



Year 1 Maths Meeting

Monday 28th March 2022



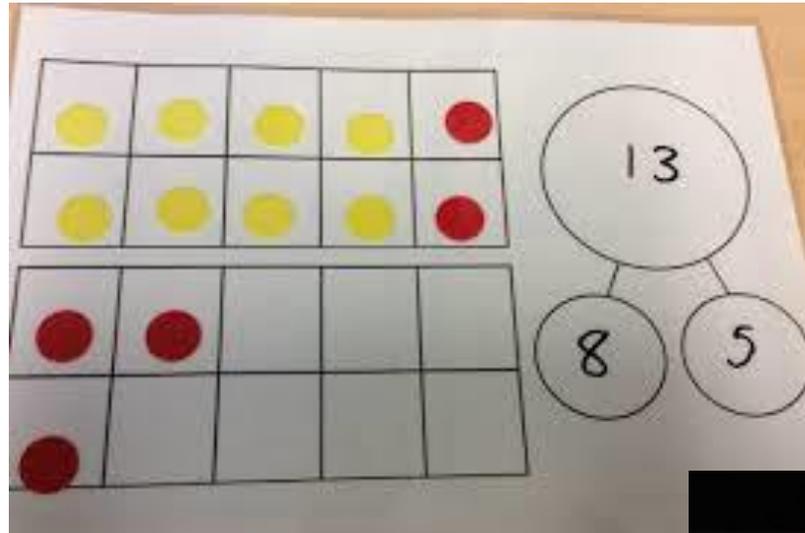
Aims of the session

- Understand how mathematics is **taught** at Deer Park School.
- Know the **current curriculum coverage** in Year 1.
- Demonstrate calculations following our **calculation policy**.
- Discuss how children's development in mathematics can be **supported at home**.
- Answer any further **questions** about mathematics at Deer Park School.



How Mathematics is taught at Deer Park

- Recap learning
- Key vocabulary
- New Learning
- Independent work

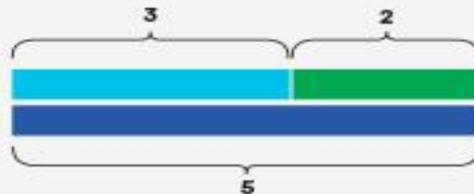


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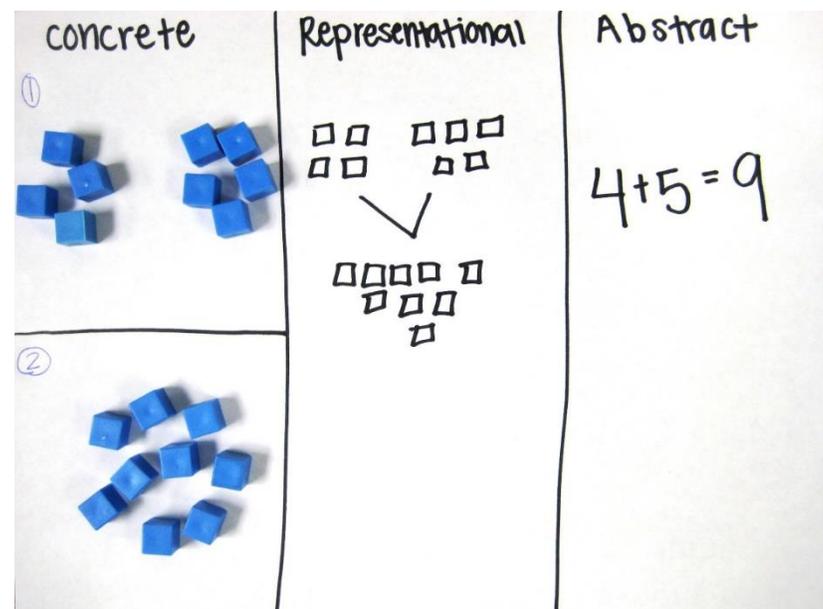


Concrete → Pictorial → Abstract



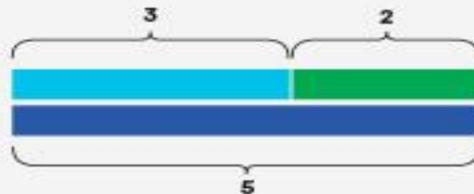
$$3 + 2 = 5$$

The C-P-A approach is a system of learning. It uses physical and visual resources to support conceptual understanding.



