar graphs, line graphs</li> <li>identify, read and interpret range and scale on graphs</li> <li>identify the mode of a set of data</li> <li>use tree diagrams to express probability using simple fractions.</li> </ul>			<b>Chapter 10: Data handling</b> Theory: page 153 Exercise: 9 Discussion: page 155	<b>Chapter 5: Data handling</b> Theory: page 85, 92 Exercise: 1 – 4, 7 – 9 Activity: page 94, 95 Group Activity: page 88  <b>Chapter 13: Area</b> Activity: page 238  <b>Chapter 21: Probability</b> Theory: page 311 Exercise: 13, 14 Puzzle: page 312	24D: Theoretical probability  25B: Bar graphs 25D: Line graphs 25E: Numerical data 25H: The range of a data set
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>collect, display and interpret data in circle graphs (pie charts) and line graphs</li> <li>identify, describe and explain the range, mode, median and mean in a set of data</li> <li>set up a spreadsheet using simple formulas to manipulate data and to create graphs</li> <li>express probabilities using scale (0–1) or per cent (0%–100%).</li> </ul>				<b>Chapter 5: Data handling</b> Activity: page 95  <b>Chapter 21: Probability</b> Theory: page 308, 310, 311 Exercise: 5, 6, 10 – 14 Discussion: page 308, 311, 313 Activity: page 312 Puzzle: page 312	24B: Using numbers to describe probabilities 24D: Theoretical probability 24E: Experimental probability  25A: Categorical data 25C: Circle graphs 25E: Numerical data 25F: The mean of a data set 25G: The median of a data set 25H: The range of a data set
Applying with understanding					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>create pictographs and tally marks</li> <li>create living graphs using real objects and people</li> <li>describe real objects and events by attributes.</li> </ul>	<b>Chapter 8: Data handling</b> Exercise: 4, 5, 7, 8 Activity: page 106 Group Activity: page 105, 108	<b>Chapter 8: Data handling</b> Exercise: 4 – 6, 8, 9 Activity: page 127 Group Activity: page 127, 130	<b>Chapter 10: Data handling</b> Exercise: 3, 4, 6, 8 Activity: page 152 <b>Practical Activity: page 162</b>	<b>Chapter 5: Data handling</b> Exercise: 2, 3, 5, 7, 9 Activity: page 94 Group Activity: page 88	
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>collect, display and interpret data for the purpose of answering questions</li> <li>create a pictograph and sample bar graph of real objects and interpret data by comparing quantities (for example, more, fewer, less than, greater than)</li> <li>use tree, Venn and Carroll diagrams to explore relationships between data</li> <li>identify and describe chance in daily events (impossible, less likely, maybe, most likely, certain).</li> </ul>		<b>Chapter 8: Data handling</b> Group Activity: page 130  <b>Chapter 12: Chance</b> Exercise: 10 Discussion: page 164 Activity: page 161, 164	<b>Chapter 10: Data handling</b> Exercise: 3 – 5, 7, 9 – 13 Activity: page 152, 159 <b>Practical Activity: page 159, 161, 162</b>  <b>Chapter 16: Chance</b> Exercise: 1 Discussion: page 216, 218 Activity: page 214	<b>Chapter 2: Addition</b> Exercise: 25  <b>Chapter 5: Data handling</b> Exercise: 1 – 4, 6 – 14 Activity: page 94 Group Activity: page 88 Puzzle: page 99 Game: page 97 <b>Practical Activity: page 97, 99</b>  <b>Chapter 21: Probability</b> Exercise: 1 Activity: page 306	24A: Describing probability  25A: Categorical data 25B: Bar graphs 25C: Circle graphs 25D: Line graphs
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>design a survey and systematically collect, organise and display data in pictographs and bar graphs</li> <li>select appropriate graph form(s) to display data</li> <li>interpret range and scale on graphs</li> <li>use probability to determine mathematically fair and unfair games and to explain possible outcomes</li> <li>express probability using simple fractions.</li> </ul>			<b>Chapter 10: Data handling</b> Exercise: 5 – 10 Discussion: page 155	<b>Chapter 5: Data handling</b> Exercise: 5 – 9 Activity: page 91, 94  <b>Chapter 21: Probability</b> Theory: page 308, 310, 311 Exercise: 10 – 14 Discussion: page 308, 311, 313 Activity: page 312 Puzzle: page 312	24B: Using numbers to describe probability 24D: Theoretical probability 24E: Experimental probability  25B: Bar graphs 25C: Circle graphs

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>design a survey and systematically collect, record, organise and display the data in a bar graph, circle graph, line graph</li> <li>identify, describe and explain the range, mode, median and mean in a set of data</li> <li>create and manipulate an electronic database for their own purposes</li> <li>determine the theoretical probability of an event and explain why it might differ from experimental probability.</li> </ul>				<b>Chapter 5: Data handling</b> Activity: page 94, 95	24E: Experimental probability
Measurement					
Conceptual understandings					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>Measurement involves comparing objects and events.</li> <li>Objects have attributes that can be measured using non-standard units.</li> <li>Events can be ordered and sequenced.</li> </ul>	<b>Chapter 6: Measurement</b> Exercise: 17 Discussion: page 81, 82 Activity: page 85, 86, 88, 90, 94  <b>Chapter 10: Time</b> Theory: page 117 Exercise: 3, 4 Discussion: page 118	<b>Chapter 6: Measurement</b> Exercise: 23 Discussion: page 91, 92, 102 Activity: page 100, 101, 104, 109  <b>Chapter 10: Time</b> Theory: page 141, 142 Discussion: page 141	<b>Chapter 6: Length</b> Theory: page 105  <b>Chapter 8: Mass</b> Theory: page 127  <b>Chapter 13: Time</b> Theory: page 187, 188	<b>Chapter 8: Time</b> Theory: page 160 Exercise: 1, 2 Discussion: page 170  <b>Chapter 11: Length</b> Theory: page 203  <b>Chapter 13: Area</b> Theory: page 229 Discussion: page 229, 232 Activity: page 231  <b>Chapter 16: Volume</b> Theory: page 261 Discussion: page 261  <b>Chapter 18: Mass</b> Theory: page 277  <b>Chapter 19: Temperature</b> Theory: page 287	9E: Time lines  11: Length (Introduction) 14: Area (Introduction) 14A: Area  16A: Volume  18: Mass (Introduction) 22: Temperature (Introduction)
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>Standard units allow us to have a common language to identify, compare, order and sequence objects and events.</li> <li>We use tools to measure the attributes of objects and events.</li> <li>Estimation allows us to measure with different levels of accuracy.</li> </ul>	<b>Chapter 6: Measurement</b> Activity: pages 85, 88, 90  <b>Chapter 10: Time</b> Theory: page 119, 120, 122 – 124	<b>Chapter 6: Measurement</b> Theory: page 96 Discussion: page 96, 110 Activity: 100, 101, 104  <b>Chapter 10: Time</b> Theory: page 143, 144, 146, 147, 149, 151 Discussion: page 146	<b>Chapter 6: Length</b> Theory: page 106 Discussion: page 106, 109  <b>Chapter 7: Capacity</b> Theory: page 118  <b>Chapter 8: Mass</b> Theory: page 130  <b>Chapter 13: Time</b> Theory: page 189, 198	<b>Chapter 8: Time</b> Theory: page 153, 157  <b>Chapter 11: Length</b> Theory: page 203, 204, 209, 214 Discussion: page 205, 211, 214  <b>Chapter 13: Area</b> Theory: page 233, 236 Activity: page 234  <b>Chapter 16: Volume</b> Theory: page 262 Activity: page 265  <b>Chapter 17: Capacity</b> Theory: page 267 Activity: page 274  <b>Chapter 18: Mass</b> Theory: page 278  <b>Chapter 19: Temperature</b> Theory: page 287  <b>Chapter 20: Money</b> Theory: page 291, (1) Activity: page 295	9: Time (Introduction)  11A: Measuring length 11D: Perimeter  14A: Area 14C: Other units of area  16A: Volume 16C: Other units of volume  17A: Units of capacity 17C: Measuring with containers  18A: Units of mass  19A: Decimal currency 19F: Rounding money 19G: Estimating with money  22A: Celsius temperature 22B: Fahrenheit temperature

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>Objects and events have attributes that can be measured using appropriate tools.</li> <li>Relationships exist between standard units that measure the same attributes.</li> </ul>			<b>Chapter 6: Length</b> Theory: page 111 Discussion: page 112  <b>Chapter 7: Capacity</b> Theory: page 118  <b>Chapter 8: Mass</b> Theory: page 128  <b>Chapter 13: Time</b> Theory: page 192, 195 Exercise: 2, 17, 18	<b>Chapter 8: Time</b> Theory: page 154, 165  <b>Chapter 11: Length</b> Theory: page 204, 209, 214 Discussion: page 211  <b>Chapter 17: Capacity</b> Theory: page 267  <b>Chapter 18: Mass</b> Theory: page 278, 282  <b>Chapter 19: Temperature</b> Discussion: page 289  <b>Chapter 20: Money</b> Theory: page 291, 296, (1, 5) Exercise: 5, (5) Activity: page 295, 300	8D: Measuring angles 8E: Constructing angles  9B: Units of time  11A: Measuring length 11B: Length conversions  17B: Capacity conversions 17C: Measuring with containers  18B: Mass conversions 18C: Measuring mass  19A: Decimal currency  22A: Celsius temperature 22B: Fahrenheit temperature
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>Accuracy of measurements depends on the situation and the precision of the tool.</li> <li>Conversion of units and measurements allows us to make sense of the world we live in.</li> <li>A range of procedures exists to measure different attributes of objects and events.</li> </ul>			<b>Chapter 7: Capacity</b> Theory: page 123	<b>Chapter 11: Length</b> Activity: page 207, 214  <b>Chapter 13: Area</b> Theory: 235, 236  <b>Chapter 16: Volume</b> Theory: page 261 Activity: page 265  <b>Chapter 17: Capacity</b> Exercise: 9 Activity: page 274  <b>Chapter 18: Mass</b> Theory: page 282 Discussion: page 283	11A: Measuring length 11B: Length conversions 11D: Perimeter 11E: The perimeter of a square 11F: The perimeter of a rectangle  14B: The area of a rectangle 14C: Other units of area  16A: Volume 16B: The volume of a rectangular prism  17C: Measuring with containers  18C: Measuring mass  19A: Decimal currency  22A: Celsius temperature 22B: Fahrenheit temperature
Constructing meaning					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>understand that attributes of real objects can be compared and described, for example, longer, shorter, heavier, empty, full, hotter, colder</li> <li>understand that events in daily routines can be described and sequenced, for example, before, after, bedtime, storytime, today, tomorrow.</li> </ul>	<b>Chapter 6: Measurement</b> Theory: page 87, 89, 92 Exercise: 1, 3, 7, 11 – 13 Discussion: page 81, 82 Activity: page 83  <b>Chapter 10: Time</b> Theory: page 117 Exercise: 1, 2, 5 Discussion: page 118	<b>Chapter 6: Measurement</b> Theory: page 98, 100, 103 – 106, 110 Exercise: 1, 3, 9, 15, 16, 18, 19, 25, 26 Discussion: page 91, 92 Activity: page 93  <b>Chapter 10: Time</b> Theory: page 142 Exercise: 1, 3 Discussion: page 141	<b>Chapter 6: Length</b> Theory: page 105, 107 Activity: page 105  <b>Chapter 7: Capacity</b> Theory: page 117 Exercise: 1 – 4  <b>Chapter 8: Mass</b> Theory: page 127  <b>Chapter 13: Time</b> Theory: page 187, 188 Exercise: 1 – 3	<b>Chapter 8: Time</b> Theory: page 160 Exercise: 1, 2, 11 – 13 Discussion: page 153 Activity: page 162  <b>Chapter 11: Length</b> Theory: page 203  <b>Chapter 13: Area</b> Theory: page 229 Discussion: page 229, 232 Activity: page 231  <b>Chapter 16: Volume</b> Theory: page 261 Discussion: page 261  <b>Chapter 17: Capacity</b> Theory: page 267 Exercise: 1  <b>Chapter 18: Mass</b> Theory: page 277  <b>Chapter 19: Temperature</b> Theory: page 287	9A: Digital time 9C: Time calculations 9D: 24-hour time  11: Length (Introduction)  14: Area (Introduction) 14A: Area  17: Capacity (Introduction)  18: Mass (Introduction)  22: Temperature (Introduction)



