Add whole numbers with 4 or more digits

SECTION A
1. 2463 + 4230
2. 56,684 + 3213
3. 21,364 + 68,023

SECTION B
1. 2684 + 9000
2. 8406 + 1732
3. 6394 + 63,453
4. 27,328 + 61,407
5. 2806 + 28,067
6. 51,478 + 29,014

SECTION C
1. 8674 + 24,187
2. 26,287 + 34,964
3. 324,698 + 438,024
4. 243 + 4926 + 8103
5. 9047 + 3524 + 87,441
# Subtract whole numbers with 4 or more digits

## Maths Arithmetic

### SECTION A

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7735 - 5203</td>
</tr>
<tr>
<td>2</td>
<td>65,534 - 3102</td>
</tr>
<tr>
<td>3</td>
<td>79,804 - 41,102</td>
</tr>
</tbody>
</table>

### SECTION B

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28,147 - 532</td>
</tr>
<tr>
<td>2</td>
<td>75,136 - 3052</td>
</tr>
<tr>
<td>3</td>
<td>84,237 - 51,152</td>
</tr>
<tr>
<td>4</td>
<td>68,372 - 5517</td>
</tr>
<tr>
<td>5</td>
<td>49,423 - 32,951</td>
</tr>
<tr>
<td>6</td>
<td>87,304 - 63,475</td>
</tr>
</tbody>
</table>

### SECTION C

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9431 - 5679</td>
</tr>
<tr>
<td>2</td>
<td>73,452 - 4258</td>
</tr>
<tr>
<td>3</td>
<td>81,326 - 33,648</td>
</tr>
<tr>
<td>4</td>
<td>94,136 - 55,878</td>
</tr>
<tr>
<td>5</td>
<td>275,321 - 157,489</td>
</tr>
<tr>
<td>6</td>
<td>134,124 - 45,687</td>
</tr>
</tbody>
</table>
Multiply whole numbers with up to 3 digits by a 2-digit number

**SECTION A**

1. \[3 3 \times 1 2\]
2. \[2 2 \times 1 4\]
3. \[1 2 2 \times 2 4\]

**SECTION B**

1. \[5 3 \times 3 1\]
2. \[3 4 1 \times 2 8\]
3. \[1 5 7 \times 4 3\]
4. \[5 3 0 \times 3 1\]
5. \[7 0 6 \times 8 1\]
6. \[2 0 8 \times 4 2\]

**SECTION C**

1. \[6 4 2 \times 4 7\]
2. \[3 9 6 \times 8 2\]
3. \[8 7 2 \times 5 9\]
4. \[3 7 8 \times 5 7\]
5. \[4 3 9 \times 7 4\]
6. \[7 2 9 \times 6 7\]
Add fractions with different denominators

SECTION A

1. \( \frac{1}{4} + \frac{1}{2} \)

2. \( \frac{2}{3} + \frac{1}{6} \)

SECTION B - Write answers in lowest terms, as appropriate

1. \( \frac{4}{9} + \frac{1}{3} \)

2. \( \frac{1}{3} + \frac{3}{12} \)

3. \( \frac{1}{6} + \frac{2}{3} \)

4. \( \frac{3}{5} + \frac{3}{15} \)

SECTION C - Write answers in lowest terms and as mixed numbers, as appropriate

1. \( \frac{2}{3} + \frac{1}{5} \)

2. \( \frac{2}{7} + \frac{2}{3} \)

3. \( \frac{3}{4} + \frac{5}{6} \)

4. \( \frac{1}{5} + \frac{1}{6} + \frac{1}{2} \)
Add decimal numbers with up to 3 decimal places

SECTION A
1. 3.2 + 4.6
2. 5.7 + 2.2
3. 4.5 + 3.2

SECTION B
1. 6.4 + 5.2
2. 8.7 + 4.65
3. 4.62 + 8.43
4. 18.6 + 24.7
5. 3.28 + 38.9
6. 27.6 + 9.48

SECTION C
1. 2.387 + 48.24
2. 476.3 + 780.9
3. 498.3 + 23.916
4. 104.5 + 98.74
5. 8.436 + 598.7
6. 3.2 + 88.46 + 29.8
### SECTION A

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50% of $70$</td>
</tr>
<tr>
<td>2</td>
<td>10% of $350$</td>
</tr>
<tr>
<td>3</td>
<td>10% of $6300$</td>
</tr>
</tbody>
</table>

### SECTION B

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25% of $436$</td>
</tr>
<tr>
<td>2</td>
<td>20% of $2480$</td>
</tr>
<tr>
<td>3</td>
<td>50% of $5030$</td>
</tr>
<tr>
<td>4</td>
<td>25% of $492$</td>
</tr>
<tr>
<td>5</td>
<td>30% of $3480$</td>
</tr>
<tr>
<td>6</td>
<td>90% of $1970$</td>
</tr>
</tbody>
</table>

### SECTION C - Write remainders as a decimal fraction

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25% of $364$</td>
</tr>
<tr>
<td>2</td>
<td>25% of $7.84$</td>
</tr>
<tr>
<td>3</td>
<td>80% of $3028$</td>
</tr>
<tr>
<td>4</td>
<td>85% of $7600$</td>
</tr>
<tr>
<td>5</td>
<td>45% of $3620$</td>
</tr>
<tr>
<td>6</td>
<td>75% of $3396$</td>
</tr>
<tr>
<td>Section C</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>1. ((62 - 38)4 + 3)</td>
<td></td>
</tr>
<tr>
<td>2. ((540 - 52) \div 8 \times 3)</td>
<td></td>
</tr>
<tr>
<td>3. (73 + 208 - 8^2)</td>
<td></td>
</tr>
<tr>
<td>4. ((1.27 \times 2^2) \div 4)</td>
<td></td>
</tr>
<tr>
<td>5. (2 \times 3 + 12 \times 3)</td>
<td></td>
</tr>
<tr>
<td>6. (730 - 53 + (6^2 \div 9))</td>
<td></td>
</tr>
</tbody>
</table>
Use knowledge of the order of operations to carry out calculations

