

Unit 8

Properties of number

Five daily lessons

National
Numeracy Strategy

Year 4
Summer term

Unit Objectives Year 4

- Recognise multiples of 2, 3, 4, 5, 10 up to the tenth multiple.
- Explain methods and reasoning about numbers, orally and in writing.
- Solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict.
- Use am and pm and the notation 9:53.
- Read simple timetables and use this year's calendar.

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Pages 98, 100

This Unit Plan is designed to guide your teaching.

You will need to adapt it to meet the needs of your class.

Resources needed to teach this unit:

- Resource sheet 8.1
- Activity sheet 8.1
- Activity sheet 8.2
- Activity sheet 8.3
- Activity sheet 8.4
- Activity sheet 8.5
- Activity sheet 8.6
- Self-assessment sheet 8.1
- OHT 8.1
- OHT 8.2
- Whiteboards
- Digit cards
- Copies of calendar showing 12 months on A4 sheet
- Large clock face with movable hands
- Working analogue wall clock

Year 3

Link Objectives

Year 5

- Recognise two-digit and three-digit multiples of 2, 5 or 10, and three-digit multiples of 50 and 100.
- Use a calendar. Read the time to 5 minutes on an analogue clock and a 12-hour digital clock, and use the notation 9:40.
- Solve mathematical problems or puzzles, recognise simple patterns and relationships, generalise and predict.
- **Explain methods and reasoning** orally, and where appropriate, in writing.

(Key objectives in bold)

- Recognise multiples of 6, 7, 8, 9 up to the tenth multiple.
- Know and apply tests of divisibility by 2, 4, 5, 10 or 100.
- Use units of time; read the time on a 24-hour digital clock and use 24-hour clock notation, such as 19:53. Use timetables.
- Solve mathematical problems or puzzles recognise and explain patterns and relationships, generalise and predict.
- Explain a generalised relationship (formula) in words.

