Mrs Angie Motsheka,  
Minister of Basic Education  

Mr Enver Surty,  
Deputy Minister of Basic Education  

These workbooks have been developed for the children of South Africa under the leadership of the Minister of Basic Education, Mrs Angie Motsheka, and the Deputy Minister of Basic Education, Mr Enver Surty.  

The Rainbow Workbooks form part of the Department of Basic Education’s range of interventions aimed at improving the performance of South African learners in the first six grades. As one of the priorities of the Government’s Plan of Action, this project has been made possible by the generous funding of the National Treasury. This has enabled the Department to make these workbooks, in all the official languages, available at no cost.  

We hope that teachers will find these workbooks useful in their everyday teaching and in ensuring that their learners cover the curriculum. We have taken care to guide the teacher through each of the activities by the inclusion of icons that indicate what it is that the learner should do.  

We sincerely hope that children will enjoy working through the book as they grow and learn, and that you, the teacher, will share their pleasure.  

We wish you and your learners every success in using these workbooks.
Mathematics

Grade 4

PART 3

WORKSHEETS

65 to 144

Name:
Which measuring instrument will you use to measure volume?

1. Colour the measuring cups that will make 1 litre
   a. 
   b. 
   c. 
   d. 
   e. 

2. How much cool drink is in the measuring jug?
   a. 
   b. 
   c. 
   d. 

Think carefully when you look at these diagrams in Question 2. Remember 0 litres (empty) is the bottom of the jug. What mark is next to the liquid level? In the first one it is the mark between the 9 and 10 litre marks - so it is 9 \( \frac{1}{2} \) litres or 9 litres and 500 ml.
3. Will you use ml or ℓ to measure the following?

The jug holds 1 ℓ.

4. A teaspoonful (or teaspoon) is a unit of capacity used in cooking and medicine.
   a) How many ml does a teaspoonful hold?
   b) How many teaspoonfuls will 20 ml be?

5. Waseela used 2 ℓ of water for making tea and coffee and 60 ℓ of water for doing her washing and 3 ℓ of water for washing dishes. How much water did she use altogether?

Millilitre fun

Collect some newspapers or junk mail.

Find 10 items for which measurements are given in ml.
Look at the pictures and answer the questions below. Note that the pictures are not to the same scale.

1. Which container do you think contains the largest amount of liquid?

2. Which container do you think contains the smallest amount of liquid?

3. What is the purpose of these containers?

4. Fill in the missing information.

a. Capacity of jug: 4 litres
   Volume of liquid: 4 litres

b. Capacity: _____________________
   Volume: _____________________
5. Answer the questions below:

a. What is capacity?

b. What is volume?

---

<table>
<thead>
<tr>
<th>Image</th>
<th>Question</th>
<th>Capacity</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="c Image" /></td>
<td>Capacity: ____________________________</td>
<td>Volume: ____________________________</td>
<td></td>
</tr>
<tr>
<td><img src="image2.png" alt="d Image" /></td>
<td>Capacity: ____________________________</td>
<td>Volume: ____________________________</td>
<td></td>
</tr>
<tr>
<td><img src="image3.png" alt="e Image" /></td>
<td>Capacity: ____________________________</td>
<td>Volume: ____________________________</td>
<td></td>
</tr>
<tr>
<td><img src="image4.png" alt="f Image" /></td>
<td>Capacity: ____________________________</td>
<td>Volume: ____________________________</td>
<td></td>
</tr>
</tbody>
</table>
6. Sort the containers into two groups: the ones you will use to measure litres and the ones you will use to measure millilitres. Write the alphabet letter only.

<table>
<thead>
<tr>
<th>Millilitres</th>
<th>Litres</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>c.</td>
<td>d.</td>
</tr>
<tr>
<td>e.</td>
<td>f.</td>
</tr>
<tr>
<td>g.</td>
<td>h.</td>
</tr>
<tr>
<td>i.</td>
<td>j.</td>
</tr>
</tbody>
</table>

7. What measuring unit will you use to measure:

a. Milk for a pudding recipe
b. Water to fill a swimming pool
c. Water to mix a packet of powdered cool drink
d. Glass of water
e. Medicine for a baby
f. Water to water your garden
8. Cut out pictures from magazines, newspapers and advertisements. Paste two or three pictures of each:

Containers that hold litres

Containers that hold millilitres

Filling the pool

A swimming pool holds 1 500 ℓ of water. How many 50 ℓ buckets of water will you use to fill the pool?
Even more capacity

Give the correct reading for each arrow.

1. These 1 litre bottles contain cool drink. Answer the questions.

i. What is the capacity of each set of bottles?
   a. __________  b. __________  c. __________  d. __________  e. __________

ii. How much cooldrink is there?

<table>
<thead>
<tr>
<th>Litres</th>
<th>Millilitres</th>
<th>Litres and millilitres</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 ℓ</td>
<td>500 ml</td>
<td>1 ℓ 500 ml</td>
<td>1 1/2 ℓ</td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Complete the following table.

<table>
<thead>
<tr>
<th>Litres</th>
<th>Millilitres</th>
<th>Litres and millilitres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ℓ</td>
<td>350 ml</td>
<td>=</td>
</tr>
<tr>
<td></td>
<td>= 3 ℓ 80 ml</td>
<td></td>
</tr>
<tr>
<td>2 ℓ</td>
<td></td>
<td>2 ℓ 755 ml</td>
</tr>
<tr>
<td></td>
<td>= 6 ℓ 5 ml</td>
<td></td>
</tr>
<tr>
<td>5 ℓ</td>
<td>65 ml</td>
<td>=</td>
</tr>
</tbody>
</table>

3. Write the following as litres only (Remember you will need to round off to the nearest litre.)

**Example:** 1876 ml ≈ 2 ℓ

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 3 546 ml</td>
<td>b. 2 876 ml</td>
<td>c. 9 234 ml</td>
</tr>
<tr>
<td>d. 6 127 ml</td>
<td>e. 8 750 ml</td>
<td>f. 9 500 ml</td>
</tr>
</tbody>
</table>

4. Write the following as millilitres only.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 4 ℓ 648 ml</td>
<td>b. 6 ℓ 394 ml</td>
<td>c. 8 ℓ 732 ml</td>
</tr>
<tr>
<td>4 648 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 8 ℓ 732 ml</td>
<td>e. 7 ℓ 912 ml</td>
<td>f. 1 ℓ 500 ml</td>
</tr>
</tbody>
</table>

5. Write the following as litres and millilitres.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 543 ml</td>
<td>b. 2 876 ml</td>
<td>c. 9 234 ml</td>
</tr>
<tr>
<td>d. 6 567 ml</td>
<td>e. 8 799 ml</td>
<td>f. 7 500 ml</td>
</tr>
</tbody>
</table>

Continued...
6. Look at the containers carefully and answer the question below.

Use the letters A, B, C and D to arrange the containers from the one that holds the least to the one that holds the most.

7. Solve the following problems:
   a. Thabo mixes two 1 ℓ bottles of orange juice with two 750 ml bottles of apple juice and two 1\(\frac{1}{2}\) ℓ bottles of lemonade. How many litres of the mixture will there be?
b. Rosie has a bad cough. Her mother buys a 225 ml bottle of cough syrup, of which she drinks 45 ml a day. How long will the bottle last?

c. Dumisani wants to make juice for his soccer team. He mixes a 2 litre bottle of orange juice with four 2 litre bottles of water. How many litres of juice has he made?

d. Sharon used 2 litres of water for making tea and coffee, 50 litres of water for doing washing and 22 litres of water in her garden. How much water did she use altogether?
How much cool drink is in each jug?

1. Read the measuring jug and complete the table.

<table>
<thead>
<tr>
<th></th>
<th>How many litres are there in the jug?</th>
<th>Fraction</th>
<th>Number of 500 ml units</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>4 litres 500 ml</td>
<td>4 1/2 litre</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td>0, 1/2, 1, 1 1/2, 1 1/2, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Capacity, mass and fractions**
2. Complete the table:

<table>
<thead>
<tr>
<th>How many kilograms?</th>
<th>Fraction</th>
<th>How many 500 g units</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 kg 500 g</td>
<td>$3\frac{1}{2}$ kg</td>
<td>7</td>
</tr>
</tbody>
</table>

Count: $0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}, 3, 3\frac{1}{2}$

Find the friends and colour them the same.
1. Write an equivalent fraction for:
   a. \( \frac{1}{4} = \)  
   b. \( \frac{1}{2} = \)  
   c. \( \frac{6}{8} = \)  
   d. \( \frac{2}{4} = \)  
   e. \( \frac{2}{2} = \)  
   f. \( \frac{2}{8} = \)  
   g. \( \frac{8}{8} = \)  
   h. \( \frac{4}{8} = \)  
   i. \( \frac{4}{4} = \)  

2. Fill in <, > or =.
   a. \( \frac{1}{2} \quad \frac{1}{4} \)
   b. \( \frac{1}{2} \quad \frac{2}{8} \)
   c. \( \frac{1}{4} \quad \frac{3}{8} \)
   d. \( \frac{1}{2} \quad \frac{2}{4} \)
   e. \( \frac{2}{2} \quad \frac{1}{8} \)
   f. \( \frac{5}{8} \quad \frac{2}{4} \)
   g. \( \frac{2}{4} \quad \frac{8}{8} \)
   h. \( \frac{1}{4} \quad \frac{4}{8} \)
   i. \( \frac{4}{8} \quad \frac{1}{2} \)
   j. \( \frac{1}{2} \quad \frac{4}{4} \)
   k. \( \frac{1}{2} \quad \frac{1}{8} \)
   l. \( \frac{5}{8} \quad \frac{1}{2} \)
   m. \( \frac{1}{2} \quad \frac{7}{8} \)
   n. \( \frac{3}{4} \quad \frac{1}{8} \)
   o. \( \frac{1}{4} \quad \frac{6}{8} \)
3. Complete the following using the diagram to guide you:

a. One whole = $\frac{1}{2}$ + 

b. One whole = $\frac{1}{4}$ + 

c. One whole = $\frac{1}{8}$ + 

4. Draw a picture to solve the following:

Palesa had 1 quarter of the cake, and July had 2 eighths of the cake. Who had the most cake?

John had four eighths of the cool drink and Ben had half of the cool drink. Did they have the same amount of cool drink?
1. Write an equivalent fraction for each of the following.
   a. \( \frac{1}{2} = \) [ ]
   b. \( \frac{2}{6} = \) [ ]
   c. \( \frac{4}{6} = \) [ ]
   d. \( \frac{1}{3} = \) [ ]
   e. \( \frac{2}{2} = \) [ ]
   f. \( \frac{3}{6} = \) [ ]
   g. \( \frac{2}{3} = \) [ ]
   h. \( \frac{6}{6} = \) [ ]
   i. \( \frac{3}{3} = \) [ ]

2. Fill in <, > or =.
   a. \( \frac{1}{2} \) [ ] \( \frac{1}{3} \)
   b. \( \frac{1}{2} \) [ ] \( \frac{2}{6} \)
   c. \( \frac{1}{3} \) [ ] \( \frac{3}{6} \)
   d. \( \frac{1}{2} \) [ ] \( \frac{2}{3} \)
   e. \( \frac{2}{3} \) [ ] \( \frac{1}{6} \)
   f. \( \frac{5}{6} \) [ ] \( \frac{2}{3} \)
   g. \( \frac{2}{3} \) [ ] \( \frac{6}{6} \)
   h. \( \frac{1}{3} \) [ ] \( \frac{4}{6} \)
   i. \( \frac{4}{6} \) [ ] \( \frac{1}{2} \)
   j. \( \frac{1}{2} \) [ ] \( \frac{3}{3} \)
   k. \( \frac{1}{2} \) [ ] \( \frac{1}{6} \)
   l. \( \frac{5}{6} \) [ ] \( \frac{1}{2} \)
3. Complete the following using the diagram to help you:

a. One whole = $\frac{1}{2}$ +

b. One whole = $\frac{1}{3}$ +

c. One whole = $\frac{1}{6}$ =

4. Write a word problem for each and solve it.

a. Mother shared the apple pie between myself, herself and my father. What fraction did we each get?

\[
1 \div 3 = \frac{1}{3}
\]

b. 

c. 

d. 

Thinking fractions

Three children have to share 12 oranges equally so that nothing remains. How many oranges will each child get?

You might need to make a drawing to help you to solve this.
1. Use two yellow squares as the whole. 

   \[ \text{yellow square} \] \text{is what part of the whole?} 

   \[ \text{red rectangle} \] \text{is what part of the whole?} 

   \[ \text{blue triangle} \] \text{is what part of the whole?} 

   \[ \text{green triangle} \] \text{is what part of the whole?} 

2. Answer these questions. 

   \[ \text{green triangles} \] \text{are in one blue triangle} 

   \[ \text{green triangles} \] \text{are in one red rectangle} 

   \[ \text{green triangles} \] \text{are in one yellow square}
d. How many blue triangles are in one yellow square?

e. How many red rectangles are in one yellow square?

3. Draw the missing fraction pieces.

= 1 whole

Make my own sums

Make five of your own sums using the shapes on the left.

[Blank spaces for five sums]
What fraction of the diagrams below has been coloured?
What fraction of the diagrams below has not been coloured?

1. Fill in >, < or =.

2. What fractions are shown by the arrow?
3. Write a sum for the number lines below and calculate the answers.

a. ![Number line](image)

\[ \frac{3}{8} + \frac{4}{8} = \frac{7}{8} \]

b. ![Number line](image)

c. ![Number line](image)

d. ![Number line](image)

e. ![Number line](image)

4. Draw number lines for the following sums.

a. \[ \frac{1}{4} + \frac{2}{4} = \]

b. \[ \frac{1}{2} + \frac{1}{4} = \]

Problem solving:

A chocolate cake is cut into 30 pieces. If a fifth has been eaten, how many pieces are left?
1. Write a sum for the following:

- $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}$
- $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}$
- $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}$
- $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}$
- $\frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}$

Which is greater, $\frac{1}{4}$ or $\frac{1}{7}$?

2. Challenge: Draw fraction circles to show the following:

a. $\frac{1}{4} + \frac{1}{4} + \frac{1}{2} = 1$ whole
b. $\frac{1}{3} + \frac{1}{3} + \frac{2}{6} = 1$ whole
3. Use the diagram to complete the sums.

<table>
<thead>
<tr>
<th>Sum</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\frac{1}{4} + \frac{2}{4}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>b. $\frac{2}{5} + \frac{1}{5}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>c. $\frac{3}{8} + \frac{2}{8}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>d. $\frac{1}{6} + \frac{2}{6}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>e. $\frac{3}{7} + \frac{2}{7}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>f. $\frac{5}{8} + \frac{1}{8}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>g. $\frac{4}{8} + \frac{3}{8}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>h. $\frac{3}{5} + \frac{2}{5}$</td>
<td>[Diagram]</td>
</tr>
<tr>
<td>i. $\frac{1}{6} + \frac{4}{6}$</td>
<td>[Diagram]</td>
</tr>
</tbody>
</table>

4. At the party I had $\frac{1}{8}$ of the cake and my friend had $\frac{3}{8}$. How much cake did we have altogether? Make a drawing to show your answer.
What is each picture telling you?

Think carefully with the next two.

We say that these are mixed numbers.

1. Write the following as mixed numbers:

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[1 \frac{4}{8}]</td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Calculate the following.