**Maths Arithmetic**

**SECTION C**

1. \(4 + 31(8 - 5)\)
2. \((654 + 12) \div 9\)
3. \(264 + 82 - 11^2\)
4. \((3^2 \times 11.4) \div 6\)
5. \(48 \div (13 - 3 + 2)\)
6. \(506 - 3 + (9^2 - 49)\)
**SECTION A**

<table>
<thead>
<tr>
<th></th>
<th>5 + 8 - 2</th>
<th>13 + 6 - 2</th>
<th>24 ÷ 3 - 7</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>6 x 7 + 16</th>
<th>(73 - 19) ÷ 9</th>
<th>387 - 4²</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>90 - 25 ÷ 5</th>
<th>(53 + 27)7</th>
<th>5 + (63 - 36)3</th>
</tr>
</thead>
</table>
Round whole numbers to the nearest 1000

1. Round the following numbers to the nearest 1000.
   
a. 1472 .................................
e. 56,427 .................................

b. 8326 .................................
f. 327,897 .................................

c. 4576 .................................
g. 476,499 .................................

d. 17,876 .................................
h. 1,872,384 .................................

2. Circle the numbers which round to 8000.
   8642  8473  7398  8416  7982

3. Complete the table below.

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>6472</th>
<th>8846</th>
<th>...........362</th>
<th>3738</th>
<th>...........827</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEAREST 1000</td>
<td>...........</td>
<td>...........</td>
<td>9000</td>
<td>...........</td>
<td>7000</td>
</tr>
</tbody>
</table>

4. For each of the numbers below, write the range of whole numbers which would round to it, as the nearest 1000. An example is shown.

   3000 ..................2500 ............ to ..................3499

a. 6000 ................................. to .................................

b. 2000 ................................. to .................................

c. 9000 ................................. to .................................
Calculate the difference between numbers across zero

1. What is the difference between the numbers shown by the 2 arrows on the number lines below?

   a. [Number line from -15 to 15]
   b. [Number line from -60 to 60]
   c. [Number line from -15 to -10]
   d. [Number line from 70 to -60]

2. Find the difference between the following pairs of numbers.
   a. -4 and 6
   b. 7 and -2
   c. 14 and -27
   d. -46 and 183

3. Solve the following.
   a. -8 + 12 =
   b. -11 + 17 =
   c. 148 - 183 =
   d. -56 + 177 =

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Divide numbers up to 4 digits by a two-digit whole number, using long division, and round its remainder up or down, as appropriate for the context.

1. 710 eggs were put into egg boxes holding 12 eggs. How many boxes were filled?

2. A coach can carry 34 passengers. How many coaches will be needed to carry 798 passengers?

3. Rashid had collected 1642 football stickers. He put them onto sheets with 24 stickers on each sheet. How many sheets had stickers on?

4. A group of archaeology students found 2647 old coins. Forty six coins could be packed in a box. How many boxes were needed?

5. 5427 people go to the stadium. There are 52 seats in each row. How many rows were full of people?

6. The chocolate factory makes 8426 chocolates. Twenty-seven chocolates fit in each bag. How many full bags of chocolates can be made?
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

1. For each of the following, add the fractions by finding the lowest common denominator.
   a. \( \frac{1}{3} + \frac{5}{6} = \underline{ } + \underline{ } = \underline{ } \)
   b. \( \frac{3}{4} + \frac{1}{8} = \underline{ } + \underline{ } = \underline{ } \)
   c. \( \frac{1}{4} + \frac{1}{3} + \frac{1}{2} = \underline{ } + \underline{ } + \underline{ } = \underline{ } \)
   d. \( 2\frac{3}{10} + 3\frac{1}{2} = \underline{ } + \underline{ } = \underline{ } \)

2. Now try subtracting these fractions.
   a. \( \frac{3}{4} - \frac{1}{3} = \underline{ } - \underline{ } = \underline{ } \)
   b. \( \frac{6}{7} - \frac{2}{3} = \underline{ } - \underline{ } = \underline{ } \)
   c. \( 2\frac{3}{4} - 1\frac{5}{8} = \underline{ } - \underline{ } = \underline{ } \)
Solve problems involving the relative size of quantities using multiplication and division

1. In a packet there are 42 biscuits. There are 4 plain biscuits to every 2 chocolate. How many chocolate biscuits are in the packet?

2. Steph shares 20 sweets. She gives 4 sweets to Winston for every 1 she keeps. How many sweets does she give to Winston?

3. Deano, the decorator, is making a new shade of paint. He mixes lilac and white, as shown in the diagram, to get the new shade. Next, Deano makes 15 litres of the new shade. How many one litre tins of each colour does he use? lilac and white

4. There are 7 footballs to every 4 rugby balls. There are 28 rugby balls. How many balls are there in total?

5. Complete the table to show the amounts needed to make fruit juice for 4 and 9 people.

<table>
<thead>
<tr>
<th></th>
<th>Lemonade (ml)</th>
<th>Orange juice (ml)</th>
<th>Lime juice (ml)</th>
<th>Water (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 people</td>
<td>400</td>
<td>350</td>
<td>150</td>
<td>500</td>
</tr>
<tr>
<td>4 people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 people</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Find pairs of numbers that satisfy an equation with two unknowns

1. Find the missing values. Write your answer in the box.

   a. \[\square = 23 + 56\]
      \[\square = \square + 43\]
      \[\triangle = \square\]

   b. \[\bigcirc = 14 \times 2\]
      \[\bigcirc = \bigstar + \bigstar\]
      \[\bigstar = \square\]

   c. \[x = 9 \times 9\]
      \[x = 47 + y\]
      \[y = \square\]

   d. \[y = 49 + 26\]
      \[y = 3a\]
      \[a = \square\]

   e. \[56 \div b = 28\]
      \[56 + 481 = x\]
      \[x = \square\]

   f. \[13y = 200 - 57\]
      \[2y = 47 - x\]
      \[x = \square\]

2. Find the missing values in each of the following.

   a. \[a + 17 = 46\]
      \[4a = 79 + b\]
      \[a = \square\]
      \[b = \square\]

   b. \[\bigcirc \times 17 = 272\]
      \[\bigcirc + \bigcirc + \bigcirc = 384 \div \bigcirc\]
      \[\bigcirc = \square\]

   c. \[x + x + 24 = 92\]
      \[102 \div x = y + y + y\]
      \[x = \square\]
      \[y = \square\]
Use simple formulae for area and volume

1. The formula to find the area of a rectangle is \( A (\text{Area}) = l \times w \) (length) \( \times \) (width). Use this to find the missing values in the table below.