department for
education and skills

Planning sheet	Day One	Unit 8 <i>Properties of number</i>		Term: <i>Summer</i>	Year Group: <i>4</i>																																			
Oral and Mental		Main Teaching			Plenary																																			
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities		Teaching Activities/Focus Questions																																			
<p>Recognise and extend number sequences.</p> <p>VOCABULARY sequence pattern multiple</p>	<ul style="list-style-type: none"> Ask the children to count in 3s from 0 to 30 and back. Remind them that the numbers are multiples of 3, i.e. they are 'answers' in the $\times 3$ table, so can all be divided in to groups of 3. Write 0, 3, 6, 9, 12 on the board. <div data-bbox="320 475 633 587" style="border: 1px solid black; padding: 5px;"> <p>Q If I continued this pattern, would 30 be in the sequence? How do you know?</p> </div> <ul style="list-style-type: none"> Establish that the pattern is made up of consecutive multiples of 3, so 30 will be in the sequence. Write 1, 4, 7, 10, 13 on the board and ask the children to give the next three numbers. <div data-bbox="320 794 633 858" style="border: 1px solid black; padding: 5px;"> <p>Q How does that pattern work?</p> </div> <ul style="list-style-type: none"> Establish that it increases in steps of 3, starting from 1. <div data-bbox="320 946 633 1034" style="border: 1px solid black; padding: 5px;"> <p>Q Will 30 be part of this sequence? How do you know?</p> </div> <ul style="list-style-type: none"> Encourage the children to explain their reasoning, (which they will probably find difficult to verbalise). Establish that 30 is not part of the sequence because it started from 1, so each number is one more than a multiple of 3. Model ways of explaining the answer. Repeat with sequences involving multiples of 4 then other steps of 4. 	<p>Recognise multiples of 2, 3, 4, 5 and 10, up to the tenth multiple.</p> <p>RESOURCES OHT 8.1 Activity sheet 8.1 Resource sheet 8.1</p>	<ul style="list-style-type: none"> Remind the children about identifying multiples of 2, 5 and 10, e.g. ask the class to count in 5s to 50. <div data-bbox="958 355 1787 395" style="border: 1px solid black; padding: 5px;"> <p>Q Which units digits do multiples of 5 have?</p> </div> <p>Establish that they always have 5 or 0 units. Write 4, 20, 36, 45, 30, 23 on the board and ask the class to say which are multiples of 5. Circle each multiple. Repeat with multiples of 10 then 2.</p> <ul style="list-style-type: none"> Rehearse multiples of 3 by asking the class to count in 1s to 30, clapping on each multiple of 3. Repeat with counting to 40, clapping on multiples of 4. Draw a circle inside a rectangle on the board. Ask a child to say any number less than 40. If it is a multiple of 3, write it in the circle, otherwise write it in the rectangle outside the circle. Repeat asking other children to say a number until there are about six numbers inside the circle. <div data-bbox="958 683 1787 722" style="border: 1px solid black; padding: 5px;"> <p>Q What do the numbers in the circle have in common?</p> </div> <ul style="list-style-type: none"> Label the circle 'multiples of 3'. Repeat with a similar diagram, this time recording multiples of 4 in the circle. Draw a diagram with two intersecting circles inside a rectangle. Label one circle 'multiples of 3' and the other 'multiples of 4'. Discuss different regions of the diagram and establish that the intersection of the circles represents multiples of both 3 and 4. Point to different parts of the diagram and ask the children to say numbers which fit in that region. Record the numbers appropriately. Write 15, 24, 40 on the board. Show OHT 8.1, write 15 in the first column and ask the children to identify whether it is a multiple of each number at the top of the other columns. Record as shown below. Repeat with 24 and 40. Explain that the number of factors for each number is recorded in the 'total' column. <table border="1" data-bbox="1048 1066 1709 1225" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th colspan="6">Multiple of:</th> </tr> <tr> <th>Number</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>10</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>15</td> <td></td> <td>✓</td> <td></td> <td>✓</td> <td></td> <td>2</td> </tr> <tr> <td>24</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>40</td> <td>✓</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>4</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Give Activity sheet 8.1 and number cards from Resource sheet 8.1 to pairs of children. Ask them to take turns to choose a number, record it on the grid, identify whether it is a multiple of 2, 3, 4, 5 or 10 and record as shown on the OHT. 			Multiple of:						Number	2	3	4	5	10	Total	15		✓		✓		2	24	✓	✓	✓			3	40	✓		✓	✓	✓	4	<ul style="list-style-type: none"> Discuss the children's results, e.g. <div data-bbox="1865 323 2179 395" style="border: 1px solid black; padding: 5px;"> <p>Q Why are multiples of 10 also multiples of 2 and 5?</p> </div> <ul style="list-style-type: none"> Establish that 10 is a multiple of both because $2 \times 5 = 10$. <div data-bbox="1865 475 2179 547" style="border: 1px solid black; padding: 5px;"> <p>Q What do you notice about multiples of 4?</p> </div> <ul style="list-style-type: none"> Establish that they are also multiples of 2. <div data-bbox="1865 627 2179 715" style="border: 1px solid black; padding: 5px;"> <p>Q What do the numbers which scored zero points have in common?</p> </div> <ul style="list-style-type: none"> Establish that they are all odd numbers. <div data-bbox="1865 802 2179 874" style="border: 1px solid black; padding: 5px;"> <p>Q Why do all the even numbers score at least one point?</p> </div> <ul style="list-style-type: none"> Establish that even numbers are always multiples of 2. <div data-bbox="1865 954 2179 1026" style="border: 1px solid black; padding: 5px;"> <p>Q Which numbers scored five points? (60) Why?</p> </div> <ul style="list-style-type: none"> Ask the children to identify numbers which satisfy given criteria, such as a number which is a multiple of 3, 4 and 5. <div data-bbox="1832 1193 2179 1449" style="border: 1px solid black; padding: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Recognise and identify numbers up to 100 that are multiples of 2, 3, 4, 5 and 10. <p>(Refer to supplement of examples, section 6, page 18.)</p> </div>
	Multiple of:																																							
Number	2	3	4	5	10	Total																																		
15		✓		✓		2																																		
24	✓	✓	✓			3																																		
40	✓		✓	✓	✓	4																																		

