GUIDELINES FOR ADAPTATION OF LTSM AND ASSESSMENT FOR LEARNERS WITH VISUAL IMPAIRMENT

DECEMBER 2013
1. INTRODUCTION

Young children start learning about their environment by looking at objects and pictures. Reading and writing of letters follow only later when the child has already learnt a lot through visual and audio communication. For the child with a visual impairment the world can be very dull if we do not provide the necessary stimulation.

A person with normal vision learns 80% of what they know by incidental learning of which a lot is graphically communicated. The visually impaired child needs to be exposed to the same variety of experiences, but with reduced visual complexity so that they are enabled to gain the same knowledge through senses other than vision, without reducing everything to “non-visual” experiences.

It is important to remember that braille graphic information cannot be scanned at a glance. The learner needs to be taught to explore tactile text, graphics, objects and shapes systematically. Additional time will be needed and graphic material need to be presented simpler and often in a very different way. Sometimes it is not possible to make a meaningful two-dimensional graphic representation and an object needs to be used for concept development.

This does not mean that the visually impaired learner is a slow learner. They only use different methods and deserve suitably adapted material and methodologies.

**Blind learners enjoy pictures as much as learners with normal vision.** It is a good idea to provide tactile pictures in children’s books even if they are not needed for content.

2. REASONS FOR ADAPTATION

- To make knowledge, skills, understanding of concepts and tasks accessible
- To make tasks meaningful
- To give the visually impaired learner an equal opportunity

3. GENERAL PRINCIPLES UNDERLYING ADAPTATION

1. Only adapt if it is necessary to provide access.
2. Assess the same skills, knowledge and concepts as in the original question so that the same assessment objective is reached.
3. Keep the same level of difficulty as the original question.
4. Keep the balance in terms of weighting and content of questions in the original paper.

5. Avoid requiring a disproportionately large amount of time for relatively few marks.

6. Replace material only when it is essential to provide access for the visually impaired candidate to meet the same assessment objective.

7. Guard against complete removal of visual material.

4. APPROACHES TO ADAPTATION

In some questions it might be necessary to use more than one of the approaches listed below to adapt the question successfully.

1. Picture or diagram simplified or shown differently to reduce visual complexity
2. Picture/diagram replaced with written description
3. Picture/diagram supplemented with written description
4. Picture/diagram replaced with real item or model
5. Unnecessary picture/diagram removed
6. Amount of information reduced
7. Measurements altered
8. Inherently visual material replaced with equivalent non-visual material
9. Question/task that requires learner to draw, replaced/reversed or written explanation accepted as response

5. LTSM

• Textbooks are usually not adapted, except for foundation phase where the material is primarily graphic.
• In classroom teaching, learners should be exposed to the original exercises and try to do as many of the original questions as possible. They should be encouraged to make simple drawings with found materials, string, glue, prestik, wikkistix, wax crayons (can feel the wax on paper), the Perkins brailler or in any other way possible.

6. ASSESSMENT

• Distinguish between formal (external examinations or tests for promotion/progression purposes) and informal (not for promotion purposes or
diagnostic) assessment. Formal assessment should be adapted or modified according to the agreed principles.

- In classroom/informal assessment, learners can be given or allowed to use objects to find or show an answer or to use prestik to indicate their choice of answer.
- In external or formal assessment, this is not practical, because the learner cannot ‘record’ the answer in a ‘permanent’ way by using prestik to indicate their answer in multiple choice questions, or by using string to draw a graph.
- In some countries, learners are given an assistant who then makes a drawing according to the learner’s instructions or records the learner’s answers. Even in classroom assessment this will be difficult and time consuming without a class assistant or two.

7. QUALITY BRAILLE

- Learners should always be given an accurate representation in the correct braille code of what is in the original document.
- The layout must be clear so that the document can be quickly scanned to find specific information.

8. GRAPHIC MATERIAL

- Start with tactile material at a very young age.
- Remember that learners need to be taught how to read diagrams, tables and graphs using both hands and all fingers.
- Diagrams and graphs must be as clear as possible. Keep the braille reader in mind when producing tactile graphics.
- Keep the important facts/content/question in mind when designing the graphic.
- Omit unnecessary information or parts of the diagram or irrelevant sections of a map.
- Use a larger and clearer scale or size.
- Write the heading, legend/key and transcriber’s notes above/before the diagram or graph. Avoid making unlabelled graphics.
- Place labels in a manner that leaves the reader in no doubt as to what is being identified. Labels are always written horizontally.
- Keep in mind the knowledge level, skills and age level of the readers.
- Draw graphics in two dimensions where possible, except for some mathematical and scientific drawings.
- A 3D picture can also be split into different 2D pictures. Complicated drawings can be split into different drawings if it will make the drawing visually more accessible.
- Avoid lines that are too close together and will be hard to distinguish.
• Do not expect blind learners to identify things like flowers, people, animals, etc. if they are not labelled. Replace these with symbols or write a label/key naming the flower or animal.
• Use different textures to differentiate between objects, e.g. water and land in maps or finding objects that are the same.
• Present information in an informative way, not as a guessing game.
• Do not say ‘can you tell what this is?’. Rather say, ‘This is a drawing of a church. You will see the steeple at the top’. Give the learner a starting point or point of reference to make sense of the drawing.

9. INSTRUCTIONS

• Remember to change the general instructions of a braille question paper, as well as the instructions for individual adapted questions.
• **Do not use any of these:**
  Start EACH section on a NEW page
  Rule off after each section.
  Leave a line after EACH answer.
  Answer all the questions in the spaces provided.
  Write ALL the answers in the ANSWER BOOK.
  Do ALL drawings in pencil and label them in blue or black ink.
  Place a cross in the box next to the correct answer.
  Circle the letter above the correct word.
  Write the question number above each answer.
  Answer SIX questions as follows in the ANSWER BOOK
  Answer SECTION A on the attached ANSWER SHEET and place it in the BACK of your ANSWER BOOK.

10. MEMORANDUM

• Make sure the memorandum is adapted according to the adapted questions and is used for marking braille answers.

Examples of different approaches
1. Picture or diagram simplified or shown differently

Foundation Phase

Grade 1 Mathematics

Find the picture that is the same as the one in the first box.

Adaptation:

Find the picture that is the same as the first one. Is it 2 or 3 or 4?

a.

b.
Grade 3 Mathematics

22. Help the puppy to find his way to his kennel.

The puppy runs to the tree.

He feels thirsty and runs to the dam to drink water.

He runs to the bus and then to his kennel.

22.1 Draw arrows on the grid to show how he ran.

22.2 How many blocks did he run altogether?
Adaptation:

22. Help the puppy to find his way to his kennel.
Study the blocks carefully and follow the instructions.
The puppy runs to the tree.
He feels thirsty and runs to the dam to drink water.
He runs to the bus and then to his kennel.

```
   |   |   |
---|---|---|
   |   | puppy
---|---|---|

   |   |   |
---|---|---|
   |   |   |
---|---|---|

   |   |   |
---|---|---|
   |   |   |
---|---|---|

   |   |   |
---|---|---|
   |   |   |
---|---|---|

dam |   | bus
    |   |   |
    |   |   |
    |   |   |
    |   |   |

kennel
```

22.1 How many blocks did he run altogether?

22.2 If the puppy is still thirsty when he gets to his kennel, describe how he would run back to drink some more water?
Grade 2 Maths

12. Use the picture of the coins to answer the question below.

The above coins make a total of _____.

Adaptation:

12. Use the picture of the coins to answer the question below.

The above coins make a total of _____.