<table>
<thead>
<tr>
<th></th>
<th>( l )</th>
<th>( w )</th>
<th>( A )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectangle A</td>
<td>4 cm</td>
<td>5 cm</td>
<td>............. cm(^2)</td>
</tr>
<tr>
<td>Rectangle B</td>
<td>8 cm</td>
<td>9 cm</td>
<td>............. cm(^2)</td>
</tr>
<tr>
<td>Rectangle C</td>
<td>3 m</td>
<td>............. m</td>
<td>36 m(^2)</td>
</tr>
<tr>
<td>Rectangle D</td>
<td>............. mm</td>
<td>9 mm</td>
<td>117 mm(^2)</td>
</tr>
<tr>
<td>Rectangle E</td>
<td>2.5 m</td>
<td>............. m</td>
<td>45 m(^2)</td>
</tr>
</tbody>
</table>

2. Use the formula \( V (\text{Volume}) = l \times w \times h \) (height) to find the volume of the cuboids.

Not to scale

a. 

\[ V = \quad \text{cm}^3 \]

b. 

\[ V = \quad \text{m}^3 \]

3. Use the formulae above to identify **two** possible sets of missing values (each side is a whole number).

   a. Area = 16 cm\(^2\)

   \[ 16 \text{ cm}^2 = \quad \text{cm} \times \quad \text{cm} \] or \[ 16 \text{ cm}^2 = \quad \text{cm} \times \quad \text{cm} \]

   b. Volume = 24 cm\(^3\)

   \[ 24 \text{ cm}^3 = \quad \text{cm} \times \quad \text{cm} \times \quad \text{cm} \] or \[ 24 \text{ cm}^3 = \quad \text{cm} \times \quad \text{cm} \times \quad \text{cm} \]
Solve problems involving the calculation and conversion of units of volume, using decimal notation up to three decimal places

1. A box had a height of 5 cm, a length of 6 cm and a width of 2 cm. What was the volume of the box in cubic centimetres?

\[ \text{cm}^3 \]

2. Look at the toy box shown. What is the volume of the toy box in cubic metres?

\[ \text{m}^3 \]

3. In the toy box, there was a cuboid-shaped container for toy cars. It had a volume of 300 cm³. The top of the container was 0.06 m × 0.05 m. What was the height of the container in centimetres?

\[ \text{cm} \]

4. A tea caddy was cubic-shaped, with a base measuring 4 cm × 5 cm and a height of 0.24 m. Mrs Black filled the caddy with tea until it reached \( \frac{3}{4} \) of the height. How many cubic centimetres of space did the tea fill?

\[ \text{cm}^3 \]

5. Ted, the sculptor, wanted to fill the cubes below with sand. How many cubic metres of sand did he need altogether?

\[ \text{m}^3 \]

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Draw 2D shapes using given dimensions and angles

Use paper or your exercise book to answer the following questions.

1. Draw the following rectangles as accurately as you can.
   - Length 5 cm, width 3 cm
   - Length 6 cm, width 6 cm
   - Length 4.4 cm, width 3 cm
   - Length $3\frac{1}{2}$ cm, width $6\frac{1}{2}$ cm

2. Draw the following triangles.
   - An equilateral triangle with sides measuring 4 cm.
   - An isosceles triangle with a base of 4.5 cm and an interior angle of 50° at either side of its base.

3. Julia made a scarecrow using 2D shapes. Use the information below to draw Julia’s scarecrow as accurately as you can. You will need to use your knowledge of the properties of shape.

<table>
<thead>
<tr>
<th>Part of scarecrow</th>
<th>Shape</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>top of hat</td>
<td>rectangle</td>
<td>0.5 cm × 2 cm</td>
</tr>
<tr>
<td>brim of hat</td>
<td>rectangle</td>
<td>0.4 cm × 3 cm</td>
</tr>
<tr>
<td>head</td>
<td>circle</td>
<td>diameter 3 cm</td>
</tr>
<tr>
<td>body</td>
<td>rectangle</td>
<td>4 cm × 6 cm</td>
</tr>
<tr>
<td>arms</td>
<td>rectangles</td>
<td>3.5 cm × 1.2 cm</td>
</tr>
</tbody>
</table>
| fingers           | right angle triangles | base 0.4 cm  
|                   |                    | height 1 cm                    |
| legs              | parallelograms     | 2 cm × 4 cm, 120° × 2           |
| feet              | rectangles         | 3 cm × 1 cm                     |
| buttons           | equilateral triangles | sides 1 cm                  |
| knee patches      | squares            | 1 cm²                           |
| eyes              | circles            | diameter 0.2 cm (approx)        |
| nose              | triangle           | sides approx 0.2 cm             |
| mouth             | arc of a circle    | to fit                          |
Calculate and interpret the mean as an average

1. Tom drew the graph below to show the distance he jumped over 5 standing jumps.

   ![](graph.png)

   a. What was the average distance Tom jumped? __________ m

   b. Tom only jumped 0.6 m for his 6th jump. To the nearest centimetre, what was his new average? __________ cm

2. Anya is saving for some trainers which cost £28.95. On average, how much would she need to save each week for 5 weeks? __________ £

3. Linzi collects £8.16 for charity. Robert collects £7.54 and Joseph collects £9.20. What is the average amount collected? __________ £

4. Dale was investigating how long he could stand on one foot. His results are shown in the table below.

<table>
<thead>
<tr>
<th>attempt</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>time in seconds</td>
<td>18</td>
<td>17</td>
<td>13</td>
<td>19</td>
<td>18</td>
</tr>
</tbody>
</table>

   a. What was his average time? __________ seconds

   b. Dale wanted to increase his average to 18 seconds. For how many seconds would he have to stand on one foot in his sixth attempt to achieve this? __________ seconds
THE RAILWAY AGE

This group of children have been working on the coming of the railways. Each one gives a short presentation to the class.