Planning sheet	Day Two	Unit 8 <i>Properties of number</i>	Term: <i>Summer</i>	Year Group: <i>4</i>
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Multiply two-digit numbers mentally by partitioning, e.g. 32×3.</p> <p>Derive related division facts, e.g. $93 \div 3$.</p> <p>VOCABULARY partitioning tens ones/unit multiply divide</p> <p>RESOURCES Whiteboards or digit cards</p>	<ul style="list-style-type: none"> Ask the children to show answers to the following using whiteboards or digit cards: 10×3, 3×3, 13×3. Record the multiplication statements in a vertical list on the board. Repeat with: 20×4, 1×4, 21×4; 30×3, 2×3, 32×3 <div data-bbox="353 483 745 547" style="border: 1px solid black; padding: 5px;"> <p>Q What is an easy way to multiply 23 by 3?</p> </div> <ul style="list-style-type: none"> Encourage the children to give full descriptions of the method using correct mathematical language. Discuss suggestions and focus on partitioning. Ask the children to show answers to other $TU \times 3$ calculations within their mental range, e.g. 35×3, 17×3, 42×3, etc. Record each multiplication statement on the board. Take each multiplication statement in turn, e.g. $35 \times 3 = 105$ and ask the children to divide the answer by 3. Record the division statement and show how it can be calculated by dividing the 10s then the units by 3, or the 10s then the number formed by combining remaining 10s and units by 3. Model how to articulate the method you use. 	<p>Solve mathematical problems and puzzles. Recognise and explain patterns and relationships, generalise and predict.</p> <p>Explain methods and reasoning about numbers orally and in writing.</p> <p>VOCABULARY horizontal vertical row column consecutive rule</p> <p>RESOURCES OHT 8.2 Self-assessment sheet 8.1</p>	<ul style="list-style-type: none"> Display a 1–100 square grid, e.g. OHT 8.2, with three consecutive squares in a horizontal row concealed, e.g. 3, 4 and 5. <div data-bbox="1081 355 1798 403" style="border: 1px solid black; padding: 5px;"> <p>Q Which numbers are covered? How do you know?</p> </div> <ul style="list-style-type: none"> Establish that the covered numbers can be identified from the patterns in the grid, e.g. they follow consecutively from 2 to 6. Explain that numbers which follow one after another are called consecutive numbers. <div data-bbox="1081 515 1798 563" style="border: 1px solid black; padding: 5px;"> <p>Q What is the total of the covered numbers?</p> </div> <ul style="list-style-type: none"> Record $3 + 4 + 5 = 12$ on the board. Repeat with other sets of three consecutive numbers. <div data-bbox="1081 651 1798 715" style="border: 1px solid black; padding: 5px;"> <p>Q Can anyone suggest a rule for finding the total of three consecutive numbers?</p> </div> <ul style="list-style-type: none"> Discuss suggestions and establish that the total is three times the middle number. Draw out that the smallest number is one less than the middle number, the largest one more, and that subtracting one from the largest and adding it to the smallest results in three of the middle number. Make sure that you model how to articulate your thinking and working. Ask the class to find a set of three consecutive numbers which have a total of 24. Establish that $7 + 8 + 9 = 24$. Write 6, 12, 36, 66 and 75 on the board. Ask the children to work in pairs to find the three consecutive numbers which have a total of each number. Observe the strategies the children use as they work. Draw the class together after about ten minutes. <div data-bbox="1081 1042 1798 1090" style="border: 1px solid black; padding: 5px;"> <p>Q How did you find the three numbers with a total of 6?</p> </div> <ul style="list-style-type: none"> Discuss the different strategies used. <div data-bbox="1081 1153 1798 1201" style="border: 1px solid black; padding: 5px;"> <p>Q Can anyone suggest a rule for finding the three numbers?</p> </div> <ul style="list-style-type: none"> Establish that dividing the total by 3 gives the middle number of the set. Challenge the children to explore totals of three numbers in a vertical column on the grid, e.g. $4 + 14 + 24$. Ask them to try to identify a rule for finding such totals, then to identify three vertical numbers which have given totals, e.g. 60, 39, 48, 45. Ask them to record the rules they found and used. Discuss the children's findings. 	<div data-bbox="1832 292 2179 355" style="border: 1px solid black; padding: 5px;"> <p>Q What three numbers from a row on the 100 grid add up to 45?</p> </div> <ul style="list-style-type: none"> Ask each child to tell a friend how they got their answer. Ask them to write how they did it on their whiteboard and talk to their friend about it. Select a few children to talk through their written versions. <p>ASSESSMENT –</p> <ul style="list-style-type: none"> Complete question 1 on Self-assessment sheet 8.1. <div data-bbox="1832 754 2179 1121" style="border: 1px solid black; padding: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Use patterns in a 1–100 square grid to identify missing numbers; Explain and use a rule for finding totals of three horizontal or vertical numbers on a 1–100 square. <p>(Refer to supplement of examples, section 6, pages 76 and 78.)</p> </div>