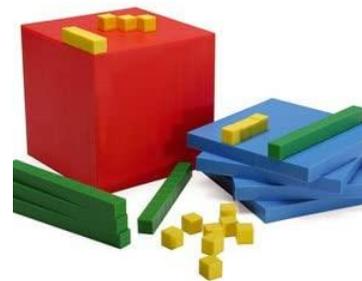


Concrete → Pictorial → Abstract



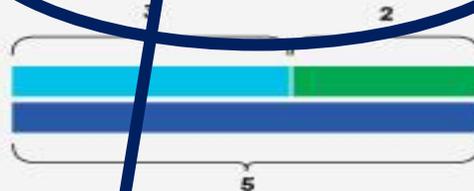
$$3 + 2 = 5$$

Using physical objects to solve maths problems, or investigate mathematical relationships.



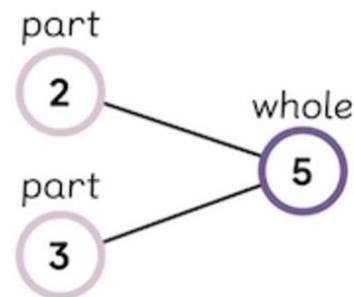
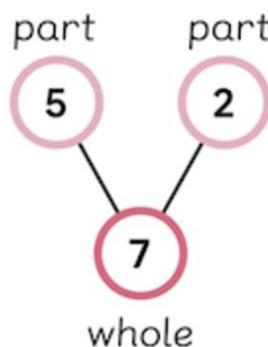
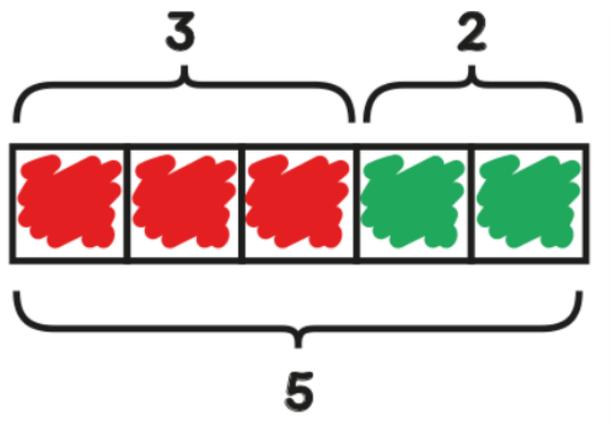


Concrete → Pictorial → Abstract



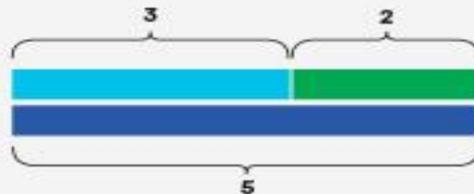
$$3 + 2 = 5$$

Using pictorial representations, or pictures, that represent equations or problems to solve.





Concrete → Pictorial → Abstract



$$3 + 2 = 5$$

Using numbers and symbols to solve problems or demonstrate relationships.

$$16 - 2t = 5t + 9$$

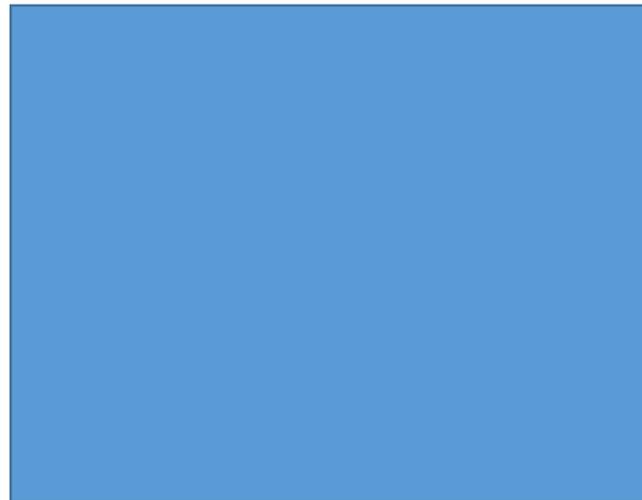
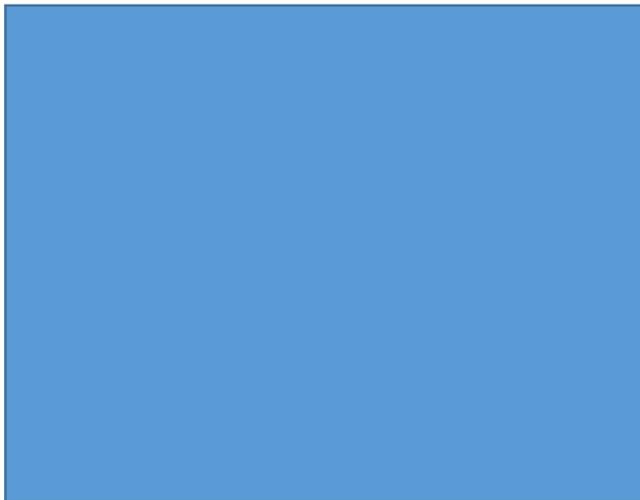
$$3 + 3$$

$$186 \div 6 = \begin{array}{r} 0 \ 3 \ 1 \\ 6 \overline{) 1 \ 8 \ 6} \\ \underline{1 \ 8 \ 6} \\ 0 \end{array}$$

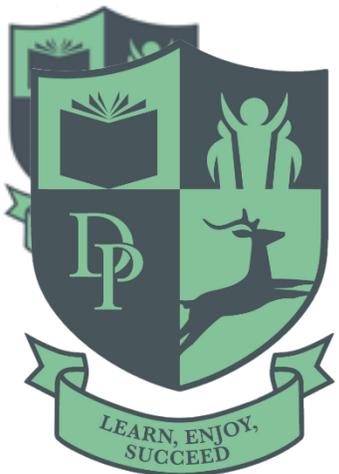


Common misconception: ‘the concrete and pictorial approach are for lower-level concepts, or for less able learners’.

Concrete → Pictorial → Abstract



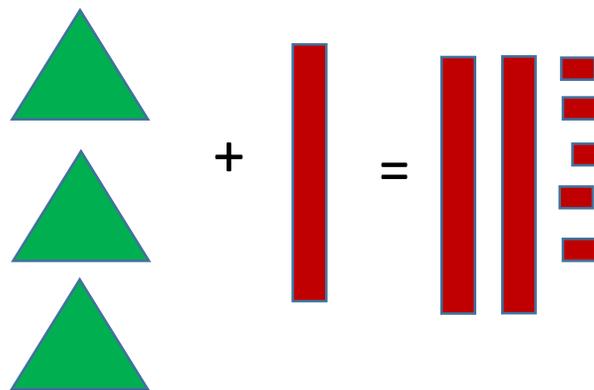
$$3y + 10 = 25$$



~~Common misconception: 'the concrete and pictorial approach are for lower-level concepts, or for less able learners'.~~

Concrete → Pictorial → Abstract

- Exchange money for items
- Use cubes to exchange
- Physically move items around the equals sign



$$3y + 10 = 25$$



The Year 1 National Curriculum

- **become fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- **can solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.



Year 1 Overview

Autumn term

| | | | |
|---|--|---|---|
| Number Place value (within 10) VIEW | Number Addition & subtraction (within 10) VIEW | Geometry Shape VIEW | Number Place value (within 20) VIEW |
|---|--|---|---|

Spring term

| | | | | | |
|---------------|--|---|---|---|---------------|
| Consolidation | Number Addition & subtraction (within 20) VIEW | Number Place value (within 50) VIEW | Measurement Length & height VIEW | Measurement Weight & volume VIEW | Consolidation |
|---------------|--|---|---|---|---------------|

Summer term

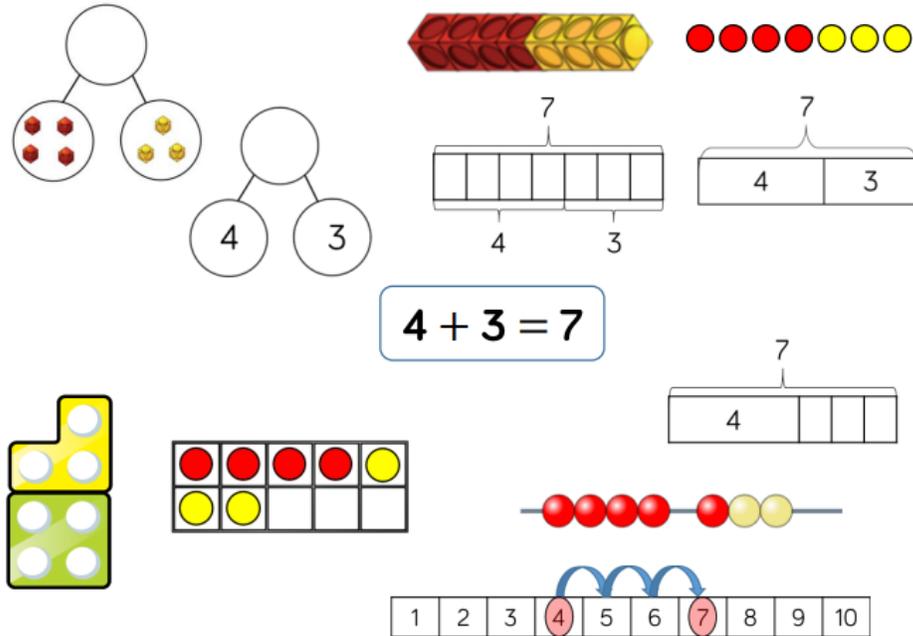
| | | | | | | |
|---------------|--|--|--|--|--|--|
| Consolidation | Number Multiplication & division VIEW | Number Fractions VIEW | Geometry Position & direction VIEW | Number Place value (within 100) VIEW | Measurement Money VIEW | Measurement Time VIEW |
|---------------|--|--|--|--|--|--|



Calculation Policy - Addition

Skill: Add 1-digit numbers within 10

Year: 1



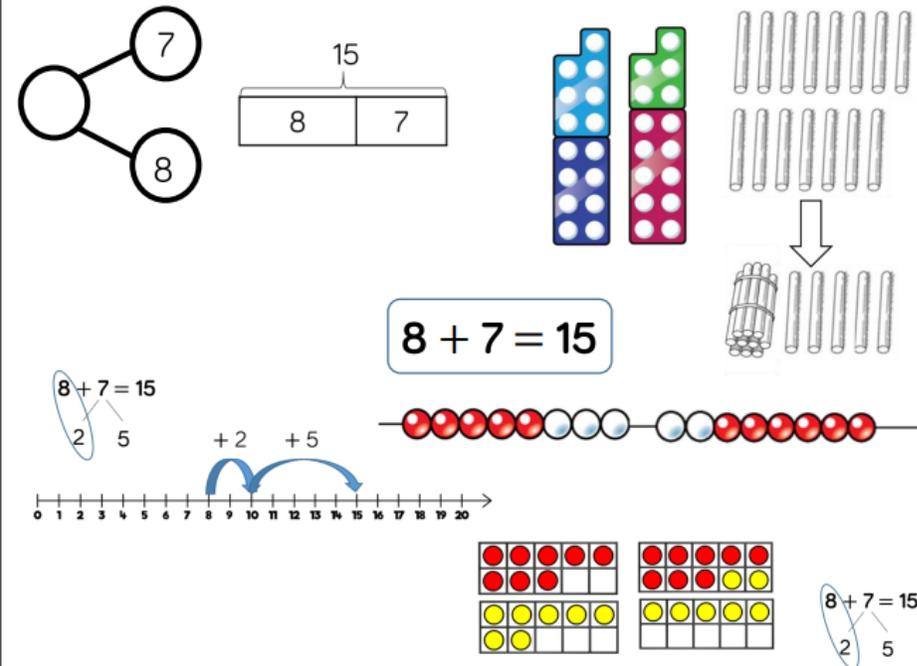
When adding numbers to 10, children can explore both aggregation and augmentation.

The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation.

The combination bar model, ten frame, bead string and number track all support augmentation.

Skill: Add 1 and 2-digit numbers to 20

Year: 1/2

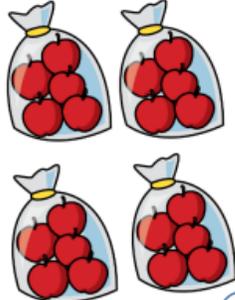
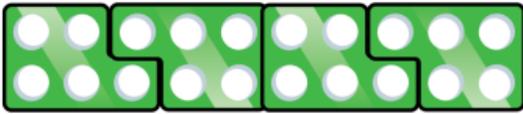
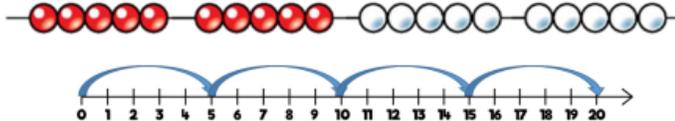
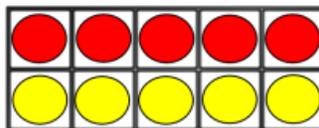
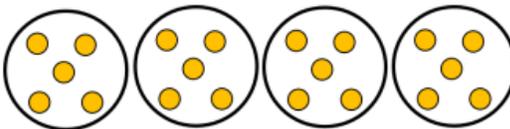
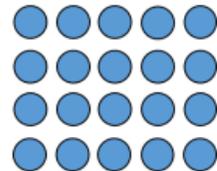


When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

Different manipulatives can be used to represent this exchange. Use concrete resources alongside number lines to support children in understanding how to partition their jumps.

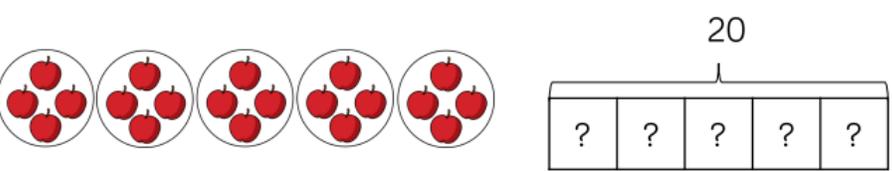
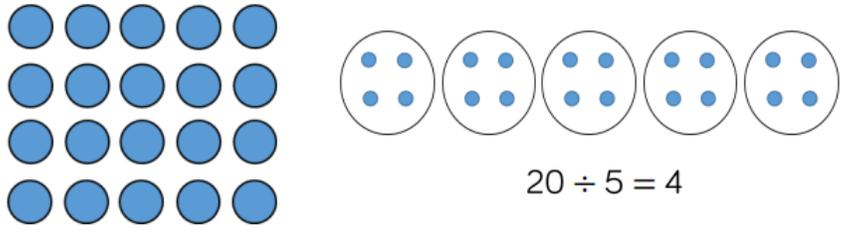


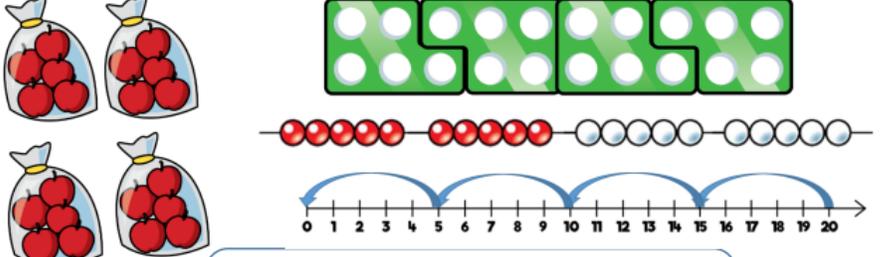
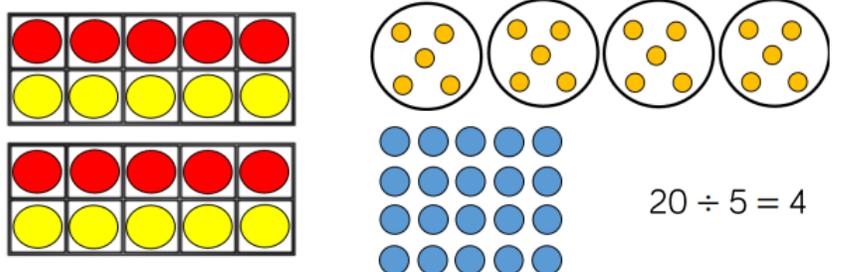
Calculation Policy – Multiplication

| Skill: Solve 1-step problems using multiplication | Year: 1/2 |
|--|---|
|    <p data-bbox="904 771 1490 892">One bag holds 5 apples. How many apples do 4 bags hold?</p>    $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$ | <p data-bbox="1707 499 1987 649">Children represent multiplication as repeated addition in many different ways.</p> <p data-bbox="1707 699 1987 971">In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.</p> <p data-bbox="1707 1021 1987 1128">In Year 2, children are introduced to the multiplication symbol.</p> |



Calculation Policy - Division

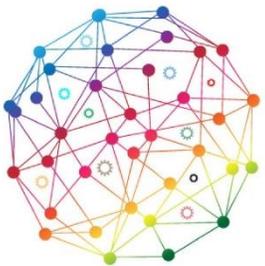
| Skill: Solve 1-step problems using multiplication (sharing) | Year: 1/2 |
|--|--|
|  <p data-bbox="254 813 815 956">There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?</p>  <p data-bbox="611 1128 789 1170">$20 \div 5 = 4$</p> | <p data-bbox="988 578 1235 721">Children solve problems by sharing amounts into equal groups.</p> <p data-bbox="988 756 1248 1006">In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally.</p> <p data-bbox="988 1042 1248 1149">In Year 2, children are introduced to the division symbol.</p> |

| Skill: Solve 1-step problems using division (grouping) | Year: 1/2 |
|---|---|
|  <p data-bbox="1528 821 2063 956">There are 20 apples altogether. They are put in bags of 5. How many bags are there?</p>  <p data-bbox="1961 1135 2140 1178">$20 \div 5 = 4$</p> | <p data-bbox="2252 578 2509 1213">Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.</p> |



Support at Home

- Invest in short practise books.
- Fact fluency – number bonds to 10 and 20, doubles to 10, near doubles (6+7) Bridging over ten (3+8)
- Useful websites – BBC Bitesize, Oxford Owl, Mathsfun
- Maths in real life...



CENTURY
INTELLIGENT LEARNING™

| Bus Stops | Day Times | | | | | | |
|---------------------|-----------|-------|-------|-------|-------|-------|-------|
| St Paul's Cathedral | 08:34 | 10:00 | 11:45 | 13:45 | 14:30 | 16:30 | 18:36 |
| Tower Of London | 08:46 | 10:12 | 11:57 | 13:57 | 14:42 | 16:42 | 18:48 |
| Tower Bridge | 08:48 | 10:14 | 11:59 | 13:59 | 14:44 | 16:44 | 18:50 |
| The Shard | 08:56 | 10:22 | 12:07 | 14:07 | 14:52 | 16:52 | 18:58 |
| Tate Modern | 09:03 | 10:29 | 12:14 | 14:14 | 14:59 | 16:59 | 19:05 |
| | 09:12 | 10:38 | 12:23 | 14:23 | 15:08 | 17:08 | 19:14 |
| | 09:17 | 10:43 | 12:28 | 14:28 | 15:13 | 17:13 | 19:19 |
| | 09:23 | 10:49 | 12:34 | 14:34 | 15:19 | 17:19 | 19:25 |
| | 09:30 | 10:56 | 12:41 | 14:41 | 15:26 | 17:26 | 19:32 |
| | 09:38 | 11:04 | 12:49 | 14:49 | 15:34 | 17:34 | 19:40 |
| | 09:45 | 11:11 | 12:56 | 14:56 | 15:41 | 17:41 | 19:47 |
| | 09:51 | 11:17 | 13:02 | 15:02 | 15:47 | 17:47 | 19:53 |
| | 10:03 | 11:29 | 13:14 | 15:14 | 15:59 | 17:59 | 20:05 |





Maths in Everyday Life

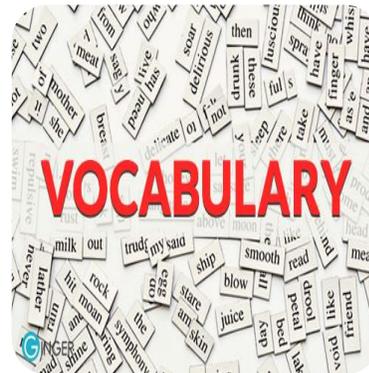
 **BUS TIMETABLE**

| | | | | | | |
|-------------|-------|-------|-------|-------|-------|-------|
| Newport | 06:50 | | 07:25 | 08:45 | 09:10 | 09:45 |
| Underwood | 07:00 | 07:25 | 07:41 | 08:55 | 09:19 | 09:53 |
| Magor | 07:11 | 07:41 | 07:51 | 09:04 | 09:31 | 10:02 |
| Rogiet | 07:18 | 07:59 | 07:59 | 09:11 | 09:38 | 10:11 |
| Caldicot | 07:29 | 08:12 | 08:09 | 09:16 | 09:47 | 10:16 |
| Portskewett | 07:33 | 08:15 | 08:14 | 09:20 | 09:53 | 10:21 |
| Chepstow | 07:45 | 08:30 | 08:30 | | 10:05 | 10:40 |

Write the Questions and Answers in your book

Reading timetables and clocks

- Working out when the next bus arrives
- Journey durations
- Dinner is in ... minutes



Using Specific Vocabulary

- 'Can you pass that one litre bottle'
- Being specific about time: 'I'll be back in ... minutes' or 'we'll be there in a minute'.



Cooking

- Measuring and weighing ingredients
- Concepts of amounts
- 'Cut these into quarters/thirds/cm size chunks'
- Twenty minutes per lb...



Handling Money

- Counting change and totaling amounts
- Saving and budgeting
- Comparing costs