The start of the railway age is accepted as 1825 when the Stockton-Darlington line was opened, first for coal wagons and then passengers.

When the railways arrived people travelled faster and further. The journey from London to Edinburgh took 30 hours less than by coach.

Improved transport meant raw materials such as coal and iron could be delivered faster and more cheaply. Farm machinery, for example, cost less, which led to cheaper food.

The delivery of newspapers from London and mail up and down the country was more efficient. More interest was taken in what was happening nationally and in the laws being passed by government.

Because the prices of food and other goods came down, demand for them increased. This meant more people were employed on the land and in factories.

Rail tracks and stations, and railway engineering towns, such as Crewe, York and Doncaster, changed the landscape. People used this cheaper mode of travel to enjoy leisure time. As a result, seaside towns welcomed day trippers.

The success of Stephenson’s steam engine, ‘Rocket’ in 1829 (it could go 30mph), led to ‘Railway Mania’ and many new railway lines were built.

By 1900, Britain had 22,000 miles of rail track constructed by men known as ‘navies’.

In 1841, Isambard Kingdom Brunel completed the line from London to Bristol. Since it was called the Great Western Railway – GWR – people referred to it as ‘God’s Wonderful Railway’.
1. What was the route of the first railway line that opened?

2. Describe two ways in which the landscape was changed.

3. What invention inspired ‘Railway Mania’?

4. How did rail travel compare with travel by coach?

5. What was the nickname given to the men who laid the railway track?

6. Who was the engineer who created God’s Wonderful Railway?

7. Complete the following table by describing how the railways changed different aspects of life in Victorian Britain:

<table>
<thead>
<tr>
<th>aspect</th>
<th>influence of the railways</th>
</tr>
</thead>
<tbody>
<tr>
<td>food</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>employment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>government</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PLUTO AND NEW HORIZONS

Scientists try to be very precise. Their training teaches them to make formal statements that can be verified by evidence. Of course, they are also human and when the space probe, New Horizons, launched in January 2006, flew past Pluto and successfully sent home lots of information, scientists, in their excitement, made a few informal remarks as well. Write formal or informal after each statement.

Pluto and its large moon, Charon, are 5 billion km from the Sun in the dim outskirts of the Solar System.

Data from New Horizons will downlink to Earth over the next sixteen months.

This observation is so tantalising, I’m finding it hard to patiently wait for more data to arrive.

Pluto’s surface, including the distinctive heart-shaped area, is covered by several different types of ice.

Pluto is a really fascinating place – both beautiful and strange.

I knew it was going to be cool. I just didn’t know it was going to be this cool.
LOSING THE PLOT

When following the plot of fantasy stories, you have to pay close attention. Read this story line from a computer game and then number the events in the correct order.

Aryth arrives at Castle Hazard with Crow perched, as always, on his shoulder. He overhears a conversation between Prince Ynyr and the half-reptilian sorceress, Malsaura, planning a conspiracy to overthrow Princess Ameira – a successful ruler – with the aid of her all-seeing amulet. He travels to the Cave-dwellers to ask if they will make him a sword capable of killing the sorceress. He has almost completed his week-long journey through the Dunes of the Scorpions when he is attacked by the Gargantua, a giant tribe of snake worshippers, who throw him into a deep pit to be disposed of by King Kobrah. Doors in the walls of the pit open to reveal not one but seven other Kobrahss. On all sides, fangs approach Aryth. But a screech heralds the arrival of Crow, who flies down and pecks out the eyes of King Kobrah. This causes a fighting frenzy among the other snakes, all eager to become pack leader. Quickly, Aryth escapes with Crow through one of the doors into a labyrinth that leads through the magma lakes to the Cave-dwellers who make him a sword. Unfortunately, he is met at the mouth of the cave by Prince Ynyr and Malsaura. However, the ever-watchful Princess Ameira has sent her soldiers to protect Aryth. The Prince is captured but Malsaura disappears.

**The sorceress appears at the mouth of the cave**

**Crow comes to Aryth’s rescue**

**Aryth overhears a conspiracy**

**The cave-dwellers make Aryth a sword**

**Aryth and Crow cross the Dunes of the Scorpions**

**Aryth escapes through a labyrinth**

**The Gargantua capture Aryth**
AN EYE FOR DETAIL

Here is a list of main ideas in the form of thought bubbles. The right-hand column presents a list of details. Draw lines matching up each main idea with the appropriate detail.

- Sanjay has been saving his pocket money for a new bicycle.
  - Lots of people in our road don’t have time to walk their dogs.

- I don’t know anybody who is crazier about animals than Kira.
  - Kira always has to tie her Labrador outside the bakery.

- I think I could make extra money as a dog-walker.
  - You don’t see him spending so much in the shopping mall.

- A good mountain bike, if it’s well cared for, should last years.
  - Whoever was looking after the dog wasn’t doing a good job.

- Shopkeepers don’t like you taking your dog in the shop.
  - Her favourite has got to be her Labrador, Blackie.