Planning sheet	Day Three	Unit 8 <i>Properties of number</i>	Term: <i>Summer</i>	Year Group: 4
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
<p>Begin to recall facts in $\times 6$ and $\times 8$ tables</p> <p>VOCABULARY multiple doubling</p> <p>RESOURCES Whiteboards or digit cards</p>	<ul style="list-style-type: none"> Ask the class to count in 6s from 0 to 60 and back. Revise that these numbers are multiples of 6. Repeat with counting in 8s from 0 to 80 and back. <p>Q What is an easy way to multiply a number by 6?</p> <p>Discuss suggestions and focus on doubling multiples of 3. Practise finding facts in the $\times 6$ table by doubling the related fact in the $\times 3$ table, e.g. What is 4×3? What is double 12? So what is 4×6?</p> <p>Repeat with finding facts in the $\times 8$ table by doubling $\times 4$.</p> <p>Ask the children to show answers to a random selection of $\times 6$ and $\times 8$ facts using whiteboards or digit cards.</p> <p>Ask the children to identify numbers according to given criteria and show them on whiteboards or digit cards on your signal, e.g. I'm thinking of a number. It is a multiple of 8 and of 3, it is greater than 40 but less than 50. Show me the number.</p>	<p>Recognise multiples of 2, 3, 4, 5 and 10 up to the tenth multiple.</p> <p>Solve mathematical problems and puzzles, recognise and explain patterns and relationships, generalise and predict.</p> <p>Explain methods and reasoning about numbers orally and in writing.</p> <p>VOCABULARY vertical diagonal</p> <p>RESOURCES OHT 8.2 Activity sheet 8.2 Activity sheet 8.3</p>	<ul style="list-style-type: none"> Use the 1–100 square grid on OHT 8.2. Ask the children to count in 2s to 20. Cover each number on the grid with a counter as they count. <p>Q How will the pattern of counters continue? How could you describe the pattern?</p> <p>Establish that it is a vertical pattern.</p> <ul style="list-style-type: none"> Repeat with multiples of 3 to 30, establishing that they produce a diagonal pattern. Give the children Activity sheet 8.2 and ask them to find which multiples of other numbers produce vertical patterns. Take feedback, encouraging the children to give full explanations, and establish that vertical patterns are formed by multiples of 2, 5 and 10. <p>Q What number statement do you know that contains the numbers 2, 5 and 10?</p> <p>Establish that $2 \times 5 = 10$.</p> <ul style="list-style-type: none"> Give the children Activity sheet 8.3 and ask them to explore the multiples of different numbers which produce vertical patterns on each of the grids. Ask them to record their findings and any relationships that they find between the numbers whose multiples produce the patterns on particular grids. After about ten minutes ask the children to share their work so far with a friend. Model how you would explain what you had been doing. Extend the activity by asking the children to find numbers whose multiples produce diagonal patterns on the grids. Ask them to consider the numbers concerned on each grid and try to explain why these particular numbers produce diagonal patterns. 	<ul style="list-style-type: none"> Discuss the children's findings. <p>Q What can you say about the numbers in the right-hand column of each grid?</p> <p>They are multiples of the number at the top of the right-hand column.</p> <p>Q Can you explain why there is only one vertical pattern on the 5×5 grid?</p> <ul style="list-style-type: none"> Discuss the children's responses to these and the questions on the sheet. <p>Establish that:</p> <ul style="list-style-type: none"> vertical patterns are produced by the multiples of the number in the top right-hand square on each grid; other numbers whose multiples produce vertical patterns can be multiplied to give the top right-hand number; diagonal patterns are produced by multiples of the number which is one less than the top right-hand number (and by multiples of its factors). <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Recognise multiples of 2, 3, 4, 5 and 10; Solve related problems and puzzles; Explain their findings. <p>(Refer to supplement of examples, section 6, pages 18, 76, 78.)</p>