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>understand the use of standard units to measure, for example, length, mass, money, time, temperature</li> <li>understand that tools can be used to measure</li> <li>understand that calendars can be used to determine the date, and to identify and sequence days of the week and months of the year</li> <li>understand that time is measured using universal units of measure, for example, years, months, days, hours, minutes and seconds.</li> </ul>	<b>Chapter 10: Time</b> Theory: page 119, 120, 122 – 124 Exercise: 6, 8, 10 – 14, 16, 18, 19 – 24 Discussion: page 128	<b>Chapter 6: Measurement</b> Theory: page 96 Exercise: 6 Discussion: page 96  <b>Chapter 10: Time</b> Theory: page 143, 144, 146, 147, 149, 151 Exercise: 5 – 7, 9 – 11, 13, 15 – 31 Discussion: page 146, 149, 152, 154, 156 Activity: page 156	<b>Chapter 6: Length</b> Theory: page 106, 111 Exercise: 4 Discussion: page 106  <b>Chapter 7: Capacity</b> Theory: page 118, 120 Exercise: 5, 6  <b>Chapter 8: Mass</b> Theory: page 128, 130 Exercise: 3  <b>Chapter 13: Time</b> Theory: page 189, 192, 195, 198 Exercise: 2, 6, 7, 14, 16 – 23 Discussion: page 194, 197, 199, 201	<b>Chapter 8: Time</b> Theory: page 153, 154, 157, 164 Exercise: 18 – 21, 24, 25  <b>Chapter 11: Length</b> Theory: page 203 – 205, 209, 211, 214 Exercise: 5 Discussion: page 205, 211, 214  <b>Chapter 17: Capacity</b> Theory: page 267, 269 Discussion: page 267 Activity: page 274  <b>Chapter 18: Mass</b> Theory: page 278, 282, 283 Discussion: page 282  <b>Chapter 19: Temperature</b> Theory: page 287 Exercise: 1, 2 Discussion: page 289, 290  <b>Chapter 20: Money</b> Theory: page 291, (1) Activity: page 295, 300	8C: Angles  9: Time (Introduction) 9A: Digital time 9B: Units of time  11A: Measuring length  17A: Units of capacity 17C: Measuring with containers  18A: Units of mass 18C: Measuring mass  19A: Decimal currency  22A: Celsius temperature 22B: Fahrenheit temperature
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>understand the use of standard units to measure perimeter, area and volume</li> <li>understand that measures can fall between numbers on a measurement scale, for example, <math>3\frac{1}{2}</math> kg, between 4 cm and 5 cm</li> <li>understand relationships between units, for example, metres, centimetres and millimetres</li> <li>understand an angle as a measure of rotation.</li> </ul>			<b>Chapter 6: Length</b> Theory: page 111 Exercise: 7 Discussion: page 112  <b>Chapter 7: Capacity</b> Theory: page 118, 122, 123 Exercise: 7  <b>Chapter 8: Mass</b> Theory: page 128 Exercise: 2  <b>Chapter 13: Time</b> Theory: page 192, 195 Exercise: 2, 17, 18	<b>Chapter 8: Time</b> Theory: page 154, 165 – 167 Exercise: 18 – 21, 24, 25 Discussion: page 155  <b>Chapter 9: Turns and angles</b> Theory: page 176, 178  <b>Chapter 11: Length</b> Theory: page 204, 205, 209, 211, 214 Exercise: 5, 9, 16, 18, 20 Discussion: page 211  <b>Chapter 13: Area</b> Theory: page 233 Exercise: 7, 8 Activity: page 234  <b>Chapter 16: Volume</b> Theory: page 262 Exercise: 2, 3  <b>Chapter 17: Capacity</b> Theory: page 267, 270, 272  <b>Chapter 18: Mass</b> Theory: page 278, 280, 281, 283  <b>Chapter 19: Temperature</b> Theory: page 287  <b>Chapter 20: Money</b> Theory: page 291, 296, (1, 5) Exercise: 4 – 14, (4 – 13) Activity: page 295, 300 Listening Activity: page 299, (8) Puzzle: page 294, (4) Challenge: page 295, (4)	8C: Angles 8D: Measuring angles 8E: Constructing angles  9A: Digital time 9B: Units of time 9G: Time zones  11A: Measuring length 11B: Length conversions 11C: Operations with lengths 11D: Perimeter  14A: Area 14C: Other units of area  16A: Volume 16C: Other units of volume  17B: Capacity conversions  18B: Mass conversions  19A: Decimal currency  22B: Fahrenheit temperature

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>understand procedures for finding area, perimeter and volume</li> <li>understand the relationships between area and perimeter, between area and volume, and between volume and capacity</li> <li>understand unit conversions within measurement systems (metric or customary).</li> </ul>			<b>Chapter 6: Length</b> Exercise: 7  <b>Chapter 7: Capacity</b> Exercise: 7  <b>Chapter 8: Mass</b> Exercise: 2	<b>Chapter 8: Time</b> Theory: page 165  <b>Chapter 11: Length</b> Exercise: 5, 16, 20  <b>Chapter 13: Area</b> Theory: page 229, 235, 236 Discussion: page 232 Activity: page 231  <b>Chapter 16: Volume</b> Theory: page 261 Activity: page 265  <b>Chapter 17: Capacity</b> Theory: page 267  <b>Chapter 18: Mass</b> Theory: page 278, 280, 281	9B: Units of time  11A: Measuring length 11B: Length conversions 11D: Perimeter 11E: The perimeter of a square 11F: The perimeter of a rectangle  14A: Area 14B: The area of a rectangle 14C: Other units of area  16A: Volume 16B: The volume of a rectangular prism  17B: Capacity conversions  18B: Mass conversions  22B: Fahrenheit temperature
Transferring meaning into symbols					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>identify, compare and describe attributes of real objects, for example, longer, shorter, heavier, empty, full, hotter, colder</li> <li>compare the length, mass and capacity of objects using nonstandard units</li> <li>identify, describe and sequence events in their daily routine, for example, before, after, bedtime, storytime, today, tomorrow.</li> </ul>	<b>Chapter 6: Measurement</b> Exercise: 2, 4 – 6, 8 – 12, 14 – 17 Activity: page 84 – 86, 89, 90, 94 Puzzle: page 87  <b>Chapter 10: Time</b> Exercise: 3, 4	<b>Chapter 6: Measurement</b> Exercise: 2, 4, 5, 10 – 18, 20 – 24 Activity: page 94, 95, 99, 102, 103, 108, 109 Group activity: page 95 Puzzle: page 109  <b>Chapter 10: Time</b> Activity: page 143	<b>Chapter 6: Length</b> Activity: page 110  <b>Chapter 7: Capacity</b> Exercise: 1 – 4 Activity: page 124  <b>Chapter 8: Mass</b> Exercise: 1, 4, 5 Discussion: page 129 Activity: page 131 Puzzle: page 128 Game: page 131  <b>Chapter 10: Data handling</b> Exercise: 9	<b>Chapter 5: Data handling</b> Theory: page 92  <b>Chapter 13: Area</b> Theory: page 229 Exercise: 1 – 6 Activity: page 231  <b>Chapter 16: Volume</b> Theory: page 261 Exercise: 1, 4  <b>Chapter 17: Capacity</b> Exercise: 1  <b>Chapter 18: Mass</b> Exercise: 1 – 3 Activity: page 277  <b>Chapter 19: Temperature</b> Discussion: page 287	9: Time (Introduction) 9E: Time lines  14A: Area

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>estimate and measure objects using standard units of measurement: length, mass, capacity, money and temperature</li> <li>read and write the time to the hour, half hour and quarter hour</li> <li>estimate and compare lengths of time: second, minute, hour, day, week and month.</li> </ul>	<b>Chapter 10: Time</b> Theory: page 119, 120, 122, 123 Exercise: 7 – 18 Discussion: page 124	<b>Chapter 6: Measurement</b> Exercise: 7, 8 Activity: page 97  <b>Chapter 10: Time</b> Theory: page 143, 144, 146, 147 Exercise: 4, 6 – 16	<b>Chapter 6: Length</b> Exercise: 1 – 5 Discussion: page 109 Activity: page 110, 113, 114  <b>Chapter 7: Capacity</b> Exercise: 8 – 10, 14 Discussion: page 120, 124 Activity: page 119, 121, 124  <b>Chapter 8: Mass</b> Activity: page 129, 131  <b>Chapter 13: Time</b> Theory: page 189 Exercise: 4, 5, 7 Activity: page 196	<b>Chapter 8: Time</b> Theory: page 153, 164 Exercise: 12, 14, 15  <b>Chapter 11: Length</b> Exercise: 1 – 4, 6 – 8, 10 – 12, 19 Discussion: page 211 Activity: page 207, 208 212 – 214  <b>Chapter 14: Position and direction</b> Theory: page 249 Exercise: 9 – 13  <b>Chapter 16: Volume</b> Theory: page 264 Exercise: 5, 6  <b>Chapter 17: Capacity</b> Exercise: 2, 4 – 14 Discussion: page 269 Activity: page 268, 271  <b>Chapter 18: Mass</b> Theory: page 283 Exercise: 17 – 19  <b>Chapter 19: Temperature</b> Exercise: 3, 4, 6  <b>Chapter 20: Money</b> Theory: page 296 Exercise: 1 – 4, 6, 8, 11 – 14 (1 – 4, 7, 10 – 13) Activity: page 295, 300 Listening Activity: page 299 (8) Puzzle: page 294 (4) Challenge: page 295 (4)	9B: Units of time 9C: Time calculations  11A: Measuring length  12E: Scale  17A: Units of capacity 17C: Measuring with containers  18C: Measuring mass  19F: Rounding money  22A: Celsius temperature 22B: Fahrenheit



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>estimate and measure using standard units of measurement: perimeter, area and volume</li> <li>describe measures that fall between numbers on a scale</li> <li>read and write digital and analogue time on 12-hour and 24-hour clocks.</li> </ul>			<b>Chapter 7: Capacity</b> Theory: page 122, 123 Exercise: 11 – 14 Activity: page 122, 124  <b>Chapter 13: Time</b> Theory: page 192, 195 Exercise: 9 – 13	<b>Chapter 8: Time</b> Theory: page 154, 157 Exercise: 3 – 6, 8 – 11, 13 Discussion: page 155 Activity: page 162  <b>Chapter 11: Length</b> Theory: page 205 Exercise: 6 – 8, 10 – 12 Activity: page 207, 208, 212, 213  <b>Chapter 13: Area</b> Theory: page 235, 236 Exercise: 7 – 11 Activity: page 238  <b>Chapter 16: Volume</b> Theory: page 264 Exercise: 2 – 6 Activity: page 265 Game: page 263  <b>Chapter 17: Capacity</b> Theory: page 270, 272 Exercise: 6 – 14 Activity: page 271  <b>Chapter 18: Mass</b> Theory: page 283 Exercise: 17 – 19  <b>Chapter 19: Temperature</b> Theory: page 287 Exercise: 3, 4, 6	9: Time (Introduction) 9A: Digital time 9C: Time calculations 9D: 24-hour time 9F: Timetables  11A: Measuring length 11D: Perimeter  14A: Area 14C: Other units of area  16A: Volume 16C: Other units of volume  17C: Measuring with containers  18C: Measuring mass  22A: Celsius temperature 22B: Fahrenheit temperature
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>develop and describe formulas for finding perimeter, area and volume</li> <li>use decimal and fraction notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles</li> <li>read and interpret scales on a range of measuring instruments</li> <li>measure and construct angles in degrees using a protractor</li> <li>carry out simple unit conversions within a system of measurement (metric or customary).</li> </ul>			<b>Chapter 6: Length</b> Theory: page 106 Exercise: 1, 7 – 9  <b>Chapter 7: Capacity</b> Theory: page 122, 123 Exercise: 7 – 14 Discussion: page 120, 124 Activity: page 121, 122, 124  <b>Chapter 8: Mass</b> Exercise: 2  <b>Chapter 13: Time</b> Theory: page 192, 195 Exercise: 8, 14 – 16	<b>Chapter 8: Time</b> Theory: page 154, 166, 167 Exercise: 7, 16 – 25  <b>Chapter 11: Length</b> Theory: page 203 – 205, 209, 211, 214 Exercise: 1, 5 – 12, 16 – 20 Discussion: page 211 Activity: page 207, 208, 212, 213  <b>Chapter 13: Area</b> Theory: page 235  <b>Chapter 17: Capacity</b> Theory: page 270, 272 Exercise: 3 – 14 Discussion: page 269 Activity: page 271  <b>Chapter 18: Mass</b> Theory: page 280, 281, 283 Exercise: 9 – 15, 17 – 19  <b>Chapter 19: Temperature</b> Theory: page 287 Exercise: 1 – 4, 6  <b>Chapter 20: Money</b> Theory: page 296, (5) Exercise: 7, (6)	8D: Measuring angles 8E: Constructing angles  9A: Digital time 9B: Units of time 9C: Time calculations  11A: Measuring length 11B: Length conversions 11C: Operations with lengths 11D: Perimeter 11E: The perimeter of a square 11F: The perimeter of a rectangle  14B: The area of a rectangle 14C: Other units of area  16B: The volume of a rectangular prism 16C: Other units of volume  17B: Capacity conversions 17C: Measuring with containers  18B: Mass conversions 18C: Measuring mass  19A: Decimal currency  21B: Problem solving  22A: Celsius temperature 22B: Fahrenheit temperature  26D: Rotations