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Fraction 1</th>
<th>Fraction 2</th>
<th>Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>$\frac{2}{6}$</td>
<td>$\frac{2}{6}$</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>$\frac{1}{3}$</td>
<td>$\frac{1}{3}$</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>$\frac{1}{3}$</td>
<td>$\frac{1}{3}$</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>$\frac{2}{4}$</td>
<td>$\frac{1}{4}$</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>$\frac{1}{4}$</td>
<td>$\frac{2}{4}$</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>$\frac{1}{5}$</td>
<td>$\frac{3}{5}$</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>$\frac{2}{6}$</td>
<td>$\frac{3}{6}$</td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>$\frac{4}{8}$</td>
<td>$\frac{2}{8}$</td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>$\frac{1}{6}$</td>
<td>$\frac{3}{6}$</td>
<td></td>
</tr>
<tr>
<td>j.</td>
<td>$\frac{3}{8}$</td>
<td>$\frac{2}{8}$</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram](image)

Make a sum for each diagram.
1. Colour the following on the picture above:

a. One quarter of the red window.
b. Two quarters of the purple window.
c. Three quarters of the orange window.
d. One quarter plus one quarter of the green window.
e. Two quarters plus one quarter of the yellow window.
f. Two quarters plus two quarters of the brown window.
g. One fifth of the first tree light green and the rest dark green.
h. Two fifths of the second tree light green and the rest dark green.
i. One fifth of the third tree light green, two fifths dark green and the rest yellow.
j. Three fifths of the fourth tree green and the rest yellow.

k. Colour the fifth tree and explain it here.
2. Look at the train in the picture on the previous page and answer the following:

a. How many passenger carriages does the train have?  
   
   b. What fraction is yellow?  Orange?  Red?  
   
   c. The wheels are divided into parts. Write one part as a fraction.  
   
   d. Each passenger carriage has windows. Write one window as a fraction.  
   
   e. Colour in two sixths of the yellow carriage windows, four sixths of the orange carriage windows, five sixths of the red carriage windows.

3. Answer the questions on the small trucks.

a. How many boxes are on the blue truck?  What fraction is yellow?  What fraction is blue?  What fraction is brown?  
   Write an addition sum for it:  
   
   b. How many boxes are on the red truck?  
   What fraction is pink?  What fraction is blue?  What fraction is brown?  
   Write an addition sum for it?  

My own questions

Look at the pictures and make your own fraction questions. Remember it should be different from the questions in this worksheet. 

There is an open space on the picture on the previous page (page 26). Draw something that will fit into the picture and then write a fraction question for it.
1. Find items advertised for about R4 000. Paste a picture here.

2. Calculate:

   a. \[1 000 + 500 + 90 + 3 = \]

   b. \[2 000 + 300 + 40 + 1 = \]

   c. \[3 000 + 800 + 20 + 9 = \]

   d. \[4 000 + 90 + 3 = \]

   e. \[4 000 + 700 = \]
3. Calculate the following:

a. \(2000 + 600 + 30 + 9 = \) 

b. \(4000 + 50 + 1 + 400 = \) 

c. \(2 + 90 + 800 + 1000 = \) 

d. \(4000 + 50 = \) 

e. \(2000 + 2 = \) 

4. Change the digit 5 to zero in each number. Show your operation.

a. \(4854 = \) 

b. \(3521 = \) 

c. \(2005 = \) 

d. \(6050 = \) 

e. \(5000 = \) 

5. Use any digits to make different 4-digit numbers smaller than 5000 but bigger than 2000. Say if the number is odd or even. We did the first one for you.

a. \(4789 \) odd 

b. 

c. 

d. 

e. 

6. Write your answers to question 5 from the biggest to the smallest number.

Number madness

Take a newspaper. Find some 4-digit numbers that are bigger than 2000 but smaller than 5000. Paste them here.
Which would be easier to say?

Example:

1 234 and 3 000

2 000 and 3 000

1. Between what two thousands are:

a. 1 234
b. 3 890

c. 2 478
d. 8 932

e. 4 329
f. 9 323

g. 6 173
h. 5 984

i. 7 394

2. Give any number between.

a. 2 000 and 3 000
b. 4 000 and 5 000

c. 3 000 and 4 000
d. 8 000 and 9 000

e. 1 000 and 2 000
f. 5 000 and 6 000

g. 6 000 and 7 000
h. 7 000 and 8 000

3. Go back to the numbers you wrote in question 2. Underline the number that is closest to your answer.

Example:

2 000 and 3 000

2 387
4. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

   a. 2 000 is between [ ] and [ ] and would be rounded to [ ].
   b. 3 400 is between [ ] and [ ] and would be rounded to [ ].
   c. 1 900 is between [ ] and [ ] and would be rounded to [ ].
   d. 4 700 is between [ ] and [ ] and would be rounded to [ ].

5. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

   a. 2 150 is between [ ] and [ ] and would be rounded to [ ].
   b. 4 490 is between [ ] and [ ] and would be rounded to [ ].
   c. 3 680 is between [ ] and [ ] and would be rounded to [ ].
   d. 1 450 is between [ ] and [ ] and would be rounded to [ ].

6. Round off to the nearest 1 000. Circle the number which you look at when deciding whether to round up or down to the nearest 1 000. Complete the sentences.

   a. 3 412 is between [ ] and [ ] and would be rounded to [ ].
   b. 2 623 is between [ ] and [ ] and would be rounded to [ ].
   c. 4 499 is between [ ] and [ ] and would be rounded to [ ].
   d. 1 507 is between [ ] and [ ] and would be rounded to [ ].

Maths artist

You want to explain to your friend, who was absent from school, what rounding off means. Make a drawing.
How fast can you calculate the following?

7 000 + 300 + 40 + 6 = 9 000 + 80 + 2 =
4 000 + 90 + 3 = 5 000 + 4 =
8 000 + 100 + 7 = 6 000 + 200 + 80 + 5 =

1. Write the following in expanded notation.
   a. 1 256
   b. 8 105
   c. 5 085
   d. 9 450
   e. 6 001
   f. 8 020

2. Calculate the following.
   a. 5 + 7 =
   b. 50 + 70 =
   c. 500 + 700 =
   d. 4 + 9 =
   e. 40 + 90 =
   f. 400 + 900 =
   g. 6 + 7 =
   h. 60 + 70 =
   i. 600 + 700 =

3. Calculate the following.
   a. 9 – 4 =
   b. 90 – 40 =
   c. 900 – 400 =
   d. 5 – 2 =
   e. 50 – 20 =
   f. 500 – 200 =
   g. 7 – 3 =
   h. 70 – 30 =
   i. 700 – 300 =
4. Calculate the following. We did the first one for you. Use extra paper if you need to.

a. \[4 898 + 3 141 =
\]
\[= 4 000 + 800 + 90 + 8 + 3 000 + 100 + 40 + 1
\]
\[= 4 000 + 3 000 + 800 + 100 + 90 + 40 + 8 + 1
\]
\[= 7 000 + 900 + 130 + 9
\]
\[= 7 000 + 900 + 100 + 30 + 9
\]
\[= 7 000 + 1 000 + 30 + 9
\]
\[= 8 000 + 30 + 9
\]
\[= 8 039
\]

b. \[6 967 + 2 052 =
\]

---

c. \[6 442 + 1 394 =
\]

d. \[3 467 + 4 292 =
\]

e. \[8 578 + 1 262 =
\]

f. \[8 258 + 1 869 =
\]
5. Calculate the following. We did the first one for you.
   a. \(8445 - 4372 =\)
      \[(8000 + 400 + 40 + 5) - (4000 + 300 + 70 + 2)\]
      \[= (8000 - 4000) + (400 - 300) + (40 - 70) + (5 - 2)\]
      \[= 4000 + 100 + (40 - 70) + 3\]
      \[= 4000 + 140 - 70 + 3\]
      \[= 4000 + 70 + 3\]
      \[= 4073\]
   b. \(4624 - 1482 =\)
   c. \(8546 - 5283 =\)
   d. \(5348 - 2195 =\)
   e. \(9434 - 6591 =\)
   f. \(3358 - 1477 =\)

6. Solve the problems by identifying the questions, the numbers and the operations (addition or subtraction); then make a drawing if necessary and write down a number sentence. Use an extra sheet of paper if needed.
b. My uncle travelled 3 520 km through Africa on a safari. His friend travelled 5 659 km on his safari. How much farther did my uncle’s friend travel?

c. The tank holds 4 500 litres of water. The community used 1 950 litres. How much water is left?

d. My mother used 1 550 grams of flour for all the cup-cakes she baked. My sister used 1 800 grams of flour for all the muffins she made. How much flour did they use together?
More addition and subtraction up to 4-digit numbers: breaking down numbers

1. Calculate the following.
   a. 5 354 + 2 000 = [___]
   b. 8 663 + 200 = [___]
   c. 2 945 + 40 = [___]
   d. 4 263 + 20 = [___]
   e. 3 748 + 5 000 = [___]
   f. 5 368 + 3 = [___]

2. Calculate the following.
   a. 5 492 – 200 = [___]
   b. 3 947 – 1 000 = [___]
   c. 8 687 – 500 = [___]
   d. 8 635 – 20 = [___]
   e. 38 473 – 400 = [___]
   f. 6 342 – 3 000 = [___]

3. Complete the table by adding or subtracting to or from the number in the first column.

<table>
<thead>
<tr>
<th></th>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 754</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 856</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 932</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 573</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 863</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Add the following by breaking down the number to be added.

Example: Adding by breaking down the number to be added

Calculate $5\,362 + 2\,486$

$5\,362 + 2\,000 \rightarrow 7\,362 + 400 \rightarrow 7\,762 + 80 \rightarrow 7\,842 + 6 \rightarrow 7\,848$

a. $3\,459 + 2\,320 =$
b. $5\,296 + 2\,312 =$
c. $8\,875 + 1\,187 =$
d. $8\,764 + 1\,586 =$

5. Subtract the following by breaking down the number to be subtracted.

Example: Subtracting by breaking down the number to be subtracted

Calculate $4\,687 - 2\,143$

$4\,687 - 2\,000 \rightarrow 2\,687 - 100 \rightarrow 2\,587 - 40 \rightarrow 2\,547 - 3 = 2\,544$

a. $7\,834 - 3\,512 =$
b. $8\,274 - 3\,843 =$
c. $4\,322 - 1\,188 =$
d. $7\,546 - 4\,657 =$

Check your answers

Check all your answers in question 4 and 5 by doing the inverse operation.

The inverse operation for addition is subtraction and for subtraction it is addition.
1. Round off the following to the nearest 10, 100 and 1 000. Underline the digit that will help you to round the number to the nearest 10 or 100 or 1 000. We did the first one for you.

<table>
<thead>
<tr>
<th></th>
<th>Nearest 10</th>
<th>Nearest 100</th>
<th>Nearest 1 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 3 184</td>
<td>3 184 ≈ 3 180</td>
<td>3 184 ≈ 3 200</td>
<td>3 184 ≈ 3 000</td>
</tr>
<tr>
<td>b. 6 758</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 4 390</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 4 402</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. 8 999</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Fill up the tens, hundreds and thousands.

<table>
<thead>
<tr>
<th></th>
<th>Fill up the tens</th>
<th>Fill up the hundreds</th>
<th>Fill up the thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 3 524</td>
<td>3 524 + 6 = 3 530</td>
<td>3 524 + 76 = 3 600</td>
<td>3 524 + 476 = 4 000</td>
</tr>
<tr>
<td>b. 5 132</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 1 213</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 8 458</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. 4 199</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Revise this by showing it on a number line.
3. Calculate the following.

- **Filling up the tens**
  - Calculate $2486 + 48$
  - $2486 + 48 = (2486 + 14) - 14 + 48$
  - $= 2500 + (48 - 14)$
  - $= 2500 + 34$
  - $= 2534$

- a. $2345 + 72 = $

- b. $6872 + 34 = $

- c. $5676 + 96 = $

- d. $6567 + 47 = $

- e. $4536 + 89 = $

- f. $8671 + 51 = $

---

**Check your answers**

Check all your answers in question 3 by doing the inverse operation.
More addition and subtraction up to 4-digit numbers

1. What number comes next?
   a. 1 000, 2 000, 3 000, 
   b. 3 300, 3 400, 3 500, 
   c. 689, 1 689, 2 689, 
   d. 2 760, 3 760, 4 760, 

2. Complete the table by adding or subtracting to or from the number in the first column.

<table>
<thead>
<tr>
<th>Number</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 212</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 910</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 069</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 989</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Estimate the answers to these sums and write them on a separate piece of paper. Then calculate these sums writing the steps you use as shown in the two examples. Use a separate piece of paper. Then compare your estimation and calculation.
4. Complete the word problems. Show your calculations.

a. There were 75 children in the music lesson, 15 went home early and 3 went to soccer lessons. How many children were left in the music lesson?

b. Andile collects 2 283 cans for recycling in the first month. He collects 3 325 cans in the second month. How many cans did he collect altogether?
Look at the pictures. What does front, side and top mean?

1. Complete the table by drawing the side, front and top view of each house.

<table>
<thead>
<tr>
<th>Picture</th>
<th>Side view</th>
<th>Front view</th>
<th>Top view</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="House" /></td>
<td><img src="image2" alt="Side View" /></td>
<td><img src="image3" alt="Front View" /></td>
<td><img src="image4" alt="Top View" /></td>
</tr>
<tr>
<td><img src="image1" alt="House" /></td>
<td><img src="image2" alt="Side View" /></td>
<td><img src="image3" alt="Front View" /></td>
<td><img src="image4" alt="Top View" /></td>
</tr>
<tr>
<td><img src="image1" alt="House" /></td>
<td><img src="image2" alt="Side View" /></td>
<td><img src="image3" alt="Front View" /></td>
<td><img src="image4" alt="Top View" /></td>
</tr>
<tr>
<td><img src="image1" alt="House" /></td>
<td><img src="image2" alt="Side View" /></td>
<td><img src="image3" alt="Front View" /></td>
<td><img src="image4" alt="Top View" /></td>
</tr>
<tr>
<td><img src="image1" alt="House" /></td>
<td><img src="image2" alt="Side View" /></td>
<td><img src="image3" alt="Front View" /></td>
<td><img src="image4" alt="Top View" /></td>
</tr>
</tbody>
</table>
2. Name the following views:

Where is the person standing?

Where do you think the person stood when he or she took the photograph?

In which direction was the photograph taken?
Here are the six faces of a cube:

Can you deduce where the faces are in relation to each other and record them on the net of the cube?

Here are three views of the cube:

1. Complete the table.

<table>
<thead>
<tr>
<th>Picture</th>
<th>Side view</th>
<th>Front view</th>
<th>Top view</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image21.png" alt="Image" /></td>
<td><img src="image22.png" alt="Image" /></td>
<td><img src="image23.png" alt="Image" /></td>
<td><img src="image24.png" alt="Image" /></td>
</tr>
</tbody>
</table>

Term 3
2. Name the following views of the blocks:

Views

What view of the child do you see?
Look at the picture. Identify all the polygons. Identify a shape that is not a polygon.