R2

R2

R2

R2

R2

R2

R2

R1

R1
Grade 2 Mathematics

23. Use the graph to complete the sentences below.

<table>
<thead>
<tr>
<th>Number of learners</th>
<th>Giraffe</th>
<th>Springbuck</th>
<th>Rhino</th>
<th>Elephant</th>
<th>Lion</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>9</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>8</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>7</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>6</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>5</td>
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<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>4</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>3</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
<tr>
<td>2</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
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</tr>
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<td>1</td>
<td><img src="image" alt="Giraffe" /></td>
<td><img src="image" alt="Springbuck" /></td>
<td><img src="image" alt="Rhino" /></td>
<td><img src="image" alt="Elephant" /></td>
<td><img src="image" alt="Lion" /></td>
</tr>
</tbody>
</table>

23.1 The least favourite animal is the _____.

23.2 There are five more _____ than rhinos.
Adaptation:

Note: The labeling on the horizontal axis can be written using two lines to fit in longer labels.

23. Use the graph to complete the sentences.

23.1 The least favourite animal is the _____.
23.2 There are five more _____ than rhinos
The sports children like most

100
90
80
70
60
50
40
30
20
10
0

Soccer  Netball  Swimming  Running

a. Which sport do most children like?
b. Which sport do children like least?
c. How many children like soccer?
d. How many children like netball?
e. How many children like running?
f. How many children like swimming?
Adaptation:
Always write the heading above the graph.

The sports children like most

a. Which sport do most children like?
b. Which sport do children like least?
c. How many children like soccer?
d. How many children like netball?
e. How many children like running?
f. How many children like swimming?
Intermediate Phase

Grade 6 Mathematics ANA

22. Examine the map below and answer the questions that follow.

22.1 What is the time difference in hours between Cape Town and Rio de Janeiro?

22.2 If it is 11:00 a.m. in Rio de Janeiro, what is the time in Cape Town?

Adaptation:

22. Examine the map below and answer the questions that follow.

The questions remain unchanged.
Grade 6 Mathematics

86 The clocks below show the times in different countries. If it is 06.10 p.m. in Berlin, it is 5.10 p.m. in London.

<table>
<thead>
<tr>
<th></th>
<th>CAPE TOWN</th>
<th>LONDON</th>
<th>BANGKOK</th>
<th>BERLIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Monday</td>
<td>Monday</td>
<td>Monday</td>
<td>Monday</td>
</tr>
<tr>
<td>Time</td>
<td>5.10 p.m.</td>
<td>12.10 p.m.</td>
<td>6.10 p.m.</td>
<td></td>
</tr>
</tbody>
</table>

86.1 If the clock in Berlin shows Tuesday 9:30 a.m., write down what the time will be in Bangkok? (1)

86.2 The time in London is 2 hours behind South Africa. Draw the hands on the clock of the time it will be in Cape Town when it is 5:10 p.m. in London. (1)
Adaptation:

86. The clocks below show the times in different countries at the same moment. If it is 06.10 p.m. in Berlin, it is 5.10 p.m. in London. Show separate pictures.

BERLIN
Monday 6:10 p.m.

BANGKOK
Monday 12:10 p.m.

LONDON
Monday 5:10 p.m.

CAPE TOWN

86.1 If the clock in Berlin shows Tuesday 9:30 a.m., write down what the time will be in Bangkok? (1)

86.2 The time in London is 2 hours behind South Africa. Describe where the hands on the clock will be in Cape Town when it is 5:10 p.m. in London. (1)
Use the map below to answer Questions 13 and 14.

13. Circle the letter of the correct answer.
13.1 Where do the children catch the bus after school?
A Park Street
B Short Street
C South Street
D North Street (1)

13.2 Which family lives the furthest from the hospital?
A The Jonathan family
B The Smith family
C The Seema family
D The Naidoo family (1)

14. Circle the letter of the correct answer.

Neeshi is a nurse at the hospital and has left her bag at home with her mother, Mrs Seema. Neeshi must fetch her bag from home. Choose the best road that Neeshi must follow from the hospital to fetch her bag from home.

Turn right into Long Street, then ...

A left into North Street.
B right into South Street.
C right into Short Street.
D left into Park Street. (1)
Adaptation:

Smith family Naidoo family

Seema family Jonathan family

Park Street

Supermarket

Short Street

Long Street

Park

South Street

Bus stop North Street

Hospital

Questions remain unaltered.
Senior Phase
Grade 7 Maths

Calculate the volume of the triangular prism.

Adaptation:

3D drawings are difficult to interpret. Give an additional drawing to make it clear.

Calculate the volume of the triangular prism with height 7 cm and the measurements of the triangular base like in the drawing below.
Further Education and Training Phase

Grade 12 Economics

3.3 Study the diagrams below which represent price elasticity and answer the questions that follow.

![Diagrams A, B, C, D, E representing price elasticity](image)

3.3.1 Identify the types of price elasticity of supply, represented by diagrams A, B, C, D and E respectively. (5 x 2 = 10)
Adaptation:

Split the graphs and do 5 separate individual graphs. The questions remain the same.
5.1.1 Use the 2010 values to draw a bar graph that represents the 2010 results on Annexure QUESTION 5.1.1, provided. (5)

5.1.2 What score range did the most learners obtain in 2010? (2)

5.1.3 A score in the range 80 – 100 is regarded as a distinction. What is the difference in the number of learners who obtained distinctions in 2009 and 2010? (2)

5.1.4 What is the total number of learners who wrote Mathematical Literacy in 2010? (3)

5.1.5 Learners who score between 0 and 29% have failed the subject. How many learners failed Mathematical Literacy in 2010? (2)

5.1.6 The pass rate for the subject is calculated as follows:

\[ \text{Pass rate} = \frac{\text{Number passed}}{\text{Number wrote}} \times 100\% \] (3)

Calculate the pass rate for Mathematical Literacy in 2010.

5.1.7 A Newspaper article claims that for every TWO learners passing Mathematical Literacy ONE learner passes Mathematics. Use this ratio to estimate the number of learners who passed Mathematics in 2010 (3)
Adaptation:

This graph is far too busy. It is not possible to fit all the data on a braille page. There are too many characters horizontally and the layout is too crowded. Use a key/legend for the graph and separate some of the data from the graph.

Number of learners and marks for ML 2009 vs 2010

<table>
<thead>
<tr>
<th>Scores</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 80-100</td>
<td>1986</td>
<td>2056</td>
</tr>
<tr>
<td>B 70-79</td>
<td>2682</td>
<td>3046</td>
</tr>
<tr>
<td>C 60-69</td>
<td>3383</td>
<td>4477</td>
</tr>
<tr>
<td>D 50-59</td>
<td>4535</td>
<td>5955</td>
</tr>
<tr>
<td>E 40-49</td>
<td>5589</td>
<td>6664</td>
</tr>
<tr>
<td>F 30-39</td>
<td>5143</td>
<td>4808</td>
</tr>
<tr>
<td>G 0-29</td>
<td>3049</td>
<td>1738</td>
</tr>
</tbody>
</table>

All questions remain the same, except 5.1.1
5.1.1 Use the 2010 values and your brailler to draw a bar graph that represents the 2010 results. Round off the numbers to the nearest 1 000. Use one braille cell per 1 000 learners and label the axes the same as for the 2009 graph. (Although our approach is to usually not ask learners to draw in braille, this might become a possibility later on once learners have had enough experience using the workbooks where they are taught how to draw simple graphs, like bar graphs, as early as Grade 3.)
2. Picture or diagram replaced with written description

Foundation Phase

Grade 2 English Home Language

17. Write 5 – 8 sentences about the picture below.

Adaptation:

It is not necessary to describe all of what is happening in the picture. This is creative writing and if we describe too much, we might be giving the learner an unfair advantage of words and sentences which the learner with vision does not have.

Keep the description as neutral as possible, but do not deny the learner from visualising.

17. Write 5-8 sentences about this picture.

A little girl is reading a book to a boy who is lying in bed. They are both smiling.
Look at the picture and answer the following questions:

1. What is dangerous in this picture?

2. What does Mom say to Sally when she walks into the room and sees what Sally is doing?
Adaptation:

Listen to your teacher read the following to you and then choose the correct answer to the questions.

In the kitchen

Sally is alone in the kitchen.

Mom keeps sweets high up in the cupboard above the stove.

Can Sally reach the sweets?

If she puts the dustbin close to the cupboard to stand on, she might just reach the sweets. She tries.

Oops, she nearly knocked the pot of boiling soup off the stove.

The dustbin just won’t stand still. The dustbin wiggles. Sally falls.

Mom walks into the kitchen!

Mom says to Sally: “-----------.”

1. What does Sally do that is dangerous?
   a. Mom is keeping the sweets high up in the cupboard
   b. Sally reaches over the hot stove and a pot of boiling soup.
   c. Sally wants sweets.

2. Mom says to Sally:
   a. The dustbin is not high enough to reach the sweets.
   b. Climb on the stove if you want to reach the sweets.
   c. Sally, never lean over a hot stove.
Adaptation:

2. Tibby the cat has five little kittens. They are very playful and love to hide under the bed in Mrs Grey’s bedroom.

   a. If you can only see 3 of them, how many are hiding under the bed? ____
   b. If you can only see 2 of them, how many are hiding under the bed? ____
   c. If you can only see 4 of them, how many are hiding under the bed? ____
   d. If you can see none of them, how many of them are hiding under the bed? ____
Grade 3 English HL

Match the words with the pictures

![Matching Words with Pictures](image)

Adaptation:

Match the words in column 1 with the sentences in column 2.

<table>
<thead>
<tr>
<th>A. jungle</th>
<th>a. A Power station is sending thick clouds of smoke into the air.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. polluted</td>
<td>b. Children are carrying posters saying: Save the forests, Keep our planet safe.</td>
</tr>
<tr>
<td>C. dangerous</td>
<td>c. Men are chopping down trees while wild animals are fleeing.</td>
</tr>
<tr>
<td>D. protest</td>
<td>d. Signs on a barbed wire fence are saying: Danger, Keep out, Danger Beware.</td>
</tr>
</tbody>
</table>
Grade 3 English Home Language ANA

7. Look at the picture and answer questions 7.1 and 7.2

7.1 Circle the letter next to the correct answer.

What is the horse doing? The horse is ____

A. galloping over the hill.
B. standing in the barn.
C. grazing in the field.
D. drinking milk.

7.2 Place a cross (x) in the box next to the correct answer.

The picture on page 6 is of a _____

game reserve.

aquarium.

farm.

zoo.
Adaptation:

It is not necessary to describe all of what is happening in the picture, because the questions can be answered without the picture. Simply adapt the wording of the question.

7. Our class is going on an outing to learn about domestic animals. We see a horse in a barn and a man milking cows.

7.1 Write the correct answer down.

What is the horse doing in the barn? The horse is _____.

galloping over a hill.
standing in the barn.
grazing in the field.
_drinking milk._

7.2 Write the correct answer down.

What is the most likely place to visit for our class to learn about domestic animals?

game reserve
aquarium
farm
Grade 3 English HL

7.2 Look at the picture and answer the questions.
7.2.1 Circle the correct answer.
The group of children are (shouting talking singing crying).
7.2.2 Place a cross (x) in the box next to the correct answer.
There are ... singers in the group.
Three four five two
7.2.3 Circle the letter next to the correct answer.
The person in the middle of the group is a ... 

Adaptation:

7.2 The picture is showing a group of children with their mouths wide open and music notes floating above them. They are standing in this order: girl, boy, boy, girl, girl Answer the questions by writing down the correct answer.

7.2.1 The group of children are (shouting/ talking/ singing/ crying).
7.2.2 There are ... singers in the group.
three
four
five
two
7.2.3 The person in the middle of the group is a ...
woman.
man.
boy.
girl.
Grade 4 English ANA

27. Write **two** paragraphs to describe the picture.
   · Look at the picture below.
   · Write **two** paragraphs of **five** sentences each.
   · Describe what is happening in the picture.
   · Write your paragraphs as a story.
   · Use the correct punctuation, spelling and grammar.
   · Marks will be given for format, content and language.

Adaptation

27. Write **two** paragraphs to describe the picture.
   · Look at the picture below of a family all sitting together on a sofa. The father is reading from a book and the little girl is sitting on his lap. The little boy and the mother are also looking at the book. They are all smiling.
   · Write **two** paragraphs of **five** sentences each.
   · Describe what is happening in the picture.
   · Write your paragraphs as a story.
   · Use the correct punctuation, spelling and grammar.
   · Marks will be given for format, content and language.
Grade 6 Mathematics

74. Complete the pattern below.

Adaptation:

In this question we do not replace the diagram with a written description, but we use a description as an answer.

74. The next picture to complete the pattern will be
a. a circle with a rectangle inside
b. a rectangle with a triangle inside
c. a triangle with a circle inside

(Answer: The next picture will be a rectangle with a triangle inside.)

Grade 4 English HL

18. Design an invitation card to your birthday party.
Your friends need to know where and when the party will be.

Adaptation:

18. Describe the design you will make for an invitation card to your birthday party. Your friends need to know where and when the party will be. You can describe the decorations or draw some with your braille.
Senior Phase

Grade 7 English Home Language

10. Study the advertisement and answer Questions 10 – 15.

10.1 Which product is being advertised?

11. Answer the following question.
Would you buy this product? Give a reason for your answer.

12. Circle the letter of the correct answer.

12.1 You can improve your ____ by using this product.
A. physical appearance.
B. hair condition
C. oral hygiene
D. skin care

13. Answer the following questions.

13.1 State one thing that the product promises to do, other than to improve bad breath.
13.2 Give two words from the advert that would make you buy the product.

14. Give three adjectives (describing words) used in this advertisement.

15. Change the following sentence into direct speech.
Tina said that all her friends used Aquafresh.
Tina said, ‘All_____.'
Adaptation:

In this question we have to write a detailed description of the picture, because the learners need the information that is given on the packet and in the advertisement.

The advertisement shows a packet with the following written on it:

NEW FLUORIDE TOOTHPASTE AQUAFRESH TRIPLE PROTECTION
WITH MICRO-ACTIVE FOAMING ACTION & WHITENING
PURE BREATH ACTION

There is also a picture of a woman with a broad smile and perfect white teeth on the advertisement. The following words are written below the picture:

MINERAL FORMULA HELPS TO NEUTRALISE BAD BREATH ODORS
Get a free sample for cleaner, whiter teeth.


The questions remain unaltered.
Grade 9 English Home Language

19. Write a paragraph.

Look at the picture below. Use this picture to write a creative paragraph. The contents of your paragraph must be about the picture.

Your paragraph should have the following:
- a topic sentence, supporting sentences and a concluding sentence.
- a suitable title.
- 60 to 80 words.

Adaptation:

19. Write a paragraph.

Look at the picture below. A patient is lying on a bed while the doctor is holding a stethoscope against the patient’s toe. The doctor’s eyes are almost closed. The corners of the patient’s mouth are turned downward and his nose seems big and there are lined radiating around it. Use this picture to write a creative paragraph. The contents of your paragraph must be about the picture.

Your paragraph should have the following:
- a topic sentence, supporting sentences and a concluding sentence.
- a suitable title.
- 60 to 80 words.
3. Interpreting a cartoon.

3.1 What do you understand by 'corporal punishment'? (1)

3.2 To which issue does this cartoon speak? (1)

3.3 Which image is used to represent our democratic legal system and why is it used here? (2)

3.4 In a paragraph of about 250 words, discuss whether you are in favour of or against corporal punishment in schools. (7)

The Soweton, Soweto, 18 April 2000
Adaptation:

We need to write a detailed description of the cartoon.

Source 3 is a cartoon depicting a young school boy bending over a small bench. His pants are down to his knees. He has a tattoo on his body saying "THE CONSTITUTION OUTLAWING CORPORAL PUNISHMENT".

Gauteng Judge-President, Bernard Ngoepe, is standing behind him and caning him with a stick over his naked butt. The boy is screaming with pain and Judge-President Ngoepe is saying "It’s fine if it’s done with love!"

On the right hand side in the picture a lady is staring in astonishment at the judge beating the boy. She is carrying a scale in her left hand.

Underneath the cartoon it says: “Gauteng Judge-President Bernard Ngoepe says pupils should be beaten with love.” – Report.

*The Soweton, Soweto, 18 April 2000*

The questions remain unaltered.
FET

History

1.3 Study Source 1 C

1.3.1 What messages does the cartoonist convey? (4)

1.3.2 Explain the statement, ‘Let’s get a lock for this thing’, in the context of the Cuban Missile Crisis. (2 x 2 = 4)

[From: Straight Herblock by H Block]

Adaptation:

The heading of the cartoon is: “LET’S GET A LOCK FOR THIS THING”

The cartoon shows John F Kennedy and Nikita Khrushchev trying to contain a monstrous creature with hairy clawlike hands from breaking out of an iron box by pushing hard on the lid of the box. Fumes are escaping the box while two hairy hands are trying to claw its way out of the box. On the box is written: NUCLEAR WAR.
The questions remain unaltered.

English FAL Grade 12

Choose ONE of the following pictures and write an essay on a topic that comes to mind. Write the question number (1.8.1 OR 1.8.2) and give your essay a suitable title.

**NOTE:** There must be a clear link between your essay and the picture you have chosen.

---

**Adaptation**

Choose ONE of the following pictures and write an essay on a topic that comes to mind. Write the question number (1.8.1 OR 1.8.2) and give your essay a suitable title.

**NOTE:** There must be a clear link between your essay and the picture you have chosen.

A photograph of two cupped hands on which a world map is painted …

A photograph of a young, smiling boy dressed in oversized shorts and boots, his foot resting on a ball.
5. Analysing a cartoon

CALVIN AND HOBBES

BY BILL WATERSON

5.1 Refer to frame 1: How does the cartoonist indicate Calvin’s guilt in this frame?(1)

5.2 Do you think Calvin is being sincere? Motivate your answer. (2)

5.3 Refer to frame 2: Choose the correct answer to complete the following sentence:
When Hobbes says “little buddy” he is referring to …
A. Calvin’s size
B. their relationship
C. his (Hobbes’) guilt
D. his (Hobbes’) sincerity (1)

5.4 Refer to frame 3: What is the purpose of the line next to Calvin’s head?(1)

5.5 Do you think the cartoonist has succeeded in creating humour here? Give a reason for your answer. (2)
Adaptation

This is a good example of how blind learners need to be specifically taught that which learners with normal vision learn incidentally, like the meaning of some 'special effects' repeatedly being used in drawings. In this cartoon the semi-circular line drawn to the left of Calvin’s head implicates movement. Other examples of such ‘special effects’ are dust clouds behind a person running or ‘radiating lines’ drawing attention to something specific, like the pulsating pain in a toe bumped against a stone. The teacher needs to make braille users aware of the meaning of such techniques in drawing.

5. Analysing a cartoon
CALVIN AND HOBBES     BY BILL WATERSO

Frame 1
Calvin’s arms are hanging and his hands are clasped close to his body. He is obviously looking up at Hobbes, the tiger, but his head is not lifted. His eyes are portrayed as being big, far more so than in frames 2 and 3.

Frame 2
Calvin is hugging Hobbes. Hobbes’ paws are on Calvin’s head. In the background there is a Christmas tree.

Frame 3
Hobbes grabs Calvin and wraps his arms around him. There is a semi-circular line drawn to the left of Calvin’s head and Hobbes is on the right. Calvin is now sitting on Hobbes’ lap. They are both smiling.

5.1 Refer to frame 1: How does the cartoonist indicate Calvin’s guilt in this frame?(1)

5.2 Do you think Calvin is being sincere? Motivate your answer. (2)

5.3 Refer to frame 2: Choose the correct answer to complete the following sentence: When Hobbes says “little buddy” he is referring to …
A. Calvin’s size
B. their relationship
C. his (Hobbes’) guilt
D. his (Hobbes’) sincerity (1)

5.4 Refer to frame 3: What is the purpose of the line next to Calvin’s head? (1)

5.5 Do you think the cartoonist has succeeded in creating humour here? Give a reason for your answer. (2)
Economics Grade 12

2.3 Study the cartoon and answer the questions below.

![Cartoon Image](Source: Business Report, 19 September 2011)

2.3.1 What is the message of the cartoon? (2)
2.3.2 What can the private sector do to improve the living conditions of the workers? (2x2=4)
2.3.3 How can the government alleviate the level of poverty? (2x2=4)

Adaptation:

2.3 Study the cartoon and answer the questions below.

The cartoon shows a big, fat cat drinking greedily from a huge bowl of milk labeled EXECUTIVE PAY. The cat is labeled "The private Sector". A smaller cat with GOVT written on its chest is saying to the big cat, “Could you spare a sip for them?". ‘Them’ refers to a group of small mice representing the labour force. They are carrying banners saying:

More pay!
20% now!
You are causing an inequality gap.

Source: Business Report, 19 September 2011

2.3.1 What is the message of the cartoon? (2)
2.3.2 What can the private sector do to improve the living conditions of the workers? (2x2=4)
2.3.3 How can the government alleviate the level of poverty? (2x2=4)
Physical Science Grade 12

Question 10

The diagram below illustrates how electricity generated at a power station is transmitted to a substation.

10.1 Does the power station use an AC or a DC generator?  (1)

10.2 Sketch a graph of the potential difference generated at the power station versus time.  (2)

10.3 The average power produced at the power station is $4,45 \times 10^9 W$. Calculate the rms current in the transmission lines if the power is transmitted at a maximum voltage of 30 000 V.  (5)

10.4 Give a reason why electricity should be transmitted at high voltage and low current.  (1)

Adaptation:

Question 10

The flow chart below illustrates how electricity generated at a power station is transmitted to a substation.

Power station $\rightarrow$ Step-up transformer for longdistance transmission $\rightarrow$

Transmission lines $\rightarrow$ Substation

10.1 Does the power station use an AC or a DC generator?  (1)

10.2 Describe the graph of the potential difference generated at the power station versus time.  (2)

10.3 The average power produced at the power station is $4,45 \times 10^9 W$. Calculate the rms current in the transmission lines if the power is transmitted at a maximum voltage of 30 000 V.  (5)

10.4 Give a reason why electricity should be transmitted at high voltage and low current.  (1)
5.4 Study the cartoon below and answer the questions that follow.

5.4.1 Which institution plays a key role in controlling inflation? (2)
5.4.2 What does the abbreviation MPC in the above cartoon stand for? (2)
5.4.3 What rates are used to influence consumer spending? (2)
5.4.4 What does 3–6% refer to? (2)
5.4.5 Which policy is used by the government to control the money supply in South Africa? (2)

Adaptation:

A huge snake, with the words “Inflation” and “Prices” written on its body is coiled up in a metal cage. A magician in a tailcoat, bowler hat and bowtie is using a saw to open a hole in the roof of the cage. The snake is putting its head through the hole showing its fangs. A speech bubble pointing to the snake says “MPC”. The magician is telling the snake: “Remember now … you can come up so high, but NO higher. A speech bubble pointing to the head of the magician indicates that he has 3 – 6% in mind. Next to the magician on the cage is a container with the words “Interest rates” written on it.

All the questions remain the same.
3. Picture or diagram supplemented with description

**Foundation Phase**

Grade 1 Mathematics

1. Draw a cross (x) on the object that can slide.

![Image of a ball and a box with a cross drawn on the ball]

**Adaptation:**

We should not expect the learner to identify a 3D object in a 2D drawing.

1. Write down the name of the object that can slide.

ball

box
Grade 2

Weather Chart February

Read this weather chart and say what the weather will be each day.

Adaptation:

Provide a legend/key and print the table vertically for better fit on the braille page.

Read the weather chart for two weeks in February, and say what the weather will be each day.

Weather symbols.

- Sunny

- Partly cloudy
- Rainy

- Thunder storm

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
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<tbody>
<tr>
<td>Sunday</td>
<td>![Sun]</td>
<td>![Rain]</td>
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<tr>
<td>Monday</td>
<td>![Clouds and Sun]</td>
<td>![Lightning]</td>
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<td>Tuesday</td>
<td>![Clouds and Sun]</td>
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<td>Wednesday</td>
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<td>![Clouds and Sun]</td>
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<tr>
<td>Saturday</td>
<td>![Lightning and Clouds]</td>
<td>![Rain]</td>
</tr>
<tr>
<td>Sunday</td>
<td>![Sun]</td>
<td>![Rain]</td>
</tr>
</tbody>
</table>
Grade 2 Maths

2.1 Draw a line to link the 3-D object name with the correct picture.

Adaptation:

2.1 Write the name of the 3-D object that is in the shape of a cube.

- dice
- soccer ball
- cooldrink can
Grade 5 Mathematics

16. Draw the missing shape in the diagram pattern.

Adaptation:

16. Which one is the missing shape in the diagram pattern?

A. Textured triangle pointing left

B. Non-textured triangle pointing down

C. Textured circle

D. Textured square
Grade 4 Maths

1. Sort the fruit and answer the questions.

Data

a. How many apples are there?
b. How many bananas are there?
c. How many strawberries are there?
d. How many naartjies are there?

2. Draw a pictograph and answer the questions.

a. Do the children like apples or bananas more?
b. Do the children like strawberries or naartjies more?
c. What is the most popular fruit?
d. What is the least popular fruit?
Adaptation:

Choose fruit that are easier to distinguish when drawn in braille and label them. Provide a legend and change the question requiring learners to draw a pictograph.

1. Sort the fruit and answer the questions.

Key:

![Images of fruits: apple, banana, pineapple, pear]

Data

a. How many apples are there?
b. How many bananas are there?
c. How many pineapples are there?
d. How many pears are there?

2. This is a pictograph of the fruit. Look at the pictograph and answer the questions.
   a. Is the pictograph a correct representation of the data?
   b. Give a reason for your answer in a.
   c. What is the most popular fruit?
   d. What is the least popular fruit?

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<thead>
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</thead>
<tbody>
<tr>
<td>apple</td>
<td>banana</td>
<td>pineapple</td>
<td>pear</td>
</tr>
</tbody>
</table>

apple  banana  pineapple  pear
7.3 In the above triangular prism, \( AB = 3 \text{ cm} \), \( AC = 4 \text{ cm} \), \( BC = 5 \text{ cm} \) and \( CD = 12 \text{ cm} \).

7.3.1 Show that \( \triangle ABC \) is a right-angled triangle \( \text{(4)} \)

7.3.2 Hence, calculate the surface area of the prism. \( \text{(4)} \)

Adaptation:

It is difficult for blind learners to read 3D diagrams. Provide some more information to make it easier to interpret the drawing.

7.3 In the above triangle prism, \( \triangle ABC \) forms the base of the prism. \( AB = 3 \), \( AC = 4 \), \( BC = 5 \) and \( AC \). The length of side \( CD \) of the rectangle \( ACDE \) is 12.

Questions remain the same.
3. Look at the diagram below and answer the questions.

3.1 When the Starter’s gun is fired, the athlete’s right leg will straighten, pushing the athlete upwards and forwards. Which of the letters (A to F) indicate muscles that will:

(a) Relax  
(b) Contract  

3.2 The leg shown in the diagram has different types of joints. Which of the following letters (A to F) indicates:

(a) A hinge joint  

---

Adaptation:

---
The learner needs to know a little more about the position of the athlete. Supplement the diagram with an explanation, but also enlarge and simplify the diagram. Relevant parts should be clearly distinguishable and bolder.

3. Look at the diagram below and answer the questions. The diagram shows the legs of an athlete while he is waiting for a race to start. He is kneeling on his left knee on the athletics track. The right foot is forward, knee bent at D for the starting position before the race. The letters A to F show some of the muscles as well as joints that will be used during the race.

A Hip joint  
B Muscle in the but  
C Muscle in upper thigh  
D Knee joint  
E Hind calf muscle  
F Front calf muscle

![Diagram showing muscles and joints](image)

3.1 When the Starter’s gun is fired, the athlete’s right leg will straighten, pushing the athlete upwards and forwards. Which of the letters (A to F) indicate muscles that will:

(a) Relax  
(b) Contract

3.2 The leg shown in the diagram has different types of joints. Which of the following letters (A to F) indicates:

(a) A hinge joint

Life Sciences Grade 12
3.4 The diagram below shows five closely related species of finches found on the mainland and on four nearby islands.

Describe how the different species on the four islands evolved over many generations from the original ancestor on the mainland. (8)

Adaptation:
Make individual drawings of the beaks and add a short description of the shape of each beak. The questions then remain unchanged.

Picture 1: Mainland

Head of finch

Picture 2: Island 1

Head of finch with longer beak, slightly hooked

Island 3: Very long, sharp, hooked beak

Island 4: Large, short beak
4. Picture or diagram replaced with real object/model

This approach is not really used in formal assessment. It is, however useful to make spatial understanding of 3D pictures easier and is therefore very important in classroom teaching for concept development and understanding of 3D objects or models and their graphic representation in 2D.

Foundation Phase

4 Picture or diagram replaced with real item or model

Adaptation:

Bring empty cardboard boxes to the classroom and let learners climb in the box, lie under the box, sit outside the box, etc.
Adaptation:

Bring these objects into the classroom and allow learners to explore the sides and edges.
Is the object lighter or heavier than 1 kilogram?

Adaptation:
Use the teaching scales provided in the toolkit and let the learners weigh a pear, a cup cake, a soccer ball and a can of cold drink. It is important to expose blind learners to real life experiences to develop real understanding of concepts and objects.
Grade 3 Mathematics

Teaching bar graphs using building blocks before moving to the two-dimensional drawing of bar graphs.
**Senior Phase**

1. A shoe box is in the shape of a rectangular prism. Calculate the volume of the shoe box.

![Diagram of a rectangular prism with dimensions 30 cm, 16 cm, 18 cm]

Adaptation:

It is a good idea for concept development to give learners a shoe box to measure while introducing the topic in class.

In formal assessment the drawing can actually be left out and the questions changed to:

A shoe box is in the shape of a rectangular prism. The box is 30 cm long, 18 cm wide and 16 cm high. Calculate the volume of the box. State the units. (4)

2. Calculate the surface area of the following rectangular prism:

![Diagram of another rectangular prism with dimensions 4 cm, 2.5 cm, 3 cm]
Adaptation:

Here it would help the blind learner to cut open a box in class so that they can experience the different sides/faces of the rectangular prism. This way they will understand that the faces are in pairs.

In formal assessment one could give them the net of the rectangular prism like in the drawing below, together with the original drawing. This will depend on the overall level of difficulty of the question paper. If the paper is on the easy side, one would not give the extra drawing. If the paper is generally rather difficult, it could bring balance to give the second drawing.
Senior Phase and FET

Mathematics

When teaching mathematical transformation and graphs the use of a grid with pegs for plotting points and stencils for graphs will help learners to understand and experience the concepts better.

This is a home made grid with holes and pegs. It can be used for transformations as well as plotting graphs before moving on to the drawn graphic representations.

Here a stencil is used to teach the movement of trigonometric graphs along the x- or y-axes.
Life Sciences

Allow the learner to explore a model of the ear before moving on to the two-dimensional drawing of the ear.
5. Unnecessary Picture removed

Foundation Phase

Mathematics Grade 2

1. What is lightest and what is heaviest?

![Image of lightest and heaviest objects]

Adaptation:

1. What is lightest?
   a. a soccer ball
   b. a small box of matches
   c. a watermelon

2. What is heaviest?
   a. a soccer ball
   b. a small box of matches
   c. a watermelon
12.3 The value of the underlined digit in the clouds are?

![Clouds with underlined digits](image)

a. 603  
b. 419

Adaptation:

12.3 Write down the value of the underlined digits.

a. 603  
b. 419
Mathematics, Grade 2

Help the springbok to write a sum.
Use the number line to help you work out the answers.

Adaptation

There is no need for the springbok. The layout is also not suitable for braille.

Use the number line to write an addition sum.

_____ + _____ = _____
Grade 7 Mathematics

Choose the correct net to go with the correct prism or pyramid. Write the name of the 3D object next to the correct net.

Tetrahedron  
Pentagonal prism  
Square pyramid

a.  
b.  
c.
Adaptation

The 3D objects are hard to read for the braille user and rather meaningless if they do not have the real object. Leave out the pictures and change the question to:

Choose the correct prism or pyramid to go with the nets. Write the name of the 3D object next to the correct net.

Tetrahedron

Pentagonal prism

Square pyramid

Do the drawings of the nets.

a.  

b.  

c.
Grade 12 Economics

5.4 Study the cartoon below and answer the questions that follow.

5.4.1 Define the concept *inflation*. (2)

5.4.2 Who regulates the petrol price in South Africa? (2)

5.4.3 Give the economic term for prices of goods and services set by government. (2)

5.4.4 Explain the effect of an unfavourable rand/dollar exchange rate on the petrol price. (2)

**INFLATION DUE TO PETROL PRICE INCREASE**

[Source: *Mail & Guardian*, January, 2012]

Adaptation:

There is no need for the cartoon. These are purely content questions and can be answered without the cartoon.
Economics Grade 12

Study the cartoon below and answer the questions that follow:

- Define the concept *pollution*. (2)
- Give one example of industrial pollution. (2)
- Why is industrial pollution regarded as a more serious type of pollution? (3)
- What measure, in your opinion, can be put in place to overcome the hazardous effects of poisoned groundwater? (3)

Adaptation:

There is no need for the picture. A definition is a definition. According to the memo for this particular question, any examples of pollution could be given as answers.

Any valid measures could be described for overcoming the problem of poisoned groundwater.

Questions remain unaltered.
Mathematical Literacy Grade 12

QUESTION 3

Nandi is considering changing her hairstyle and visits a local hair salon to determine the cost of styling her hair. She has a choice between hair extensions or hair relaxing. The pictures below compare relaxed hair and hair extensions.

![Image of hair styles](image)

The cost of the two choices is shown below.

<table>
<thead>
<tr>
<th>COST OF HAIR RELAXING</th>
<th>COST OF HAIR EXTENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>R140.00 per treatment, including moisturising gel and one hair wash</td>
<td>R500.00, including one hair wash</td>
</tr>
<tr>
<td>Weekly hair wash at R40.00, including moisturising gel</td>
<td>Weekly hair wash at R40.00</td>
</tr>
<tr>
<td>Treatment must be repeated every four weeks or monthly.</td>
<td>Extensions last for 6 months or 24 weeks.</td>
</tr>
</tbody>
</table>

3.1.1 Calculate the cost of hair relaxing for the first four weeks. Use the formula:
Cost for the first four weeks (in rand) = 140 + (3 \times \text{cost of a hair wash}) \quad (2)

3.1.2 Calculate the cost of hair extensions for the first four weeks. Use the formula:
Cost for the first four weeks (in rand) = 500 + (3 \times \text{cost of a hair wash}) \quad (2)

Adaptation:

The pictures are not necessary to answer the questions and can simply be left out.

The questions remain the same.

Grade 11 Life Sciences
2.1 From the diagrams (A, B and C), name the species that appeared on earth as follows:

a. first
b. second
c. last

2.2 Tabulate three visible structural differences between DIAGRAM A and DIAGRAM B that illustrate evolutionary trends in human development.

2.3 Describe two lines of evidence which support the idea that the human population had its origins on the African continent.

Adaptation:

The theory covered by this question can just as well be asked without the drawing which is very hard to “read” in braille, even if simplified.
2. Human development

2.1 Name the three species that appeared on earth in the evolutionary development of humankind in order of first, second and last.

2.2 Tabulate three visible structural differences between the second and last of the above species that illustrate evolutionary trends in human development.

2.3 Describe two lines of evidence which support the idea that the human population had its origins on the African continent.
6. Reduce the amount of information

Foundation Phase

Grade 3 Mathematics

1. Busi asks all of her friends to vote for their favourite party food.

This is how they vote: 1 friend = 😊

<table>
<thead>
<tr>
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<th>😊</th>
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<th>😊</th>
<th>😊</th>
<th>😊</th>
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<tbody>
<tr>
<td>Ice Cream</td>
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<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
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<tr>
<td>Ice Cream</td>
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<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
</tr>
<tr>
<td>Cupcake</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
<td>😊</td>
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<tr>
<td>Lollipops</td>
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<td>😊</td>
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</tbody>
</table>

a. Count and write how many friends choose each kind of food.

<table>
<thead>
<tr>
<th>Number</th>
</tr>
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<tbody>
<tr>
<td>😊</td>
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<tr>
<td>😊</td>
</tr>
<tr>
<td>😊</td>
</tr>
<tr>
<td>😊</td>
</tr>
</tbody>
</table>

b. Which is the favourite party food?

c. How many friends does Busi ask?

d. How many more friends choose ice cream over sweets?
Adaptation:

The table is too big to fit on a page. Reduce the number of friends in each category.

1 friend = ☺

It does not have to be a face, you can simply make dots or any other symbol.

<table>
<thead>
<tr>
<th>Food</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
<th>☺️</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lemonade</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Ice cream</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
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<td>☺️</td>
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</tr>
<tr>
<td>Cup cake</td>
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<td>☺️</td>
<td>☺️</td>
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<td></td>
</tr>
<tr>
<td>Sweets</td>
<td>☺️</td>
<td>☺️</td>
<td>☺️</td>
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<td>☺️</td>
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</tr>
</tbody>
</table>

a. Count and write how many friends choose each kind of food.

Lemonade: _____

Ice cream: _____

Cup cakes: _____

Sweets: _____

b. Which is the favourite party food?

c. How many friends does Busi ask?

d. How many more friends choose ice cream over sweets?
Mathematics Grade 6

2. Study the grid below and then answer the questions that follow.

2.1 How many pentagons are there in this grid? (1)

2.2 Which shape is in block 8A? (1)

2.3 In which block will you find a rectangle? (1)

<p>| | | | | |</p>
<table>
<thead>
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<td>D</td>
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<td>A</td>
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</tbody>
</table>

1 2 3 4 5 6 7 8 9
Adaptation:

Reduce the number of columns so that each shape can be bigger, otherwise it is too difficult to identify differences. Adapt the questions accordingly.

2. Study the grid below and then answer the questions that follow.

2.1 How many pentagons are there in this grid? (1)
2.2 Which shape is in block 5A? (1)
2.3 In which block will you find a rectangle? (1)
6. Look at the table below and answer the questions:

<table>
<thead>
<tr>
<th>km</th>
<th>m</th>
</tr>
</thead>
<tbody>
<tr>
<td>981</td>
<td>981 k</td>
</tr>
</tbody>
</table>
Comments:

There is too much information to fit on a braille page.

Usually the reason why we have to reduce information, is that one can only fit 40-45 braille characters (letters) horizontally on a braille page. The size of braille characters cannot be changed.

Do only the columns and distances for Bloemfontein, Cape Town, Durban, Johannesburg, Pretoria. Write the names of the cities as Bloem, CT, Db, Jhg, Pta so they can fit.

Change questions and memorandum to include only these cities

Make sure you have 11 questions again.

Adaptation:

4. Look at the table below and answer the questions.

<table>
<thead>
<tr>
<th></th>
<th>Bfn</th>
<th>CT</th>
<th></th>
<th>667</th>
<th>1660</th>
<th>Dbn</th>
<th>417</th>
<th>1405</th>
<th>598</th>
<th>Jhg</th>
<th>PE</th>
<th>475</th>
<th>1463</th>
<th>656</th>
<th>58</th>
<th>1120</th>
<th>Pta</th>
</tr>
</thead>
<tbody>
<tr>
<td>998</td>
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<td>667</td>
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<td>417</td>
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<td></td>
<td>1120</td>
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<td></td>
</tr>
</tbody>
</table>

How far are these cities from each other? Write all answers down in km and m.

Example:

Durban is 417 km from Bloemfontein.
667 km = 667 000 m

a. Durban from Johannesburg?
b. Bloemfontein from Cape Town?
c. Johannesburg from Bloemfontein?
d. Pretoria from Durban?
e. Port Elizabeth from Cape Town?
f. Durban from Cape Town?
g. Port Elizabeth from Johannesburg?
h. Johannesburg from Cape Town?
i. How far apart are the two cities that are furthest away from each other? Which two cities are they?
j. How far apart are the two cities that are closest to each other? Which two cities are they?
FET

Mathematical Literacy

1.3 In most countries there is generally an annual increase in health care costs. The bar graph below shows the annual increase in health care costs for eight countries from 2009 to 2011.

1.3.1 Give India’s percentage increase in health care costs during 2010. (2)
1.3.2 Which country’s percentage increase in health care costs was 8% during 2010? (2)
1.3.3 Identify the country which had the highest percentage increase in health care costs during 2009. (2)
1.3.4 Which country showed a decrease in healthcare costs every year from 2009 to 2011? (2)
1. In most countries there is generally an annual increase in health care costs. The bar graph above shows the annual increase in health care costs for four countries from 2009 to 2011.

1.1 Give India’s percentage increase in health care costs during 2010. (2)
1.2 Which country’s percentage increase in health care costs was 8% during 2010? (2)
1.3 Identify the country which had the highest percentage increase in health care costs during 2009. (2)
1.4 Which country showed a decrease in healthcare costs every year from 2009 to 2011? (2)
5.4 Study the graph and answer the questions that follow.

5.4.1 Define tourism.  
(2)

5.4.2 Use the data given in the graph to calculate the percentage of foreign tourists in 2010. Show all calculations.  
(2x2)  
(4)

5.4.3 Which tourists form the biggest part of the tourist industry in South Africa?  
(2)

5.4.4 What led to the steady increase in the number of foreign tourists visiting South Africa?  
(2)

5.5 Explain any TWO causes of cost-push inflation.  
(2x2)  
(4)
Adaptation:

The labelling on the axes needs to be reduced for the graph to fit on a braille page. Such information is given in a braille note before the graph. The vertical axis is labelled 5, 10, 15, etc. Give a braille note to explain that the numbers represent millions. The horizontal axis is labelled in 5 year periods, instead of each year. It is however not necessary to mention this, seeing that it has no influence on the questions. Write the heading above the graph.

5.4 Study the graph and answer the questions that follow.

Braille notes:

The vertical axis shows the number of tourists in millions.

NUMBER OF FOREIGN AND SOUTH AFRICAN TOURISTS BY YEAR OF TRAVEL, 1991 - 2010

All questions remain unchanged.
Mathematical Literacy Grade 12 March 2013

2.1 The South African coastline measures approximately 2 798 km from the mouth of the Orange River on the West Coast to Ponta do Ouro in Mozambique on the East Coast. The Eastern Cape has approximately 800 km of coastline. The map below shows the coastline of South Africa.

2.1.1 Determine the total length, in miles, of the South African coastline if the coastline of the Eastern Cape is approximately 500 miles long. (3)

2.1.2 Use the map to list the coastal provinces of South Africa in descending order according to the length of their coastlines. (3)

2.1.3 Annie measured the length of the coastline of South Africa on her map and found it to be 223 mm long.

Determine the scale of the map in the form 1 : ...

Round off the answer to the nearest hundred thousand. (4)

Map showing the South African coastline
Adaptation:

The map is only needed to answer question 2.1.2 and that involves no measurement or accurate information. The learners can only give an estimated answer. It is therefore possible to give a simplified map indicating only the provinces. Give a key/legend for the labeling.

Western Cape: 1
Eastern Cape: 2
Northern Cape: 3
KwaZulu-Natal: 4
Free State: 5
North West: 6
Gauteng: 7
Mpumalanga: 8
Limpopo: 9

All questions remain unchanged.
7. Measurements altered

Foundation Phase

In Grade 1 learners do not really measure, particularly not in assessment. But they need graphics that are big enough to comfortably explore.

Example:

1. Trace the patterns with your finger.
Adaptation:

1. Trace the patterns with your finger.
Mathematics Grade 3

2. Measuring

a. How many of the grey lines do you need to cover the black line?

b. How many of the grey lines do you need to go all the way around the rectangle?
Adaptation:

If we look at the rectangle we see that there are 15 segments in the longest side, therefore 7 ½ grey lines are needed to cover that side. In Grade 3 this could be challenging and take an unnecessary amount of time checking and rechecking whether counting was correct. Rather draw the rectangle one segment shorter so that a round number of the ‘grey line’ fits onto each side. Change the word ‘grey’.

2. Measuring

a. How many of the short, fat lines do you need to cover the long line below it?

b. How many of the short, fat lines do you need to go all the way around the rectangle?
Intermediate Phase

1.1 Measure the diameter of the circles in cm and mm.

a. Diameter
___ cm
___ mm

b. Diameter
___ cm
___ mm

c. Diameter
___ cm
___ mm

1.2 Calculate the radius of each circle in cm and mm.

___ cm
___ mm

___ cm
___ mm

___ cm
___ mm

Adaptation

• Braille rulers are not calibrated in mm. The visually impaired learner cannot be expected to measure accurately in mm, rather use centimetres and halves.

• Draw a 3cm diameter, 5 cm diameter or 7.5 cm diameter that is easy to measure. Let them calculate the radius in cm and mm.

• Leave the questions as they are.
Senior Phase

Mathematics Grade 8

3. Measure each angle (you can extend the rays to help you measure).

Adaptation:

The braille protractor is fairly big and it is not possible for the blind learner to extend the rays or to measure very accurately. Draw angles with long rays in tens or fives, e.g. 30°, 45°, 80° or 150°, etc.
Mathematics Grade 9

4. Calculate the area of \( \triangle ABC \) by measuring the relevant lengths.

Adaptation:

Make sure that in your drawing the base BC of the \( \triangle ABC \) and the height AD are measured in whole or half centimetres and not millimeters.

FET

We do not often have measuring in an FET paper, but the same applies as in the above examples.
8. Inherently visual material replaced with equivalent non-visual material

Foundation Phase

Find the picture that is the same as the one in the first box.

Adaptation:

It is not possible for the braille user to find the differences in these pictures. We replace them with wellknown shapes, but with different tactile textures.

Find the picture that has the same texture as the one in the first box.
Mathematics Grade 2

Write all the numbers that are on the yellow beads. What do we call the numbers on the yellow beads?

Write all the numbers that are on the pink beads. What do we call the numbers on the pink beads?

Adaptation:

This question is based on colour recognition, which is an inherently visual skill. We change it to the recognition of well-known shapes.

2. Numbers
   a. Write all the numbers in the circles.
   b. What do we call these numbers in the circles?

   c. Write all the numbers in the squares.
   d. What do we call these numbers in the squares?

   11 12 13 14
   Etc.
Mathematics Grade 6

1. What geometric figure do you see?
   a. 
   b. 

   ![Images of geometric figures]

**Adaptation:**

1. Identify the following geometric shapes.
   a. 
   b. 

   ![Images of geometric shapes]
4. Identify the tetrahedron. Compare the tetrahedron with the other pyramids.

![Diagram of tetrahedron and other pyramids]

Adaptation:

These 3D drawings are meaningless to a blind learner. It would be much clearer to give the nets of these bodies.

4. Pyramids

a. Identify the tetrahedron.
b. Compare the tetrahedron to the other pyramids.

![Diagram of tetrahedron net]
Quote:

When she thought about it afterwards, it seemed to Clara that the time she and Maxi spent on the train was like a dream, or an old-fashioned flickering film at the cinema where images followed one after another before you had time to make sense of them.

12. The author describes Clara’s time on the train as like an old-fashioned flickering film.

12.1 Explain as fully as you can why you think the author uses this image. (2)

12.2 Write a short paragraph to explain what it tells you about Clara’s feelings. (3)

Adaptation Grade 12 Literature

Quote:

Clara thinks, “If I open my mouth, all the tears that are squashed together in the back of my throat will spill out like a waterfall and drown my mother.

12.1 Explain as fully as you can why you think the author uses this image. (2)

12.2 Write a short paragraph to explain what it tells you about Clara’s feelings. (3)

Source: Well Prepared – An illustrated guide to how examination and assessment materials are modified – Rory Cobb and Suzy McDonald, RNIB, April 2001
1. NOTE: The logo in the bottom right-hand corner reads: Namibia Endless horizons

1.11 Discuss how the slogan, 'Endless horizons', links to the visual elements in Text B. (3)

1.12 Comment on the significance of the size of the man in this text. (2)

• It is questionable whether a blind person can really visualise this scene.
• Replace with another question.
Grade 9 English HL
13. Read the poem below and answer the questions that follow.
13.1 Why did the poet choose “Heritage” as the title of the poem?

My Heritage
“your grandpa”
says my father resting
before the light at the window
“your grandpa was a farmer
not all that successful” 5
“his farm ran down the Fish River”
(ah I see again the banks buttocking
steep and lush and blue before me)
“with his hands deep in the good clods
your grandpa 10
died of poverty
but this - and this
he left to you:”
the sun a hill on fire

mountains with their rumpled cheeks 15
flowers humankind even canes wound
with snakes
:“all this priceless dictionary!”
Breyten Breytenbach

[Abridged version of the poem translated from Afrikaans by the poet]

13.2 “mountains with their rumpled cheeks” (line 15)
13.2.1 Identify the figure of speech in the above line.
13.2.2 Explain how this figure of speech has been used effectively in the poem.
9. Questions that require learner to draw

Foundation Phase

Grade 1 Mathematics

12. Use the number line to show how you will calculate $4 + 2 + 2$.

Adaptation:

Use the number line to write an addition sum.
Mathematics Grade 3

16. Draw a line on the picture to show the line of symmetry.

Adaptation:

16. Which picture shows the line of symmetry of the heart? Picture a or b? Write down only the letter a or b.
Grade 4 Maths

17. Mrs Patel keeps a record to show how many textbooks she gets. Draw tally marks to show how many she got in February.

<table>
<thead>
<tr>
<th>Month</th>
<th>Tally marks</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>February</td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>

Adaptation:

Tally marks are not drawn in braille, but written in the correct braille code. See below.

Braille code for tallies:

One: dot 4,5,6

Five: dot 4,5,6; dot 4,5,6, dot 4,5,6, dot 4,5,6, dot 2

17. Mrs Patel keeps a record to show how many textbooks she gets. Write the tally marks to show how many she got in February. (2)
Grade 4 Mathematics
28. A survey was conducted amongst Grade 4 learners to determine their favourite flavour of juice. Each pupil could vote only once for their favourite flavour.

<table>
<thead>
<tr>
<th>FLAVOUR OF JUICE</th>
<th>TALLY MARKS</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Strawberry</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Banana</td>
<td>III</td>
<td>3</td>
</tr>
<tr>
<td>Apple</td>
<td>-TTT</td>
<td>5</td>
</tr>
</tbody>
</table>

28.1 Fill in the missing tally marks in the above table. (2)
28.2 Which flavour was liked the least? (1)
28.3 Complete the bar graph. (2)
Adaptation:

28. A survey was conducted amongst Grade 4 learners to determine their favourite flavour of juice. Each pupil could vote only once for their favourite flavour.

<table>
<thead>
<tr>
<th>FLAVOUR OF JUICE</th>
<th>TALLY MARKS</th>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>Apple</td>
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<td></td>
</tr>
</tbody>
</table>

28.1 Write down the missing tally marks for oranges and strawberries.
Oranges: ________
Strawberries: ________  (2)

28.2 Which flavour was liked the least?  (1)

28.3 Look at the bar graph given and answer the question:
Is the bar graph a correct representation of the favourite juice flavours of the learners? Give a reason for your answer.  (2)

Braille notes:
The vertical axis represents the number of learners.
The horizontal axis represents the flavours.

**FAVOURITE JUICE FLAVOUR**

![Bar graph showing the results of the survey](image)

Once learners are more accomplished in drawing braille bar graphs with a Perkins brailler (using the workbooks), this adaptation might not be necessary.
5.2
5.2.1 On the same set of axes, draw and label the graphs defined by \( y = -2x + 1 \) and \( x = 2 - 2 \). Use the given grid and clearly indicate the points where the lines cut the axes. (8)

5.2.2 The lines intersect at T. Show by calculation that the co-ordinates of T are \( x = 1 \) and \( y = -1 \) or \((1; -1)\). (2)
Adaptation:

5.2.1 The graph below shows two straight line A and B. Find the equation of each line and write it in the form \( y = mx + c \).

5.2.2 The lines intersect at T. Show by calculation that the co-ordinates of T are \( x = 1 \) and \( y = -1 \) or \((1;-1)\).
5. Given the functions and:

\[ y = f(x) = -\frac{1}{2}(x + 1)^2 \quad \text{and} \quad g(x) = -2x - 6 \]

5.1 Write down the co-ordinates of the turning point of. \hfill (2)

5.2 Calculate the roots of the equation \( f(x) = 0 \) \hfill (4)

5.3 Write down the equation of the axis of symmetry of \( f \). \hfill (2)

5.4 Sketch the graphs of \( y = f(x) \) and \( y = g(x) \) on the same system of axes. \hfill (5)

5.5 Determine the equation of \( h(x) \) obtained by shifting \( f(x) \) two units to the left. \hfill (2)

5.6 Determine the equation of \( k(x) \) obtained by shifting \( g(x) \) two units down. \hfill (2)
Adaptation: Give the drawing, then ask questions on drawing.

5. The sketch shows the graphs of two functions $g(x) = mx + c$ and $f(x) = a(x - p)^2 + q$ on the same set of axes.

5.1 Write down the co-ordinates of the turning point of.  

5.2 Write down the equation of the axis of symmetry of $f$.  

5.3 Write down the roots of the equation $f(x) = 0$  

5.4 Calculate, showing all your work, the equation of $f$ in the form $f(x) = a(x - p)^2 + q$.  

5.5 Write down the equation of $g$.  

5.6 Determine the equation of $h(x)$ obtained by shifting $f(x)$ two units to the left.  

5.7 Determine the equation of $k(x)$ obtained by shifting $g(x)$ two units down.
Question 10

Given \( f(x) = -x^3 - x^2 + x + 10 \)

10.1 Write down the coordinates of the \( y \)-intercept of \( f \). \hspace{1cm} (1)

10.2 Show that \((2; 0)\) is the only \( x \)-intercept of \( f \). \hspace{1cm} (4)

10.3 Calculate the coordinates of the turning points of \( f \). \hspace{1cm} (6)

10.4 Sketch the graph of \( f \) in your ANSWER BOOK. Show all intercepts with the axes and all turning points. \hspace{1cm} (3)

Adaptation

Only 10.4 needs to be adapted.

10.4 Will the graph of \( f \) look like A or motivate your answer. \hspace{1cm} (3)

A.

\[ y \]

\[ x \]