Planning sheet	Day Four	Unit 8 <i>Properties of number</i>		Term: <i>Summer</i>	Year Group: 4
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions	
<p>Derive quickly all number pairs that total 100.</p> <p>VOCABULARY multiple total</p> <p>RESOURCES Whiteboards or digit cards</p>	<ul style="list-style-type: none"> Ask the children to work in pairs using whiteboards or digit cards. Ask them to show a pair of numbers which total 100. Record some of the pairs and show on the board. <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Q What is the sum of the 10s in each pair of numbers? What is the sum of the units?</p> </div> <ul style="list-style-type: none"> Ask the children to explain how they know the two numbers have a sum of 100. Establish that the units total 10 and the 10s total 90 unless the numbers are multiples of 10. Ask the children to show another pair of numbers with a sum of 100. Ask each child to write any two-digit number and keep it concealed. Challenge the class to complete the following in the shortest possible time. One child reads their number. The next says the number which must be added to total 100, then reads out their own number and so on until all the children have taken part. 	<p>Use this year's calendar.</p> <p>VOCABULARY calendar day week year date of birth</p> <p>RESOURCES Activity sheet 8.4 Activity sheet 8.5 Copies of the current year's calendar set out on one sheet, e.g. copied from the year planner in a diary or provided as a free gift by a commercial supplier</p>	<ul style="list-style-type: none"> Provide copies of the current year's calendar set out on one sheet of paper, e.g. copied from the year planner in a diary, one per child. Discuss with and question the children to establish that there are: 12 months in a year; 52 weeks in a year; 7 days in a week. Point out that the first of each month falls on different days of the week. Draw attention to the number of days in different months and show the children the rhyme '30 days hath September' with the number missing and together complete it. Ask the children to find today's date on their calendars. Ask questions such as: What will the date be next Sunday? In two weeks' time? In six weeks' time? Ask them to find the date on which the summer holidays begin, e.g. 23 July, and to say which day of the week it falls on. Ask further questions to familiarise the children with the reading and use of the calendar, e.g. what date is the second Saturday in August? How many weeks are there between today and the start of the summer holidays? How many days? How long is it to Christmas in months, weeks and days? Write a date on the board, e.g. 3.6.02. Discuss and establish that the first number refers to the day, the second to the month and the third to the year. Ask a child to give their date of birth in numbers starting with the day, then month, then year. Record on the board and ask the children to find the child's birthday on their calendar for this year. Give out Activity sheet 8.4. Explain that it shows December 2002 and January 2003. Ensure the children understand how to read and use the sheet, e.g. write 11.12.02 on the board and ask the children to find it on their sheet. Ask them to say which day of the week it falls on. Ask for the (numerical) date one week after 27.12.02. Give out Activity sheet 8.5. Make sure the children understand the questions and point out that answers to part A should be recorded on the calendar on Activity sheet 8.4. For part B they should use their current year's calendar to find the answers and record them in the spaces provided alongside the questions. 	<ul style="list-style-type: none"> Ask volunteers to give their answers to some of the questions on Activity sheet 8.5. Deal with any common errors or misunderstandings that were evident during the activity. Ask a few children to read out their own questions for other children to answer. Give out a copy of the rhyme '30 days hath September' on the board. <p>HOMEWORK –</p> <ul style="list-style-type: none"> Learn the rhyme '30 days hath September'. Make lists of months under the headings: 30 days; 31 days; 28/29 days. Write dates of birth of oneself and siblings or friends in numerical form. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Read and use the current year's calendar; Understand and use dates written numerically, including their own birthday; Use a rhyme to work out the number of days in a particular month. <p>(Refer to supplement of examples, section 6, pages 98, 100.)</p> </div>	