1. Look at the picture above. Draw an example of each of the shapes with straight sides. Name the shapes.

2. Under each shape write how many sides the shape has.

3. Look at the picture. Draw the shape with curved sides. Name the shape.

4. Add 5 polygons to the picture above.
5. Look at the picture. Write the alphabet letter of the shapes on the picture. For example for square shapes put the letter a. Complete the table.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Number of sides</th>
<th>Straight or curved sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Hexagon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Circle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Triangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Rectangle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A Shape animal

Draw your own animal using various shapes.
Name the 2-dimensional shapes. Say if the shapes have straight or curved sides.

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

1. Complete the shapes by drawing a side or sides.

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

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<tr>
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<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

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<tr>
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<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Square</th>
<th>Pentagon</th>
<th>Hexagon</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Triangle" /></td>
<td><img src="image" alt="Square" /></td>
<td><img src="image" alt="Pentagon" /></td>
<td><img src="image" alt="Hexagon" /></td>
</tr>
</tbody>
</table>
2. Circle the octagons.

3. Colour the pentagons blue.

4. Draw the following in the table.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Two quadrilaterals</td>
<td></td>
</tr>
<tr>
<td>b. Two pentagons</td>
<td></td>
</tr>
<tr>
<td>c. Two heptagons</td>
<td></td>
</tr>
</tbody>
</table>

5. Use only quadrilaterals, pentagons and hexagons to draw a 2-D representation of any building.
Using grid paper is an easy way to draw perfect, geometric shapes and diagrams.

6. Use a ruler and the lines on the grid paper to draw the following. Use extra grid paper if you need to.
   a. Small and large triangle
   b. Small and large square
   c. Small and large rectangle
   d. Small and large pentagon
   e. Small and large hexagon

7. What is the area of each shape?
   a. small triangle: 
      large triangle:
   b. small square:
      large square:
   c. small rectangle:
      large rectangle:
   d. small pentagon:
      large pentagon:
   e. small hexagon:
      large hexagon:
8. Circle the closed shapes.

9. Circle the shapes with straight sides only.

10. Draw the following shapes.

   a. Two closed shapes with curved sides only

   b. Three closed shapes with straight sides only

   c. One open with curved and straight sides

How many shapes?

_______________________

_______________________

_______________________

_______________________

_______________________

How many shapes can you make with these sticks? Name them.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Look at the pictures. Why do we need to take part in sport?

1. In groups of six you will do the following activity. Your teacher will keep time. Write your results in the table below.
   How many times can you skip in one minute?

<table>
<thead>
<tr>
<th>Name</th>
<th>Skips in one minute</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   You can make a skipping rope by tying old plastic shopping bags together.

2. Write five questions on the data you have collected.
3. Each person in a group of six tries to balance on an object. Your teacher will time you to see who can stay the longest on the object. Organise and record your data.

<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Write five questions on the data you have collected.

Fitness survey

One of your friends told you that children in your school doing sport are more healthy. How do you think she knows this?
How many cell phones did the shop sell?

1. Complete the frequency table on coloured cell phones.

<table>
<thead>
<tr>
<th></th>
<th>Tally</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green phone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow phone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Use the table above and draw a pictograph.
3. Draw a bar graph using the pictograph.

4. Complete the following questions:
   a. How many yellow cell phones have been sold?
   b. How many red cell phones have been sold?
   c. How many blue cell phones have been sold?
   d. How many green cell phones have been sold?
   e. What colour phone was the most popular?
   f. What colour phone was the least popular?
   g. Why do you think green is the most popular colour?
1. Write down all the types of restaurants/take-aways on the map.

<table>
<thead>
<tr>
<th>Type of Restaurant</th>
<th>Total</th>
</tr>
</thead>
</table>

2. Design a food picture that you will use in your pictograph.
3. Show the numbers of the different types of restaurants in a pictograph using the food picture you designed.

4. Answer the following questions.
   a. How many hamburger places are there?  
   b. How many take away places are there?  
   c. How many restaurants are there in total?  
   d. Which is the most common type of restaurant?  
   e. Which is the least common type of restaurant?

Favourite restaurant

Find out what is the favourite restaurant amongst the learners in your class.
1. Answer the following questions:

a. What are you going to collect? ____________________

b. How will you do it? ____________________

c. How will you organise your data? ____________________
2. Draw a pictograph.

3. Draw a bar graph.

I think about data.

Decide on five questions you will ask about the bar graph. Write a short paragraph on the data collected on a separate sheet of paper.
## Data cycle

### Bags of waste collected in our school.

<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td><img src="image1" alt="Bags" /></td>
<td><img src="image2" alt="Bags" /></td>
<td><img src="image3" alt="Bags" /></td>
<td><img src="image4" alt="Bags" /></td>
<td><img src="image5" alt="Bags" /></td>
</tr>
<tr>
<td>Week 2</td>
<td><img src="image6" alt="Bags" /></td>
<td><img src="image7" alt="Bags" /></td>
<td><img src="image8" alt="Bags" /></td>
<td><img src="image9" alt="Bags" /></td>
<td><img src="image10" alt="Bags" /></td>
</tr>
<tr>
<td>Week 3</td>
<td><img src="image11" alt="Bags" /></td>
<td><img src="image12" alt="Bags" /></td>
<td><img src="image13" alt="Bags" /></td>
<td><img src="image14" alt="Bags" /></td>
<td><img src="image15" alt="Bags" /></td>
</tr>
<tr>
<td>Week 4</td>
<td><img src="image16" alt="Bags" /></td>
<td><img src="image17" alt="Bags" /></td>
<td><img src="image18" alt="Bags" /></td>
<td><img src="image19" alt="Bags" /></td>
<td><img src="image20" alt="Bags" /></td>
</tr>
<tr>
<td>Week 5</td>
<td><img src="image21" alt="Bags" /></td>
<td><img src="image22" alt="Bags" /></td>
<td><img src="image23" alt="Bags" /></td>
<td><img src="image24" alt="Bags" /></td>
<td><img src="image25" alt="Bags" /></td>
</tr>
</tbody>
</table>

1. Draw a pictograph using the information above.
2. Draw a bar graph based upon your pictograph data.

3. Answer the following questions:

a. How many bags of waste did we collect in
   week 1? □ □ □ □ □
   week 2? □ □ □ □ □
   week 3? □ □ □ □ □
   week 4? □ □ □ □ □
   week 5? □ □ □ □ □

b. During which week did we collect the most waste?

c. During which week did we collect the least waste?

d. What do you think happened on Friday?

How many waste bags or dustbins does your class fill with rubbish each day?
These bins filled with waste were collected after a sports day at School A. Why do you think there was so much waste?

1. Use the given information to draw up a frequency table of the different bins of waste.

2. Write four sentences on the waste created during the sports day.

**Example:** There were eight bins full of paper waste because a lot of food was wrapped in paper or cardboard containers.
3. Another school, School B, also held a sports day. To represent the waste collected they drew a pie chart. They forgot to give it a heading. Add a heading.

![Pie chart with waste categories]

- a. How many waste bins of glass did they collect?
- b. How many waste bins of paper did they collect?
- c. How many waste bins of plastic did they collect?
- d. How many waste bins of metal did they collect?
- e. Compare school A’s results with school B’s?
- f. Why do you think school B collected so much plastic?
- g. What will you do with all this waste?
- h. What type of waste did they not collect?
- i. What will you do with this type of waste?

**Mandela day:**

As part of Nelson Mandela’s birthday we give 67 minutes of our time to take action to help change the world for the better. This year the school wants to make big changes starting with the school grounds. What will you do? How will you collect the data?
Number patterns

Describe all the patterns.

1. Complete the pattern.
   a. 122 124 126
   b. 366 369 372
   c. 155 160 165
   d. 520 530 540
   e. 375 400 425
   f. 250 300 350

2. Complete the pattern.
   a. 846 844 842
   b. 456 453 450
   c. 925 920 915
3. Fill in the missing numbers.
   a. 100, 102, 104,
   b. 156, 159, 162,
   c. 285, 290, 295,
   d. 100, 110, 120,
   e. 175, 200, 225,
   f. 150, 200, 250,

4. Fill in the missing numbers.
   a. 86, 84, 82,
   b. 111, 108, 105,
   c. 625, 620, 615,
   d. 260, 250, 240,
   e. 475, 450, 425,
   f. 950, 900, 850,

Pattern fun

What will the missing numbers be?
More number patterns

1. Complete the flow diagrams.

<table>
<thead>
<tr>
<th></th>
<th>a. 1200</th>
<th>1350</th>
<th>1500</th>
<th>1650</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>b. 1200</th>
<th>1349</th>
<th>1498</th>
<th>1647</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+125</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>c. 1120</th>
<th>1360</th>
<th>1600</th>
<th>1840</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+1000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>d. 9200</th>
<th>8916</th>
<th>8632</th>
<th>8348</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>e. 2030</th>
<th>4215</th>
<th>6400</th>
<th>8585</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>f. 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>g. 2/6</th>
<th>3/6</th>
<th>4/6</th>
<th>5/6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+1/6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>h. 2/8</th>
<th>3/8</th>
<th>4/8</th>
<th>5/8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+1/8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Complete the table.

a. 

\[
\begin{array}{cccccccccc}
+1 & +1 & +1 & +1 & +1 & +1 & +1 & +1 & +1 & +1 \\
1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\
\times 4 & & & & & & & & & \\
+4 & +4 & & & & & & & & \\
\end{array}
\]

b. 

\[
\begin{array}{cccccccccc}
-3 & -3 & & & & & & & & \\
36 & 33 & 30 & 27 & 24 & 21 & 18 & 15 & 12 & 9 \\
\div 3 & & & & & & & & & \\
\end{array}
\]

c. 

\[
\begin{array}{cccccccccc}
-7 & -7 & & & & & & & & \\
84 & 77 & 70 & 63 & 56 & 49 & 42 & 35 & 28 & 21 \\
\div 7 & & & & & & & & & \\
\end{array}
\]

d. 

\[
\begin{array}{cccccccccc}
+1 & +1 & & & & & & & & \\
5 & 6 & 7 & 8 & 9 & 10 & 11 & 12 & 13 & 14 \\
\times 8 & & & & & & & & & \\
\end{array}
\]

Create a table

Create your own tables like the ones above.

Create your own tables like the ones above.
How fast can you calculate the output value?

A flow diagram is balanced when the input (as changed by the rule) is equal to the output.

An important fact about the rule is that the order of operations may not be changed!

1. Complete the flow diagrams.
   a. 
   b. 
   c. 
   d. 
   e. 
   f. 

   Input | Rule | Output
   ---   | ---  | ---
   1    | 2    | 3
   3    | 5    | 9
   5    | 7    | 11
   9    | 11   |
   11   | 3    |

   Input | Rule | Output
   ---   | ---  | ---
   2    | 4    | 6
   4    |

   Input | Rule | Output
   ---   | ---  | ---
   3    | 5    |
   5    |

   Input | Rule | Output
   ---   | ---  | ---
   5    | 6    |
   6    |

   Input | Rule | Output
   ---   | ---  | ---
   4    | 8    |
   8    |

   Input | Rule | Output
   ---   | ---  | ---
   3    | 5    |
   5    |

   Input | Rule | Output
   ---   | ---  | ---
   3    | 5    |
   5    |
2. Complete the flow diagrams.
   a. The input values are 2, 4, 6, 8 and 10. The rule is \( x \times 2 + 2 \).

   b. The rule is \( x \times 3 + 1 \) and the output values are 10, 19, 28, 37 and 46.

   Give the rule for the following flow diagram.

   ![Flow Diagram](image)
What is the difference between the two tables?

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8 000 + 200 + 30 + 4 =</td>
<td>8 234</td>
<td>4 948 =</td>
<td>4 000 + 900 + 40 + 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 000 + 100 + 80 + 5 =</td>
<td>5 185</td>
<td>7 503 =</td>
<td>7 000 + 500 + 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 000 + 300 + 70 =</td>
<td>9 370</td>
<td>3 097 =</td>
<td>3 000 + 90 + 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 000 + 500 + 4 =</td>
<td>6 504</td>
<td>6 601 =</td>
<td>6 000 + 600 + 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 000 + 400 =</td>
<td>7 400</td>
<td>5 004 =</td>
<td>5 000 + 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Calculate the following.
   a. 3 000 + 80 =
   b. 7 000 + 100 + 70 + 4 =
   c. 4 000 + 7 =
   d. 5 000 + 90 =
   e. 8 000 + 500 + 20 + 8 =
   f. 9 000 + 2 =

2. Write the following in expanded notation.
   a. 7 483
   b. 8 425
   c. 3 672

3. Calculate the following.
   a. 8 + 4 =
   b. 80 + 40 =
   c. 800 + 400 =
   d. 6 + 7 =
   e. 60 + 70 =
   f. 600 + 700 =
   g. 7 + 5 =
   h. 70 + 50 =
   i. 700 + 500 =
4. Calculate the following.

a. $5 - 3 =$  

b. $50 - 30 =$  

c. $500 - 300 =$  

d. $.7 - 2 =$  

e. $70 - 20 =$  

f. $700 - 200 =$  

g. $9 - 6 =$  

h. $90 - 60 =$  

i. $900 - 600 =$  

5. Calculate the following using both methods.

Example:

Method 1:
Calculate: $3791 + 4145$

$3791 + 4145$

$= 3000 + 700 + 90 + 1 + 4000 + 100 + 40 + 5$

$= 3000 + 4000 + 700 + 100 + 90 + 40 + 1 + 5$

$= 7000 + 800 + 130 + 6$

$= 7936$

Method 2:

$1 + 5 = 6$

$90 + 40 = 130$

$700 + 100 = 800$

$3000 + 4000 = 7000$

$3791 + 4145 = 7936$

a. $3211 + 3494 =$  

b. $6439 + 1290 =$  

continued
6. Calculate the following.

**Example:**
Calculate: $8787 - 2493$

\[
8787 - 2493 = (8000 + 700 + 80 + 7) - (2000 + 400 + 90 + 3) = (8000 + 600 + 180 + 7) - (2000 + 400 + 90 + 3) = (8000 - 2000) + (600 - 400) + (180 - 90) + (7 - 3) = 6000 + 200 + 90 + 4 = 6294
\]

a. $8874 - 3412 =

b. $6543 - 3281 =

c. $1469 + 5270 =$
Solve the problems by identifying the questions, the numbers and the operations (addition or subtraction); then make a drawing if necessary and write down a number sentence.

- My mother bought a lounge set for R5 450. My father bought a bedroom set for R4 250. How much did they pay altogether?
- My brother travelled 5 320 km through Africa on his vacation. His friend travelled 6 595 km on his vacation. How much farther did his friend travel?
- The water tank holds 5 400 litres. Our household used 2 590 litres. How much water is left?
- I used 1 630 kg sugar in my bakery in January. In February I used 2 800 kg. How much sugar did I use in the two months?
## More addition and subtraction: breaking down numbers

### 1. Calculate the following.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>9 534 + 200 =</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>6 543 + 20 =</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>3 796 + 1 000 =</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>2 014 + 2 =</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>8 591 + 4 000 =</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>5 699 + 500 =</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>4 512 + 2 000 =</td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>1 853 + 400 =</td>
<td></td>
</tr>
</tbody>
</table>

### 2. Calculate the following.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>7 169 – 100 =</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>4 976 – 50 =</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>6 789 – 3 000 =</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>3 135 – 1 000 =</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>2 579 – 4 =</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>8 646 – 500 =</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>6 825 – 10 =</td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>8 839 – 30 =</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Complete the table by adding or subtracting to or from the number in the first column.

<table>
<thead>
<tr>
<th></th>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 459</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 572</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 197</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 475</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 216</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Calculate the following by breaking down the number to be added.

Example: Adding by breaking down the number to be added

Calculate \(4658 + 3271\)

\(4658 + 3000 \rightarrow 7658 + 200 \rightarrow 7858 + 70 \rightarrow 7928 + 1 \rightarrow 7929\)

a. \(3874 + 2215 = \)

b. \(6313 + 2847 = \)

c. \(5322 + 3729 = \)

d. \(7556 + 1876 = \)

5. Subtract the following by breaking down the number to be subtracted.

Example: Subtracting by breaking down the number to be subtracted

Calculate \(6478 – 3235\)

\(6478 – 3000 \rightarrow 3478 – 200 \rightarrow 3278 – 30 \rightarrow 3248 – 5 \rightarrow 3243\)

a. \(3275 – 1434 = \)

b. \(8745 – 4672 = \)

c. \(5432 – 2874 = \)

d. \(8159 – 3754 = \)

**Sum problems**

- What is the sum of R2 999 and R3 534?
- What is the difference between 4 738 m and 8 735 m?
- What is the sum of 4 983 g and 3 982 g?
- What is the sum of 4 983 km and 4 894 km?
1. How much money do you have left?
   a. I have R90. I spend R40.
   b. I have R120. I spend R50.
   c. I have R100. I spend R50.50.
   d. I have R60.75. I spend R20.
   e. I have R80.50. I spend R20.20.

2. Complete all the calculations in each of these flow diagrams.
   In the first example, I have R100, I get R30 more, I spend R20, and I then have R110 left.

A budget is a plan that shows what money you plan on spending and where it is coming from.

How much do I still need?
3. Ann earns pocket money once a month. Her parents encourage her to keep a budget.

<table>
<thead>
<tr>
<th>Sept</th>
<th>Money I get</th>
<th>Money I spend</th>
<th>Money left</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pocket money R50,00</td>
<td></td>
<td>R50,00</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Tuck shop R10,00</td>
<td>R40,00</td>
</tr>
<tr>
<td>6</td>
<td>Extra chores R30,00</td>
<td></td>
<td>R70,00</td>
</tr>
<tr>
<td>15</td>
<td>Birthday present R40,00</td>
<td></td>
<td>R110,00</td>
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<td>18</td>
<td></td>
<td>Book R30,00</td>
<td>R80,00</td>
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<tr>
<td>22</td>
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<td>R110,00</td>
</tr>
<tr>
<td>24</td>
<td>CD on special R60,00</td>
<td></td>
<td>R50,00</td>
</tr>
<tr>
<td>28</td>
<td>Gift for friend R30,00</td>
<td></td>
<td>R20,00</td>
</tr>
</tbody>
</table>

a. How much money did Ann get on the 1st of September? ________________
b. How much did she spend on the 5th of September? ________________
   How much money is left? ________________
c. Did she get or spend money on the 6th of September? ________________
   How much? ________________ How much money does she have left? ________________
d. When is Ann’s birthday? ________________ How much money did she get? ________________
   How much money does Ann have now? ________________
e. What did Ann do on the 18th of September? ________________
   How much money does she have left? ________________
f. How much did she earn on the 22nd of September? ________________
   What did she do to earn it? ________________
   How much money does she have left? ________________
g. What did she buy on the 24th and 28th of September? ________________
h. How much money does she have left for the month? ________________
i. What can she do with the left over money? ________________
1. Answer the following orally:

- How many wheels will 5 cars have? Let us count 4, 8, 12, …
- How many days will be in 8 weeks? Let us count …
- How many fingers will 10 hands have? Let us count …
- How many legs will 9 spiders have? Let us count …
- How many eggs will 7 half dozen boxes hold?
- How many small squares will be on 5 “Noughts and crosses boards”? Let us count …

2. Colour the multiples of

- 4 blue
- 5 red

<table>
<thead>
<tr>
<th>×</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>10</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>12</td>
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<td>24</td>
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<td>42</td>
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<td>7</td>
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<td>21</td>
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<td>42</td>
<td>49</td>
<td>56</td>
<td>63</td>
<td>70</td>
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<tr>
<td>8</td>
<td>8</td>
<td>16</td>
<td>24</td>
<td>32</td>
<td>40</td>
<td>48</td>
<td>56</td>
<td>64</td>
<td>72</td>
<td>80</td>
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<tr>
<td>9</td>
<td>9</td>
<td>18</td>
<td>27</td>
<td>36</td>
<td>45</td>
<td>54</td>
<td>63</td>
<td>72</td>
<td>81</td>
<td>90</td>
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<td>10</td>
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<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>
3. Complete these patterns.
   a. The multiples of 2 are 2, 4, 6, 8, 10, 12, □□□□□□□□□□□
   b. The multiples of 3 are 3, 6, 9, 12, 15, 18, □□□□□□□□□□□

4. Complete the patterns.

5. Show the following on the number lines.
   a. Multiples of 2
      0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
   b. Multiples of 5
      0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
   c. Multiples of 3
      0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
   d. Multiples of 4
      0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
   e. Multiples of 6
      0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
### Multiples continued

**6. Give the missing multiples:**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. × 3</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. × 2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>c. × 6</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>d. × 4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>e. × 5</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

### 7. Complete the multiple pattern.

- **Multiples of:**
  - 6, 12, 18, 24, 30, ...
  - 8, 16, 24, 32, 40, ...
  - 10, 20, 30, 40, 50, 60, ...
  - 5, 10, 15, 20, 25, ...
  - 7, 14, 21, 28, 35, ...

### 8. These numbers are multiples of:

- a. 3, 6, 9, 12, 15, ...
- b. 6, 12, 18, 24, 30, ...
- c. 10, 20, 30, 40, 50, 60, ...
- d. 5, 10, 15, 20, 25, ...
- e. 7, 14, 21, 28, 35, ...

### A riddle

I am thinking of 3 numbers.
They are all multiples of 2, 5 and 10.
They all have 2 digits.
They are all greater than 10 and less than 41.
They are all even.

What are the numbers? [ ] [ ] [ ]
More multiples

Multiples of a number can be made by multiplying the number by any whole number. The first four multiples of 2 are 2, 4, 6 and 8. You get them by doing $2 \times 1$, $2 \times 2$, $2 \times 3$ and $2 \times 4$.

Reminder: When you do multiplication you can write the numbers in any order and get the same answer. $8 \times 3$ is the same as $3 \times 8$.

1. Complete the following:
   a. The numbers you find in the 3-times table are all multiples of ___.
   b. The numbers you find in the 4-times table are all multiples of ___.
   c. Here is how to make multiples of 4. Just multiply ___ by a whole number each time.
      $1 \times 4 = ___$, $2 \times 4 = ___$, $3 \times 4 = ___$, $4 \times 4 = ___$.
   d. The numbers you find in the 5-times table are all multiples of ___.
   e. Here is how to make multiples of 5. Just multiply ___ by a whole number each time.
      $1 \times 5 = ___$, $2 \times 5 = ___$, $3 \times 5 = ___$, $4 \times 5 = ___$.
   f. Here is how to make multiples of 6. Just multiply ___ by a whole number each time.
      $1 \times 6 = ___$, $2 \times 6 = ___$, $3 \times 6 = ___$, $4 \times 6 = ___$.

2. Complete the following:
   a. Is 12 a multiple of 4? If you multiply 4 by ___ , you get ___.
      so 12 is a multiple of ___.
   b. Is 36 a multiple of 6? If you multiply 6 by ___ , you get ___.
      so 36 is a multiple of ___.
   c. Is 49 a multiple of 7? If you multiply 7 by ___ , you get ___.
      so 49 is a multiple of ___.

3. Complete the following:
   a. 20 is a multiple of 5, because $___ \times ___ = 20$.
   b. 42 is a multiple of 6, because $___ \times ___ = 42$.
   c. 56 is a multiple of 7, because $___ \times ___ = 56$.
      56 is a multiple of 8, because $___ \times ___ = 56$.

In real life?
What comes in multiples of these numbers in the everyday world?

Remember you can not give the same answers as before.
1. Complete the table below.

<table>
<thead>
<tr>
<th>Number</th>
<th>x 1</th>
<th>x 2</th>
<th>x 3</th>
<th>x 4</th>
<th>x 5</th>
<th>x 6</th>
<th>x 7</th>
<th>x 8</th>
<th>x 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
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<td>100</td>
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<td>150</td>
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<tr>
<td>200</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

2. Use both methods to solve the sums below. Write the steps you use on a separate piece of paper.

Example 1:
\[57 \times 78 = (50 \times 70) + (7 \times 70) + (50 \times 8) + (7 \times 8)\]
\[= 3500 + 490 + 400 + 56\]
\[= 350 + 50 + 40 + 6\]
\[= 4000 + 400 + 40 + 6\]
\[= 4446\]

Example 2:
\[216 \times 6 = (200 \times 6) + (10 \times 6) + (6 \times 6)\]
\[= 1200 + 60 + 36\]
\[= 1000 + 200 + 60 + 30 + 6\]
\[= 1000 + 200 + 90 + 6\]
\[= 1296\]

You did 3-digit x 2-digit before but this time your answer will be bigger than 2000 and smaller than 5000. See if this is true!!

3. Solve the problems.

a. There are 45 sweets in one packet. How many sweets are there in 12 packets?

b. The shopkeeper sells 98 litres of milk in one week. How many litres will he have sold in 12 weeks?

4. Calculate this.

\[\begin{array}{cccccccc}
2 & \times & 3 & \times & 1 & \times & 2 & \times & 3 & \times & 1 & \times & 2 \\
\end{array}\]

\[\begin{array}{cccccccc}
2 & \times & 4 & \times & 3 & \times & 2 & \times & 4 & \times & 3 & \times & 2 \\
\end{array}\]
Multiplication: 2-digit by 2-digit and 3-digit by 1-digit and 2-digit continued

5. What number comes next?

6. Complete the table.

<table>
<thead>
<tr>
<th>Number</th>
<th>x 10</th>
<th>x 20</th>
<th>x 30</th>
<th>x 40</th>
<th>x 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>45</td>
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<td>55</td>
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<tr>
<td>60</td>
<td></td>
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</tr>
</tbody>
</table>

7. Calculate the following:
   a. \(27 \times 15 = \)  
   b. \(56 \times 76 = \)  
   c. \(456 \times 2 = \)  
   d. \(576 \times 9 = \)  

8. Solve the problems.
   a. There are 25 marbles in one bag. There are 19 bags. How many marbles are there in total?
      
   b. The computer game costs R199. My father bought two. How much did he pay?
      
   c. Each chicken costs R42. We need to buy 35 chickens for the function. How much will we pay for all the chickens?
Using approximation in multiplication

1. Round off the following to the nearest ten.
   a. 78 =
   b. 14 =
   c. 69 =
   d. 22 =
   e. 55 =
   f. 98 =
   g. 81 =
   h. 36 =
   i. 43 =

2. Calculate the following by approximation using the example to guide you.
   Example:
   46 x 58 ≈ 46 x 60 (by approximating the second number)
   ≈ (40 + 6) x 60
   ≈ (40 x 60) + (6 x 60)
   ≈ 2 400 + 360
   ≈ 2 760

   a. 23 x 39 =
   b. 48 x 63 =
   c. 26 x 46 =
   d. 49 x 74 =
   e. 32 x 58 =
   f. 36 x 52 =
   g. 32 x 58 =
   h. 36 x 52 =
   i. 58 x 37 =

3. Calculate the following by approximation using the example to guide you.
   Example:
   46 x 58 ≈ 46 x 60 (by approximating the second number)
   ≈ (40 + 6) x 60
   ≈ (40 x 60) + (6 x 60)
   ≈ 2 400 + 360
   ≈ 2 760

   a. 38 x 65 =
   b. 54 x 41 =
   c. 58 x 37 =

Approximately how much will it cost?

What is the approximate cost if my company wants to buy 54 pairs of shoes at R69 per pair?
**101**

**Multiplication by breaking down the second number**

- **Look at the examples below. What do you notice?**
  - Example:
    - \(6 = 2 \times 3\)
    - \(108 = 2 \times 2 \times 3 \times 3 \times 3\)
    - \(324 = 2 \times 2 \times 3 \times 3 \times 3 \times 3\)
    - \(54 = 3 \times 3 \times 2\)
    - \(216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3\)
  - Example:
    - \(30 = 2 \times 3 \times 5\)
    - \(60 = 2 \times 2 \times 3 \times 5\)
    - \(90 = 2 \times 3 \times 3 \times 5\)
    - \(150 = 2 \times 3 \times 5 \times 5\)
    - \(180 = 2 \times 2 \times 3 \times 3 \times 5\)

1. **Break down the numbers into 2s and 3s.**
   - a. \(18 = \)  
   - b. \(90 = \)  
   - c. \(60 = \)  
   - d. \(66 = \)  
   - e. \(42 = \)  
   - f. \(78 = \)  
   - g. \(54 = \)  
   - h. \(84 = \)  
   - i. \(30 = \)  

2. **Break down the numbers into 2s/3s/5s or a combination.**
   - a. \(210 = \)  
   - b. \(90 = \)  
   - c. \(180 = \)  
   - d. \(120 = \)  
   - e. \(270 = \)  
   - f. \(30 = \)  
   - g. \(60 = \)  
   - h. \(150 = \)  
   - i. \(240 = \)  

3. **Break down the second number into 2s and 3s.**
   - Example 1:
     - \(58 \times 12 = 58 \times 2 \times 6 = 58 \times 2 \times 2 \times 3 = 116 \times 2 \times 3 = 232 \times 3 = (200 + 30 + 2) \times 3 = 600 + 90 + 6 = 696\)
   - a. \(33 \times 42 = \)  

4. **Multiply by breaking down the second number into 2s, 3s and 5s.**
   - Example:
     - \(58 \times 54 = 58 \times 9 \times 6 = 58 \times 3 \times 3 \times 6 = 174 \times 3 \times 6 = 522 \times 6 = (500 + 20 + 2) \times 6 = 3000 + 120 + 12 = 3132\)
   - a. \(210 \times 32 = \)  
   - b. \(46 \times 78 = \)  
   - c. \(34 \times 90 = \)  
   - d. \(90 \times 45 = \)  
   - e. \(39 \times 30 = \)  

---

**Counting the cost...**

My teacher had to buy apples for all 3 classes in the grade. She bought 60 apples per class and paid R3 per apple. How much did she pay for the apples?
## Properties of Number

### Quick recall. How fast can you answer the following.

<table>
<thead>
<tr>
<th>Term 1</th>
<th>Term 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 + 4 =</td>
<td>7 x 2 =</td>
</tr>
<tr>
<td>7 x 1 =</td>
<td>4 x 3 =</td>
</tr>
<tr>
<td>9 x 2 =</td>
<td>1 + 2 =</td>
</tr>
<tr>
<td>6 x 2 =</td>
<td>4 x 3 =</td>
</tr>
<tr>
<td>9 + 2 =</td>
<td>8 x 3 =</td>
</tr>
<tr>
<td>3 x 3 =</td>
<td>5 + 3 =</td>
</tr>
<tr>
<td>1 x 3 =</td>
<td>3 + 2 =</td>
</tr>
<tr>
<td>2 x 2 =</td>
<td>4 + 3 =</td>
</tr>
</tbody>
</table>

### 1. Complete the following. The example will guide you.

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
<th>(d)</th>
<th>(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 + 1 = 1 + 7</td>
<td>70 + 10 = 10 + 70</td>
<td>20 + 3 = 30 + 20</td>
<td>80 + 40 = 4 + 80</td>
<td>10 + 6 = 60 + 10</td>
</tr>
<tr>
<td>4 + 2 = 2 +</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. Look at the first example. Make your own drawings to show this.

<table>
<thead>
<tr>
<th>(a)</th>
<th>(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 6 = 6 x 2</td>
<td>1 x 7 = 7 x 1</td>
</tr>
<tr>
<td>9 x 3 = 3 x 9</td>
<td>8 x 5 = 5 x 8</td>
</tr>
<tr>
<td>4 x 8 = 8 x 4</td>
<td></td>
</tr>
</tbody>
</table>

### 3. Complete the following:

- **a.** 7 + (1 + 4) = (1 + 7) + 4
  - 7 + | 8 + 4 |
  - 12 = |
- **b.** (8 + 1) + 4 = (1 + 4) + 8
  - 9 + 4 = |
  - 13 = |
- **c.** 2 + (6 + 4) = (6 + 6) + 4
  - 2 + 10 = |
  - 30 = |
- **d.** 1 + (3 + 4) = (1 + 4) + 3
  - 1 + = |
  - 8 = |
- **e.** 4 + (4 + 3) = (3 + 1) + 4
  - 1 + 7 = |
  - 36 = |

### 4. Complete the following:

- **a.** 2 x (2 x 3) = [2 x 2] x 3
  - 2 x 6 = |
  - 12 = |
- **b.** 2 x (3 x 1) = (3 x 2) x 1
  - 2 x 3 = |
  - 6 x 1 |
- **c.** 3 x (5 x 2) = (2 x 3) x
  - 3 x 5 x 2 = |
  - 30 = |
- **d.** 4 x (3 x 3) = (3 x 4) x
  - 4 x 3 x 3 = |
  - 12 x 3 = |
- **e.** 6 x (3 x 2) = (2 x 6) x 3
  - 6 x 3 x 2 = |
  - 36 = |

---

### I made a mess...

Help me to find the numbers I messed on.

- 12 + 14 = | 12 + 5 = 5 + 11 |
- 16 + 8 = | 16 + 13 = | 7 + 13 |
Basic operations

Quick recall.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 000 + 6</td>
<td>5 006</td>
</tr>
<tr>
<td>6 000 - 400</td>
<td>5 600</td>
</tr>
<tr>
<td>4 000 - 80</td>
<td>3 920</td>
</tr>
<tr>
<td>250 × 4</td>
<td>1 000</td>
</tr>
<tr>
<td>400 × 8</td>
<td>3 200</td>
</tr>
<tr>
<td>800 ÷ 5</td>
<td>160</td>
</tr>
<tr>
<td>4 500 - 700</td>
<td>3 800</td>
</tr>
<tr>
<td>8 000 + 25</td>
<td>8 025</td>
</tr>
<tr>
<td>30 × 30</td>
<td>900</td>
</tr>
<tr>
<td>880 ÷ 8</td>
<td>110</td>
</tr>
<tr>
<td>5 000 ÷ 5</td>
<td>1 000</td>
</tr>
<tr>
<td>7 800 ÷ 6</td>
<td>1 300</td>
</tr>
<tr>
<td>9 000 + 900</td>
<td>9 900</td>
</tr>
<tr>
<td>50 × 60</td>
<td>3 000</td>
</tr>
<tr>
<td>7 500 + 150</td>
<td>7 650</td>
</tr>
</tbody>
</table>

1. Work these out in your head.
   a. 36 plus 7 = __________
   b. 4 multiplied by 6 = __________
   c. The sum of 15 and 32 = __________
   d. Divide 48 by 8 = __________
   e. The product of 10 and 11 = __________
   f. What is the remainder of 22 is divided by 5? __________
   g. What is 12 less than 4 time a hundred? __________

2. Tick the correct answer.
   a. Another word for addition is:
      i. subtraction
      ii. product
      iii. plus/the sum of
   b. Minus means the same as:
      i. subtraction
      ii. product
      iii. divide
   c. Ten thousand has ___ zeros.
      i. 2
      ii. 3
      iii. 4
   d. Ten thousand is a ___ digit number.
      i. 3
      ii. 4
      iii. 5
   e. The product of 6 and 100 is:
      i. 106
      ii. 600
      iii. 94
   f. When adding or subtracting, if a number ends in 9 round it up to the next 10, and then take away or add ___.
      i. 10
      ii. 9
      iii. 1

3. Work these out in your head.
   a. 72 ÷ 9 = __________
   b. 84 ÷ 4 = __________
   c. 65 ÷ 5 = __________
   d. 93 ÷ 3 = __________
   e. 28 ÷ 5 = __________
   f. 31 ÷ 6 = __________

4. Match column A with column B.
   A                        B
   a. Addition
   b. Subtraction
   c. Multiplication
   d. Division
   i. Share
   ii. Product
   iii. Increase by
   iv. Decrease by

5. Fill in the correct symbol.
   a. 80 ___ 2 = 160
   b. 10 000 ___ 400 = 10 400
   c. 399 ___ 301 = 98
   d. 99 ___ 9 = 11
   e. 25 ___ 4 = 100
   f. 2 345 ___ 214 = 2 559

Operation symbols and numbers

<table>
<thead>
<tr>
<th>Number</th>
<th>+</th>
<th>-</th>
<th>×</th>
<th>+</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>5</td>
<td>20</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>10</td>
<td>40</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>25</td>
<td>5</td>
<td>25</td>
<td>50</td>
<td>10</td>
</tr>
</tbody>
</table>
1. Draw on the square grid paper a shape with:
   a. 4 sides
   b. 6 sides
   c. 8 sides

2. What shape does ___ form:
   a. ____________________________
   b. ____________________________
   c. ____________________________

3. On the triangle grid paper a shape with:
   a. 3 sides
   b. 4 sides
   c. 5 sides
   d. 6 sides

4. What shape does ___ form:
   a. ____________________________
   b. ____________________________
   c. ____________________________
   d. ____________________________

5. How many sides do these shapes have?
   a. 
   b. 
   c. 
   d. 
   e. 
   f. 
   g. 
   h. 

6. Use the grid paper to draw the following:
   a. 4-sided shape
   b. 10-sided shape
   c. 12-sided shape

7. Use the triangular paper to draw the following:
   a. 6-sided shape
   b. 9-sided shape
   c. 16-sided shape

8. Use the grid paper below to design the composite shape that you would want your bedroom to look like.
9. Show that these shapes tessellate by tiling the floor. We started it for you.

a. 

b. 

c. 

10. Show a tessellation pattern using these shapes.

a. 

b. 

A tessellation is a combination of shapes fitting together exactly (with no gaps or overlaps between the shapes). Another word for tessellation is tiling.
1. Round off the numbers to the nearest 10, 100 and 1 000.

<table>
<thead>
<tr>
<th></th>
<th>Nearest 10</th>
<th>Nearest 100</th>
<th>Nearest 1 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 587</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 1 324</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 4 815</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 9 082</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Complete the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 9 000 + 300 + 20 + 5 =</td>
<td></td>
</tr>
<tr>
<td>b. 3 000 + 600 + 4 =</td>
<td></td>
</tr>
<tr>
<td>c. 1 000 + 700 =</td>
<td></td>
</tr>
<tr>
<td>d. 4 000 + 9 =</td>
<td></td>
</tr>
<tr>
<td>e. 8 + 6 000 + 80 =</td>
<td></td>
</tr>
</tbody>
</table>

3. What is the place value of the underlined digits in each number?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 738 =</td>
<td></td>
</tr>
<tr>
<td>b. 1 324 =</td>
<td></td>
</tr>
<tr>
<td>c. 1 780 =</td>
<td></td>
</tr>
<tr>
<td>d. 1 702 =</td>
<td></td>
</tr>
<tr>
<td>e. 1 899 =</td>
<td></td>
</tr>
</tbody>
</table>

4. Circle the number that is:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 4 000 more than 3 415: 3 815; 7 145; 7 415; 7 541; 7 514</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 3 000 more than 6 201: 8 201; 9 201; 9 210; 6 501; 8 210</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 500 more than 5 126: 5 526; 1 126; 8 126; 5 626; 7 400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 8 000 more than 1 333: 2 133; 9 333; 9 313; 2 833; 4 987</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. 1 000 more than 948: 1 948; 3 948; 2 984; 12 948; 2 498</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Use any of these digits to make five different 4-digit numbers smaller than 9 999 but bigger than 5 000.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Answer <, > or =

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 218</td>
<td>1 181</td>
<td></td>
</tr>
<tr>
<td>b. 1 341</td>
<td>1 341</td>
<td></td>
</tr>
<tr>
<td>c. 1 948</td>
<td>1 849</td>
<td></td>
</tr>
<tr>
<td>d. 1 020</td>
<td>1 002</td>
<td></td>
</tr>
<tr>
<td>e. 1 409</td>
<td>1 470</td>
<td></td>
</tr>
</tbody>
</table>

7. Write the following in numbers:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Four thousand nine hundred and sixteen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Five thousand three hundred and eighty one.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Write the following in words and say if it an even or odd number:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 1 478</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 8 735</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 7 004</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 9 620</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How much is 10 000?

What is the number just before 10 000?

What is the number just after 10 000?

Find 10 numbers in a newspaper that is bigger than 1 000 but smaller than 10 000. How many numbers are closer to 1 000 than to 10 000? What does the numbers tell us?

How many R100 notes do you need to make R10 000?

How many R200 notes do you need to make R10 000?
1. Double the following numbers:
   a. 23
      = double 20 + double 3
      = 40 + 6
      = 46
   b. 36
   c. 135
   d. 1253

2. Calculate. Make use of the example to guide you.
   a. 23 + 25
      = double 23 + 2
      = 46 + 2
      = 48
   b. 36 + 38
   c. 135 + 138
   d. 2456

3. Halve the following numbers:
   a. 28
      = half 20 + half 8
      = 10 + 4
      = 14
   b. 64
   c. 468
   d. 8482
   e. 276
   f. 7770

Doubling and halving

My number is 15. I double it. I double it again. I add 100. I double it. I add 20. I double it. I add 20 again. I halve it. I minus 50. I halve it. I minus 50 again. I halve it. What is my number? __________
### Addition and subtraction of 4-digit numbers: breaking down numbers

#### 1. Calculate the following.

**Example:**

8 + 9 = 17 and 17 = 10 + 7

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 7 + 5 =</td>
<td>70 + 50 =</td>
<td>700 + 500 =</td>
</tr>
<tr>
<td>b. 9 + 6 =</td>
<td>90 + 60 =</td>
<td>900 + 600 =</td>
</tr>
<tr>
<td>c. 8 + 4 =</td>
<td>80 + 40 =</td>
<td>800 + 400 =</td>
</tr>
</tbody>
</table>

#### 2. Calculate the following.

**Example:**

17 – 9 = 8 and 170 – 90 = 80

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 8 – 4 =</td>
<td>80 – 40 =</td>
<td>800 – 400 =</td>
</tr>
<tr>
<td>b. 6 – 4 =</td>
<td>60 – 40 =</td>
<td>600 – 400 =</td>
</tr>
<tr>
<td>c. 9 – 3 =</td>
<td>90 – 30 =</td>
<td>900 – 300 =</td>
</tr>
</tbody>
</table>

#### 3. Calculate the following.

**Example:**

7348 + 1571
= 7000 + 300 + 400 + 8 + 1000 + 500 + 70 + 1
= 7000 + 1000 + 300 + 500 + 40 + 70 + 8 + 1
= 8000 + 800 + 110 + 9
= 8919

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 4588 + 3251 =</td>
<td>b. 6439 + 2280 =</td>
<td></td>
</tr>
<tr>
<td>c. 3765 + 2186 =</td>
<td>d. 5782 + 2999 =</td>
<td></td>
</tr>
<tr>
<td>e. 9524 + 3687 =</td>
<td>f. 2921 + 8651 =</td>
<td></td>
</tr>
</tbody>
</table>

#### 4. Calculate the following.

**Example:**

8437 – 3274
= (8000 + 400 + 30 + 7) – (3000 + 200 + 70 + 4)
= (8000 + 300 + 130 + 7) – (3000 + 200 + 70 + 4)
= (8000 – 3000) + (300 – 200) + (130 – 70) + (7 – 4)
= 5000 + 100 + 60 + 3
= 5163

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 6539 – 2296 =</td>
<td>b. 9773 – 3392 =</td>
<td></td>
</tr>
<tr>
<td>c. 9269 – 4190 =</td>
<td>d. 9583 – 5392 =</td>
<td></td>
</tr>
<tr>
<td>e. 8956 – 3254 =</td>
<td>f. 4235 – 1578 =</td>
<td></td>
</tr>
</tbody>
</table>
1. Calculate the following.

Example: 5 678 + 3 000 = 8 678

<table>
<thead>
<tr>
<th></th>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 6 435 + 40 =</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>b. 3 853 + 4 000 =</td>
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<tr>
<td>c. 8 482 + 7 =</td>
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<tr>
<td>d. 6 634 + 60 =</td>
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<tr>
<td>e. 9 842 + 50 =</td>
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<tr>
<td>f. 4 535 + 3 000 =</td>
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<td></td>
</tr>
</tbody>
</table>

What do you notice?

2. Calculate the following.

Example: 5 678 – 3 000 = 2 678

<table>
<thead>
<tr>
<th></th>
<th>Add 1000</th>
<th>Subtract 1000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 7 579 – 3 000 =</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 5 489 – 60 =</td>
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<tr>
<td>c. 6 634 – 500 =</td>
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<tr>
<td>d. 5 676 – 300 =</td>
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<tr>
<td>e. 6 435 – 4 =</td>
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<tr>
<td>f. 8 482 – 40 =</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What do you notice?

3. Complete the table. Always start with the given number.

<table>
<thead>
<tr>
<th></th>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 475</td>
<td></td>
<td></td>
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<tr>
<td>6 382</td>
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<td></td>
</tr>
<tr>
<td>8 455</td>
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<td></td>
</tr>
<tr>
<td>5 383</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7 373</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4. Add the following by breaking down the number to be added.

Example: Calculate 6 352 + 2 584

6 352 + 2 000 → 8 352 + 500 → 8 852 + 80 → 8 932 + 4 → 8 936

<table>
<thead>
<tr>
<th></th>
<th>Add 1 000</th>
<th>Subtract 1000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 5 793 + 3 554 =</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>b. 6 982 + 2 075 =</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>c. 6 898 + 2 181 =</td>
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<td></td>
</tr>
<tr>
<td>d. 1 023 + 7 169 =</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

5. Subtract the following by breaking down the number to be subtracted.

Example: Calculate 8 936 – 3 425

8 936 – 3 000 → 5 936 – 400 → 5 536 – 20 → 5 516 – 5 = 5 511

<table>
<thead>
<tr>
<th></th>
<th>Add 1000</th>
<th>Subtract 1000</th>
<th>Add 100</th>
<th>Subtract 100</th>
<th>Add 10</th>
<th>Subtract 10</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 9 954 – 3 512 =</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. 5 632 – 2 310 =</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 7 692 – 4 451 =</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 3 002 – 1 356 =</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Calculate more …

Solve the problems by identifying the questions, the numbers and the operation (addition or subtraction). Make a drawing if necessary and write down a number sentence. Solve the problem.

- What is the sum of 4 378 and 92 999?
- What is the difference between 6 796 m and 3 785 m?
- What is 3 951 g and 5 638 g together?
- What is the total distance of 6 749 km and 4 827 km?
1. Round the following off to the nearest 10, 100 and 1 000.

**Example:**
Nearest ten 34 \approx 30
Nearest hundred 682 \approx 700
Nearest thousand 8 668 \approx 9 000

<table>
<thead>
<tr>
<th>Nearest ten</th>
<th>Nearest hundred</th>
<th>Nearest thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 \approx 30</td>
<td>682 \approx 700</td>
<td>8 668 \approx 9 000</td>
</tr>
</tbody>
</table>

a. 9 531           b. 4 872           c. 6 467

2. Fill up the tens.

**Example:**
34 + 6 = 40
345 + 5 = 350

<table>
<thead>
<tr>
<th>Tens</th>
<th>Hundreds</th>
<th>Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>34 + 6 = 40</td>
<td>345 + 5 = 350</td>
<td>2 300 + 700 = 3 000, 4 300 + 700 = 5 000</td>
</tr>
</tbody>
</table>

a. 1 428           b. 4 393           c. 3 783

3. Fill up the hundreds.

**Example:**
430 + 70 = 500
2 360 + 40 = 2 400

<table>
<thead>
<tr>
<th>Hundreds</th>
</tr>
</thead>
<tbody>
<tr>
<td>430 + 70 = 500</td>
</tr>
</tbody>
</table>

a. 4 174           b. 6 572           c. 2 908

4. Fill up the thousands.

**Example:**
2 300 + 700 = 3 000
4 300 + 700 = 5 000

<table>
<thead>
<tr>
<th>Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 300 + 700 = 3 000</td>
</tr>
</tbody>
</table>

a. 5 262           b. 7 423           c. 4 351

5. Fill up the tens, hundreds and thousands.

<table>
<thead>
<tr>
<th>Fill up the tens</th>
<th>Fill up the hundreds</th>
<th>Fill up the thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 8 521</td>
<td>8 521 + 9 = 8 530</td>
<td>8 521 + 79 = 8 600</td>
</tr>
<tr>
<td>b. 8 394</td>
<td>8 394 + 7 = 8 397</td>
<td>8 394 + 47 = 8 441</td>
</tr>
<tr>
<td>c. 6 182</td>
<td>6 182 + 7 = 6 189</td>
<td>6 182 + 47 = 6 229</td>
</tr>
<tr>
<td>d. 8 945</td>
<td>8 945 + 7 = 8 952</td>
<td>8 945 + 47 = 8 992</td>
</tr>
<tr>
<td>e. 9 473</td>
<td>9 473 + 7 = 9 480</td>
<td>9 473 + 47 = 9 520</td>
</tr>
</tbody>
</table>

6. Calculate the following.

**Example:** Calculate 4 688 + 65
4 688 + 65 = (4 688 + 12) – 12 + 65 = 4 700 + (65 – 12) = 4 700 + 53 = 4 753

a. 2 768 + 97 =

b. 2 345 + 98 =

c. 5 734 + 97 =

d. 7 472 + 59 =

e. 4 436 + 85 =

Calculate more ...

Make your own word problems with the following numbers and operations.

a. R6 300, R9 450 and ‘difference’
b. 8 040 kg, 1 860 kg and ‘altogether’
c. The sum of 7 450 m and 1 490 m
d. ‘Subtract’ 9 460 millilitres and 5 379 millilitres.
Addition and subtraction up to 4-digits: filling up the tens

1. Round off the following to the nearest 10, 100 and 1 000

<table>
<thead>
<tr>
<th>Example: Nearest ten</th>
<th>Nearest hundred</th>
<th>Nearest thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 ≈ 40</td>
<td>531 ≈ 500</td>
<td>7 429 ≈ 7 000</td>
</tr>
<tr>
<td>82 ≈ 80</td>
<td>865 ≈ 900</td>
<td>5 836 ≈ 6 000</td>
</tr>
</tbody>
</table>

2. Fill up the tens.

Example: 73 + 7 = 80; 321 + 9 = 330

<table>
<thead>
<tr>
<th>a. 8327</th>
<th>b. 2067</th>
<th>c. 2986</th>
</tr>
</thead>
</table>

3. Fill up the hundreds.

Example: 320 + 80 = 400; 3 780 + 20 = 3 800

<table>
<thead>
<tr>
<th>a. 5 778</th>
<th>b. 6 643</th>
<th>c. 2 892</th>
</tr>
</thead>
</table>

4. Fill up the thousands.

Example: 3 200 + 800 = 4 000; 6 400 + 600 = 7 000

<table>
<thead>
<tr>
<th>a. 4 988</th>
<th>b. 4 512</th>
<th>c. 4 974</th>
</tr>
</thead>
</table>

5. Fill up the tens, hundreds and thousands.

<table>
<thead>
<tr>
<th>Fill up the tens</th>
<th>Fill up the hundreds</th>
<th>Fill up the thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 471</td>
<td>4 471 + 9 = 4 480</td>
<td>4 471 + 29 = 4 500</td>
</tr>
</tbody>
</table>

| a. 5 243 | b. 4 224 | c. 1 276 | d. 6 131 |

6. Calculate the following.

Example: 3 648 + 85
= (3 648 + 15 + 85) – 15
= (3 648 + 100) - 15
= 3 748 – 15
= 3 733

<table>
<thead>
<tr>
<th>a. 9 383 + 49 =</th>
<th>b. 6 485 + 46 =</th>
<th>c. 7 399 + 36 =</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>d. 5 044 + 78 =</th>
<th>e. 2 597 + 57 =</th>
<th>f. 3 243 + 88 =</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>g. 1 252 + 69 =</th>
<th>h. 8 184 + 68 =</th>
<th>i. 4 164 + 65 =</th>
</tr>
</thead>
</table>

Make your own word problems with the following numbers and operations:
• R5 300, R8 400 and ‘difference’
• 4 387kg, 1 060 kg and ‘altogether’
• The ‘sum’ of 5 400 m and 6 810 m.
• ‘Subtract’ 8 540 millilitres and 7 698 millilitres.
1. Circle the lightest object.

- Pineapple
- Bus
- Football
- Ant
- Apple
- Chair
- Orange
- Netball
- Car
- Four chairs
- Two apples
- Ten bricks
- Tennis ball
- Paint tin
- Empty bucket
- Shoes
- Socks
- Television set

2. Arrange from heaviest to lightest.

<table>
<thead>
<tr>
<th>Objects</th>
<th>Heaviest to lightest</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Feather, elephant, lunch box.</td>
<td></td>
</tr>
<tr>
<td>b. House, apple, four chairs.</td>
<td></td>
</tr>
<tr>
<td>c. Motor car, two apples, ten bricks.</td>
<td></td>
</tr>
<tr>
<td>d. Tennis ball, full paint tin, empty bucket.</td>
<td></td>
</tr>
<tr>
<td>e. Shoes, socks, television set.</td>
<td></td>
</tr>
</tbody>
</table>

3. Study the objects below and answer the questions.

- Which item is the heaviest? [Answers should be filled in]
- Which item is the lightest? [Answers should be filled in]
- Which items have the same mass? [Answers should be filled in]
- If I had two boxes of washing powder, what would the mass be? [Answers should be filled in]
- If I had three packets of samp, what would the mass be? [Answers should be filled in]

Find pictures of three objects that have a mass less than 1 kg.

- 1 kg
- 500 g
- 100 g
- 200 g
- 250 g
We use **scales** to measure **mass** and **weight**. Most people use both words as if they are the same, though they are different. The **mass** of an object is how much matter it contains. It does not change. The **weight** of an object changes according to gravity. An object weighs six times more on earth than on the moon, and weighs nothing in empty space, even though its mass remains the same everywhere.

A **balance scale** measures **mass**. A **spring scale** measures **weight**. On earth both types of scale give us the same approximate reading, so for everyday practical activities we can also use spring scales (such as bathroom and kitchen scales) to measure mass.

1. **What would you weigh with the following measuring instruments?**
   Would you weigh it in kilograms or grams?

<table>
<thead>
<tr>
<th>Type</th>
<th>For measuring:</th>
<th>Kilograms or grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring scale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance scale</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In an **analogue** scale the stretching of the spring moves a pointer to show what the weight is.

In a **digital** scale the stretching of the spring is measured by an electric instrument which records the weight in numbers on a small display screen.

2. **Which of these scales is digital?**

   ![scale images](image)

3. **Would you measure the mass of the following in grams or kilograms?**

   a. A cow: ____________________________
   b. Flour for baking a cake: ____________________________
   c. Your own mass: ____________________________
   d. A coin: ____________________________

4. **Answer the following questions.**

   a. Will a bag full of feathers have a larger mass than the same size bag half filled with stones? ________

   b. We use grams (g) and kilograms (kg) when measuring mass.
      i. Which unit of measurement do you think we use to measure heavier objects? ________
      ii. Which unit of measurement do you think we use for lighter objects? ________

   c. We make use of scales to weigh objects.
      i. Is there only one type of scale? ________
      ii. Name some of the types of scales we use and what we use them for.

**Measuring the ingredients**

My mother baked a cake. What did she use to measure the ingredients?
Weighing objects

1. What is the maximum reading on these scales?
   a.  
   b.  

2. Fill in the intervals on these scales with a maximum reading of 10 kg.
   
3. How much do the objects weigh on these scales which have a maximum reading of 10 kg?
   a.  
   b.  
   c.  
   d.  

4. Calculate the total mass of all the objects in Question 3.

Your teacher will give you a variety of objects that each weigh $2 \frac{1}{2}$ kg.

These products below or the ones your teacher gave you all weight $2 \frac{1}{2}$ kg. You can prove it by weighing them on a scale.

- WISA
- Ricoffi
- Same Seed Flour

Remember that the abbreviation for kilogram is kg and for gram is g.

- There are 1,000 g in 1 kg. That means $\frac{1}{2}$ kg is 500 g.

We say each weighs $2 \frac{1}{2}$ kg.
5. Do this practical activity using a kitchen scale and suitable objects.

We see that the apple weighs 167 g.
Find objects that weigh about:
- 20 g
- 90 g
- 35 g
- 67 g
- 500 g

The meat weighs 2 kg 850 g.
Find objects that weigh about:
- 3 kg
- 1 kg 500 g
- 3 kg 200 g
- 2 kg 900 g
- 4 kg 750 g

6. Use the information below to complete the table.

<table>
<thead>
<tr>
<th>Number of pencils</th>
<th>Total mass of pencils</th>
<th>Mass pieces</th>
<th>Total mass</th>
<th>Is it balanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 3</td>
<td>6 g</td>
<td>5 g; 1 g</td>
<td>6 g</td>
<td>Yes</td>
</tr>
<tr>
<td>b. 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. 59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. What mass pieces would you use to make the following:

<table>
<thead>
<tr>
<th>Total mass</th>
<th>Mass pieces used</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 g</td>
<td>300 g</td>
</tr>
<tr>
<td>10 Kg</td>
<td>1 000 g</td>
</tr>
<tr>
<td>22 g</td>
<td>575 g</td>
</tr>
<tr>
<td>33 g</td>
<td>865 g</td>
</tr>
<tr>
<td>9 Kg</td>
<td>624 g</td>
</tr>
</tbody>
</table>

8. Draw the pointer on this scale which has a maximum reading of 10 kg to show the following.

- 2 kg
- 3 kg 500 g
- 4 kg 700 g

Heavy

Write down the names of five objects that weigh more than 2 kg 500 g.
Draw a picture of each.
**Term 4**

### Mass: Converting Measuring Units

1. **How much do the objects weigh? Write your answer in:**
   - i. kilograms and grams
   - ii. grams

   **a.**
   - i. [Image of an apple on a scale]
   - ii. [Image of a banana on a scale]

   **b.**
   - i. [Image of a pear on a scale]
   - ii. [Image of a potato on a scale]

   **c.**
   - i. [Image of a bag of tomatoes on a scale]
   - ii. [Image of a basket of apples on a scale]

2. **Show the following on this 10 kg kitchen scale.**
   - a. 4 kg 500 g
   - b. 6 kg 300 g
   - c. 2 kg 100 g
   - d. 9 kg 500 g
   - e. 4 kg 200 g
   - f. 3 kg 600 g

3. **Write the following in grams.**
   - a. 2 kg 250 g = 2 250 g
   - b. 3 kg 500 g =
   - c. 4 kg 150 g =
   - d. 1 kg 200 g =
   - e. 6 kg 750 g =
   - f. 8 kg 950 g =

4. **Write the following in kilograms and grams.**
   - a. 4 150 g = 4 kg 150 g
   - b. 6 550 g =
   - c. 7 650 g =
   - d. 5 250 g =
   - e. 9 950 g =
   - f. 8 750 g =

---

#### Weighing the stew

My mother bought 2 kg 250 g of meat and 1 500 g of vegetables for her stew. How much do the ingredients for the stew weigh?
Which measuring instruments would you use to weigh objects? What kinds of objects would you weigh with them?

1. Colour in the blocks that will make 1 kg.

- a. 1 kg
  - 100 g
  - 500 g
  - 500 g
  - 200 g
  - 50 g

- b. 1 kg
  - 250 g
  - 250 g
  - 100 g
  - 150 g
  - 500 g

- c. 1 kg
  - 250 g
  - 750 g
  - 150 g
  - 100 g
  - 125 g

- d. 1 kg
  - 50 g
  - 150 g
  - 75 g
  - 950 g
  - 250 g

- e. 1 kg
  - 500 g
  - 125 g
  - 50 g
  - 125 g
  - 250 g

2. What does each object weigh?

- A
  - 3 kg
  - 1 kg
  - 500 g
  - 200 g
  - 150 g

- B
  - 2 kg
  - 500 g
  - 250 g
  - 100 g
  - 50 g

- C
  - 1 kg
  - 750 g
  - 150 g
  - 100 g
  - 250 g

- D
  - 1 kg
  - 500 g
  - 250 g
  - 125 g
  - 50 g

3. Use the objects on the left to estimate whether each object is heavier or lighter than kilogram or gram.

- a. Boots
- b. Paper
- c. Rope
- d. Baby bottle
- e. Sugar
- f. Banana

4. A bag of maize meal contains 10 kg. Busi used 2 kg in the first week and 3 kg the next week. She then divided the rest equally into 2 separate bags. What will be the mass each of the 2 remaining bags?

Continue on an extra sheet of paper.

Gram fun...

Look at a newspaper or advertising mail (sometimes called "junk mail"). Find 10 items for which measurements are given in grams.
1. Look at the 3-D objects and answer the questions.

a. [Image of a sphere]
   i. Name this object.
   ii. Does it have a flat or curved surface?
   iii. Can a 3-D object with a curved surface roll or slide?

b. [Image of a rectangular prism]
   i. Name the objects.
   ii. Do they have flat or curved surfaces?
   iii. Can a 3-D object with a flat surface roll or slide?

c. [Image of a triangular prism]
   i. Name the objects.
   ii. Do they have flat or curved surfaces?
   iii. Can a 3-D object with a curved and flat surface roll or slide?

2. Colour the shapes with both flat and curved surfaces.

3. Fill in the missing information in the table.

<table>
<thead>
<tr>
<th>3-D object</th>
<th>Name of 3-D object</th>
<th>Names of shapes that make up the faces</th>
<th>Flat or curved surfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Think about your house (the building itself). What kinds of 3-D objects make up your house? Would your house slide or roll?
1. Look at the nets below.
   a. What shapes can you see?
   b. How many faces can you see?
   c. What 3-D object will it form?

2. Colour the shapes with only flat surfaces.

3. Match the nets and the 3-D objects.

Match the words with the objects:
- Sphere
- Square-based pyramid
- Cone
- Cylinder
- Rectangular prism

Find objects in your environment that looks similar to the object below.
Describing, ordering and comparing common fractions

1. Use the information below to describe the fraction shapes.

a. 

b. 

i. 

ii. 

iii. 

2. Colour the shape according to the information given.

a. 

b. 

c. 

d. 

e. 

f. 

3. Divide and colour the shapes according to the information given.

a. 

b. 

c. 

d. 

4. Use the fraction wall to help you. Fill in >, < or =.

a. 

b. 

c. 

d. 

e. 

f. 

Fractions in order

Order the following fractions: $\frac{1}{2}, \frac{4}{5}, \frac{1}{3}, \frac{3}{4}, \frac{1}{5}, 1$
A fraction of a number

What do you think the questions will be? We did the first one for you.

My sister bought 8 lollipops. 4 lollipops are strawberry flavour. What fraction is strawberry flavour?

1. Draw a picture to solve the problems.
   a. One tenth of the 30 bananas is rotten. How many bananas are rotten?

   b. There are 18 chairs in the classroom room. One third of them are green in colour. How many chairs are not green in colour?

   c. One half of the 6 people in a taxi are going to town. What fraction of people are going to town?

   d. There are 64 children in the park, three sixths of them are wearing blue shoes. How many children in the park are wearing blue shoes?

   ________________
   How many do not like chocolate ice-cream?

   ________________

Children at my party

Six tenths of the children at my party like chocolate ice-cream.

How many children like chocolate ice-cream?

____________________________

How many do not like chocolate ice-cream?

____________________________
Each strip represents one whole. Describe it in fractions using the colours.

1. Write which part of the fraction is coloured and which part is not.

   a. [Fraction coloured: \(\frac{2}{10}\), Fraction not coloured: \(\frac{8}{10}\)]
   
   b. [Fraction coloured: [Diagram], Fraction not coloured: [Diagram]]
   
   c. [Fraction coloured: [Diagram], Fraction not coloured: [Diagram]]
   
   d. [Fraction coloured: [Diagram], Fraction not coloured: [Diagram]]
   
   e. [Fraction coloured: [Diagram], Fraction not coloured: [Diagram]]

2. Colour in to show that the following are equal

   a. \(\frac{5}{10} = \frac{1}{2}\)
   
   b. \(\frac{4}{10} = \frac{2}{5}\)
   
   c. \(\frac{6}{10} = \frac{3}{5}\)
   
   d. \(\frac{8}{10} = \frac{4}{5}\)

3. Colour in both diagrams in every box.

<table>
<thead>
<tr>
<th>8 (\frac{10}{10})</th>
<th>Three tenths</th>
<th>Eight tenths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. If we divide a shape into ten equal pieces we can write each piece as \(\frac{1}{10}\). Show \(\frac{1}{10}\) on each shape. We did the first one for you.

5. If \(\frac{1}{10} = \frac{1}{10}\) What is:

   a. \(\frac{1}{2} = \frac{5}{10}\)
   
   b. \(\frac{1}{3} = \frac{3}{10}\)
   
   c. \(\frac{1}{4} = \frac{2}{10}\)
   
   d. \(\frac{1}{5} = \frac{2}{10}\)
   
   e. \(\frac{1}{6} = \frac{1}{10}\)
   
   f. \(\frac{1}{7} = \frac{1}{10}\)

Decimal diagrams

Draw diagrams that represent these fractions:

- \(\frac{1}{8}\)
- \(\frac{1}{4}\)
- \(\frac{1}{2}\)
- \(\frac{1}{3}\)
- \(\frac{1}{7}\)
- \(\frac{1}{10}\)

The diagrams should be different to the ones you have already used.
1. Write which part of the fraction is coloured and which fraction not. Then show the same fraction on the different shape.

   a. 
   
   b. 
   
   c. 
   
   d. 
   
   e. 

2. Colour in the parts of the circle

   - 10/10
   - 4/10
   - 8/10

3. Show the following by making drawings. I have 10 sweets. I divide it between ___ children. What fraction of the sweets will each child get.
   a. 2 children
   b. 5 children

4. Give a fraction that is equal to:
   a. 2/10 = 
   b. 4/10 = 
   c. 6/10 = 
   d. 8/10 = 

Ten fingers

How many fingers have got finger puppets on? Give your answer in fractions.
Fraction problems

How fast can you complete the following?

\[
\begin{align*}
\frac{1}{4} + \frac{2}{4} &= \frac{3}{4} \\
\frac{4}{6} + \frac{1}{6} &= \frac{1}{2} \\
\frac{1}{3} + \frac{1}{3} &= \frac{2}{3} \\
\frac{1}{4} + \frac{1}{4} &= \frac{1}{2}
\end{align*}
\]

\[
\begin{align*}
\frac{2}{8} + \frac{3}{8} &= \frac{5}{8} \\
\frac{1}{3} + \frac{2}{3} &= \frac{1}{1} \\
\frac{6}{8} + \frac{3}{8} &= \frac{9}{8}
\end{align*}
\]

1. Use the pictures or diagrams to help you to solve the problem.
   a. There are eight pieces of pizza. Sipho ate five eighths of the pizza for lunch. He ate one eighth of the pizza for supper. How much pizza has he eaten in all?

   [Picture of a pizza]

   b. There were three fourths of a litre of milk in the refrigerator. There was also one fourth of a litre of chocolate milk. How much more plain milk was there than chocolate milk?

   [Picture of bottles of milk]

c. On Monday Ben picked one sixth of a kilogram of strawberries. On Tuesday he picked three sixths of a kg of strawberries. What is the total mass of strawberries Ben picked?

   [Picture of strawberries]

d. There were 5 bananas on the counter. Two fifths of the bananas were eaten yesterday. One fifth of the bananas were eaten today. What fraction of the bananas has been eaten in all?

   [Picture of bananas]

Make your own problems

Look at the pictures and make your own fraction word problems.

1 litre 1 kilogram 1 metre
1. Solve the following by making your own drawing or diagram.
   a. Bongi ate three eighths of her orange before lunch and four eighths of her orange after lunch. How much of her orange did she eat in all? Draw a picture to show your answer.
   b. Ben has six rand. He spent four sixths of his money on sweets and one sixth of his money on milk. What fraction of his money did he spend altogether? Draw a picture to show your answer.
   c. Muzi added four fifths of a cup of flour to the chocolate cake. He added one fifth of a cup of flour to the strawberry cake. How much more flour was needed for the chocolate cake? Draw a picture to show your answer.
   d. On Friday James ate a third of a kilogram of strawberries. On Saturday he ate two thirds of a kilogram of strawberries. What was the total weight of the strawberries that James ate? Draw a picture to show your answer.

Cutting the cake
My mother baked a cake. She cut it into 10 equal slices. We ate 6 equal pieces.
• What fraction of the cake did we eat?
• What fraction of the cake did we not eat?
• Write it as a sum.

How fast can you complete the following:

\[
\begin{align*}
\frac{1}{7} + \frac{3}{7} &= \quad \frac{2}{8} + \frac{5}{8} &= \quad \frac{1}{4} + \frac{1}{4} &= \\
\frac{1}{3} + \frac{2}{3} &= \quad \frac{3}{6} + \frac{2}{6} &= \quad \frac{3}{8} + \frac{3}{8} &= \\
\frac{4}{8} + \frac{3}{8} &= \quad \frac{1}{6} + \frac{4}{6} &= \quad \frac{3}{5} + \frac{2}{5} &= \\
\frac{2}{4} + \frac{1}{4} &= \quad \frac{6}{8} + \frac{2}{8} &= \quad \frac{1}{5} + \frac{3}{5} &= \\
\end{align*}
\]
1. Complete the following:
   a. You have 97 objects. Divide them into groups of 4. How many do you have in a group? How many objects are left over that do not fit into a group?
   b. Do a division sum for 97 divided by 4.

2. Complete the table. If you need more space for your picture, use a separate sheet of paper to draw it.

<table>
<thead>
<tr>
<th>How many objects are left over that do not fit into a group?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divide 10 objects into 5 groups.</td>
</tr>
<tr>
<td>Divide 100 objects into 8 groups.</td>
</tr>
<tr>
<td>Divide 100 objects into 7 groups.</td>
</tr>
<tr>
<td>Divide 100 objects into 6 groups.</td>
</tr>
</tbody>
</table>

3. Look at the number line and answer the questions below:
   a. How many **red** groups do you have from 0 – 5 000?
   b. What is the size of each group?
   c. Write a multiplication sum for the **red** groups.
   d. Write a division sum for the **red** groups.
   e. How many **green** groups do you have from 0 – 5 000?
   f. What is the size of each group?
   g. Write a multiplication sum for the **green** groups.
   h. Write a division sum for the **green** groups.

4. We have shown the division of 4 750 by 250 on this number line. Answer the questions.
   a. How many groups do you have?
   b. How much is left after you have made all the groups?
   c. Complete the number sentence: 4 750 ÷ 250 = _____________ rem _______

   How many objects can you make that will give you a total of 5 000? Remember all the groups must be the same size.
**Division: 3-digits by 1-digit**

Quick recall.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
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<tr>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Example 1:**

633 ÷ 3 = (600 ÷ 3) + (30 ÷ 3) + (3 ÷ 3)

Test the answer.

1. Show your calculations in your writing book:
   a. 481 ÷ 3 =
   b. 635 ÷ 3 =
   c. 744 ÷ 3 =
   d. 815 ÷ 3 =
   e. 965 ÷ 3 =

2. Show your calculations in your writing book:
   a. 267 ÷ 5 =
   b. 578 ÷ 5 =
   c. 650 ÷ 5 =
   d. 812 ÷ 5 =
   e. 942 ÷ 5 =

3. Show your calculations in your writing book:
   a. 218 ÷ 7 =
   b. 350 ÷ 7 =
   c. 482 ÷ 7 =
   d. 678 ÷ 7 =
   e. 928 ÷ 7 =

4. Show your calculations in your writing book:
   a. 150 ÷ 8 =
   b. 267 ÷ 8 =
   c. 615 ÷ 8 =
   d. 863 ÷ 8 =
   e. 941 ÷ 8 =

5. Show your calculations in your writing book:
   a. 230 ÷ 9 =
   b. 349 ÷ 9 =
   c. 487 ÷ 9 =
   d. 865 ÷ 9 =
   e. 985 ÷ 9 =

**Example 2:**

689 ÷ 4 = (500 ÷ 4) + (80 ÷ 4) + (9 ÷ 4)

Test the answer.

6. Say in each case whether there is a remainder or not, and if there is, then what it is.
   Show all your calculations in your writing book.
   a. 157 ÷ 8 =
   b. 648 ÷ 4 =
   c. 531 ÷ 9 =
   d. 842 ÷ 6 =
   e. 914 ÷ 5 =
   f. 999 ÷ 7 =

7. The farmer collected 574 eggs. He packed them in half a dozen containers. How many containers did he fill? Were there any eggs left? Check your answer.

---

**Example 3:**

7.2
---

100 ÷ 2 =
64 ÷ 2 =
Make your own sum.

You need to go and practice some of these sums at home.
1. Thami and Sipho divided their money in the following ratios. Say how much money they got each time. Colour Thami’s money **red** and Sipho’s money **blue**.

- a. R60 in the ratio of 4:2
- b. R80 in the ratio of 2:6
- c. R400 in the ratio 1:3
- d. R300 in the ratio 3:3
- e. R800 in the ratio 3:1
- f. Make your own drawing to show. R100 in the ratio 8:2

2. Solve the problems

**Example:**
Thandi and Lisa win R50 between them. They agree to divide the money in the ratio 2:3. How much does each person receive?

Thandi gets 2 parts and Lisa gets 3 parts. This is a total of 5 parts.

They have R50. R50 divided by 5 parts = 10

**Order**
It’s important to notice what order the parts of the ratio are written in. The ratio 2:3 is not the same as 3:2.

If we swap the order to 3:2 then Thandi would get more than Lisa.

To keep it the same as in the example we could say that the ratio of Lisa’s money to Thandi’s would be 3:2

Thandi gets 2 parts and Lisa gets 3 parts. This is a total of 5 parts.

They have R50. R50 divided by 5 parts = 10

Thandi gets 2 parts x R10 = R20.
Lisa gets 3 parts x R10 = R30

**a.** John and Manoj win a prize of R800, which they agree to share in the ratio 5:3. How much does each person get?

**b.** A necklace is made using red and blue beads in the ratio 4:2. If there are 60 beads in the necklace:

i) How many are red?

ii) How many are blue?
1. How many steps will the person walk:
   a. To the flowers?
   b. From the flowers to the dog?
   c. From the dog to the cat?
   d. From the cat to where the person started walking?
   e. What is the total distance that the person walked?

2. What is the total distance around these shapes.
   a. _____ units.
   b. _____ units.
   c. _____ units.
   d. _____ units.
   e. _____ units.
   f. _____ units.

3. Use the grid below and make drawings of shapes with the following perimeter:
   a. A blue shape with a perimeter of 16
   b. A red shape with a perimeter of 12
   c. A green shape with a perimeter of 18
   d. A yellow shape with a perimeter of 8
   e. A brown shape with a perimeter of 10

We call the distance around a shape its perimeter.
## Area Measurement in Square Units

**Term 4**

### 1. How many square units are there in each of these shapes?

<table>
<thead>
<tr>
<th>Shape</th>
<th>Square Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td></td>
</tr>
</tbody>
</table>

### 2. Draw different shapes with the same area. You can use Cut-out 8 squared paper for this question.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Square Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>A rectangle with 12 square units.</td>
</tr>
<tr>
<td>b.</td>
<td>A different rectangle with 12 square units.</td>
</tr>
<tr>
<td>c.</td>
<td>A different rectangle with 12 square units.</td>
</tr>
<tr>
<td>d.</td>
<td>A square with 16 square units.</td>
</tr>
<tr>
<td>e.</td>
<td>A rectangle with 16 square units.</td>
</tr>
<tr>
<td>f.</td>
<td>A different square with 16 square units.</td>
</tr>
<tr>
<td>g.</td>
<td>Any shape with 18 square units.</td>
</tr>
<tr>
<td>h.</td>
<td>Any shape with 18 square units.</td>
</tr>
<tr>
<td>i.</td>
<td>Any different shape with 18 square units.</td>
</tr>
</tbody>
</table>
1. How many square units in each shape?

- a. 
- b. 
- c. 
- d. 
- e. 
- f. 

I see 2 squares and 4 half squares. 4 half squares give me 2. 4 plus 2 equals to 6 square units.

2. Measure and label the length and the width of the sides.

- a. 
- b. 
- c. 

3. Use your ruler and measure the sides of the shapes. Give your answer in mm.

- a. 
- b. 
- c. 
- d. 
- e. 
- f. 

Length: 
Width: 
Total distance around the shape: 

Length: 
Width: 
Total distance around the shape: 

Length: 
Width: 
Total distance around the shape: 

Length: 
Width: 
Total distance around the shape: 

Length: 
Width: 
Total distance around the shape:
1. Answer the following questions:
   a. Look at the first layer. How many cubes are in this layer? [ ]
   b. How many cubes are in the:
      2nd layer? [ ] 3rd layer? [ ] 4th layer? [ ]

2. What is the total number of cubes in the box?
   a. Calculate it using addition.
   b. Calculate it using multiplication.

2. How many cubic units are there?
   a. [ ] cubic units  b. [ ] cubic units
   c. [ ] cubic units  d. [ ] cubic units
   e. [ ] cubic units  f. [ ] cubic units
   g. [ ] cubic units  h. [ ] cubic units

In order
List the objects above in order, from the smallest to the biggest volume.
[ ]

This is a cubic unit
1. Show the length, width and height of each block.

2. Without counting each cube, how many cubic units are there?

3. Without counting each cube, how many cubic units are there?

4. Without counting each cube, how many cubic units are there?

5. Without counting each cube, how many cubic units are there?
More and more volume

1. Give three ways to calculate the cubic units of the object

   a.

   Solution 1: 
   Solution 2: 
   Solution 3:

   b.

   Solution 1: 
   Solution 2: 
   Solution 3:

   c.

   Solution 1: 
   Solution 2: 
   Solution 3:

   d.

   Solution 1: 
   Solution 2: 
   Solution 3:

3. How many cubic units are in this model of a modern building? Use the table to help you.

<table>
<thead>
<tr>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

Draw your own model of a modern building using cubic units. It should have more than 100 cubic units. How many cubic units does your model have?
1. Where is the boy?

2. Draw a girl in:

3. Use the grid to answer the questions:

   | A | B | C | D | E | F | G | H | I | J |
   ---|---|---|---|---|---|---|---|---|---|
   1  |   |   |   |   |   |   |   |   |   |
   2  |   |   |   |   |   |   |   |   |   |
   3  |   |   |   |   |   |   |   |   |   |

   Where will you find a?
   a. Green hexagon
   b. Yellow square
   c. Green square
   d. Red square
   e. Orange hexagon
   f. Pink pentagon
   g. Purple pentagon

4. Draw the following on the grid:
   a. Blue triangle in B4
   b. Yellow circle in E9
   c. Red pentagon in C1
   d. Green rectangle in F3
   e. Purple hexagon in J10
   f. Green triangle in H8
   g. Blue hexagon in G10
   h. Blue triangle in I 6
   i. Brown square in E 5

Fun walk ...

- John walks 3 steps across and 2 steps down. What items did John get?
- John walks 1 step across and 3 steps down. What items did John get?
- John walks 3 steps across and 1 step down. What items did John get?

NB: Remember, when writing items you start by recording the item that is across before recording the items that go downwards.
Position and movement – more working with maps

You can use your fingers to help you work out in which block an object can be located.

This example shows us that sometimes the object being located does not fit in only one block. This means that we need to identify all the blocks this object can be located in.

1. Use the map to answer the questions. Give the map reference and province.

2. Where will you find:
   a. North West?
   b. Western Cape?
   c. Eastern Cape?
   d. Free State?
   e. Gauteng?
   f. Northern Cape?
   g. KwaZulu-Natal?
   h. Limpopo?
   i. Mpumalanga?

3. Colour Gauteng red in the map in Question 1.

4. Draw your own map and write five questions that your friend can try to answer.

   A B C D E F
   1
   2
   3
   4
   5

   a. Cow?
   D3 Free State
   d. Diamond?
   b. Grapes?
   e. Elephant?
   c. Fish?
   f. Banana?
Tessellations

What do you notice about the shapes? Are there spaces in-between? Do the shapes overlap?

These are tessellations. What do you think ‘tessellation’ means?

A tessellation is a pattern made of one or more identical shapes. The shapes must:
• fit together without any gaps
• not overlap

1. Answer the questions for each pattern.
   i. What shapes have been used?
   ii. Are these patterns tessellations? Why?

2. Complete the tessellation
   a.
   b.

3. Answer the following questions for each pattern.
   i. Are these patterns tessellations
   ii. Give a reason for your answer.

Create your own tessellating patterns using:
• Squares and rectangles
• Triangles of different sizes
2. Describe the patterns below by choosing the correct answer. Pattern with symmetry / pattern using 3-D objects / pattern using straight lines / pattern using 2-D shapes.

3. Describe the pattern.

1. Use the words below to complete the description of the patterns. symmetrical, 2-D shapes, tessellations, pattern, straight lines

Let’s tessellate a shape that you find in nature.

a. The pattern I see on the floor looks like a tessellation pattern using ____________________.

b. The pattern I see is made of ________________.

d. The pattern I see on the floor looks like a ________________ pattern using 2-D shapes.

e. The __________________ I see on the artwork looks like a tessellation pattern using 2-D shapes. This pattern is also _________________________.

Describing patterns

These examples of patterns are made by using 2-D shapes, 3-D objects, and lines of symmetry. Only look at the pictures and then describe it. Do you get the same answer as the answer below.

Term 4

136
More on describing patterns

Look at the three different patterns.
- Are the colours being repeated?
- Is the square being repeated?
- Would you look at the rows or columns when you describe the pattern?

1. Complete the patterns and then describe each.

   a.
   ![Pattern A]

   b.
   ![Pattern B]

2. Complete the sentences to describe the patterns.

   a.
   ![Pattern C]

   b.
   ![Pattern D]

   c.
   ![Pattern E]

   d.
   ![Pattern F]

Quilt

Design your own patterned quilt. Describe it.
What happens to the petal?

1. Look at the patterns and complete the table below.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Blocks</th>
<th>Pattern</th>
<th>Blocks</th>
<th>Pattern</th>
<th>Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td>b.</td>
<td></td>
<td>c.</td>
<td></td>
</tr>
</tbody>
</table>

This is a pattern. Design your own pattern and give it to a friend to solve.
More geometric patterns

1. Copy the pattern:
   a. 
   b. 
   c. 

2. Copy the patterns:

3. Copy the pattern.

Explain what is happening with this pattern.
1. Break up the number in four different ways. The example will guide you.

a. 9 451
b. 7 843
c. 8 986
d. 8 965
e. 9 572
f. 7 764
g. 7 897
h. 8 547
i. 9 698

Example 1: 9 000 + 400 + 50 + 1
Example 2: 8 000 + 1 400 + 50 + 1
Example 3: 9 000 + 300 + 130 + 1
Example 4: 9 000 + 400 + 40 + 11

2. Calculate the following using the example to guide you. You might need some extra paper.

Example:
Calculate: 9 652 – 4 375
9 652 – 4 375 = (9 000 + 600 + 50 + 2) – 4 000 – 300 – 70 – 5
= (9 000 + 500 + 140 + 12) – 4 000 – 300 – 70 – 5
= (9 000 – 4 000) + (500 – 300) + (140 – 70) + (12 – 5)
= 5 000 + 200 + 70 + 7
= 5 277

a. 7 965 – 4 487 =
b. 8 157 – 3 079 =
c. 9 635 – 3 257 =

3. Solve the following. My mother had R8 000 and spent R4 578 on new furniture. What was her change?

Problem solving

- My mother bought 13 550 mm of ribbon. She used 2 975 mm. How much ribbon is left?
- There was 1 650 ml juice in the bottle. My brother drank 350 ml. How much juice is left in the bottle?
- My dog weighs 4 550 g. My sister’s dog weighs 3 785 g. What is the difference in their weight?
1. Calculate the following.

Example: $8\ 753 + 1\ 000 = 9\ 753$

<table>
<thead>
<tr>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 10</th>
<th>Add 10</th>
<th>Subtract 1</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>9\ 534</td>
<td>8\ 617</td>
<td>8\ 536</td>
<td>8\ 728</td>
<td>5\ 649</td>
<td>5\ 649 – 2\ 000 =</td>
<td>3\ 617</td>
<td>3\ 617 – 3\ 000 =</td>
</tr>
</tbody>
</table>

What do you notice?

2. Calculate the following.

Example: $8\ 753 – 1\ 000 = 7\ 753$

<table>
<thead>
<tr>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 10</th>
<th>Add 10</th>
<th>Subtract 1</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7\ 169</td>
<td>3\ 135</td>
<td>6\ 825</td>
<td>5\ 649</td>
<td>6\ 543 + 20 =</td>
<td>8\ 617 – 3\ 000 =</td>
<td>2\ 014</td>
<td>2\ 014 – 2 =</td>
</tr>
</tbody>
</table>

What do you notice?

3. Complete the table. Always start with the given number.

<table>
<thead>
<tr>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 10</th>
<th>Add 10</th>
<th>Subtract 1</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>6\ 459</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4\ 572</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7\ 197</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5\ 475</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3\ 216</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Add the following by breaking down the number to be added.

Example: Calculate $4\ 658 + 3\ 271$

$4\ 658 + 3\ 000 \rightarrow 7\ 658 + 200 \rightarrow 7\ 858 + 70 \rightarrow 7\ 928 + 1 \rightarrow 7\ 929$

<table>
<thead>
<tr>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 10</th>
<th>Add 10</th>
<th>Subtract 1</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>5\ 793 + 3\ 554</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6\ 982 + 2\ 075</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6\ 898 + 2\ 181</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Subtract the following by breaking down the number to be subtracted.

Example: Calculate $6\ 478 – 3\ 235$

$6\ 478 – 3\ 000 \rightarrow 3\ 478 – 200 \rightarrow 3\ 278 – 30 \rightarrow 3\ 248 – 5 \rightarrow 3\ 243$

<table>
<thead>
<tr>
<th>Add 1 000</th>
<th>Subtract 1 000</th>
<th>Add 100</th>
<th>Subtract 10</th>
<th>Add 10</th>
<th>Subtract 1</th>
<th>Add 1</th>
<th>Subtract 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>3\ 275 – 1\ 438</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8\ 159 – 3\ 754</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5\ 315 – 2\ 946</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4\ 952 – 3\ 966</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Solving problems by calculating

Solve the problems by identifying the questions, the numbers and the operation (addition or subtraction), make a drawing if necessary and write down a number sentence. Solve the problem:

- What is the sum of R2 999 and R3 534?
- What is the difference between 4 738 m and 8 735 m?
- What is the sum of 4 983 g and 3 982 g?
- What is the sum of 4 983 km and 4 894 km?
1. Tick to show if the balls were sold.

<table>
<thead>
<tr>
<th>Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3,50</td>
</tr>
<tr>
<td>R2,00</td>
</tr>
<tr>
<td>R1,50</td>
</tr>
<tr>
<td>R1,00</td>
</tr>
<tr>
<td>R0,50</td>
</tr>
</tbody>
</table>

a. What would I have got if I sold all the balls?
Show your calculations here.

R24,99
R23,99
R22,99
R21,99
R20,99
R19,99
R18,99
R17,99
R16,99
R15,99
R14,99
R13,99
R12,99
R11,99
R10,99
R9,99
R8,99
R7,99
R6,99
R5,99
R4,99
R3,99
R2,99
R1,99
R0,99
R99,99

b. What did I actually get for selling the balls?
Show your calculations here.

R49,99
R34,99
R9,99
R24,99
R18,99
R35,99
R12,99
R99,99
R64,99
R55,99

2. Colour in the money you get in blue, and the money you spend in orange.

<table>
<thead>
<tr>
<th>Money I get</th>
<th>Money I spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket money R150</td>
<td>Burger R25</td>
</tr>
<tr>
<td>Tuck shop R15</td>
<td>Cool drink R8</td>
</tr>
<tr>
<td>Extra chores R50</td>
<td>Book R50</td>
</tr>
<tr>
<td>Stationary R22</td>
<td>Airtime R12</td>
</tr>
<tr>
<td>Jewellery R18</td>
<td>Birthday money R100</td>
</tr>
<tr>
<td>Cool drink R8</td>
<td>Extra chores R50</td>
</tr>
<tr>
<td>Book R50</td>
<td>Ice skating R25</td>
</tr>
<tr>
<td>Extra Chores R30</td>
<td>Movies R25</td>
</tr>
<tr>
<td>Pocket money R150</td>
<td>Jeans R99</td>
</tr>
<tr>
<td>Birthday money R100</td>
<td>Sweet R6</td>
</tr>
<tr>
<td>CD special R50</td>
<td>Extra chores R40</td>
</tr>
<tr>
<td>Magazine R50</td>
<td>Tuck shop R12</td>
</tr>
<tr>
<td>Sweets R15</td>
<td>Airtime R15</td>
</tr>
<tr>
<td>Extra chores R30</td>
<td>Birthday card R10</td>
</tr>
</tbody>
</table>

3. Complete this table using the information above.

<table>
<thead>
<tr>
<th>Money I get</th>
<th>Money I spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>R49,99</td>
<td>R34,99</td>
</tr>
<tr>
<td>R9,99</td>
<td>R24,99</td>
</tr>
<tr>
<td>R24,99</td>
<td>R18,99</td>
</tr>
<tr>
<td>R35,99</td>
<td>R12,99</td>
</tr>
<tr>
<td>R99,99</td>
<td>R64,99</td>
</tr>
<tr>
<td>R55,99</td>
<td>R55,99</td>
</tr>
</tbody>
</table>

a. Did I stay within my budget?
Explain:

Budget your winnings

If you win a R1 000 prize what will you do with the money?
### Term 4

**Probability**

1. **Answer: Likely or unlikely to happen.**
   - I am going to eat supper.
   - A three-months-old baby is going to walk.
   - It is going to snow tomorrow.
   - I will walk to school tomorrow.
   - I will not go to school tomorrow.
   - My mom is going to work tomorrow.
   - My teacher is not coming to school tomorrow.
   - The sun will shine tomorrow.
   - It is going to rain this afternoon.
   - I am going to ride a bicycle this afternoon.

2. **Draw a picture.**
   - Something that **will likely** happen with you today.
   - Something that **will not likely** happen with you today.

3. **Use the words and write sentences on:**
   - play with friends
   - do my homework
   - play with my dog
   - eat lunch
   - going on holiday
   - eat breakfast
   - see my grandma

   **Something that will **likely** happen with you today.**

   **Something that will **not likely** happen with you today.**

**Ask your family to help you to complete the diagram below.**

- **Likely to happen**
- **Unlikely to happen**
1. Take a non-transparent bag. Make two cards that are similar to the ones below, and place them in the bag.

Take a card from the bag without looking. Check which card you have drawn. Put it back in the bag. Draw a card again. Is it the same or a different card?

b. Did your friend draw the same cards?

c. Did the people in your group all draw the same cards?

Now do this activity 50 times. (Draw a card, record your results using tallies and place the card back into the bag). Write your results in the table below.

Compare your results with your friend’s results.

2. Make your own dice with the following colours and then answer the questions.

a. What colour do you like the most on the dice?

b. What colour do you like the least on the die?

Ask your friend the same questions. What did she or he answer?

d. Roll the dice. On what colour did it land?

e. Ask your friend to roll the dice. On what colour did it land?

f. Did you land on the same colour?

g. Did the other children in your class land on the same colour?

3. Roll the dice 50 times and record your results in the table below using tallies.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>