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
Appling with understanding					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>describe observations about events and objects in real-life situations</li> <li>use non-standard units of measurement to solve problems in real-life situations involving length, mass and capacity.</li> </ul>	<b>Chapter 6: Measurement</b> Exercise: 5, 6, 14 – 17 Activity: pages 84 – 86, 88, 90, 94 Puzzle: page 87  <b>Chapter 10: Time</b> Exercise: 3, 4 Discussion: page 128 Activity: page 126, 128	<b>Chapter 6: Measurement</b> Exercise: 4, 5, 10, 11, 13, 14, 17, 20 – 24 Activity: page 94, 95, 97, 100 – 104, 108, 109 Group Activity: page 95 Puzzle: page 109  <b>Chapter 10: Time</b> Exercise: 2 Discussion: page 153, 154 – 156 Activity: 156	<b>Chapter 6: Length</b> Activity: page 110  <b>Chapter 7: Capacity</b> Exercise: 2 – 4  <b>Chapter 8: Mass</b> Exercise: 1 Discussion: page 129 Puzzle: page 128  <b>Chapter 13: Time</b> Exercise: 5 – 7 Discussion: page 201	<b>Chapter 8: Time</b> Discussion: page 160  <b>Chapter 13: Area</b> Activity: page 231  <b>Chapter 18: Mass</b> Exercise: 1 – 3 Activity: page 277  <b>Chapter 19: Temperature</b> Discussion: page 287	18C: Measuring mass
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>use standard units of measurement to solve problems in real-life situations involving length, mass, capacity, money and temperature</li> <li>use measures of time to assist with problem solving in real-life situations.</li> </ul>	<b>Chapter 10: Time</b> Discussion: page 124		<b>Chapter 6: Length</b> Exercise: 4 Activity: page 110  <b>Chapter 7: Capacity</b> Activity: page 119  <b>Chapter 8: Mass</b> Exercise: 4 – 6 Activity: page 129, 131 Game: page 131  <b>Chapter 13: Time</b> Exercise: 20 – 23 Activity: page 196	<b>Chapter 8: Time</b> Exercise: 26, 27 Activity: page 162, 171  <b>Chapter 11: Length</b> Exercise: 14, 15, 21, 22 Activity: page 207, 208, 212 – 214  <b>Chapter 17: Capacity</b> Exercise: 2 Activity: page 268, 274  <b>Chapter 18: Mass</b> Exercise: 4 – 7  <b>Chapter 19: Temperature</b> Exercise: 5, 7 Discussion: page 289  <b>Chapter 20: Money</b> Theory: page 301 Exercise: 15 – 17 Discussion: page 302 Activity: page 303	9B: Units of time 9C: Time calculations 9D: 24-hour time 9E: Time lines 9F: Timetables 9G: Time zones  11B: Length conversions 11C: Operations with lengths  17A: Units of capacity 17B: Capacity conversions 17C: Measuring with containers  18A: Units of mass 18B: Mass conversions 18C: Measuring mass  19B: Adding money 19C: Subtracting money 19D: Multiplying with money 19E: Dividing money 19F: Rounding money 19G: Estimating with money 19H: Budgets  21B: Problem solving  22A: Celsius temperature 22B: Fahrenheit temperature
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>use standard units of measurement to solve problems in real-life situations involving perimeter, area and volume</li> <li>select appropriate tools and units of measurement</li> <li>use timelines in units of inquiry and other real-life situations.</li> </ul>			<b>Chapter 6: Length</b> Exercise: 6 Activity: page 114	<b>Chapter 8: Time</b> Exercise: 14, 15  <b>Chapter 11: Length</b> Theory: page 214 Exercise: 13  <b>Chapter 13: Area</b> Activity: page 235  <b>Chapter 16: Volume</b> Exercise: 7  <b>Chapter 18: Mass</b> Exercise: 8	8D: Measuring angles 8E: Constructing angles  9B: Units of time 9E: Time lines  11A: Measuring length 11C: Operations with lengths 11D: Perimeter 11E: The perimeter of a square 11F: The perimeter of a rectangle  14B: Area of a rectangle 14C: Other units of area  16C: Other units of volume  17A: Units of capacity  18A: Units of mass  21B: Problem solving

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>select and use appropriate units of measurement and tools to solve problems in real-life situations</li> <li>determine and justify the level of accuracy required to solve real-life problems involving measurement</li> <li>use decimal and fractional notation in measurement, for example, 3.2 cm, 1.47 kg, 1½ miles</li> <li>use timetables and schedules (12-hour and 24-hour clocks) in real-life situations</li> <li>determine times worldwide.</li> </ul>				<b>Chapter 8: Time</b> Exercise: 26, 27 Discussion: page 170 Activity: page 171  <b>Chapter 11: Length</b> Exercise: 6 – 10, 18, 19 Discussion: page 213 Activity: page 208, 212, 213  <b>Chapter 13: Area</b> Exercise: 9, 10  <b>Chapter 17: Capacity</b> Exercise: 9 – 14  <b>Chapter 18: Mass</b> Exercise: 11 – 19 Discussion: page 283  <b>Chapter 19: Temperature</b> Exercise: 6  <b>Chapter 20: Money</b> Exercise: 8 – 14, (7 – 13) Discussion: page 302 Activity: page 303 Listening Activity: page 299, (8)	9C: Time calculations 9F: Timetables 9G: Time zones  11A: Measuring length 11B: Length conversions 11C: Operations with lengths 11D: Perimeter 11E: The perimeter of a square  13B: Triangles 13C: Quadrilaterals 13E: Circles  14A: Area 14B: The area of a rectangle 14C: Other units of area  16C: Other units of volume  17B: Capacity conversions 17C: Measuring with containers  18A: Units of mass 18B: Mass conversions 18C: Measuring mass  19A: Decimal currency 19B: Adding money 19C: Subtracting money 19D: Multiplying with money 19E: Dividing money 19F: Rounding money 19G: Estimating with money 19H: Budgets  20A: Generating a sequence 20B: Finding a rule for a sequence  21B: Problem solving  22A: Celsius temperature 22B: Fahrenheit temperature
Shape and space					
Conceptual understandings					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>Shapes can be described and organised according to their properties.</li> <li>Objects in our immediate environment have a position in space that can be described according to a point of reference.</li> </ul>	<b>Chapter 2: Position and direction</b> Exercise: 1 – 3, 5, 12 Discussion: page 36  <b>Chapter 4: Shape</b> Theory: page 55, 56, 62 Exercise: 2 Discussion: page 55	<b>Chapter 2: Position and direction</b> Exercise: 4, 7, 8 Discussion: page 37, 41  <b>Chapter 4: Shape</b> Theory: page 65, 72	<b>Chapter 4: Shape</b> Theory: page 71, 76	<b>Chapter 12: Shape</b> Theory: page 217  <b>Chapter 15: Solids</b> Theory: page 255	12A: Language  13: Shape (Introduction)  15: Solids (Introduction) 15A: Solids with flat surfaces

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"><li>Shapes are classified and named according to their properties.</li><li>Some shapes are made up of parts that repeat in some way.</li><li>Specific vocabulary can be used to describe an object’s position in space.</li></ul>	<b>Chapter 4: Shape</b> Theory: page 57, 64 Exercise: 3, 6, 11, 13, 15 Activity: page 61	<b>Chapter 4: Shape</b> Theory: page 66, 73 Exercise: 1, 3, 4, 6, 9 – 11	<b>Chapter 2: Position and direction</b> Discussion: page 37, 44  <b>Chapter 4: Shape</b> Exercise: 1 – 3, 7, 8 Discussion: page 77 Activity: page 73  <b>Chapter 10: Data handling</b> Theory: page 158, 160  <b>Chapter 17: Transformations</b> Theory: page 223, 224, 227, 229	<b>Chapter 12: Shape</b> Theory: page 220 Exercise: 1 – 7 Discussion: page 220 Activity: page 226  <b>Chapter 14: Position and direction</b> Discussion: page 241, 243  <b>Chapter 15: Solids</b> Exercise: 1 – 3  <b>Chapter 22: Transformations</b> Theory: page 319, 322	12A: Language  13A: Polygons 13B: Triangles 13C: Quadrilaterals 13D: Regular polygons 13E: Circles  15A: Solids with flat surfaces 15B: Solids with curved surfaces  26C: Line symmetry 26E: Rotational symmetry
<b>Phase 3:</b> <ul style="list-style-type: none"><li>Changing the position of a shape does not alter its properties.</li><li>Shapes can be transformed in different ways.</li><li>Geometric shapes and vocabulary are useful for representing and describing objects and events in real-world situations.</li></ul>			<b>Chapter 14: Turns</b> Theory: page 205, 206 Exercise: 1 Discussion: page 208  <b>Chapter 17: Transformations</b> Theory: page 223 – 225, 227 Discussion: page 226, 227 Activity: page 229, 231	<b>Chapter 9: Turns and angles</b> Theory: page 175, 176, 178 Discussion: page 178  <b>Chapter 12: Shape</b> Discussion: page 221  <b>Chapter 16: Volume</b> Activity: page 265  <b>Chapter 22: Transformations</b> Theory: page 315, 316, 318, 319 Discussion: page 315, 316	8A: Lines 8B: Parallel lines 8C: Angles 8E: Constructing angles  15A: Solids with flat surfaces 15B: Solids with curved surfaces  26: Transformations (Introduction) 26A: Translations 26B: Reflections 26C: Line symmetry 26D: Rotations 26E: Rotational symmetry 26F: Enlargements and reductions
<b>Phase 4:</b> <ul style="list-style-type: none"><li>Manipulation of shape and space takes place for a particular purpose.</li><li>Consolidating what we know of geometric concepts allows us to make sense of and interact with our world.</li><li>Geometric tools and methods can be used to solve problems relating to shape and space.</li></ul>			<b>Chapter 17: Transformations</b> Activity: page 226, 227, 228, 229, 231		8A: Lines 8B: Parallel lines  12D: Compass points 13E: Circles  26D: Rotations 26F: Enlargements and reductions
Constructing meaning					
<b>Phase 1:</b> <ul style="list-style-type: none"><li>understand that 2D and 3D shapes have characteristics that can be described and compared</li><li>understand that common language can be used to describe position and direction, for example, inside, outside, above, below, next to, behind, in front of, up, down.</li></ul>	<b>Chapter 2: Position and direction</b> Exercise: 1 – 3, 5, 7, 8, 10, 12 Discussion: page 34, 36, 39  <b>Chapter 4: Shape</b> Theory: page 55, 57, 64 Exercise: 1 – 8, 11, 12 Discussion: page 55, 61 Listening Activity: page 61	<b>Chapter 1: Number</b> Theory: page 32  <b>Chapter 2: Position and direction</b> Exercise: 4, 6 – 8, 10 – 14 Discussion: page 37, 38, 41, 45 Puzzle: page 46 Game: page 43  <b>Chapter 4: Shape</b> Theory: page 65, 66, 73 Exercise: 1, 3, 4, 8 Listening Activity: page 70	<b>Chapter 2: Position and direction</b> Theory: page 45 Exercise: 5 Discussion: page 37, 38, 44 Revision: page 48  <b>Chapter 4: Shape</b> Theory: page 71, 76 Exercise: 1 – 3, 6, 9, 10 Listening Activity: page 75	<b>Chapter 14: Position and direction</b> Discussion: page 241, 243, 246	1E: Number lines  12A: Language

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>understand that there are relationships among and between 2D and 3D shapes</li> <li>understand that 2D and 3D shapes can be created by putting together and/or taking apart other shapes</li> <li>understand that examples of symmetry and transformations can be found in their immediate environment</li> <li>understand that geometric shapes are useful for representing real-world situations</li> <li>understand that directions can be used to describe pathways, regions, positions and boundaries of their immediate environment.</li> </ul>	<b>Chapter 4: Shape</b> Theory: page 62 Exercise: 10, 13 – 16 Discussion: page 58 Puzzle: page 64	<b>Chapter 4: Shape</b> Theory: page 72 Exercise: 2 – 6, 9 – 12 Activity: page 71 Puzzle: page 71	<b>Chapter 2: Position and direction</b> Exercise: 6 Activity: page 45  <b>Chapter 4: Shape</b> Theory: page 76, 80 Exercise: 2 – 4, 7, 8, 13 Discussion: page 77 Activity: page 80 Listening Activity: 75 Puzzle: page 75, 80  <b>Chapter 17: Transformations</b> Theory: page 223, 224, 229 Discussion: page 223, 225 Activity: page 226, 227, 229, 231	<b>Chapter 12: Shape</b> Theory: page 224 Exercise: 1, 4, 8, 10 – 13 Discussion: page 219, 221, 226  <b>Chapter 14: Position and direction</b> Theory: page 244, 246  <b>Chapter 15: Solids</b> Theory: page 258 Exercise: 1 – 3, 5 Discussion: page 259 Activity: page 260  <b>Chapter 16: Volume</b> Activity: page 265  <b>Chapter 22: Transformations</b> Theory: page 315, 316, 318, 319, 322	12A: Language  13D: Regular polygons 13F: Composite figures  14A: Area  15A: Solids with flat surfaces 15B: Solids with curved surfaces 15C: Constructing solids  26A: Translations 26B: Reflections 26C: Line symmetry 26D: Rotations 26E: Rotational symmetry 26F: Enlargements and reductions
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>understand the common language used to describe shapes</li> <li>understand the properties of regular and irregular polygons</li> <li>understand congruent or similar shapes</li> <li>understand that lines and axes of reflective and rotational symmetry assist with the construction of shapes</li> <li>understand an angle as a measure of rotation</li> <li>understand that directions for location can be represented by coordinates on a grid</li> <li>understand that visualisation of shape and space is a strategy for solving problems.</li> </ul>	<b>Chapter 2: Position and direction</b> Exercise: 8	<b>Chapter 2: Position and direction</b> Exercise: 10 Activity: page 43 Puzzle: page 46	<b>Chapter 2: Position and direction</b> Exercise: 4, 6 Activity: page 43, 45  <b>Chapter 14: Turns</b> Activity: page 209  <b>Chapter 17: Transformations</b> Theory: page 227 Discussion: page 226	<b>Chapter 9: Turns and angles</b> Theory: page 176, 178  <b>Chapter 12: Shape</b> Theory: page 217, 220 Exercise: 2 – 9 Discussion: page 219  <b>Chapter 14: Position and direction</b> Theory: page 246 Exercise: 7, 12, 13 Activity: page 246, 252  <b>Chapter 15: Solids</b> Theory: page 255 Exercise: 2 – 4 Discussion: page 256  <b>Chapter 22: Transformations</b> Theory: page 318, 319	8: Lines and angles (Introduction) 8C: Angles 8D: Measuring angles 8E: Constructing angles  12A: Language 12B: Grid references 12C: Finding points  13C: Quadrilaterals 13D: Regular polygons 13F: Composite figures  14A: Area  17A: Units of capacity  26B: Reflections 26C: Line symmetry 26E: Rotational symmetry
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>understand the common language used to describe shapes</li> <li>understand the properties of regular and irregular polyhedra</li> <li>understand the properties of circles</li> <li>understand how scale (ratios) is used to enlarge and reduce shapes</li> <li>understand systems for describing position and direction</li> <li>understand that 2D representations of 3D objects can be used to visualise and solve problems</li> <li>understand that geometric ideas and relationships can be used to solve problems in other areas of mathematics and in real life.</li> </ul>			<b>Chapter 4: Shape</b> Theory: page 80 Exercise: 13 Activity: page 80 Puzzle: page 80  <b>Chapter 7: Capacity</b> Discussion: page 124	<b>Chapter 14: Position and direction</b> Theory: page 249 Exercise: 9 – 13  <b>Chapter 15: Solids</b> Theory: page 258 Exercise: 5 Discussion: page 259 Activity: page 257, 259, 260  <b>Chapter 16: Volume</b> Discussion: page 261  <b>Chapter 17: Capacity</b> Exercise: 14	8: Lines and angles (Introduction) 8A: Lines 8B: Parallel lines  12D: Compass points 12E: Scale  13: Shape (Introduction) 13A: Polygons 13B: Triangles 13C: Quadrilaterals 13D: Regular polygons 13E: Circles  15: Solids (Introduction) 15A: Solids with flat surfaces 15B: Solids with curved surfaces 15C: Constructing solids  16A: Volume  26C: Line symmetry 26F: Enlargements and reductions



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
Transferring meaning into symbols					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>sort, describe and compare 3D shapes</li> <li>describe position and direction, for example, inside, outside, above, below, next to, behind, in front of, up, down.</li> </ul>	<b>Chapter 2: Position and direction</b> Exercise: 4, 11 Discussion: page 34, 39  <b>Chapter 4: Shape</b> Exercise: 16 Activity: page 65	<b>Chapter 1: Number</b> Exercise: 30, 31  <b>Chapter 2: Position and direction</b> Exercise: 2, 5, 9, 10, 14 Discussion: page 38, 45 Puzzle: page 39, 46 Game: page 43  <b>Chapter 4: Shape</b> Exercise: 11 Activity: page 74	<b>Chapter 2: Position and direction</b> Exercise: 1 – 3, 5 Discussion: page 38 Activity: page 41	<b>Chapter 14: Position and direction</b> Exercise: 1, 2	12A: Language
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>sort, describe and label 2D and 3D shapes</li> <li>analyse and describe the relationships between 2D and 3D shapes</li> <li>create and describe symmetrical and tessellating patterns</li> <li>identify lines of reflective symmetry</li> <li>represent ideas about the real world using geometric vocabulary and symbols, for example, through oral description, drawing, modelling, labelling</li> <li>interpret and create simple directions, describing paths, regions, positions and boundaries of their immediate environment.</li> </ul>	<b>Chapter 4: Shape</b> Exercise: 7 – 12, 14 – 16 Discussion: page 61, 63 Activity: page 61, 65, 66 Listening Activity: page 61 Puzzle: page 64  <b>Chapter 6: Measurement</b> Activity: page 89	<b>Chapter 4: Shape</b> Exercise: 5 – 8, 10 – 12 Activity: page 67, 69, 71, 74 Listening Activity: page 70 Puzzle: page 70, 71  <b>Chapter 6: Measurement</b> Exercise: 12 Activity: page 99  <b>Chapter 12: Chance</b> Discussion: page 160	<b>Chapter 2: Position and direction</b> Exercise: 6 Activity: page 45  <b>Chapter 4: Shape</b> Theory: page 80 Exercise: 4 – 6, 8, 10 – 13 Discussion: page 77 Activity: page 73, 79, 80 Listening Activity: page 75 Puzzle: page 75, 80  <b>Chapter 6: Length</b> Activity: page 110  <b>Chapter 14: Turns</b> Activity: page 209  <b>Chapter 16: Chance</b> Exercise: 9  <b>Chapter 17: Transformations</b> Theory: page 223, 224, 227, 229 Exercise: 4 – 6 Discussion: page 226 Activity: page 228 – 231 Puzzle: page 227	<b>Chapter 12: Shape</b> Theory: page 224 Exercise: 1, 10 – 13  <b>Chapter 13: Area</b> Exercise: 4, 5  <b>Chapter 14: Position and direction</b> Theory: page 248 Exercise: 3, 6, 7, 12, 13 Discussion: page 248 Activity: page 246, 252  <b>Chapter 15: Solids</b> Theory: page 258 Exercise: 1 – 5 Discussion: page 259 Activity: page 259, 260  <b>Chapter 22: Transformations</b> Theory: page 315, 316, 318, 319, 322 Exercise: 5 – 8 Discussion: page 320 Activity: page 321 – 323	12A: Language 12B: Grid references 12E: Scale  13A: Polygons 13F: Composite figures  15A: Solids with flat surfaces 15B: Solids with curved surfaces 15C: Constructing solids  26A: Translations 26B: Reflections 26C: Line symmetry 26D: Rotations 26E: Rotational symmetry
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>sort, describe and model regular and irregular polygons</li> <li>describe and model congruency and similarity in 2D shapes</li> <li>analyse angles by comparing and describing rotations: whole turn; half turn; quarter turn; north, south, east and west on a compass</li> <li>locate features on a grid using coordinates</li> <li>describe and/or represent mental images of objects, patterns, and paths.</li> </ul>			<b>Chapter 14: Turns</b> Theory: page 205, 206 Exercise: 1 – 7 Discussion: page 208 Game: page 209  <b>Chapter 17: Transformations</b> Theory: page 223 – 225 Exercise: 1 – 3 Discussion: page 223, 226 Activity: page 224, 225	<b>Chapter 9: Turns and angles</b> Theory: page 175, 176, 178 Exercise: 1, 2  <b>Chapter 12: Shape</b> Activity: page 225, 226  <b>Chapter 15: Solids</b> Activity: page 257  <b>Chapter 22: Transformations</b> Theory: page 315, 316, 318 Exercise: 1 – 4 Discussion: page 317 Activity: page 316, 319	8C: Angles  12B: Grid references 12C: Finding points 12D: Compass points 12E: Scale  13D: Regular polygons 13F: Composite figures  15A: Solids with flat surfaces 15B: Solids with curved surfaces  26A: Translations 26B: Reflections 26D: Rotations 26F: Enlargements and reductions



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>analyse, describe, classify and visualise 2D (including circles, triangles and quadrilaterals) and 3D shapes, using geometric vocabulary</li> <li>describe lines and angles using geometric vocabulary</li> <li>identify and use scale (ratios) to enlarge and reduce shapes</li> <li>identify and use the language and notation of bearing to describe direction and position</li> <li>create and model how a 2D net converts into a 3D shape and vice versa</li> <li>explore the use of geometric ideas and relationships to solve problems in other areas of mathematics.</li> </ul>			<b>Chapter 4: Shape</b> Theory: page 80 Exercise: 13 Activity: page 80 Puzzle: page 80	<b>Chapter 9: Turns and angles</b> Theory: page 176 – 178 Exercise: 3, 4, 7, 8 Discussion: page 178  <b>Chapter 15: Solids</b> Theory: page 258 Exercise: 5 Discussion: page 259 Activity: page 259, 260	8: Lines and angles (Introduction) 8A: Lines 8B: Parallel lines 8C: Angles 8D: Measuring angles 8E: Constructing angles  12D: Compass points 12E: Scale  13B: Triangles 13C: Quadrilaterals 13E: Circles  15A: Solids with flat surfaces 15B: Solids with curved surfaces 15C: Constructing solids  26F: Enlargements and reductions
Applying with understanding					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>explore and describe the paths, regions and boundaries of their immediate environment (inside, outside, above, below) and their position (next to, behind, in front of, up, down).</li> </ul>	<b>Chapter 2: Position and direction</b> Exercise: 4, 6, 8, 9, 11 Discussion: page 40 Activity: page 37, 38	<b>Chapter 2: Position and direction</b> Exercise: 1 – 3, 5, 9, 10, 14 Discussion: page 45 Activity: page 43 Puzzle: page 39, 46	<b>Chapter 2: Position and direction</b> Exercise: 1 – 4 Discussion: page 38, 42, 44 Activity: page 40, 41, 43 Puzzle: page 38	<b>Chapter 14: Position and direction</b> Exercise: 1 – 4	12A: Language
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>analyse and use what they know about 3D shapes to describe and work with 2D shapes</li> <li>recognise and explain simple symmetrical designs in the environment</li> <li>apply knowledge of symmetry to problem-solving situations</li> <li>interpret and use simple directions, describing paths, regions, positions and boundaries of their immediate environment.</li> </ul>	<b>Chapter 4: Shape</b> Activity: page 66	<b>Chapter 4: Shape</b> Exercise: 5 Activity: page 69, 71 Puzzle: page 71  <b>Chapter 6: Measurement</b> Activity: page 99  <b>Chapter 12: Chance</b> Discussion: page 160	<b>Chapter 2: Position and direction</b> Exercise: 6 Activity: page 45  <b>Chapter 4: Shape</b> Puzzle: page 75  <b>Chapter 14: Turns</b> Activity: page 209  <b>Chapter 16: Chance</b> Exercise: 9  <b>Chapter 17: Transformations</b> Exercise: 1 – 3 Activity: page 225, 228, 229 Discussion: page 223	<b>Chapter 9: Turns and angles</b> Theory: page 175  <b>Chapter 14: Position and direction</b> Theory: page 244, 248 Exercise: 5, 7, 8, 12, 13 Discussion: page 248 Activity: page 252  <b>Chapter 21: Probability</b> Exercise: 8  <b>Chapter 22: Transformation</b> Exercise: 1 – 7 Discussion: page 317, 320 Activity: page 319, 321	12A: Language 12B: Grid references 12E: Scale  26A: Translations 26B: Reflections 26C: Line symmetry 26D: Rotations 26E: Rotational symmetry
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>analyse and describe 2D and 3D shapes, including regular and irregular polygons, using geometrical vocabulary</li> <li>identify, describe and model congruency and similarity in 2D shapes</li> <li>recognise and explain symmetrical patterns, including tessellation, in the environment</li> <li>apply knowledge of transformations to problem-solving situations.</li> </ul>			<b>Chapter 17: Transformations</b> Exercise: 1 – 3, 5 Discussion: page 223, 226 Activity: page 224, 225, 231 Puzzle: page 227	<b>Chapter 9: Turns and angles</b> Theory: page 177 Exercise: 5, 6, 8 Activity: page 177, 180 Puzzle: page 181  <b>Chapter 12: Shape</b> Theory: page 220 Exercise: 2 – 8 Discussion: page 220 Activity: page 220 – 222  <b>Chapter 22: Transformations</b> Exercise: 1 – 4 Discussion: page 316, 317 Activity: page 316, 319, 323	8A: Lines 8B: Parallel lines 8C: Angles 8D: Measuring angles 8E: Constructing angles  13D: Regular polygons  26A: Translations 26B: Reflections 26C: Line symmetry 26D: Rotations 26E: Rotational symmetry 26F: Enlargements and reductions

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>use geometric vocabulary when describing shape and space in mathematical situations and beyond</li> <li>use scale (ratios) to enlarge and reduce shapes</li> <li>apply the language and notation of bearing to describe direction and position</li> <li>use 2D representations of 3D objects to visualise and solve problems, for example using drawings or models.</li> </ul>				<b>Chapter 16: Volume</b> Exercise: 2, 3	8A: Lines 8B: Parallel lines 8C: Angles 8E: Constructing angles 15C: Constructing solids 16A: Volume 16B: The volume of a rectangular prism 16C: Other units of volume 21B: Problem solving 26F: Enlargements and reductions
Pattern and function					
Conceptual understandings					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>Patterns and sequences occur in everyday situations.</li> <li>Patterns repeat and grow.</li> </ul>	<b>Chapter 1: Number</b> Activity: page 24	<b>Chapter 1: Number</b> Activity: page 14, 15  <b>Chapter 6: Measurement</b> Discussion: page 92	<b>Chapter 17: Transformations</b> Discussion: page 223		20: Number sequences (Introduction)
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>Whole numbers exhibit patterns and relationships that can be observed and described.</li> <li>Patterns can be represented using numbers and other symbols.</li> </ul>	<b>Chapter 1: Number</b> Exercise: 28 Activity: page 24  <b>Chapter 3: Addition</b> Theory: page 50 Exercise: 19, 20 Discussion: page 50  <b>Chapter 5: Subtraction</b> Theory: page 72 Exercise: 11	<b>Chapter 1: Number</b> Activity: page 14, 15  <b>Chapter 3: Addition</b> Theory: page 56 Exercise: 17, 21 Discussion: page 54  <b>Chapter 5: Subtraction</b> Theory: page 79 Exercise: 9, 18, 19	<b>Chapter 1: Number</b> Activity: page 12  <b>Chapter 3: Addition</b> Exercise: 5  <b>Chapter 5: Subtraction</b> Exercise: 13, 19, 21  <b>Chapter 17: Transformations</b> Theory: page 223, 224	<b>Chapter 3: Subtraction</b> Exercise: 8, 10, 12	1E: Number lines  20: Number sequences (Introduction)
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>Functions are relationships or rules that uniquely associate members of one set with members of another set.</li> <li>By analysing patterns and identifying rules for patterns it is possible to make predictions.</li> </ul>					20A: Generating a sequence 20B: Finding a rule for a sequence
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>Patterns can often be generalised using algebraic expressions, equations or functions.</li> <li>Exponential notation is a powerful way to express repeated products of the same number.</li> </ul>					
Constructing meaning					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>understand that patterns can be found in everyday situations, for example, sounds, actions, objects, nature.</li> </ul>			<b>Chapter 17: Transformations</b> Activity: page 231	<b>Chapter 22: Transformations</b> Activity: page 323	20: Number sequences (Introduction) 20B: Finding a rule for a sequence

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>understand that patterns can be found in numbers, for example, odd and even numbers, skip counting</li> <li>understand the inverse relationship between addition and subtraction</li> <li>understand the associative and commutative properties of addition.</li> </ul>	<b>Chapter 1: Number</b> Exercise: 28  <b>Chapter 3: Addition</b> Exercise: 19, 22, 26 Discussion: page 50  <b>Chapter 5: Subtraction</b> Theory: page 70 Exercise: 23 <b>Practical Activity: page 69</b>  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 1: Number</b> Activity: page 14, 15  <b>Chapter 3: Addition</b> Exercise: 17, 18, 25, 26 Discussion: page 54  <b>Chapter 5: Subtraction</b> Theory: page 77 Exercise: 25 <b>Practical Activity: page 77</b>  <b>Chapter 7: Multiplication</b> Exercise: 9, 10 Discussion: page 113, 115  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 1: Number</b> Activity: page 12  <b>Chapter 3: Addition</b> Exercise: 7, 28 Discussion: page 57 Puzzle: page 51  <b>Chapter 5: Subtraction</b> Theory: page 84  <b>Chapter 9: Multiplication</b> Theory: page 142 Exercise: 15  <b>Chapter 15: Money</b> Exercise: 1	<b>Chapter 2: Addition</b> Exercise: 3 Puzzle: page 24  <b>Chapter 3: Subtraction</b> Theory: page 43  <b>Chapter 4: Multiplication</b> Theory: page 62 Exercise: 27  <b>Chapter 6: Division</b> Exercise: 13	
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>understand that patterns can be analysed and rules identified</li> <li>understand that multiplication is repeated addition and that division is repeated subtraction</li> <li>understand the inverse relationship between multiplication and division</li> <li>understand the associative and commutative properties of multiplication.</li> </ul>	<b>Chapter 7: Multiplication</b> Theory: page 95 Exercise: 1 – 6, 10 Discussion: page 102	<b>Chapter 7: Multiplication</b> Theory: page 111, 115, 117 Exercise: 1, 6, 9 – 13 Activity: page 121	<b>Chapter 9: Multiplication</b> Theory: page 133 Exercise: 1 – 4, 6 – 8 Discussion: page 136  <b>Chapter 11: Division</b> Theory: page 168, 170 Discussion: page 169	<b>Chapter 4: Multiplication</b> Theory: page 61, 65, 66 Exercise: 1, 2, 14, 15, 28  <b>Chapter 6: Division</b> Theory: page 105, 116 Exercise: 2 Activity: page 114  <b>Chapter 7: Fractions</b> Exercise: 19, 20, 33, 34  <b>Chapter 8: Time</b> Theory: page 167  <b>Chapter 10: Decimal numbers</b> Exercise: 39 Discussion: page 197	4: Multiplication (Introduction) 4A: The multiplication table 4C: Multiplying by 10, 100, and 1000  5A: Dividing equally  6A: Rounding to the nearest ten 6B: Rounding to the nearest hundred 6C: Rounding to the nearest thousand  11E: The perimeter of a square 11F: The perimeter of a rectangle  20: Number sequences (Introduction) 20A: Generating a sequence 20B: Finding a rule for a sequence
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>understand that patterns can be generalised by a rule</li> <li>understand exponents as repeated multiplication</li> <li>understand the inverse relationship between exponents and roots</li> <li>understand that patterns can be represented, analysed and generalised using tables, graphs, words, and, when possible, symbolic rules.</li> </ul>					4G: Exponents 4H: Squares and square roots  6C: Rounding to the nearest thousand  10A: Decimal numbers 10F: Multiplying by 10 and 100 10G: Dividing by 10 and 100  20B: Finding a rule for a sequence
Transferring meaning into symbols					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>describe patterns in various ways, for example, using words, drawings, symbols, materials, actions, numbers.</li> </ul>	<b>Chapter 1: Number</b> Exercise: 27 Activity: page 24  <b>Chapter 3: Addition</b> Exercise: 17  <b>Chapter 5: Subtraction</b> Exercise: 20  <b>Chapter 7: Multiplication</b> Exercise: 9 Discussion: page 102	<b>Chapter 1: Number</b> Exercise: 29 Activity: page 14, 15  <b>Chapter 3: Addition</b> Exercise: 14  <b>Chapter 5: Subtraction</b> Exercise: 23	<b>Chapter 3: Addition</b> Discussion: page 55, 57, 58		

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>represent patterns in a variety of ways, for example, using words, drawings, symbols, materials, actions, numbers</li> <li>describe number patterns, for example, odd and even numbers, skip counting.</li> </ul>		<b>Chapter 7: Multiplication</b> Discussion: page 113, 115	<b>Chapter 1: Number</b> Activity: page 12  <b>Chapter 3: Addition</b> Exercise: 30  <b>Chapter 5: Subtraction</b> Exercise: 23  <b>Chapter 9: Multiplication</b> Exercise: 5  <b>Chapter 17: Transformations</b> Theory: page 223, 224, 229	<b>Chapter 2: Addition</b> Exercise: 23  <b>Chapter 3: Subtraction</b> Exercise: 20  <b>Chapter 4: Multiplication</b> Exercise: 21 Discussion: page 67  <b>Chapter 6: Division</b> Exercise: 20  <b>Chapter 22: Transformations</b> Theory: page 322	
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>describe the rule for a pattern in a variety of ways</li> <li>represent rules for patterns using words, symbols and tables</li> <li>identify a sequence of operations relating one set of numbers to another set.</li> </ul>					20: Number sequences (Introduction) 20A: Generating a sequence 20B: Finding a rule for a sequence
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>represent the rule of a pattern by using a function</li> <li>analyse pattern and function using words, tables and graphs, and, when possible, symbolic rules.</li> </ul>					11E: The perimeter of a square 11F: The perimeter of a rectangle  14B: The area of a rectangle  16B: The volume of a rectangular prism  20B: Finding a rule for a sequence  22B: Fahrenheit temperature
Applying with understanding					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>extend and create patterns.</li> </ul>	<b>Chapter 1: Number</b> Exercise: 26  <b>Chapter 3: Addition</b> Exercises: 24, 29  <b>Chapter 4: Shape</b> Activity: page 61  <b>Chapter 5: Subtraction</b> Exercise: 12, 13, 17, 21, 25, 26 Activity: page 75	<b>Chapter 1: Number</b> Exercise: 28  <b>Chapter 3: Addition</b> Exercise 29	<b>Chapter 3: Addition</b> Exercise: 8, 16, 17  <b>Chapter 17: Transformations</b> Exercise: 1, 2, 6 Activity: page 224, 230, 231 Discussion: page 223	<b>Chapter 2: Addition</b> Exercise: 5  <b>Chapter 22: Transformations</b> Exercise: 8 Activity: page 323	
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>extend and create patterns in numbers, for example, odd and even numbers, skip counting</li> <li>use number patterns to represent and understand real-life situations</li> <li>use the properties and relationships of addition and subtraction to solve problems.</li> </ul>	<b>Chapter 1: Number</b> Exercise: 28  <b>Chapter 3: Addition</b> Exercise: 16  <b>Chapter 5: Subtraction</b> Exercise: 6, 10, 16, 19, 23  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 3: Addition</b> Exercise: 13  <b>Chapter 5: Subtraction</b> Exercise: 5, 8, 10, 11, 13, 14, 20, 22, 25, 26  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 3: Addition</b> Exercise: 31  <b>Chapter 5: Subtraction</b> Exercise: 3 – 5, 15, 17, 20, 22 Discussion: page 94  <b>Chapter 9: Multiplication</b> Challenge: page 145  <b>Chapter 15: Money</b> Exercise: 1	<b>Chapter 2: Addition</b> Exercise: 24  <b>Chapter 3: Subtraction</b> Exercise: 2 – 4, 9, 19 Class Activity: page 44  <b>Chapter 6: Division</b> Exercise: 21  <b>Chapter 20: Money</b> Activity: page 303	20A: Generating a sequence 20B: Finding a rule for a sequence
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>select appropriate methods for representing patterns, for example using words, symbols and tables</li> <li>use number patterns to make predictions and solve problems</li> <li>use the properties and relationships of the four operations to solve problems.</li> </ul>			<b>Chapter 9: Multiplication</b> Exercise: 8 Listening Activity: page 137  <b>Chapter 11: Division</b> Exercise: 5 – 7 Puzzle: page 171	<b>Chapter 4: Multiplication</b> Exercise: 10  <b>Chapter 6: Division</b> Theory: page 109 Exercise: 3 – 6, 8, 9, 12, 13, 22 Discussion: page 107 Activity: page 114 Puzzle: page 108	5A: Dividing equally 5B: Dividing by 10, 100, and 1000 5C: Remainders  20A: Generating a sequence 20B: Finding a rule for a sequence

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>select appropriate methods to analyse patterns and identify rules</li> <li>use functions to solve problems.</li> </ul>					7G: Fractions which add up to one whole 20B: Finding a rule for a sequence 22B: Fahrenheit temperature
Number					
Conceptual understandings					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>Numbers are a naming system.</li> <li>Numbers can be used in many ways for different purposes in the real world.</li> <li>Numbers are connected to each other through a variety of relationships.</li> <li>Making connections between our experiences with number can help us to develop number sense.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 15, 21, 25 Exercise: 1, 2, 6 – 8, 11 – 13, 16, 19, 29 Discussion: page 25 Activity: page 9, 11, 18 Listening Activity: page 8, 13, 17 Group Activity: page 32 Practical Activity: page 9, 11, 18, 31 Extra assistance: page 12, 16  <b>Chapter 7: Multiplication</b> Discussion: page 101  <b>Chapter 9: Division</b> Discussion: page 109	<b>Chapter 1: Number</b> Theory: page 11, 13, 27, 29, 33 Exercise: 1, 2, 4, 11 – 13, 15 – 17, 19, 20, 33 Discussion: page 13 Activity: page 7, 22 Listening Activity: page 33 Group Activity: page 29 Practical Activity: page 28 Extra practice: page 10 Extra assistance: page 10  <b>Chapter 9: Division</b> Discussion: page 131	<b>Chapter 1: Number</b> Theory: page 7, 30 Exercise: 1 – 4, 9, 11, 13, 14, 16, 18, 22, 23, 40 Discussion: page 8, 8 Activity: page 20 Listening Activity: page 9, 30 Puzzle: page 23 Extra practice: page 9, 22 Worksheet: page 7  <b>Chapter 5: Subtraction</b> Discussion: page 87	<b>Chapter 1: Number</b> Theory: page 12 Exercise: 7, 10, 11, 16, 17, 19 Activity: page 13 Listening Activity: page 20  <b>Chapter 4: Multiplication</b> Theory: page 70  <b>Chapter 10: Decimal numbers</b> Theory: page 183, 194 Exercise: 1, 2, 7	1B: Millions  6: Rounding numbers (Introduction) 6D: Estimation problems  10A: Decimal numbers

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>The base 10 place value system is used to represent numbers and number relationships.</li> <li>Fractions are ways of representing whole-part relationships.</li> <li>The operations of addition, subtraction, multiplication and division are related to each other and are used to process information to solve problems.</li> <li>Number operations can be modelled in a variety of ways.</li> <li>There are many mental methods that can be applied for exact and approximate computations.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 20, 21 Exercise: 15 – 18, 30, 31  <b>Chapter 3: Addition</b> Theory: page 41, 47, 51 Exercise: 3, 4, 26, 27 Practical Activity: page 42  <b>Chapter 5: Subtraction</b> Theory: page 67, 68, 70, 72, 78, 79 Exercise: 2, 4, 6, 9, 10, 12, 21, 23 Practical Activity: page 69  <b>Chapter 7: Multiplication</b> Theory: page 95 Exercise: 1 – 6, 9, 10 Discussion: page 101, 102  <b>Chapter 9: Division</b> Theory: page 109, 111, 114, 116 Exercise: 7, 13, 15 Discussion: page 112	<b>Chapter 1: Number</b> Theory: page: 12, 13, 19 Exercise: 6 – 10, 12 – 14, 17, 18, 21, 24 Discussion: page 25 Group Activity: page 26 Game: page 25 Practical Activity: page 32 Extra practice: page 23  <b>Chapter 3: Addition</b> Theory: page 47, 51 Exercise: 9, 24, 26, 27 Practical Activity: page 48  <b>Chapter 5: Subtraction</b> Theory: page 75, 77, 79, 86, 87 Exercise: 1, 3, 5, 7, 8, 14, 16, 19, 25 Practical Activity: page 77  <b>Chapter 7: Multiplication</b> Theory: page 111, 117 Exercise: 1 – 7, 9 – 13 Discussion: page 113, 115 Activity: page 121  <b>Chapter 9: Division</b> Theory: page 131, 134 – 136, 138 Exercise: 4, 7, 12, 15, 16 Discussion: page 134, 137	<b>Chapter 1: Number</b> Theory: page 10, 11, 14, 20, 28, 29 Exercise: 6 – 8, 10 – 12, 15 – 17, 21, 23, 25, 33 – 35, 38, 39 Listening Activity: page 20, 32 Challenge: page 32 Extra practice: page 18, 24  <b>Chapter 3: Addition</b> Theory: page 49, 50 Exercise: 6, 12, 27 Discussion: page 53, 55, 57, 58 Practical Activity: page 50  <b>Chapter 5: Subtraction</b> Theory: page 83, 84, 86, 93, 94 Exercise: 3 – 7, 11 – 13, 15, 19 – 21 Discussion: page 90  <b>Chapter 6: Length</b> Exercise: 7 – 9  <b>Chapter 7: Capacity</b> Exercise: 7  <b>Chapter 8: Mass</b> Exercise: 2  <b>Chapter 9: Multiplication</b> Theory: page 133, 143, 145 Exercise: 1 – 7, 9, 23 Discussion: page 138 Challenge: page 145  <b>Chapter 11: Division</b> Theory: page 165 Discussion: page 170  <b>Chapter 12: Fractions</b> Theory: page 173 – 178 Exercise: 2, 6	<b>Chapter 1: Number</b> Theory: page 7, 9, 12, 14, 16 – 18 Exercise: 1 – 6, 8, 9, 12 – 15, 30, 31 Discussion: page 7 Listening Activity: page 20 Puzzle: page 11, 19 Game: page 12  <b>Chapter 2: Addition</b> Theory: page 33 Exercise: 1, 2, 4, 40 Discussion: page 26, 29 Group Activity: page 30  <b>Chapter 3: Subtraction</b> Theory: page 43, 45 Exercise: 1 – 5, 8, 9, 12 Discussion: page 47, 55 Class Activity: page 44  <b>Chapter 4: Multiplication</b> Theory: page 61, 65, 66, 73 Exercise: 13, 21, 25 – 27 Discussion: page 65  <b>Chapter 6: Division</b> Theory: page 103, 109, 116 Exercise: 7, 11 – 13, 22, 23  <b>Chapter 7: Fractions</b> Theory: page 125, 129, 140 Exercise: 1  <b>Chapter 10: Decimal numbers</b> Theory: page 183, 185, 187, 191, 194 – 196 Exercise: 12, 24, 29, 32, 33, 40, 41 Discussion: page 184, 196  <b>Chapter 11: Length</b> Exercise: 16, 17, 20  <b>Chapter 17: Capacity</b> Exercise: 3  <b>Chapter 18: Mass</b> Exercise: 9, 10, 13  <b>Chapter 20: Money</b> Exercise: 5, (5)	1A: Place value 1B: Millions  2A: Mental addition 3: Subtraction (Introduction) 3A: Mental subtraction  4: Multiplication (Introduction) 4C: Multiplying by 10, 100, and 1000 4D: Column multiplication 4E: Long multiplication  5A: Dividing equally 5B: Dividing by 10, 100, and 1000 5D: Dividing by larger numbers  6A: Rounding to the nearest ten 6B: Rounding to the nearest hundred 6C: Rounding to the nearest thousand 6D: Estimation problems  7A: Fractions 7B: Finding a fraction of a quantity 7C: Fractions on a number line  10A: Decimal numbers 10C: Ordering decimal numbers 10D: Adding decimal numbers 10E: Subtracting decimal numbers 10F: Multiplying by 10 and 100 10G: Dividing by 10 and 100  18B: Mass conversions



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>The base 10 place value system can be extended to represent magnitude.</li> <li>Fractions and decimals are ways of representing whole-part relationships.</li> <li>The operations of addition, subtraction, multiplication and division are related to each other and are used to process information to solve problems.</li> <li>Even complex operations can be modelled in a variety of ways, for example, an algorithm is a way to represent an operation.</li> </ul>		<b>Chapter 3: Addition</b> Theory: page 61  <b>Chapter 5: Subtraction</b> Theory: page 88	<b>Chapter 1: Number</b> Theory: page 22  <b>Chapter 3: Addition</b> Theory: page 62, 64  <b>Chapter 5: Subtraction</b> Theory: page 96, 98  <b>Chapter 11: Division</b> Theory: page 168, 169, 170 Exercise: 4, 5, 7 Discussion: page 169 <b>Practical Activity: page 167</b>	<b>Chapter 1: Number</b> Theory: page 12  <b>Chapter 2: Addition</b> Theory: page 34 – 36  <b>Chapter 3: Subtraction</b> Theory: page 52, 54  <b>Chapter 4: Multiplication</b> Theory: page 61, 76, 77 Exercise: 1, 2  <b>Chapter 6: Division</b> Theory: page 105, 117 – 119 Exercise: 2, 4, 5, 7 Discussion: page 107  <b>Chapter 7: Fractions</b> Theory: page 132  <b>Chapter 10: Decimal numbers</b> Theory: page 183, 185, 187, 188, 192 – 196 Exercise: 24, 29, 40, 41 Discussion: page 196  <b>Chapter 20: Money</b> Theory: page 296, (5) Exercise: 7, (6)	1B: Millions 1C: Comparing numbers  2B: Column addition 3B: Column subtraction 4: Multiplication (Introduction) 4D: Column multiplication 4E: Long multiplication 5D: Dividing larger numbers 5F: Factors  10A: Decimal numbers 10B: Decimal numbers on a number line 10D: Adding decimal numbers 10E: Subtracting decimal numbers  19A: Decimal currency
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>The base 10 place value system extends infinitely in two directions.</li> <li>Fractions, decimal fractions and percentages are ways of representing whole-part relationships.</li> <li>For fractional and decimal computation, the ideas developed for whole-number computation can apply.</li> <li>Ratios are a comparison of two numbers or quantities.</li> </ul>					10A: Decimal numbers 10D: Adding decimal numbers 10E: Subtracting decimal numbers 10F: Multiplying by 10 and 100 10G: Dividing by 10 and 100 10H: Multiplying decimals by a whole number 10I: Dividing decimals by a whole number  19F: Rounding money  23A: Percentage

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
Constructing meaning					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>understand one-to-one correspondence</li> <li>understand that, for a set of objects, the number name of the last object counted describes the quantity of the whole set</li> <li>understand that numbers can be constructed in multiple ways, for example, by combining and partitioning</li> <li>understand conservation of number</li> <li>understand the relative magnitude of whole numbers</li> <li>recognise groups of zero to five objects without counting (subitising)</li> <li>understand whole-part relationships</li> <li>use the language of mathematics to compare quantities, for example, more, less, first, second.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 15, 20, 25, 28 Exercise: 1, 2, 4, 9, 10, 14 – 18, 20 – 27, 30, 31 Discussion: page 25, 27 Activity: page 18, 24 Listening Activity: page 8, 13, 17 Game: page 17 <b>Practical Activity: page 11</b> <b>Extra practice: page 10</b>  <b>Chapter 3: Addition</b> Theory: page 47  <b>Chapter 4: Shape</b> Exercise: 5  <b>Chapter 9: Division</b> Theory: page 109, 111, 114 Exercise: 5 – 7, 11 – 13 Discussion: page 112	<b>Chapter 1: Number</b> Theory: page 11, 12, 29, 31 – 33 Exercise: 5 – 10, 14, 18, 25 – 32 Discussion: page 30 Activity: page 15 Puzzle: page 26 Game: page 25 <b>Practical Activity: page 32</b> <b>Extra practice: page 19</b>  <b>Chapter 3: Addition</b> Theory: page 51, 55, 63 Exercise: 15, 19, 20  <b>Chapter 5: Subtraction</b> Exercise: 21  <b>Chapter 9: Division</b> Theory: page 131, 134, 136, 138 Exercise: 6, 7, 12 Discussion: page 134	<b>Chapter 1: Number</b> Theory: page 10, 11, 25, 27, 29 Exercise: 5 – 8, 12, 17, 21, 26 – 30, 37 Activity: page 12 Listening Activity: page 9 Puzzle: page 24 Challenge: page 32  <b>Chapter 3: Addition</b> Theory: page 60  <b>Chapter 5: Subtraction</b> Discussion: page 87  <b>Chapter 9: Multiplication</b> Exercise: 6, 7  <b>Chapter 11: Division</b> Theory: page 165  <b>Chapter 12: Fractions</b> Theory: page 173, 176 – 178 Exercise: 1, 2, 6	<b>Chapter 1: Number</b> Theory: page 15, 18 Exercise: 21, 22  <b>Chapter 4: Multiplication</b> Theory: page 65  <b>Chapter 6: Division</b> Theory: page 103  <b>Chapter 7: Fractions</b> Theory: page 125 Exercise: 1	1C: Comparing numbers 1D: Ordering numbers 1E: Number lines  6A: Rounding to the nearest ten 6B: Rounding to the nearest hundred 6C: Rounding to the nearest thousand  7: Fractions (Introduction)  10A: Decimal numbers
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>model numbers to hundreds or beyond using the base 10 place value system</li> <li>estimate quantities to 100 or beyond</li> <li>model simple fraction relationships</li> <li>use the language of addition and subtraction, for example, add, take away, plus, minus, sum, difference</li> <li>model addition and subtraction of whole numbers</li> <li>develop strategies for memorising addition and subtraction number facts</li> <li>estimate sums and differences</li> <li>understand situations that involve multiplication and division</li> <li>model addition and subtraction of fractions with the same denominator.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 20, 21 Exercise: 15 – 17, 30 <b>Practical Activity: page 31</b>  <b>Chapter 3: Addition</b> Theory: page 41, 47, 51 Exercise: 1 – 15, 18, 21, 22, 26, 27, 29  <b>Chapter 5: Subtraction</b> Theory: page 67, 68, 70, 78, 79 Exercise: 1 – 9, 13 – 17, 22, 24 – 28 Discussion: page 71 Activity: page 75 <b>Chapter 7: Multiplication</b>  Theory: page 95 Exercise: 1 – 7, 9, 10 Discussion: page 101, 102  <b>Chapter 9: Division</b> Theory: 109, 114, 116 Exercise: 1, 2, 8 – 10, 14 – 17 Activity: page 110, 113  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 1: Number</b> Theory: page 12, 13, 27 Exercise: 7 – 9, 12 – 14, 17, 18, 22 – 24 Group Activity: page 26 Game: page 25 <b>Practical Activity: page 28</b> <b>Extra practice: page 23</b>  <b>Chapter 3: Addition</b> Theory: page 47, 51, 61, 63 Exercise: 1 – 12, 15, 16, 18, 24 – 27, 29 – 32, 34 – 37 Discussion: page 47, 53 Puzzle: page 59  <b>Chapter 5: Subtraction</b> Theory: page 75, 77, 86 – 88 Exercise: 1 – 7, 10 – 14, 16 – 20, 24, 26 – 33 Discussion: page 75 Listening Activity: page 84  <b>Chapter 7: Multiplication</b> Theory: page 111, 115, 117 Exercise: 1 – 7, 11 – 13, 16 Discussion: page 112 Activity: page 121  <b>Chapter 9: Division</b> Theory: page 131, 135 Exercise: 1 – 5, 8 – 11, 13 – 19 Discussion: page 137 Activity: page 140  <b>Chapter 11: Money</b> Exercise: 1	<b>Chapter 1: Number</b> Theory: page 11, 20, 28 Exercise: 7, 10 – 12, 16, 17, 19, 20 <b>Extra practice: page 18</b>  <b>Chapter 3: Addition</b> Theory: page 49, 50, 62, 64, 67 Exercise: 1 – 4, 6 – 11, 13 – 26, 28, 32 – 39 Discussion: page 49, 55, 57, 58 Puzzle: page 51  <b>Chapter 5: Subtraction</b> Theory: page 83, 84, 86, 93, 94, 96, 98 Exercise: 1 – 21, 24 – 34 Discussion: page 83, 87, 94 Listening Activity: page 96 Puzzle: page 88, 100  <b>Chapter 9: Multiplication</b> Theory: page 133, 143, 145 Exercise: 1 – 7, 9, 20, 23 Discussion: page 138 Listening Activity: page 137 Challenge: page 145  <b>Chapter 11: Division</b> Theory: page 165, 166 Exercise: 1 – 4, 8  <b>Chapter 12: Fractions</b> Theory: page 175, 180, 183 Exercise: 3, 5, 7 – 13, 15 – 21 Discussion: page 178 Activity: page 174  <b>Chapter 15: Money</b> Exercise: 1	<b>Chapter 1: Number</b> Theory: page 16, 17 Exercise: 1  <b>Chapter 2: Addition</b> Theory: page 34, 35, 36, 38 Exercise: 1 – 22, 27, 29 – 39 Discussion: page 26, 29 Listening Activity: page 33 Group Activity: page 30 Puzzle: page 24  <b>Chapter 3: Subtraction</b> Theory: page 43, 45, 52, 54 Exercise: 1 – 18, 21 – 30 Discussion: page 47, 55 Listening Activity: page 49 Puzzle: page 47 <b>Class Activity: page 44</b>  <b>Chapter 4: Multiplication</b> Theory: page 68 Exercise: 16, 25 – 27  <b>Chapter 6: Division</b> Theory: page 103, 110 Exercise: 1, 2, 10 – 19 Puzzle: page 113  <b>Chapter 7: Fractions</b> Theory: page 127, 129, 130, 134, 138 Exercise: 2 – 4, 7 – 11, 13 – 16, 21 – 28 Discussion: page 126 Puzzle: page 137  <b>Chapter 9: Turns and angles</b> Theory: page 176 Exercise: 2	2: Addition (Introduction) 2A: Mental addition 2B: Column addition 2C: Addition problems  3: Subtraction (Introduction) 3A: Mental subtraction 3B: Column subtraction 3C: Subtraction problems  5A: Dividing equally 5C: Remainders 5E: Division problems  6: Rounding numbers (Introduction) 6A: Rounding to the nearest ten 6B: Rounding to the nearest hundred 6C: Rounding to the nearest thousand 6D: Estimation problems  7A: Fractions 7B: Finding a fraction of a quantity 7C: Fractions on a number line 7G: Fractions which add up to one whole 7H: Adding and subtracting fractions

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>model numbers to thousands or beyond using the base 10 place value system</li> <li>model equivalent fractions</li> <li>use the language of fractions, for example, numerator, denominator</li> <li>model decimal fractions to hundredths or beyond</li> <li>model multiplication and division of whole numbers</li> <li>use the language of multiplication and division, for example, factor, multiple, product, quotient, prime numbers, composite number</li> <li>model addition and subtraction of fractions with related denominators</li> <li>model addition and subtraction of decimals.</li> </ul>	<b>Chapter 7: Multiplication</b> Theory: page 95 Exercise: 1 – 6, 9, 10 Discussion: page 101, 102  <b>Chapter 9: Division</b> Theory: page 109 Exercise: 1, 2	<b>Chapter 7: Multiplication</b> Theory: page 111, 115, 117 Exercise: 1 – 13 Activity: page 121  <b>Chapter 9: Division</b> Theory: page 131 Exercise: 1 – 5, 18 Discussion: page 137	<b>Chapter 1: Number</b> Exercise: 21, 23, 24 Challenge: page 32  <b>Chapter 9: Multiplication</b> Theory: 133, 138, 141, 143, 145 Exercise: 1 – 7, 9 – 13, 15, 16 Discussion: page 138  <b>Chapter 11: Division</b> Theory: page 165, 166, 168 Exercise: 1 – 5 Discussion: page 170 <b>Practical Activity: page 167</b>  <b>Chapter 12: Fractions</b> Theory: page 174 Exercise: 4, 19	<b>Chapter 1: Number</b> Theory: page 7, 12, 14 Exercise: 2, 3, 6, 8, 9, 12, 13, 15, 18 – 20 Listening Activity: page 20 Puzzle: page 11 Game: page 12  <b>Chapter 4: Multiplication</b> Theory: page 61, 65, 66, 68 – 70, 72, 73, 76, 77 Exercise: 3, 5, 7, 8, 13, 17 – 24, 29, 31 – 33 Discussion: page 65 Activity: page 71 Listening Activity: page 71 Puzzle: page 70  <b>Chapter 6: Division</b> Theory: page 103, 109, 110, 113, 116 – 119 Exercise: 1, 2, 7, 14 – 16, 18 – 25, 27, 28 Activity: page 114 Puzzle: page 113  <b>Chapter 7: Fractions</b> Theory: page 125, 132, 145, 149 Exercise: page 2, 3, 17 – 20, 23, 29 – 34, 40, 41 Discussion: page 140, 142, 143 Activity: page 141  <b>Chapter 10: Decimal numbers</b> Theory: page 188, 189, 192, 193, 196 Exercise: 5, 6, 13 – 18, 22 – 24, 26 – 29, 35, 36, 40, 41  <b>Chapter 20: Money</b> Activity: page 303	1A: Place value  4: Multiplication (Introduction) 4A: The multiplication table 4B: Multiples 4C: Multiplying by 10, 100, and 1000 4D: Column multiplication 4E: Long multiplication  5A: Dividing equally 5B: Dividing by 10, 100, and 1000 5C: Remainders 5D: Dividing larger numbers 5F: Factors  6: Rounding numbers (Introduction) 6A: Rounding to the nearest ten 6B: Rounding to the nearest hundred 6C: Rounding to the nearest thousand  7A: Fractions 7D: Equal fractions 7E: Finding equal fractions 7F: Lowest terms 7I: Proper and improper fractions  10A: Decimal numbers 10B: Decimal numbers on a number line 10D: Adding decimal numbers 10E: Subtracting decimal numbers

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>model numbers to millions or beyond using the base 10 place value system</li> <li>model ratios</li> <li>model integers in appropriate contexts</li> <li>model exponents and square roots</li> <li>model improper fractions and mixed numbers</li> <li>simplify fractions using manipulatives</li> <li>model decimal fractions to thousandths or beyond</li> <li>model percentages</li> <li>understand the relationship between fractions, decimals and percentages</li> <li>model addition, subtraction, multiplication and division of fractions</li> <li>model addition, subtraction, multiplication and division of decimals.</li> </ul>				<b>Chapter 7: Fractions</b> Theory: page 145, 146 Exercise: 35 – 41  <b>Chapter 10: Decimal numbers</b> Theory: page 183, 185, 187, 188, 194, 196 Exercise: 1, 3 – 13, 15 – 17, 31 – 35, 39 Discussion: page 184, 196	1B: Millions  4G: Exponents 4H: Squares and square roots  7E: Finding equal fractions 7I: Proper and improper fractions  10A: Decimal numbers 10B: Decimal numbers on a number line 10D: Adding decimal numbers 10E: Subtracting decimal numbers 10F: Multiplying by 10 and 100 10G: Dividing by 10 and 100 10H: Multiplying decimals by a whole number 10I: Dividing decimals by a whole number  14A: Area  23A: Percentage 23B: Converting percentages into fractions 23C: Converting fractions into percentages 23D: Converting percentages into decimals 23E: Converting decimals into percentages
Transferring meaning into symbols					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>connect number names and numerals to the quantities they represent.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 21 Exercise: 1 – 3, 5 – 7, 11, 12, 31 Activity: page 11, 19, 21, 30 Listening Activity: page 8, 13, 17 Group Activity: page 32 Game: page 17 Extra practice: page 10 Extra assistance: page 12, 16	<b>Chapter 1: Number</b> Exercise: 1 – 4, 12, 13, 17 Activity: page 18 Practical Activity: page 32 Extra practice: page 7, 8, 23 Extra assistance: page 10	<b>Chapter 1: Number</b> Exercise: 1 – 4 Extra practice: page 9		

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>read and write whole numbers up to hundreds or beyond</li> <li>read, write, compare and order cardinal and ordinal numbers</li> <li>describe mental and written strategies for adding and subtracting two-digit numbers.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 25 Exercise: 19, 21, 22, 24, 25, 29 Discussion: page 25, 27	<b>Chapter 1: Number</b> Theory: page 29, 33 Exercise: 11, 15, 16, 19 – 24, 26, 27, 30 – 33 Discussion: page 30, 35 Activity: page 22, 35, 36 Listening Activity: page 25, 33 Puzzle: page 26  <b>Chapter 3: Addition</b> Theory: page 55, 61, 63 Exercise: 19, 20, 30 – 37  <b>Chapter 5: Subtraction</b> Theory: page 88 Exercise: 21, 30 – 33	<b>Chapter 1: Number</b> Theory: page 27 – 30 Exercise: 9 – 11, 13 – 16, 18 – 20, 26 – 29, 31 – 36, 38 – 40 Activity: page 20, 31, 32 Listening Activity: page 9, 13, 20, 30, 32 Extra practice: page 15, 18  <b>Chapter 3: Addition</b> Theory: page 60, 62, 64, 67 Exercise: 29, 32 – 39 Discussion: page 53 Puzzle: page 66  <b>Chapter 5: Subtraction</b> Theory: page 96, 98 Exercise: 28 – 34 Puzzle: page 100  <b>Chapter 8: Mass</b> Exercise: 4, 5 Activity: page 131 Game: page 131	<b>Chapter 1: Number</b> Theory: page 16 – 18 Exercise: 1, 21 – 24, 26, 28, 29  <b>Chapter 2: Addition</b> Theory: page 34 – 36, 38 Exercise: 26, 28 – 40  <b>Chapter 3: Subtraction</b> Theory: page 52, 54 Exercise: 14, 22 – 30 Discussion: page 55 Listening Activity: page 49  <b>Chapter 4: Multiplication</b> Puzzle: page 70 Challenge: page 80  <b>Chapter 5: Data handling</b> Exercise: 12, 13 Game: page 97  <b>Chapter 11: Length</b> Exercise: 14, 15  <b>Chapter 16: Volume</b> Exercise: 4, 6  <b>Chapter 18: Mass</b> Exercise: 4, 5  <b>Chapter 20: Money</b> Exercise: 4, (4)	1E: Number lines  2A: Mental addition 2B: Column addition 2C: Addition problems  3A: Mental subtraction 3B: Column subtraction 3C: Subtraction problems  4B: Multiples  9B: Units of time 9C: Time calculations  11D: Perimeter  16A: Volume  19H: Budgets  25A: Categorical data 25G: The median of a data set 25H: The range of a data set

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>read, write, compare and order whole numbers up to thousands or beyond</li> <li>develop strategies for memorising addition, subtraction, multiplication and division number facts</li> <li>read, write, compare and order fractions</li> <li>read and write equivalent fractions</li> <li>read, write, compare and order fractions to hundredths or beyond</li> <li>describe mental and written strategies for multiplication and division.</li> </ul>	<b>Chapter 7: Multiplication</b> Exercise: 2, 8 Discussion: page 101	<b>Chapter 7: Multiplication</b> Theory: page 115 Exercise: 2, 8, 14, 15	<b>Chapter 1: Number</b> Exercise: 23, 24, 25 Listening Activity: page 32 Puzzle: page 24 Extra practice: page 22, 24  <b>Chapter 3: Addition</b> Exercise: 13 – 26, 28 Discussion: page 55, 57, 58  <b>Chapter 9: Multiplication</b> Theory: page 142, 145 Exercise: 8, 10 – 18, 21  <b>Chapter 11: Division</b> Theory: page 169, 170 Exercise: 6, 7 Discussion: page 170  <b>Chapter 12: Fractions</b> Theory: page 174 – 178, 180, 183 Exercise: 5, 8, 10 – 21 Discussion: page 178	<b>Chapter 1: Number</b> Theory: page 7 Exercise: 3 – 8, 10 – 18, 20, 25, 27, 30, 31 Activity: page 13 Listening Activity: page 20 Puzzle: page 11, 19 Game: page 12  <b>Chapter 2: Addition</b> Exercise: 9 – 19 Discussion: page 26, 29  <b>Chapter 4: Multiplication</b> Theory: page 62, 73, 76, 77 Exercise: 4 – 8, 10 – 12, 14, 15, 17, 22 – 24, 28 – 33 Discussion: page 65 Activity: page 71 Listening Activity: page 71 Puzzle: page 64  <b>Chapter 6: Division</b> Theory: page 105, 109, 116 – 119 Exercise: 3 – 9, 23 – 25, 27, 28  <b>Chapter 7: Fractions</b> Theory: page 125, 127, 129, 132, 134, 138, 145, 146, 149 Exercise: 1 – 41 Discussion: page 140, 142, 143 Activity: page 141 Puzzle: page 137  <b>Chapter 10: Decimal numbers</b> Theory: page 183, 185, 187, 189, 191, 194 – 196 Exercise: 1 – 21, 24 – 26, 29, 30 – 36, 40, 41 Discussion: page 196  <b>Chapter 11: Length</b> Activity: page 208, 213	1A: Place value 1D: Ordering numbers  2A: Mental addition 2B: Column addition  3A: Mental subtraction  4A: The multiplication table 4B: Multiples 4C: Multiplying by 10, 100, and 1000 4D: Column multiplication 4E: Long multiplication 4F: Multiplication problems 4G: Exponents 4H: Squares and square roots  5B: Dividing by 10, 100, and 1000 5D: Dividing larger numbers  7A: Fractions 7B: Finding a fraction of a quantity 7C: Fractions on a number line 7D: Equal fractions 7E: Finding equal fractions 7F: Lowest terms 7G: Fractions which add up to one whole 7H: Adding and subtracting fractions 7I: Proper and improper fractions  10A: Decimal numbers 10B: Decimal numbers on a number line 10C: Ordering decimal numbers 10D: Adding decimal numbers 10E: Subtracting decimal numbers  19A: Decimal currency 19H: Budgets  23D: Theoretical probability 23E: Experimental probability



Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>read, write, compare and order whole numbers up to millions or beyond</li> <li>read and write ratios</li> <li>read and write integers in appropriate contexts</li> <li>read and write exponents and square roots</li> <li>convert improper fractions to mixed numbers and vice versa</li> <li>simplify fractions in mental and written form</li> <li>read, write, compare and order decimal fractions to thousandths or beyond</li> <li>read, write, compare and order percentages</li> <li>convert between fractions, decimals and percentages.</li> </ul>				<b>Chapter 7: Fractions</b> Theory: page 146 Exercise: 38  <b>Chapter 10: Decimal numbers</b> Exercise: 21, 37 – 39  <b>Chapter 11: Length</b> Exercise: 9, 18	1B: Millions 1C: Comparing numbers  4G: Exponents 4H: Squares and square roots  7A: Fractions 7E: Finding equal fractions 7F: Lowest terms 7H: Adding and subtracting fractions 7I: Proper and improper fractions  9: Time (Introduction)  10A: Decimal numbers  11B: Length  17A: Units of capacity  18A: Units of mass  23A: Percentage 23B: Converting percentages into fractions 23C: Converting fractions into percentages 23D: Converting percentages into decimals 23E: Converting decimals into percentages  24B: Using numbers to describe probabilities 24D: Theoretical probability
Applying with understanding					
<b>Phase 1:</b> <ul style="list-style-type: none"> <li>count to determine the number of objects in a set</li> <li>use number words and numerals to represent quantities in real-life situations</li> <li>use the language of mathematics to compare quantities in real-life situations, for example, more, less, first, second</li> <li>subitise in real-life situations</li> <li>use simple fraction names in real-life situations.</li> </ul>	<b>Chapter 1: Number</b> Theory: page 25 Exercise: 5, 10, 14, 24 Discussion: page 25 Activity: page 9, 11, 18 Group Activity: page 32 Game: page 17 <b>Practical Activity: page 9, 11, 18</b>  <b>Chapter 9: Division</b> Theory: page 109, 111, 114 Exercise: 5  <b>Chapter 10: Time</b> Theory: page 120, 122, 123 Exercise: 8 – 17	<b>Chapter 1: Number</b> Theory: page 29 Exercise: 3, 6 Activity: page 7  <b>Chapter 4: Shape</b> Exercise: 2  <b>Chapter 9: Division</b> Theory: page 131, 134, 136  <b>Chapter 10: Time</b> Theory: 144, 146, 147 Exercise: 6 – 16	<b>Chapter 1: Number</b> Exercise: 6 <b>Worksheet: page 7</b>  <b>Chapter 11: Division</b> Theory: page 165  <b>Chapter 12: Fractions</b> Theory: page 173, 176, 177  <b>Chapter 13: Time</b> Theory: page 189	<b>Chapter 6: Division</b> Theory: page 103  <b>Chapter 7: Fractions</b> Theory: page 125 Exercise: 12	7: Fractions (Introduction)

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 2:</b> <ul style="list-style-type: none"> <li>use whole numbers up to hundreds or beyond in real-life situations</li> <li>use cardinal and ordinal numbers in real-life situations</li> <li>use fast recall of addition and subtraction number facts in real-life situations</li> <li>use fractions in real-life situations</li> <li>use mental and written strategies for addition and subtraction of two-digit numbers or beyond in real-life situations</li> <li>select an appropriate method for solving a problem, for example, mental estimation, mental or written strategies, or by using a calculator</li> <li>use strategies to evaluate the reasonableness of answers.</li> </ul>	<b>Chapter 1: Number</b> <b>Practical Activity: page 31</b>  <b>Chapter 3: Addition</b> Exercise: 15 – 17, 23 – 25, 27, 28 Game: page 48, 53 <b>Activity: page 43, 49</b> <b>Practical Activity: page 42</b>  <b>Chapter 5: Subtraction</b> Exercise: 8 – 10, 12, 13, 16 – 22, 24, 25 Discussion: page 71 Puzzle: page 76 <b>Practical Activity: page 69</b>  <b>Chapter 8: Data handling</b> Exercise: 2, 4 – 6  <b>Chapter 9: Division</b> Exercise: 3  <b>Chapter 10: Time</b> Exercise: 3, 4	<b>Chapter 1: Number</b> Theory: page 33 Discussion: page 35 Activity: page 35, 36 <b>Practical Activity: page 28</b>  <b>Chapter 2: Position and direction</b> Exercise: 14  <b>Chapter 3: Addition</b> Exercise: 11, 13 – 15, 22, 23, 27, 28, 33, 35, 37 Activity: page 59 Puzzle: page 60 Game: page 51, 58 <b>Practical Activity: page 48, 64</b>  <b>Chapter 4: Shape</b> Exercise: 2  <b>Chapter 5: Subtraction</b> Exercise: 6 – 8, 10, 11, 13 – 15, 22 – 24, 26, 29, 32, 33 Puzzle: page 83 <b>Practical Activity: page 77</b>  <b>Chapter 8: Data handling</b> Exercise: 1, 2, 4, 5, 7 – 9  <b>Chapter 10: Time</b> Exercise: 19, 20, 25, 28 – 31 Discussion: page 146 Activity: page 156	<b>Chapter 1: Number</b> Activity: page 31, 32 Puzzle: page 12  <b>Chapter 3: Addition</b> Exercise: 12, 27, 30, 31, 36, 37 Puzzle: page 54, 62, 66 Game: page 54, 60 Challenge: page 56 <b>Practical Activity: page 50</b>  <b>Chapter 4: Shape</b> Listening Activity: page 75  <b>Chapter 5: Subtraction</b> Exercise: 8, 10, 17, 18, 22 – 25, 27, 30, 33, 34 Discussion: page 90, 93, 94 Puzzle: page 88, 93, 100  <b>Chapter 6: Length</b> Discussion: page 112  <b>Chapter 8: Mass</b> Theory: page 130 Exercise: 4 – 6 Activity: page 131 Game: page 131  <b>Chapter 9: Multiplication</b> Exercise: 19, 22 Puzzle: page 145  <b>Chapter 10: Data handling</b> Exercise: 2, 5, 7, 8, 10 Discussion: page 155  <b>Chapter 11: Division</b> Exercise: 8  <b>Chapter 12: Fractions</b> Exercise: 14  <b>Chapter 13: Time</b> Exercise: 19  <b>Chapter 14: Turns</b> Theory: page 205 Exercise: 1 – 3  <b>Chapter 16: Chance</b> Exercise: 7	<b>Chapter 2: Addition</b> Theory: page 38 Exercise: 20 – 25, 38 – 40 Puzzle: page 27  <b>Chapter 3: Subtraction</b> Exercise: 6, 7, 16 – 21, 28, 29 Puzzle: page 47  <b>Chapter 4: Multiplication</b> Exercise: 16, 34, 35 Challenge: page 80  <b>Chapter 5: Data handling</b> Exercise: 1, 2, 4, 6 – 8 Activity: page 94  <b>Chapter 6: Division</b> Exercise: 10, 17 – 19, 26, 29, 30 Puzzle: page 113, 121  <b>Chapter 7: Fractions</b> Theory: page 145 Exercise: 12, 24, 25 Puzzle: page 137  <b>Chapter 8: Time</b> Theory: page 166, 167 Exercise: 17 – 21, 23, 24  <b>Chapter 9: Turns and angles</b> Exercise: 1  <b>Chapter 11: Length</b> Exercise: 14, 15, 21, 22 Activity: page 207, 214  <b>Chapter 12: Shape</b> Exercise: 4  <b>Chapter 13: Area</b> Exercise: 3 Activity: page 231, 235  <b>Chapter 14: Position and direction</b> Exercise: 8  <b>Chapter 16: Volume</b> Exercise: 7  <b>Chapter 18: Mass</b> Theory: page 280 Exercise: 6, 7  <b>Chapter 19: Temperature</b> Exercise: 5  <b>Chapter 20: Money</b> Theory: page 296, 301, (5) Exercise: 1 – 4, 8 – 17, (1 – 4, 7 – 13) Discussion: page 302 Activity: page 295, 300, 303 Listening Activity: page 299, (8) Puzzle: page 294, (4)	2B: Column addition 2C: Addition problems  3C: Subtraction  6D: Estimation problems  7A: Fractions  9: Time (Introduction) 9B: Units of time 9C: Time calculations 9D: 24-hour time  11C: Operations with lengths 11D: Perimeter 11F: The perimeter of a rectangle  12A: Language  14A: Area 14C: Other units of area  15C: Constructing solids  17B: Capacity conversions 17C: measuring with containers  19A: Decimal currency 19H: Budgets  20A: Generating a sequence 20B: Finding a rule for a sequence  22A: Celsius temperature  25A: Categorical data 25B: Bar graphs 25C: Circle graphs 25E: Numerical data 25F: The mean of a data set 25H: The range of a data set

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 3:</b> <ul style="list-style-type: none"> <li>use whole numbers up to thousands or beyond in real-life situations</li> <li>use fast recall of multiplication and division number facts in real-life situations</li> <li>use decimal fractions in real-life situations</li> <li>use mental and written strategies for multiplication and division in real-life situations</li> <li>select an efficient method for solving a problem, for example, mental estimation, mental or written strategies, or by using a calculator</li> <li>use strategies to evaluate the reasonableness of answers</li> <li>add and subtract fractions with related denominators in real-life situations</li> <li>add and subtract decimals in real-life situations, including money</li> <li>estimate sum, difference, product and quotient in real-life situations, including fractions and decimals.</li> </ul>		<b>Chapter 7: Multiplication</b> Exercise: 16 Game: page 122	<b>Chapter 9: Multiplication</b> Exercise: 19, 22 Puzzle: page 145  <b>Chapter 10: Data handling</b> Exercise: 3, 4  <b>Chapter 11: Division</b> Exercise: 8 Puzzle: page 171  <b>Chapter 13: Time</b> Exercise: 8, 14 – 16 Discussion: page 197	<b>Chapter 4: Multiplication</b> Theory: page 68 Exercise: 9, 16, 34, 35 Challenge: page 80  <b>Chapter 5: Data handling</b> Exercise: 3, 11, 12 Game: page 97  <b>Chapter 6: Division</b> Exercise: 10, 16 – 19, 26, 29, 30 Puzzle: page 108, 113, 121  <b>Chapter 8: Time</b> Exercise: 7, 16, 17, 22, 25  <b>Chapter 11: Length</b> Theory: page 204, 205, 209, 211 Exercise: 14, 15, 21, 22 Activity: page 214  <b>Chapter 13: Area</b> Exercise: 4, 5 Activity: page 235  <b>Chapter 14: Position and direction</b> Exercise: 9 – 13  <b>Chapter 17: Capacity</b> Theory: page 272 Discussion: page 267  <b>Chapter 18: Mass</b> Theory: page 281 Exercise: 7, 19  <b>Chapter 19: Temperature</b> Exercise: 7  <b>Chapter 20: Money</b> Theory: page 296, (5) Exercise: 3, 6, 8, 15, (3, 7) Discussion: page 302 Activity: page 295, 300 Puzzle: page 294, (4) Challenge: page 295, (4)	2C: Addition problems 3C: Subtraction problems 4F: Multiplication problems 5C: Remainders 5E: Division problems 5F: Factors 6D: Estimation problems 9B: Units of time 9C: Time calculations 10B: Decimal number on a number line 10C: Ordering decimal numbers 10D: Adding decimal numbers 10E: Subtracting decimal numbers 10H: Multiplying decimals by a whole number 11A: Measuring length 11C: Operations with lengths 11D: Perimeter 11E: The perimeter of a square 11F: The perimeter of a rectangle 12E: Scale 14A: Area 14B: The area of a rectangle 14C: Other units of area 16B: The volume of a rectangular prism 16C: Other units of volume 17B: Capacity conversions 18B: Mass conversion 18C: Measuring mass 19B: Adding money 19C: Subtracting money 19F: Rounding money 19G: Estimating with money 19H: Budgets 20A: Generating a sequence 20B: Finding a rule for a sequence 21A: Using your calculator 21B: Problem solving 22A: Celsius temperature 23A: Percentage

Learning Outcome	PYP 1	PYP 2	PYP 3	PYP 4	PYP 5
<b>Phase 4:</b> <ul style="list-style-type: none"> <li>• use whole numbers up to millions or beyond in real-life situations</li> <li>• use ratios in real-life situations</li> <li>• use integers in real-life situations</li> <li>• convert improper fractions to mixed numbers and vice versa in real-life situations</li> <li>• simplify fractions in computation answers</li> <li>• use fractions, decimals and percentages interchangeably in real-life situations</li> <li>• select and use an appropriate sequence of operations to solve word problems</li> <li>• select an efficient method for solving a problem: mental estimation, mental computation, written algorithms, by using a calculator</li> <li>• use strategies to evaluate the reasonableness of answers</li> <li>• use mental and written strategies for adding, subtracting, multiplying and dividing fractions and decimals in real-life situations</li> <li>• estimate and make approximations in real-life situations involving fractions, decimals and percentages.</li> </ul>				<b>Chapter 11: Length</b> Activity: page 208  <b>Chapter 13: Area</b> Theory: page 235 Exercise: 10  <b>Chapter 18: Mass</b> Exercise: 19  <b>Chapter 19: Temperature</b> Exercise: 7	1B: Millions  7G: Fractions which add up to one whole 7H: Adding and subtracting fractions 7I: Proper and improper fractions  10D: Adding decimal numbers 10E: Subtracting decimal numbers 10H: Multiplying decimals by a whole number 10I: Dividing decimals by a whole number  11B: Length conversions 11C: Operations with lengths 11D: Perimeter 11E: The perimeter of a square  14B: The area of a rectangle 14C: Other units of area  16C: Other units of volume  17B: Capacity conversions 17C: Measuring with containers  18B: Mass conversions 18C: Measuring mass  19A: Decimal currency 19B: Adding money 19C: Subtracting money 19D: Multiplying with money 19E: Dividing money 19F: Rounding money 19G: Estimating money 19H: Budgets  20A: Generating a sequence 20B: Finding a rule for a sequence  21B: Problem solving  22A: Celsius temperature 22B: Fahrenheit temperature  23B: Converting percentages into fractions 23C: Converting fractions into percentages 23D: Converting percentages into decimals  24B: Using numbers to describe probabilities 24D: Theoretical probability 24E: Experimental probability  25B: Bar graphs 25C: Circle graphs 25F: The mean of a data set