- I fell off my bike when a dog ran in front of me.
  - There’s no point saving for something then neglecting it.
SCIENTIFIC IDEAS

Here are some main ideas from your science lessons. Find the detail that goes with each of them. One has already been done for you.

- We use materials according to their properties.
- Electrical components will function in different ways depending on power source.
- Photosynthesis in plants requires water, light from the sun and carbon dioxide.
- Forces include gravity, air resistance, upthrust and magnetism.
- Rocks are formed in a number of different ways.
- Some processes are not reversible.
- Food chains are composed of producers and consumers.
- The factors not being studied in a fair test must be kept constant.
- Some substances will dissolve in water.
- The Moon is a satellite that orbits the Earth.
- Melting chocolate can change its state back to a solid.
- By producing their own food, plants are fundamental to life on the planet.
- In scientific experiments, it is essential to change one variable at a time.
- A bulb won’t light up if its circuit is not complete or it doesn’t have a battery.
- Some light passes through translucent materials.
- The movement of objects in space depends on gravity.
- Examples of soluble materials include salt and sugar.
- The transportation of water throughout a plant begins with the roots.
- Igneous rock such as basalt is created inside volcanoes.
- Friction is the force involved when a cyclist brakes.
QUEEN OF THE AIR

Amelia Earhart: first woman to fly solo across the Atlantic.
Born – 24 July 1897
Disappeared – 2 July 1937

Amelia Earhart, an American, experienced her first close encounter with an aeroplane at the Iowa State Fair. She was ten years old and described it as: ‘... a thing of rusty wire and wood and not at all interesting.’

Almost ten years later, while at a stunt-flying exhibition, an airborne pilot spotted Amelia and a friend, standing away from the rest of the crowd. He swooped down towards them, possibly hoping to make them run, but Amelia stood her ground. Later in life, she said: ‘I did not understand it at the time, but I believe that little red airplane [aeroplane] said something to me as it swished by.’

On 28 December 1920, pilot Frank Hawks took her up in an aeroplane for the first time. ‘By the time I had got two or three hundred feet off the ground, I knew I had to fly.’

As a child, Amelia stayed with her grandmother during school term. In spite of her grandmother’s disapproval – common in those days – Amelia spent much of her time outdoors, climbing trees, riding imaginary horses and hunting. Later, in high school, she was described as:

A.E. – the girl in brown who walks alone.

On 3 January 1921, she took her first flying lesson. She worked hard for six months and saved enough money to buy her first, small aircraft: a two-seater biplane painted bright yellow, which she called The Canary.

A few years later, she was invited to join two other pilots to fly across the Atlantic. They left Newfoundland and landed in Wales 21 hours later. She became an international celebrity.

Then a new secret project presented itself – the opportunity to fly the same route completely single-handed. The news soon got out and on 20 May, 1932, she took off for Paris, but icy conditions and strong winds forced her to land in a farmer’s field in Londonderry, Ireland. At a time when even a car was a novelty, one can only imagine how excited the local people must have felt to see her land her plane.

Approaching her 40th birthday, she decided to be the first woman to fly round the world. By 29 June 1937, with her navigator, Fred Noonan, she reached New Guinea, having completed 22,000 of the 29,000 mile journey. A few days later, running into cloud and heavy rain, and with broken and irregular radio guidance from a ship in the area, her last message was: ‘We must be on you, but we cannot see you. Fuel is running low. Been unable to reach you by radio. We are flying at 1,000 feet. We are running north and south.’ Nothing more was heard from her.
Now use evidence from the text to answer the following questions.

1. What, in the introduction to the text, suggests that we don’t know precisely when Amelia Earhart died.

2. Amelia wasn’t impressed when she first had a close-up view of an aeroplane. How do we know?

3. What experience, described by Amelia, tells you that, even as a child, she was brave and not easily scared?

4. Why might her grandmother have disapproved of Amelia spending so much of her time outdoors?

5. How do we know Amelia had trouble making friends at school?

6. What phrase tells you that her second Atlantic crossing was done on her own?

7. Why would the local people in Ireland be so excited about Amelia landing there?

8. What made flying so difficult on the last leg of the round-the-world flight?
THEN WHAT DID THEY SAY?

Using the hints given in these pieces of conversation, write down what you think might have been said in response.

1. “Megan! Alesha is standing here, waiting with her hula hoop. What shall I tell her?”


3. “I think we’ve seen this film before, Simon, but I can’t remember how it ends.”

4. “Hi, Emilia. Just back from holidays? What was the best thing you did?”

5. “So how are you going to explain why you didn’t finish your homework?”

6. “What happened when the referee blew his whistle?”

7. “I would have been scared by that growling too. So what did you do?”

8. “Once you reached the top of the tower, what could you see?”

9. “Why do you think you didn’t get picked for the team?”
ANOTHER WORLD

Science fiction is often set in another world or a future version of our world after some global crisis. There, you will find contact with alien life forms, artificial intelligence, a focus on one or two survivors, conflict involving outlandish weapons or strange vehicles – all of which is often described in scientific-sounding or alien language. Read the following extract and make a note of some of these features.

The Sands of Zylon 7

A silver dust cloud moving across the far horizon heralded the approach of a GravX Ion Disruptor. It wasn’t entirely unexpected. The osmium-based life forms known as Krish would have been alerted the moment we ruptured their robotzoid guard’s security shield. What we didn’t expect was a photon-converter among the wreckage of robotic wiring and DNA replication. We could do some major discolouration with that in our possession. As Z’bella, a captured olian from the planet Garsz, pointed out by means of her linguaphon implant, our escape plan had just turned into a means of shutting down Tereer, the Krish’s evil empire.

Zylon 7, this artificial moon covered in silver dust, orbited Tereer to provide the Krish with the reflected light and energy to power their devastating voyages throughout space. Z’bella and I – a solitary Ichobi so far from my home in the Outer Tsapudi region and taken prisoner sixteen astral years ago – we might now have the means of standing in their way.