Planning sheet	Day Five	Unit 8 <i>Properties of number</i>	Term: <i>Summer</i>	Year Group: 4																																			
Oral and Mental		Main Teaching		Plenary																																			
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities / Focus Questions																																			
<p>To be able to read times from an analogue clock and use and understand the notation 9:53.</p> <p>RESOURCES Large clock face with movable hands Working analogue wall clock Whiteboards</p>	<ul style="list-style-type: none"> Look at the clock on the wall. Ask a child to say the time in digital form and another to give it in words, e.g. ten past eleven. Ask questions such as: What time will it be in 20 minutes? How many minutes are there to the next hour? How long have we been in school today? etc. Show a clock face, and ask what time it shows. Provide various examples. Use only digital times, e.g. 3:40 not 20 to 4. Ask the children to record some of them on whiteboards. Write these times on the board: 2:30, 2:50, 3:15, 3:45 <div data-bbox="353 770 654 834" style="border: 1px solid black; padding: 5px;"> <p>Q Which time is nearer to 3:00, to 3:25, etc?</p> </div> <p>Ask the children to show their answers on whiteboards.</p>	<p>To be able to read and use timetables. Use correctly am and pm and the notation 9:53.</p> <p>VOCABULARY am/pm arrive depart</p> <p>RESOURCES Activity sheet 8.6</p>	<ul style="list-style-type: none"> Refer to the previous day's homework. <div data-bbox="967 331 1792 371" style="border: 1px solid black; padding: 5px;"> <p>Q Which months have 30 days?</p> </div> <div data-bbox="967 403 1792 467" style="border: 1px solid black; padding: 5px;"> <p>Q Who has a sibling/friend who has a birthday in June? What is their date of birth? How can we tell it is a June birthday?</p> </div> <ul style="list-style-type: none"> Display the table below, e.g. on the board, and explain that it shows the times of buses departing from a bus station. <div data-bbox="967 555 1792 635" style="border: 1px solid black; padding: 5px;"> <p>Bus departure time:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">am</td> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">pm</td> <td style="width: 20%;"></td> </tr> <tr> <td>8:00</td> <td>10:30</td> <td>11:45</td> <td>1:20</td> <td>3:15</td> </tr> </table> </div> <ul style="list-style-type: none"> Discuss and establish the meaning of am and pm. <div data-bbox="967 691 1792 730" style="border: 1px solid black; padding: 5px;"> <p>Q How long is there between each bus?</p> </div> <ul style="list-style-type: none"> Ask the children to explain how they worked out their answers. Establish that the intervals of time between each departure vary. Ask questions, e.g. <div data-bbox="967 858 1792 994" style="border: 1px solid black; padding: 5px;"> <p>Q - You arrive at the bus station at 12:30 pm - Which bus can you catch? - What time does it arrive? - How long must you wait? - What if it was 20/30 minutes late?</p> </div> <div data-bbox="967 1026 1792 1114" style="border: 1px solid black; padding: 5px;"> <p>Q - The bus takes 20 minutes to take me home. - What time do I arrive if I catch the 10:30 am bus? - What if I catch the 3:15 pm bus?</p> </div> <p>The children record answers on whiteboards using am or pm. Give out Activity sheet 8.6. Explain that the bus timetable is incomplete. Discuss the first column and establish how long the bus takes between stops. Explain that each bus takes the same amount of time between stops as the first bus. Ask the children to work in pairs to fill in the rest of the timetable and answer the questions. <table border="1" data-bbox="967 1297 1514 1441" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>Village Green</td> <td>9:00</td> <td>10:30</td> <td>12:15</td> <td>2:45</td> </tr> <tr> <td>Field Lane</td> <td>9:20</td> <td>10:50</td> <td>12:35</td> <td>3:05</td> </tr> <tr> <td>Hill Street</td> <td>9:45</td> <td>11:15</td> <td>1:00</td> <td>3:30</td> </tr> <tr> <td>Long Road</td> <td>9:55</td> <td>11:25</td> <td>1:10</td> <td>3:40</td> </tr> <tr> <td>Bus station</td> <td>10:10</td> <td>11:40</td> <td>1:25</td> <td>3:55</td> </tr> </table> </p>		am		pm		8:00	10:30	11:45	1:20	3:15	Village Green	9:00	10:30	12:15	2:45	Field Lane	9:20	10:50	12:35	3:05	Hill Street	9:45	11:15	1:00	3:30	Long Road	9:55	11:25	1:10	3:40	Bus station	10:10	11:40	1:25	3:55	<ul style="list-style-type: none"> Ask volunteers to read out the times they have recorded for each bus and discuss the answers to the questions on the sheet. Clarify any misconceptions or common errors which are evident. Ask the children to read out the questions they have written. The other children respond on whiteboards. The question writers say whether an answer is correct and how they know. Where appropriate, ask: <div data-bbox="1865 715 2177 778" style="border: 1px solid black; padding: 5px;"> <p>Q How did you work out the answers?</p> </div> <p>ASSESSMENT –</p> <ul style="list-style-type: none"> Complete question 2 on Self-assessment sheet 8.1. <div data-bbox="1832 930 2177 1273" style="border: 1px solid black; padding: 10px;"> <p>By the end of the lesson the children should be able to:</p> <ul style="list-style-type: none"> Read, understand and use simple timetables; Use and understand am and pm; Use simple notation, e.g. 9:53 <p>(Refer to supplement of examples, section 6, pages 98, 100.)</p> </div>
	am		pm																																				
8:00	10:30	11:45	1:20	3:15																																			
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2	4	6	8	10
12	14	16	18	20
5	15	25	35	45
30	40	50	60	70
80	90	100	3	9
21	24	27	28	32
36	1	7	11	13
17	26	29	23	19