The GravX pulled up in a shower of silver beside the bits and pieces of the neutralised robotzoid guard. One of the Krish reluctantly slid out of the transporter, his weight just a little too much for the moon’s gravitational pull. His luminous body quivered and his eyes spun round his head as he kicked the guard’s metal head. We hoped that covering as much of ourselves in the granules of silver that we shovelled every Sagittarian day would be camouflage enough. But a trickle of grains alerted the seven-legged Krish, who turned quickly. It was now or never.

Z’bella plugged the photon-converter into her neuron outlet and scanned the whole area. Light drained from Zylon 7. A freezing wind swept our dark desert. And Tereer slowly was lost in shadow, until, moments later, as energy systems broke down, it exploded into nothingness.
Identifying different types of nouns

There are several different types of nouns.
- There are **common nouns** such as cat, dog, table, chair etc.
- There are **proper nouns** that name people, places etc. and start with a capital letter.
- There are **countable nouns** which can be singular or plural and are used with numbers and a range of determiners; e.g. one car, two cars etc.
- There are **non-countable nouns** which cannot be counted and for which there is no plural; e.g. money, water, sugar.
- There are **concrete nouns** which you can see, hear, touch or smell such as houses, windows, trees, grass, etc.
- There are **abstract nouns** which you can’t see, hear, touch or smell such as love, bravery, fear, anger etc.
- There are **collective nouns** which are words for groups of people, animals or things such as team, herd, bunch, etc.
- There are **compound nouns** which are made of two or more words such as butterfly, washing machine, or merry-go-round.

Put the various nouns into the appropriately labelled evacuees’ cases. (Some nouns can go in more than one case, but each case should have a minimum of three nouns.)

courage, freedom, hate, shelter, bomb, explosion, searchlight, air raid, gas mask, Churchill, Hitler, Zeppelin, tank, warden, pilot, butter, luggage, money, army, band, crowd, explosion, officer, shell.
Grammar and Punctuation

Using direct speech

Direct speech can go at the beginning of a sentence.

“I got on the train to be evacuated, but I didn’t know where I was going,” said Beatrice.

Direct speech can go at the end of a sentence.

Beatrice continued, “I’m not even sure the teachers knew where we were going.”

In the following sentences the speech either goes at the beginning or the end of the sentence. Use inverted commas and all appropriate punctuation to write them out correctly.

Memories from Evacuees

1. Martin said I was only five when war broke out during air raids we sheltered in the basement of the building we were living in

2. Peggy said I was evacuated with my three brothers but we were split up and I didn’t see them again until after the war

3. We were fed very well in the country there was plenty of eggs butter and milk that we didn’t have in the city said Eileen

4. I was sent to a little village school and there were only twelve children in the class I loved it said Pauline

5. An elderly lady chose me and my sister to go and live with her we were driven away in a car I had never been in a car before said Grace

6. Arthur admitted the evacuation seemed like one long holiday to me
Using expanded noun phrases

An expanded noun phrase is a group of words that go before and/or after a noun and modify its meaning.

It's easy! Start with a noun.
Let's start with suitcase
Now let's add a determiner: a suitcase
Let's add an adjective or two to describe it: a small brown suitcase
Let's add a qualifier: a small, brown suitcase with leather straps and a handle
Now we have an expanded noun phrase.

Following the example above, write your own expanded noun phrases about the evacuees in the pictures below.
Using Standard English

**Standard English** is formal English which you should always try to use in your written work.

Non-Standard English is a more informal type of English which you can use when you are speaking to your friends, or when you are writing dialogue.

The United Kingdom has a rich landscape of regional dialects. But in regional dialects words are often used that are not understood across the country, or elements of grammar are altered that do not conform to rules of Standard English. There is nothing wrong with regional dialects, but it is important that you can make the distinction.

In the Second World War children were often evacuated far from home and the way they spoke was quite different to their host families. Can you match the regional expressions (that come from across the country) to their Standard English equivalent?

1. He's got a right cob on.     You're making a mess of that.
2. Stop skrikin'ar kid.         Think about it.
3. Were there owt else?        Who's making a pot of tea?
4. Tha's mekkin'a reet pig's ear o' that.     He's in a very bad mood.
5. If tha wants owt doin' reet, do it thissen.     I won't say anything.
6. Aa winnet say nowt.         You get on my nerves.
7. Hoo's ya fettle?             Stop crying, brother (or sister).
8. Use your loaf.              I don't know.
9. You get on my wick.         Was there anything else?
10. Who's mashing?             If you want something doing properly, do it yourself.
11. Quit ya belly-aching.       How are you?

Do you know what regions they come from? Write the numbers of the expressions next to the different regions.

1. Scotland  4. Yorkshire  
2. North-West  5. Midlands  
Using formal language for letter writing

When you write a letter, it should be in a formal style using language appropriate for formal writing. Language that you use with your friends would not be suitable for most types of letters.

Below is a letter from a young boy who has just recently been evacuated. You must decide which of the words and phrases in bold are the most appropriate and write the most suitable version on the lines underneath.

Dear Uncle Mervin and Aunty Sheila,

How’s it going? I trust this letter finds you well. I am writing to say cheers/thank you for the money/dosh you sent me for my birthday. My mum got/purchased a new suitcase with the money as the old one was broken/knackered. I needed/required a new suitcase for my trip/journey to Wales where I have been evacuated/sent. The train departed/left Liverpool early on Monday morning and I am now residing/living in Rhyl in North Wales.

I am a bit narked/rather annoyed because I wanted to be with my friends/mates from school, but they have been billeted/taken to accommodation/digs on the other side of town. However, the family I have been put/placed with are very pally/friendly and I am/I’m sure life here will be tolerable/okay.

Love from your nephew,

Jim x

P.S. I have just found out/discovered that Mum forgot to pack my toothbrush. Could/Can I ask/request that when you next pop round/visit, you let her know I am without a/I’ve not got no toothbrush.

P.P.S. Please tell mum that I miss her and I wish she was/were here.
Identifying the subject and object in a sentence

Most sentences are made up of a subject and an object.
The subject of the sentence is the person or thing doing the action.
The object is the person or thing having the action done to it.
The subject normally comes first in a sentence. The object usually comes second in the sentence, after the verb.

Many people feared a German attack.

subject verb object

Underline the subject in the following sentences. (Hint: one sentence has several subjects.)

The Home Guard

1. On Friday May 10th, German soldiers attacked Belgium and the Netherlands.
2. The Government was worried Britain would be attacked next.
3. British troops were fighting in mainland Europe.
4. They needed men to protect Britain.
5. An urgent appeal was broadcast on the radio.
6. They asked for men to join the Local Defence Volunteers (The Home Guard).
7. Over one million men volunteered to join the Home Guard.
8. Farmers, bakers, teachers, grocers, bank staff, transport workers joined the Home Guard.
9. Men who were too young or too old joined too.

Underline the object in the following sentences. (Hint: there is often more than one object.)

1. At the beginning, they had no uniforms and little equipment.
2. They had to use pikes instead of rifles.
3. The public donated weapons for them to use.
4. The Home Guard defended factories, beaches and sea fronts.
5. At night, they patroled fields in which enemy para troopers could land.
6. They couldn’t beat well-trained German soldiers.
7. But they could slow the soldiers down until help arrived.
8. The Germans didn’t invade Britain.
9. The Home Guard’s main job was to capture German airmen whose planes had been shot down.

Have you seen Dad’s Army – a comedy programme about the Home Guard?
Make nouns and verbs into adjectives using suffixes

You can turn nouns and verbs into adjectives by adding a suffix to the verb or noun form. A suffix is a letter or a group of letters added at the end of the word to make a new word.

The suffixes needed for the task below are: able, al, ed, ful, less, ing.

Change the underlined nouns and verbs in the first sentence with a suffix to make an adjective for the second sentence.

The War Ends

1. The announcement on May 8th 1945 that the war was over was greeted with delight. 
   ............................................. people listened to the announcement that the war was over.

2. Churchill remarked that the British people had achieved a lot.
   Churchill said that the British achievement had been truly ...................................... .

3. Overwhelmed by emotion, people kissed each other in the street.
   People found it an ...........................................................experience.

4. For the first time since the war began people felt they could relax.
   During the war, there had never been a .................................................... period.

5. The excitement was felt up and down the country with lots of victory parties.
   Lots of ................................................................. victory parties were planned across the country.

6. Children laughed, danced, sang and waved flags at the street parties.
   ................................................................. children could be seen waving flags at street parties.

7. Many children had a surprise when their fathers returned home after many years away.
   ................................................................. children met their fathers who they hadn't seen for years.

8. The war was over, but the pain for many would not be over for a long time.
   Life was still going to be ..................................................... even though the war was finally over.

9. Because of the bombing, some families didn't have a home to go to.
   Some families found themselves ..................................................... .

10. For some refugee children there was little hope of reuniting them with their parents.
    Reuniting refugee children with their parents was a .................................................... task.
Ellipsis is the term that is used when certain words have been missed out of a sentence, but the sentence can still be understood without them. It is most commonly used when speaking or when writing dialogue.

“You buy the new Beano?” Alex asked his friend.

If we followed the grammatical rules this should be: “Did you buy the new Beano?” Alex asked his friend.

Comics were very popular during the war. The two most popular comics were the Beano and the Dandy.

In the comic strip below, write the dialogue in full including the words that have been missed out because ellipsis has been used.

Five pieces of carrot cake later…
Using hyphens to avoid ambiguity

There are a number of reasons for using hyphens. They are used for compound words.
The soldier carried a water-bottle.

They are used to join some prefixes to another word, especially if the prefix ends in a vowel and the other word starts with a vowel.
The two soldiers carried one water-bottle between them, so they had to co-operate.
They are used to avoid ambiguity.
The desert soldier carried a hot water bottle; he didn’t need a hot water bottle!
This doesn’t make sense until we add the hyphens.
The desert soldier carried a hot water-bottle; he didn’t need a hot-water bottle!
(One is a bottle of water for drinking that has got hot in the desert sun; the other is a rubber container that if filled with hot water will keep you warm at night.)

Hyphens are also used for ages and numbers.
The twenty-four-year-old soldier carried all the water-bottles for his platoon of thirty-six men.

In the sentences below decide where the hyphens should go.

1. Winston Churchill had a war conference in Washington D.C. with President Roosevelt.
2. My brother in law has gone to fight in Egypt with Field Marshal Montgomery.
3. With the rationing, we could have only one hard boiled egg a week.
4. It was a heart stopping moment, the night we heard the doodlebug fly over our house.
5. The Anglo American invasion of North Western Africa took place in November 1942.
6. As well as fighting the Japanese, American sailors in the Pacific had to beware of man eating sharks.
7. Some soldiers carried wire cutters as part of their equipment.
8. Firefighters during the Blitz had to manage without the protection of fire proof vests.
9. Anti aircraft guns tried to shoot down the German bombers.
10. A squad has between eight and twenty four soldiers.
11. Men between the ages of eighteen and forty one were called up to fight.
12. Because of rationing, by the end of the war, a six year old child would not have seen a banana.
13. There are many non fiction books about World War II.
14. The wounded soldier had to go to the first aid post.
Identifying different word classes (parts of speech)

Oy! Put that light out at number ten! How many times do you need telling?

It’s not a light, you stupid man. We’re on fire!

Well! Why didn’t you tell me before? I’ll fetch the stirrup pump straightaway. Was it a German incendiary bomb?

Germans - no! It was my fool of a husband when he set the chip pan alight!

Place all the words in the speech bubbles under the correct word class. (It can get tricky when the same words can be classified under different word classes. Use a dictionary to help you decide.)

1. Nouns

2. Pronouns

3. Determiners

4. Adjectives

5. Verbs

6. Adverbs

7. Prepositions

8. Conjunctions

9. Interjections
The words below have a ‘sh’ sound in the middle, but they are spelt very differently. Put the following words into groups of the same spelling pattern.

conscious  fractious  impartial  financial  scrumptious  residential  atrocious  precocious  luscious  malicious  sacrificial  gracious  multiracial  potential  spacious  unofficial  beneficial  repetitious  prejudicial  superficial  substantial  vivacious  commercial  flirtatious

I’m collecting words that end in **-cious.**

I’m collecting words that end in **-cial.**

I’m collecting words that end in **-tious.**

I’m collecting words that end in **-tial.**

Complete the sentences below using two of the words above.

Your bedroom is so .................... , Blossom.
It’s got great .................... .
Match the words in the box to the dictionary definitions.

vivacious  fractious  malicious  residential  substantial  superficial  gracious  precocious  impartial  prejudicial

........................................ irrritable and quarrelsome (typically of children).
........................................ occupied by private houses.
........................................ courteous, kind, and pleasant.
........................................ a biased opinion that is not based on reason or actual experience.
........................................ (of a person) never thinking about things that are serious or important.
........................................ to do something with the intention of causing harm.
........................................ (especially of a woman) attractively lively and animated.
........................................ treating all rivals equally.
........................................ of considerable importance, size, or worth.
........................................ (of behaviour or ability) having developed at an earlier age than is usual or expected.

Complete the sentences using the words above.

Usually she is ................., but today she is ................. and irrritable.
Complete this crossword with no clues. All the words are from Set 3 spellings. To get you started, a few letters have already been placed.

Words:
- adorable
- knowledgeable
- definite
- equipped
- considerable
- noticeable
- desperate
- exaggerate
- applicable
- irreplaceable
- embarrass
- foreign
- rechargeable
- untraceable
- environment
- frequently
Use the words in the boxes to complete the sentences in your own words.

**feasible**  His plan didn’t sound like it would work, but 

**compatible**  I have to return this software to the store because 

**edible**  Dad had to order a takeaway, because 

**plausible**  Danny gave the teacher an interesting account of how he lost his homework, but 

**permissible**  You may get away with that behaviour at home, but 

**flexible**  I do stretching exercises every day, because 

**suggestible**  I was hoping to convince him, but 

**digestible**  Tom had three helpings of pudding, but 

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There are words which are spelt ‘ei’ after ‘c’, but there are also words spelt ‘ei’ though they do not come after ‘c’.

ceiling    weird    feisty    receive    forfeit    sovereign
inconceivable    perceive    heist    receipt    counterfeit
leisure    conceit    deceitful    conceive    sleight

Write the words spelt **ei** after **c**.

So, remember: it is **i** before **e** except when you run a feisty heist on a weird beige foreign neighbour.

Try to make up your own sentence using **ei** words like the one above.
Some letters which are no longer sounded used to be sounded hundreds of years ago.

lamb limb numb tomb doubt debt
dumb subtle autumn column hymn solemn
gnat gnaw gnash gnome align campaign
design resign obscene abscess fascinate scenario

Complete the words below with the missing silent letters. Look at the clues to help you.

Unable to speak dum... A small fly ...nat
A season autum... An ulcer abs...ess
You do this with teeth ...nash No feeling num...
Very rude obs...ene A military operation campai...n
Gloomy solem... Understated su...tle
A plan desi...n A dwarfish creature ...nome
An arm or leg lim... A young sheep lam...
A pillar colum... A religious song hym...
Storyline s...enario To bite ...naw
For burying the dead tom... Uncertainty dou...t
To straighten ali...n To leave a job resi...n
Money owed de...t To interest fas...inate
Spud’s Spelling Scrabble

lamb  limb  numb  tomb  doubt  debt  dumb  subtle  autumn  column  hymn  solemn  gnat  gnaw  gnash  gnome  align  campaign  design  resign  obscene  abscess  fascinate  scenario

How many words can you make from the twelve letters below. You can use the letters twice. Try to fill the grid.

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oamsignbludt
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Use one of the pairs of homophones in the box to complete the sentences below.

- affect/effect
- profit/prophet
- story/storey
- altar/alter
- stationary/stationery
- who’s/whose

You should know better than to tell me such a ............... .

Some scientists think that the greenhouse ............... is imaginary.

I bought some ............... from the school shop.

.............. talking at the back of the class?

I made a ............... selling my football cards.

How awful! The groom left the bride standing at the ............... .
Match the dictionary definition to the correct homophone.

ascent/assent  descent/dissent  toad/towed
sweet/suite  wary/weary  wail/whale

a tailless amphibian

to utter a high-pitched cry of pain

a set of rooms for a particular purpose

the act of moving downwards

feeling extreme tiredness

to agree

a very large marine animal

pulled a vehicle

a climb or walk to the top of a hill

confectionary made of sugar

feeling cautious about dangers

to express opinions different to official ones

Complete Sprout’s tall tale.

I’m extremely w.......... for I t.......... a w.......... for the entire a.......... up the mountain without a word of d.......... for one measly s.......... .
The wrong homophones or near homophones have been used in the following sentences. Write the correct word for each sentence.

The whale of the sirens could be heard all through the night. .................

Be weary of strangers who approach you. .................

I have a need to eat something suite. .................

Raise your hands if you give your ascent to the proposal. .................

I can’t tell the difference between a frog and a towed. .................

The dissent of the hill was the best part of the hike. .................

We bought a new three-piece sweet for the living room. .................

Don’t park there, or your car will be toad away. .................

James showed his descent by refusing to join in. .................

I’m wary of doing the same things over and over again. .................

We are having a wail of a time. .................

They followed a steep assent to the top of the hill. .................

Make up a sentence to describe the picture using as many homophones as you can from above.

.................................................................
.................................................................
.................................................................
.................................................................
.................................................................
.................................................................