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

5 x 5 Grid

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

6 x 6 Grid

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

Explore the patterns made by multiples of different numbers on each grid.

8 x 8 Grid

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64

Multiples of give a vertical pattern on a 5 x 5 grid.

Multiples of give vertical patterns on a 6 x 6 grid.

Multiples of give vertical patterns on an 8 x 8 grid.

What would happen on a 7 x 7 grid?

What do you notice about the numbers which give diagonal patterns?

Calendar

December 2002

Sunday 1	Monday 2	Tuesday 3	Wednesday 4	Thursday 5	Friday 6	Saturday 7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

January 2003

Sunday	Monday	Tuesday	Wednesday 1	Thursday 2	Friday 3	Saturday 4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	23	25
26	27	28	29	30	31	

Part A

Follow these instructions and write on the December 2002/January 2003 sheet.

1. Write *Christmas Day* on 25.12.02.
2. New Year's Day is exactly one week after Christmas Day. Write its date in numbers on the correct day on the calendar.
3. A school breaks up for Christmas on 19.12.02. The children have two weeks off school then go back on a Monday. Write *break up* and *school starts* on the correct days on the calendar.
4. Emily was born on 9.12.1996. Write her age on her birthday on the calendar.

Part B

Use this year's calendar to find the answers to these questions. Write each answer in the space next to the question.

1. Which day of the week is 18 August? _____
2. What is the date four weeks after 18 August? _____
3. Which day of the week is your birthday? _____
4. What is the date of the third Saturday in November? _____
5. How many days are there between 16 May and 10 June? _____
6. How many weeks are there between 20 July and 7 September? _____

Make up a question of your own. Write it in the space below. Make sure you know the answer!

Timetable

Village Green	9:00	10:30		
Field Lane	9:20			
Hill Street	9:45		1:00	
Long Road	9:55			
Bus Station	10:10			3:55

Mrs Singh gets to the bus stop in Field Lane at 10:35 am;

1. How long does she wait for the bus? _____

2. How long will it take to get to the bus station? _____

Make up some questions of your own.

1.

1	2	3	4	5
11	12	13	14	15
21	22	23	24	25
31	32	33	34	35
41	42	43	44	45

The 3 numbers are

Tell a friend how you did it?

I did this	
on my own	<input type="checkbox"/>
together	<input type="checkbox"/>

What three numbers from a column add up to 39?

2.

	am	pm	pm
Monsters Inc.	10:30	12:30	2:30
Lord of the Rings	10:45	2:45	
Harry Potter	12:05	3:05	5:05
Ice Age	3:30	5:30	7:30

It is 2:27 pm. Which film starts next?

It is 12:30 pm. How long before the next showing of Harry Potter?

Tell a friend how you did it?

I did this	
on my own	<input type="checkbox"/>
together	<input type="checkbox"/>

My next target:

I want to get better at:
