



**REPUBLIC OF KENYA  
MINISTRY OF EDUCATION**

**UPPER PRIMARY LEVEL DESIGNS**

**SUBJECT**

**BRAILLE SKILLS**

**GRADE 9**

**FOR LEARNERS WITH BLINDNESS**



**KENYA INSTITUTE OF CURRICULUM DEVELOPMENT**

**MAY 2021**

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## **NATIONAL GOALS OF EDUCATION**

Education in Kenya should:

**i) Foster nationalism and patriotism and promote national unity.**

Kenya's people belong to different communities, races and religions, but these differences need not divide them. They must be able to live and interact as Kenyans. It is a paramount duty of education to help young people acquire this sense of nationhood by removing conflicts and promoting positive attitudes of mutual respect which enable them to live together in harmony and foster patriotism in order to make a positive contribution to the life of the nation.

**ii) Promote the social, economic, technological and industrial needs for national development.**

Education should prepare the youth of the country to play an effective and productive role in the life of the nation.

**a) Social Needs**

Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following in the wake of rapid modernization. Education should assist our youth to adapt to this change.

**b) Economic Needs**

Education in Kenya should produce citizens with the skills, knowledge, expertise and personal qualities that are required to support a growing economy. Kenya is building up a modern and independent economy which is in need of an adequate and relevant domestic workforce.

**c) Technological and Industrial Needs**

Education in Kenya should provide learners with the necessary skills and attitudes for industrial development. Kenya recognizes the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

**iii) Promote individual development and self-fulfillment**

Education should provide opportunities for the fullest development of individual talents and personality. It should help children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

**iv) Promote sound moral and religious values.**

Education should provide for the development of knowledge, skills and attitudes that will enhance the acquisition of sound moral values and help children to grow up into self-disciplined, self-reliant and integrated citizens.

**v) Promote social equality and responsibility.**

Education should promote social equality and foster a sense of social responsibility within an education system which provides equal educational opportunities for all. It should give all children varied and challenging opportunities for collective activities and corporate social service irrespective of gender, ability or geographical environment.

**vi) Promote respect for and development of Kenya's rich and varied cultures.**

Education should instill in the youth of Kenya an understanding of past and present cultures and their valid place in contemporary society. Children should be able to blend the best of traditional values with the changing requirements that must follow rapid development in order to build a stable and modern society.

**vii) Promote international consciousness and foster positive attitudes towards other nations.**

Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.

**viii. Promote positive attitudes towards good health and environmental protection.**

**Education should inculcate in young people the value of good health in order for them to avoid indulging in activities that will lead to physical or mental ill health. It should foster positive attitudes towards environmental development and conservation.**

**It should**

#### **LEVEL LEARNING OUTCOMES FOR JUNIOR SECONDARY LEVEL**

By the end of Middle School, the learner should be able to:

1. Apply literacy, numeracy and logical thinking skills for appropriate self-expression.
2. Communicate effectively, verbally and non-verbally, in diverse contexts.
3. Demonstrate social skills, spiritual and moral values for peaceful co-existence.
4. Explore, manipulate, manage and conserve the environment effectively for learning and sustainable development.
5. Practise relevant hygiene, sanitation and nutrition skills to promote health.
6. Demonstrate ethical behaviour and exhibit good citizenship as a civic responsibility.
7. Appreciate the country's rich and diverse cultural heritage for harmonious co-existence.
8. Manage pertinent and contemporary issues in society effectively.
9. Apply digital literacy skills for communication and learning.

## BRAILLE SKILLS

### DESIGN FOR GRADE 9

#### ESSENCE STATEMENT

Braille is a system of reading and writing using raised dots to convey meaning. It is a tactile code through which letters and numbers are represented. Braille is a system of writing with contractions that represents a group of letters and words. Symbols in the areas of Mathematics, Integrated science, Music, French and German have special signs in braille. Braille is the main medium of reading and writing for learners with blindness. It enables the learners to communicate effectively and access information. It is therefore an indispensable tool in the learning process for learners with blindness.

Braille skills enable the learners to acquire competencies in reading and writing placing them at par with their sighted counterparts. This therefore enhances their privacy, independence and self-esteem. The learning area equips learners with appropriate skills that will enable them to grasp concepts in the other subjects offered at lower secondary school level. It also enables learners to acquire skills in tracing, interpreting and drawing of tactile graphics which will enable them to be actively involved in learning. In view of the evolving world, the learning area exposes learners with blindness to the use of digital devices with assistive technology especially devices with refreshable braille display. This empowers learners to develop digital literacy which is a 21<sup>st</sup> century skill.

Learners are expected to acquire skills in Science braille notation which will give them a positive attitude to approach integrated science with confidence. Other braille skills that are covered at this level include English, Kiswahili, Mathematics, Music, French and German.

Learning of braille skills is in line with several international and national legal documents which emphasize the use of braille in learning and communication. Some of these documents include: United Nations Convention on the Rights of the Persons with disabilities 2006, (*article 24- 3a*) and the constitution of Kenya 2010, (*articles 7 and 54*).

Given that braille skills is multi disciplinary, the teaching of its strands should be done in an alternating manner. The choice of strand and sub strand to be learnt should be informed by the skills required in different learning areas. If the skills of units of measurement

comes first in the mathematics learning area then the substrand on units of measurement in braille skills should be given priority over the other skills. For the area of elective which include; French ,German and Music braille , the learner will only be obliged to pursue relevant braille skills in the areas chosen.

## GENERAL LEARNING OUTCOMES

By the end of lower secondary, the learner should be able to:

- a) use braille reading and writing skills to promote learning,
- b) use braille writing and reading equipment and materials in learning and communication,
- c) use digital devices with assistive technologies to enhance learning and communication,
- d) make and interpret tactile graphics for learning,
- e) apply braille skills in learning different learning areas offered in junior secondary level,
- f) promote safety and responsibility when using digital devices, braille equipment and materials.

**BRaille SKILLS**  
**DESIGN FOR GRADE 9**

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>1.0 BRAILLE READING AND WRITING EQUIPMENT AND MATERIALS</b>	1.1 Digital devices for reading and writing braille  2 lessons	By the end of the sub strand, the learner should be able to; a) identify digital device for reading and writing braille, b) describe features of digital devices for reading and writing braille, c) read braille texts using digital devices with refreshable braille display, d) write braille texts using digital devices , e) enjoy using digital devices to read and write braille text.	<ul style="list-style-type: none"> <li>● In groups or pairs learners are guided to identify digital devices for reading and writing braille such as focus 40 and Braille sense U2.</li> <li>● Learners are guided to identify and describe features of digital devices for reading and writing braille.</li> <li>● Learners are guided to read braille texts using digital devices with refreshable braille displays.</li> <li>● Learners are guided to write braille texts using digital devices.</li> <li>● In groups learners practice reading and writing braille text using digital devices.</li> </ul>	1. How do you use digital devices to read and write braille text?

**Core competencies to be Developed:**

**Digital literacy:** This is developed as learners use digital devices to read and write braille text.

**Learning to learn:** This is developed as learners search and retrieve information from the digital devices and read the information.



<b>Communication and collaboration:</b> This is developed as learners interact while working in groups.	
<b>Link To Pertinent and Contemporary Issues:</b> <b>Social Awareness skills:</b> this is developed as learners try to express their ideas well during the discussion groups <b>Mentorship and peer education:</b> This is developed as learners support each other during group activities.	<b>Link to Values:</b> <b>Responsibility:</b> This is developed as learners take care of the digital devices. <b>Love:</b> This is developed as learners share digital devices.
<b>Link to other Learning Areas:</b> <b>English and kiswahili :</b> as learners read and write braille texts using digital devices. <b>Religious studies;</b> as learners use braille sense U2 to read religious books.	<b>Suggested Community Service Learning:</b> Learners could visit nearby places of worship and read religious books using digital devices.
<b>Suggested Non Formal Activity that Support Learning:</b> Learners participate in writing minutes using digital devices with refreshable braille displays during debate club.	<b>Suggested modes of Assessment:</b> Oral questions, self and peer assessment.
<b>Suggested Learning Resources:</b> Braille sense U2,Focus 40.	

### Suggested Assessment Rubric

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
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The learner is able to identify and categorize digital devices for reading and writing braille.	The learner is able to identify digital devices for reading and writing braille.	The learner is able to identify some digital devices for reading and writing braille.	The learner is able to identify few digital devices for reading and writing braille.
The learner is able to describe and state functions of features of digital devices for reading and writing braille.	The learner is able to describe features of digital devices for reading and writing braille.	The learner is able to make progressive effort in describing features of digital devices for reading and writing braille.	The learner is able to make little effort in describing features of digital devices for reading and writing braille.
The learner is able to read braille texts with fluency using digital devices with refreshable braille displays.	The learner is able to read braille texts using digital devices with refreshable braille displays.	The learner is able to make progressive effort in reading braille texts using digital devices with refreshable braille displays.	The learner is able to make little effort in reading braille texts using digital devices with refreshable braille displays.
The learner is able to write, edit and save braille texts using digital devices .	The learner is able to write braille texts using digital devices .	The learner is able to write simple words in braille using digital devices .	The learner is able to write alphabetical letters in braille using digital devices .

### **BRaille READING SKILLS**

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
<b>2.0 BRAILLE</b>	<b>2.1 TACTILE TABLES</b>	By the end of the sub-strand the learner should be able to:	<ul style="list-style-type: none"> <li>In pairs, learners are guided to identify rows and columns on a tactile table which include logarithm tables, periodic tables and grid references.</li> </ul>	1. Why do you identify rows and

<b>READING SKILLS</b>	<b>2 lessons</b>	<ul style="list-style-type: none"> <li>a) identify rows and columns on a tactile table,</li> <li>b) read values in rows and columns on a tactile table,</li> <li>c) match values in rows and columns on a tactile table,</li> <li>d) enjoy matching values in rows and columns on a tactile table.</li> </ul>	<ul style="list-style-type: none"> <li>● Learners are guided to read values in rows and columns on a tactile table.</li> <li>● In pairs, learners match values in rows and columns on a tactile table.</li> <li>● Learners practice matching values on rows and columns on a tactile table.</li> </ul>	columns in a tactile table?
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**Core Competencies to be Developed**

**Communication and collaboration:** This is developed as learners interact while working in pairs.

**Critical thinking and problem solving:** This is developed as learners interpret and analyze information from tactile tables.

**Link To Pertinent and Contemporary Issues:**

- **Analytical thinking skills** as learners match values in rows and columns.
- **Safety issues** as learners store safely the tactile tables after use.

**Link to Values:**

**Responsibility** this is achieved as learners care for and store tactile tables safely after use.

**Link to other Learning Areas:**

**Suggested Community Service Learning:**

Learners could visit a nearby regular school during clubs and societies to engage in interpreting tactile tables with their

<p><b>Mathematics and integrated science, social studies,</b> This is achieved as learners apply the acquired skills to trace and interpret tactile tables in the aforementioned learning area.</p>	<p>sighted peers. Learners with blindness could use tactile tables while their sighted counterparts use print maps.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners could visit the school resource room and compete in tracing and interpreting information on tactile tables.</p>	<p><b>Suggested Assessment:</b></p> <p>Oral questions, self-assessment and peer assessment</p>
<p><b>Suggested Learning Resources:</b></p> <p>Braille logarithm table, Braille periodic table,</p>	

### Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p>The learner is able to identify and explain rows and columns on a tactile table.</p>	<p>The learner is able to identify rows and columns on a tactile table.</p>	<p>The learner is able to make progressive effort in identifying rows and columns on a tactile table.</p>	<p>The learner is able to make minimal effort in identifying rows and columns on a tactile table.</p>
<p>The learner is able to read and interpret values in rows and columns on a tactile table.</p>	<p>The learner is able to read values in rows and columns on a tactile table.</p>	<p>The learner is able to make progressive effort in reading values in rows and columns on a tactile table.</p>	<p>The learner is able to make minimal effort in reading values in rows and columns on a tactile table.</p>

The learner is able to match and interpret values in rows and columns on a tactile table.	The learner is able to match values in rows and columns on a tactile table.	The learner is able to match most of the values in rows and columns on a tactile table.	The learner is able to match few values in rows and columns on a tactile table.
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Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	<b>2.2 Key features of a braille text</b>  <b>2 lessons</b>	By the end of the sub strand the learner should be able to: <ol style="list-style-type: none"> <li>a) identify layout of functional writing items on braille books,</li> <li>b) Read functional writing items on braille books,</li> <li>c) Differentiate the layout of functional writing items in braille,</li> <li>d) Show curiosity in reading functional writing items in braille.</li> </ol>	<ul style="list-style-type: none"> <li>● In pairs, learners are guided to manipulate functional writing items which include; curriculum vitae, application form, bursary forms, and registration form.</li> <li>● Learners are guided to identify the layout of functional writing items on braille books.</li> <li>● Learners could read functional writing items on braille books.</li> <li>● In groups learners could differentiate the layout of functional writings items in braille.</li> </ul>	1. How do we identify the layout of functional writing items in braille?

**Core Competencies to be Developed:**

<ul style="list-style-type: none"> <li>● <b>Communication and collaboration:</b> This is developed as learners interact in groups when manipulating functional writing items.</li> <li>● <b>Critical thinking and problem solving:</b> This is developed as learners differentiate the layout of functional writing items in braille.</li> </ul>	
<p><b>Link To Pertinent and Contemporary Issues:</b></p> <ul style="list-style-type: none"> <li>● <b>Mentorship and Peer education:</b> This is enhanced as learners support each other in groups to identify layout of functional writing items.</li> <li>● <b>Social cohesion:</b> This is enhanced as learners work in groups to promote values of sharing, tolerance and respect.</li> </ul>	<p><b>Link to Values:</b></p> <ul style="list-style-type: none"> <li>● <b>Unity</b> as learners work harmoniously in groups.</li> <li>● <b>Respect</b> as learners appreciate each other’s opinion during group work.</li> </ul>
<p><b>Link to other Learning Areas:</b></p> <p><b>English and Kiswahili</b> – as learners apply knowledge on layout of functional writing items learning of aforementioned learning areas.</p>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners to support members of the community in identifying key features of functional writing items.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners visit the school resource room to identify the layout of the functional writing items from braille books.</p>	<p><b>Suggested modes of Assessment:</b></p> <p>Oral questions, self-assessment, and peer assessment and observation</p>
<p><b>Suggested Learning Resources:</b></p> <p>copies of curriculum vitae, application form, bursary forms, and registration form.</p>	

**Suggested Assessment Rubrics**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
The learner is able to: Identify layout of functional writing items in braille and give layout of more items.	The learner is able to: Identify layout of functional writing items in braille.	The learner is able to: Identify layout of some functional writing items in braille.	The learner is able to: Identify the layout of a few functional writing items in braille
Read functional writing items in braille and identify other functional writing items.	Read functional writing items in braille.	Read most functional writing items o in braille.	Read a few functional writing items in braille.
Compare the layout of functional writing items in braille.	Differentiate the layout of functional writing items in braille.	Differentiate the layout of most functional writing items in braille.	Differentiate the layout of a few functional writing items in braille.

## **BRILLE WRITING SKILLS**

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
<b>3.0 BRILLE WRITING SKILLS</b>	3.1 Tactile Graphics  3 lessons	By the end of the sub-strand the learner should be able to:  a) draw tactile graphics using	<ul style="list-style-type: none"> <li>Learners are guided to identify materials and equipment for drawing tactile graphics which include; spur wheel, tracing mat, braille machine, cut outs, adhesive labels, outlines and braille papers.</li> </ul>	1. How do you make tactile graphics?

		braille materials and equipment, b) make tactile graphics using locally available materials, c) care for and store tactile graphics safely after use, d) enjoy drawing and making tactile graphics to enhance learning.	<ul style="list-style-type: none"> <li>● Learners are guided to draw tactile graphics using braille material and equipment. The tactile graphics may include; net of solids for cones and pyramids, stages of a river</li> <li>● Learners are guided to name and label the tactile graphic drawn, for example labeling the vertices of nets of solids using letters.</li> <li>● In pairs learners are guided to identify locally available materials that could be used to make tactile graphics for example; sands, wood glue, sticks, soil, thread, cotton, grains.</li> <li>● Learners are guided to make tactile graphics using locally available materials for example; map of africa, structure of the earth, a diagram of digestive system.</li> <li>● Learners are guided to name and label the tactile graphics made.</li> <li>● In groups or pairs learners are guided to take proper care of tactile materials.</li> <li>● Learners are guided to store tactile materials carefully.</li> <li>● learners practice drawing and making tactile graphics.</li> </ul>	
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**Core Competencies to be Developed**

**Communication and collaboration:** This is developed as learners work in pairs and in groups to draw and make tactile graphics.

**Creativity and imagination;** this is developed as learners make tactile graphics.

**Link To Pertinent and Contemporary Issues:**

**Environmental issues in education ;** this is developed as learners make tactile graphics using locally available materials to minimize pollution.

**Link to Values:**

**Responsibility** this is achieved as learners care for and store tactile graphics safely after use.

**Love;** this is developed as learners share the locally available resources



<p><b>Safety issues</b> ; this is developed as learners observe safety measures while using sharp objects when making tactile graphics.</p>	
<p><b>Link to other Learning Areas:</b> <b>Mathematics, Social studies, Creative Arts, Music, Integrated science.</b> as learners apply the acquired skills in performing tasks in the aforementioned learning areas.</p>	<p><b>Suggested Community Service Learning:</b> Learners to collect locally available materials and use them to draw and make tactile graphics, then showcase them during parents day or open day.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b> Learners could visit the school resource room and work with school transcriber to draw and make tactile graphics.</p>	<p><b>Suggested mode of Assessment:</b> Oral questions, self-assessment ,peer assessment and observation.</p>
<p><b>Suggested Learning Resources:</b> Pairs of scissors, braille material, sands, wood glue, sticks, soil, thread, cotton ,cardboard, tracing mat, spur wheel, adhesive labels, thumb pins and grains.</p>	

### Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p>The learner is able to draw and label tactile graphics using braille materials and equipment.</p>	<p>The learner is able to draw tactile graphics using braille materials and equipment.</p>	<p>The learner makes progressive effort to draw tactile graphics using braille materials and equipment.</p>	<p>The learner makes little effort to draw tactile graphics using braille materials and equipment.</p>

The learner is able to make and label tactile graphics using locally available materials.	The learner is able to make tactile graphics using locally available materials.	The learner makes progressive effort in making tactile graphics using locally available materials.	The learner makes little effort in making tactile graphics using locally available materials.
The learner is able to care for and store tactile graphics safely after use in a variety of ways.	The learner is able to care for and store tactile graphics safely after use.	The learner makes progressive effort to care for and store tactile graphics safely after use.	The learner makes little effort to care for and store tactile graphics safely after use.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>3.0 BRAILLE WRITING SKILLS</b>	3.2 Functional writing  2 lessons	By the end of the sub strand the learner should be able to:  a) identify layout of functional writing items from braille books, b) write functional writing items on braille papers, c) show curiosity in reading functional writing items for learning.	<ul style="list-style-type: none"> <li>● In pairs, learners are guided to manipulate functional writing items on a braille work card which include: curriculum vitae, application form, bursary forms and registration form.</li> <li>● In groups learners to differentiate layout of functional writings items such as; curriculum vitae, application form, bursary forms, and registration form.</li> <li>● Learners are guided to identify the layout of the functional writing items on braille papers.</li> <li>● Learners write the functional writing items on braille papers.</li> </ul>	1. How do we identify the layout of functional writing items in braille ?

<p><b>Core Competencies to be Developed:</b></p> <p><b>Communication and collaboration:</b> as learners work in pairs to manipulate functional writing items on a braille work card.</p> <p><b>Critical thinking and problem solving:</b> This is developed as learners differentiate functional writing items.</p>	
<p><b>Link to Pertinent and Contemporary Issues:</b></p> <ul style="list-style-type: none"> <li>● <b>Mentorship and Peer education</b> ; this is enhanced as learners support each other in groups to identify layout of the functional writing items.</li> <li>● <b>Social cohesion;</b> this is enhanced as learners work in groups to promote values of sharing, tolerance and respect.</li> </ul>	<p><b>Link to Values:</b></p> <ul style="list-style-type: none"> <li>● <b>Unity;</b> this is developed as learners work harmoniously in groups.</li> <li>● <b>Respect;</b> this is developed as learners appreciate each other's opinion during group work.</li> </ul>
<p><b>Link To other Learning Areas:</b></p> <p><b>English, Kiswahili ,–</b> as learners apply skills on the layout of functional writing items in learning of English and Kiswahili.</p> <p><b>Pre-technical and pre career education:</b> as learners learn how to prepare documents for career opportunity.</p>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners could prepare functional writing items and bind them into booklets then donate them to the community library for persons with blindness.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners visit the school resource room to identify the layout of the functional writing items from braille books.</p>	<p><b>Suggested mode of Assessment:</b></p> <p>Oral questions, written questions, self-assessment , peer assessment and observation.</p>

**Suggested Learning Resources:**

Braille papers, braille books, braille machines and braille copies of curriculum vitae, bursary form, application and registration.

**Suggested Assessment Rubric**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
Learner is able to: Identify layout of functional writing items on braille books and give layout of more items.	Learner is able to: Identify layout of functional writing items on braille books.	Learner is able to: Identify layout of some functional writing items on braille books.	Learner is able to: Identify layout of very few functional writing items on braille books.
create and write functional items on braille papers.	Write functional items on braille papers.	Write some functional items on braille papers.	Write very few functional items on braille papers.

**ENGLISH BRAILLE**

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
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<b>4.0 ENGLISH H BRAILLE</b>	<b>4.1 POETRY LAYOUT</b> <b>2 lessons</b>	<p>By the end of the sub-strand the learner should be able to:</p> <ul style="list-style-type: none"> <li>a) identify features of a poem written in braille following line symbol style,</li> <li>b) read a poem written in braille following line symbol style</li> <li>c) write a poem in braille following line symbol style,</li> <li>d) appreciate use of line symbol style in reading and writing poetry in braille.</li> </ul>	<ul style="list-style-type: none"> <li>● Learners are guided to identify features of a poem written in braille following line symbol style which include; using the line symbol at the end of a line, using the line symbol after punctuation, using the line symbol after the last line.</li> <li>● Learners are guided to read a poem written in braille following line symbol style.</li> <li>● Learners are guided to write a poem in braille following line symbol style.</li> <li>● in pairs or groups learners could practice reading and writing poems following the line symbol style.</li> </ul>	<p>1. How do you identify a poem written in braille following line symbol style?</p>
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<p><b>Core competencies to be developed</b></p> <p><b>Communication and collaboration:</b> This is developed as learners work together in groups as they read and write poems in braille following line symbol style.</p> <p><b>Self – efficacy:</b> This is developed as learners gain confidence in writing poems in braille following line symbol style and as they do peer evaluation of each other’s poems.</p>	
<p><b>Link to Pertinent and Contemporary Issues –social cohesion -</b>  This is realized as learners from different ethnic groups work together during peer review of their own composed poems written in braille using line symbol style.</p>	<p><b>Link to values: patriotism:</b> learners demonstrate patriotism as they read and write poems promoting nationhood following line symbol style.</p>
<p><b>Links to other learning areas:</b> English language, Kiswahili French, German Chinese: as learners use the knowledge acquired</p>	<p><b>Suggested community service learning:</b> learners could compose poems written in line symbol style and present them during a music festival competition.</p>

to perform tasks involving poetry in the above mentioned learning areas.	
<b>Suggested non formal activity to support learning:</b> Learners could go to the library and read poetry books to familiarize themselves with poems written following line symbol style.	<b>Suggested assessment:</b> Peer assessment, observation, oral questions, written questions.
<b>Suggested learning resources:</b> braille machines, braille work cards, braille papers, braille books.	

### Assessment Rubrics

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
The learner is able to: identify features of a poem written in braille following line symbol style giving more explanation on the features.	the learner is able to: identify features of a poem written in braille following line symbol style,	The learner is able to: the learner is able to: identify most of the features of a poem written in braille following line symbol style	The learner is able to: identify only one feature of a poem written in braille following line symbol style
read with fluency a poem written in braille following line symbol style	read a poem written in braille following line symbol style	shows progressive effort in reading a poem written in braille following line symbol style	shows little effort in reading a poem written in braille following line symbol style
write a poem in braille following line symbol style and even compose and write his/her own poem using the same style.	write a poem in braille following line symbol style,	write a poem in braille following line symbol style incorporating most of the features	write a poem in braille following line symbol style incorporating few of the features.

STRAND	SUB STRAND	SPECIFIC LEARNING OUTCOME	SUGGESTED LEARNING EXPERIENCES	KEY INQUIRY QUESTION
	<p>4.2 Punctuation signs: accent sign, oblique stroke.</p> <p>1 lessons</p>	<p>By the end of the sub-strand the learner should be able to:</p> <ol style="list-style-type: none"> <li>identify accent sign and oblique stroke sign in braille.</li> <li>read braille text involving accent sign and oblique stroke sign.</li> <li>write braille text involving accent sign and oblique stroke sign while observing the rules.</li> <li>appreciate the use of accent sign and oblique stroke sign in braille texts for effective communication.</li> </ol>	<ul style="list-style-type: none"> <li>learners are guided to identify accent sign and oblique stroke sign in braille text,</li> <li>learners are guided to read braille text involving accent sign and oblique stroke sign while noting the rules,</li> <li>learners are guided to write braille text involving accent sign and oblique stroke signs while observing the rules,</li> <li>in pairs or groups learners are guided to use digital devices with assistive technology to read and write braille text involving accent sign and oblique stroke sign while noting and observing the rules,</li> </ul>	<p>How do you identify an accented braille?</p>

**Core Competencies to be developed**

**self-efficacy:** this is developed as learners gain confidence in wrong words with accent and using oblique stroke appropriately.

**digital literacy:** this is developed as learners use use digital devices with assistive technology to read and write braille text involving accent sign and oblique stroke sign while noting and observing the rules,

<b>Communication and collaboration</b> – this is developed as learners work together in reading and writing text with accent sign and oblique stroke sign	
<b>Link to Pertinent and Contemporary Issues: - effective communication:</b> this is achieved as learners use the skill learnt to read and write sentences using accent marks and oblique stroke appropriately.	<b>Link to values:</b> this is enhanced as learners work in groups as they share ideas on using accent marks and oblique stroke in harmony. <b>responsibility:</b> this is achieved as learners take care of the digital devices as they use them to perform class tasks involving accent sign and oblique stroke sign
<b>Link to other learning areas:</b> English Language, Kiswahili, integrated science, performing arts: as learners use accent sign and oblique stroke sign when taking notes, and performing other tasks in the above mentioned learning areas.	<b>Suggested Community Service Learning:</b> Learners could visit a french cultural centre nearby, collect brochures, read them through and make a list of the words with accent marks and present the list to others in class during the next lesson.
<b>Suggested non formal activity to support learning:</b> Learners could go to the library and read books with accent marks and oblique strokes to familiarize themselves more with these punctuation marks.	<b>Suggested assessment:</b> Oral questions, written questions, observation.
<b>Suggested learning resources:</b> braille machines, braille papers, braille books, digital devices with assistive technology.	

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### Assessment Rubrics

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
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The learner is able to: identify accent sign and oblique stroke sign in braille giving examples of words with accent marks..	The learner is able to: identify accent sign and oblique stroke sign in braille.	The learner is able to: makes progressive effort in identifying accent sign and oblique stroke sign in braille.	The learner is able to: makes little effort in identifying accent sign and oblique stroke sign in braille.
read with fluency braille text involving accent sign and oblique stroke sign.	read braille text involving accent sign and oblique stroke sign.	read most of the words with accent sign and oblique stroke sign in a braille text.	read a few words with accent sign and oblique stroke sign in a braille text.
write braille text involving accent sign and oblique stroke sign while observing the rules and write words in foreign languages with accent marks.	write braille text involving accent sign and oblique stroke sign while observing the rules.	makes progressive effort in writing braille text involving accent sign and oblique stroke sign while observing the rules.	makes little effort in writing braille text involving accent sign and oblique stroke sign while observing the rules.

#### **BRELI YA KISWAHILI**

<b>Mada</b>	<b>Mada ndogo</b>	<b>Matokeo maalum yanayotarajiwa.</b>	<b>Mapendekezo ya shughuli za somo</b>	<b>Swali Dadisi</b>
5.0 <b>BRELI YA KISWAHILI</b>	5.1 MPANGILIO WA MASHAIRI:	Kufikia mwisho wa mada ndogo,mwanafunzi aweze:	<ul style="list-style-type: none"> <li>wanafunzi waelekezwe kutambua alama ya breli ya kuhitimisha mustari katika shairi.</li> </ul>	1. Ni vipi utasoma n

<p>Alama ya breli ya kuhitimisha mustari katika shairi.</p> <p>Vipindi 2</p>	<p>a) Kutambua alama ya breli ya kuhitimisha mustari katika shairi,</p> <p>b) Kusoma mashairi kwa breli akizingatia alama ya kuhitimisha mustari,</p> <p>c) Kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari,</p> <p>d) afurahie kusoma na kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari.</p>	<p>nukta nundu 3,4,5.</p> <ul style="list-style-type: none"> <li>● Kwa vikundi wanafunzi waelekezwe kusoma mashairi kwa breli wakizingatia alama ya kuhitimisha mustari.</li> <li>● Wanafunzi wakiwa wawili wawili waelekezwe kuandika mashairi wakizingatia alama ya kuhitimisha mustari.</li> <li>● Kwa vikundi wanafunzi wafanye mazoezi ya kusoma na kuandika mashairi kwa breli wakizingatia alama ya kuhitimisha mustari</li> </ul>	<p>akuandika kwa beli mashairi ukizingatia alama ya kuhitimisha mustari?</p>
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**Umilisi wa kimsingi unaokuzwa**

**Uraia-** hukuzwa wanafunzi wanapo soma na kuandika mashairi inayohusu jamii mbalimbali ya dunia.

**ujizi wa ujifunzaji:** hukuzwa wakati wanafunzi wanapo jifunza kuandika mashairi wakizingatia alama ya kuhitimisha mustari.

**Uhusiano na masuala mtambuko**

**Uongozi hitajika**—hukuzwa wakati wanafunzi wanapofanya kazi katika vikundi huku wakipata nafasi sawa ya kutwaa uongozi katika vikundi vyao.

**Uhusiano wa maadili**

**uadilifu** - hukuzwa wakati wanafunzi wanaposoma mashairi yanayo onyesha umuhimu wa tabia njema.

<p><b>Uhusiano na masomo mengine</b></p> <p><b>Kiswahili ,kiingereza kijerumani, kifaranza. —wakati wanafunzi wanaposoma na kuandika mashairi.</b></p>	<p><b>Mapendekezo ya shughuli za huduma za kijamii zinazochangia ujifunzaji:</b></p> <p>Wanafunzi wanaweza kutembelea kituo cha utamaduni kilicho karibu ilikujifunza zaidi kuhusu mashairi ya jamii husika.</p>
<p><b>Shughuli za kila siku zisizo ratibiwa zinazochangia ujifunzaji:</b></p> <p>Wanafunzi wakiwa katika vilabu vyao shuleni wanaweza kufanya mazoezi ya kusoma na kuandika mashairi kwa breli wakizingatia alama ya kuhitimisha mustari.</p>	<p><b>Mapendekezo ya tathmini</b></p> <p>Maswali kwa sauti, maswali ya kuandika, tathmini ya rika, kujitathmini na tathmini ya kutazama</p>
<p><b>Nyenzo</b></p> <p>Karatasi za breli, vitabu vya mashairi vya breli, mashine ya breli.</p>	

### Kiwango Cha Tathmini

<b>Anazidi matarajio</b>	<b>Anatimiza Matarajio</b>	<b>Anakaribia Matarajio</b>	<b>Chini ya matarajio</b>
<p>Mwanafunzi anaweza Kutambua na kuelezea alama ya breli ya kuhitimisha mustari katika shairi.</p>	<p>Mwanafunzi anaweza Kutambua alama ya breli ya kuhitimisha mustari katika shairi.</p>	<p>Mwanafunzi anaonyesha bidii ya wastani katika kutambua alama ya breli ya kuhitimisha mustari katika shairi.</p>	<p>Mwanafunzi anaonyesha bidii hafifu kutambua alama ya breli ya kuhitimisha mustari katika shairi.</p>
<p>Mwanafunzi anaweza kusoma kwa ufasaha mashairi kwa breli</p>	<p>Mwanafunzi anaweza kusoma mashairi kwa breli</p>	<p>Mwanafunzi anaonyesha bidii ya wastani katika kusoma</p>	<p>Mwanafunzi anaweza kusoma mashairi kwa breli bila</p>

akizingatia alama ya kuhitimisha mustari.	akizingatia alama ya kuhitimisha mustari.	mashairi kwa breli akizingatia alama ya kuhitimisha mustari.	kuzingatia alama ya kuhitimisha mustari.
Mwanafunzi anaweza kutunga na kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari.	Mwanafunzi anaweza kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari.	Mwanafunzi anaonyesha bidii ya wastani katika kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari.	Mwanafunzi anaonyesha bidii hafifu katika kuandika mashairi kwa breli akizingatia alama ya kuhitimisha mustari.

### MATHEMATICS BRAILLE NOTATION

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>6.0 MATHEMATIC S BRAILLE NOTATION</b>	6.1 Numbers In Braille  1 lesson	By the end of the sub-strand the learner should be able to;  a) identify ordinal numbers in braille, b) read ordinal numbers in braille, c) write ordinal numbers in braille, d) enjoy reading and writing ordinal numbers used in learning.	<ul style="list-style-type: none"> <li>● In groups or pairs learners are guided to identify ordinal numbers on braille work cards;which include; 1st, 2nd, 3rd, 4th, 5th,...</li> <li>● In groups or pairs learners are guided to read ordinal numbers in braille.</li> <li>● In groups or pairs learners are guided to write ordinal numbers in braille.</li> <li>● Learners could practice reading and writing ordinal numbers using digital devices with a refreshable braille display or braille materials and equipment.</li> </ul>	1. Why are ordinal numbers written differently in braille?

<p><b>Core competencies to be developed:</b></p> <p><b>Digital literacy;</b> this is developed as learners use digital devices with refreshable braille display to read and write ordinal numbers.</p> <p><b>Communication and collaboration;</b> this is developed as learners engage one another in group discussion</p>	
<p><b>Link To Pertinent and Contemporary Issues:</b></p> <p><b>Good governance ;</b>This is developed as learners take up leadership roles as they work in groups</p> <p><b>Friendship formation;</b> this is developed as learners work in groups</p>	<p><b>Link to Values:</b></p> <p><b>Patriotism;</b> this is developed as learners work together irrespective of their backgrounds</p> <p><b>Respect;</b> this is developed as learners listen to each other’s opinion while working in groups to achieve set goals</p>
<p><b>Link To other Learning Areas:</b></p> <p><b>Mathematics, english;</b>as learners use ordinal numbers in writing dates in the aforementioned learning areas.</p>	<p><b>Suggested Community Service Learning:</b></p> <p>learners visit a nearby community library and assist in labeling shelves using ordinal numbers.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>This occurs as learners use ordinal numbers during competition in math clubs.</p>	<p><b>Suggested Assessment:</b></p> <p>Peer and self-assessment, observation, oral questions.</p>
<p><b>Suggested Learning Resources:</b></p> <p>braille work cards, ,braille machine, braille papers and digital devices with refreshable braille display-braille me</p>	

**Suggested Assessment Rubrics**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
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The learner is able to identify ordinal numbers in braille and further categorize them.	The learner is able to identify ordinal numbers in braille.	The learner shows progressive effort to identify ordinal numbers in braille.	The learner shows minimal effort to identify ordinal numbers in braille.
The learner is able to read a wide range ordinal numbers in braille.	The learner is able to read ordinal numbers in braille.	The learner makes progressive effort to read ordinal numbers in braille.	The learner makes minimal effort to read ordinal numbers in braille.
The learner is able to write ordinal ordinal numbers in braille and come up with other numbers.	The learner is able to write ordinal ordinal numbers in braille.	The learner makes progressive effort to write ordinal ordinal numbers in braille.	The learner makes minimal effort to write ordinal ordinal numbers in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>6.0 MATHEMATICS</b>	6.2 Mathematics Signs	By the end of the sub-strand the	<ul style="list-style-type: none"> <li>In groups or pairs learners are guided to identify mathematics signs on a braille work card which include; cube and cube root</li> </ul>	1. Why is it important to write mathematics

<p><b>BRAILLE NOTATION</b></p>	<p>2 lessons</p>	<p>learner should be able to;</p> <p>a) identify mathematics signs in braille,</p> <p>b) read mathematics expressions involving mathematics signs in braille,</p> <p>c) write mathematic expressions involving mathematics signs in braille,</p> <p>c) appreciate the use of mathematics signs in learning.</p>	<p>sign, logarithm sign, antilog sign, delta sign, superscript sign, subscript sign, index and bottom index sign , matrice sign, parallel line sign and perpendicular line.</p> <ul style="list-style-type: none"> <li>● Learners are guided to read mathematics expression involving mathematics signs in braille</li> <li>● In groups or pairs learners are guided to write mathematics expressions involving mathematics signs in braille.</li> </ul> <p>In groups or in pairs learners practice reading and writing mathematics expressions involving the mathematics signs using digital devices with refreshable braille display.</p>	<p>signs correctly?</p>
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<p><b>Competencies To Be Developed:</b></p> <p><b>Communication and collaboration;</b> this is developed as learners participate in group activities.</p> <p><b>Digital literacy;</b> this is developed as learners use digital devices with refreshable braille display to read and write mathematics signs.</p>	
<p><b>Link To Pertinent and Contemporary Issues:</b></p> <p><b>social cohesion;</b> this is developed as learners work together in groups .</p> <p><b>Mentorship and peer education;</b> this is developed as learners support each other during group activities.</p>	<p><b>Link to Values:</b></p> <p><b>Unity;</b> as learners work together in groups</p> <p><b>Responsibility;</b> as learners shut down digital devices appropriately</p> <p><b>Love;</b> as learners share resources.</p>
<p><b>Link To other Learning Areas;</b></p> <ul style="list-style-type: none"> <li>● <b>Mathematics and integrated science;</b> this is developed as learners apply the skills of reading and writing signs to solve problems in the aforementioned learning areas.</li> </ul>	<p><b>Suggested Community Service Learning:</b></p> <ul style="list-style-type: none"> <li>● Learners could prepare charts of mathematics signs and present them during science symposiums.</li> </ul>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>learners to make charts of maths signs and present them during clubs and societies time.</p>	
<p><b>Suggested assessment:</b></p> <p>Oral, written, observation, portfolio, peer and self-assessment</p>	



**Suggested Learning Resources**

braille work cards, braille machine, braille papers and digital devices with refreshable braille display.

**Suggested Assessment Rubrics**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
The learner is able to identify mathematics signs in braille and further state how they are used.	The learner is able to identify mathematics signs in braille.	The learner is able to identify most mathematics signs in braille.	The learner is able to identify few mathematics signs in braille.
The learner is able to read and write mathematical expressions involving mathematics signs in braille and further categorize them.	The learner is able to read and write mathematical expressions involving mathematics signs in braille.	The learner is able to read and write most mathematical expressions involving mathematics signs in braille.	The learner is able to read and write a few mathematical expressions involving mathematics signs in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>6.0 MATHEMATICS BRAILLE NOTATION</b>	6.3 Mathematics Formulas  1 lesson	By the end of the sub-strand the learner should be able to; <ul style="list-style-type: none"> <li>a) read mathematics formulas in braille,</li> <li>b) write mathematics formulas in braille,</li> <li>c) appreciate the use of mathematical formulas in braille in the process of learning.</li> </ul>	<ul style="list-style-type: none"> <li>● In groups or pairs learners are guided to read mathematics formulas on braille work cards which include; the formula for surface area of a pyramid, cones, frustum and sphere, volume of pyramid, cones, frustum and sphere, Simple and compound interest formula, Hire purchase formula and Appreciation and depreciation.</li> <li>● In pairs or groups learners write mathematics formulas in braille.</li> <li>● Learners practice reading and writing mathematics formulas.</li> </ul>	1. Why would you write braille mathematics formulae correctly?

**Competencies To Be Developed**

**Communication and collaboration :** This is developed as learners work together in groups and consult each other

**Citizenship;** this is developed as learners work together in groups and appreciating individual and cultural differences

**Link To Pertinent and Contemporary Issues:**

**social cohesion;** this is developed as learners interact and appreciate each other's opinion during group activities.

**Link to Values: love;** This is developed as learners share resources.

<p><b>Mentorship and peer education</b> ; this is developed as learners support each other during group activity.</p>	<p><b>Unity</b>; This is developed as learners work towards achieving set goals in their groups.</p>
<p><b>Link To other Learning Areas:</b> <b>mathematics, Integrated Science:</b> as learners use mathematics formulae to solve problems in the aforementioned learning areas.</p>	<ul style="list-style-type: none"> <li>● <b>Suggested Community Service Learning:</b> Learners prepare formulas in braille and present them during the county Trade Fair.</li> </ul>
<p><b>Suggested Non Formal Activity that Support Learning:</b> This is developed as learners identify formulas for calculating volume of different shapes in the environment.</p>	<p><b>Suggested Assessment:</b> oral work, observation, written work peer and self-assessment</p>
<p><b>Suggested Learning Resources</b> braille work cards, braille papers, braille machines.</p>	

**Suggested Assessment Rubric**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
<p>The learner is able to read mathematics formulas in braille and state the meaning of each quantity.</p>	<p>The learner is able to read mathematics formulas in braille.</p>	<p>The learner is able to read most of the mathematics formulas in braille.</p>	<p>The learner is able to read a few of the mathematics formulas in braille.</p>

The learner is able to write mathematics formulas in braille and further derive other formulas.	The learner is able to write mathematics formulas in braille.	The learner is able to write most of the mathematics formulas in braille.	The learner is able to write a few of the mathematics formulas in braille.
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Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>6.0 MATHEMATIC S BRAILLE NOTATION</b>	6.4 Units Of Measurement  3 lessons	By the end of the sub-strand the learner should be able to;  a) identify units of measurement in braille,  b) write units of measurement in braille,  c) Appreciate the use of units of measurement in braille.	In pairs or groups learners are guided to identify units of measurement on a braille work card which include:  mass , weight and density.  <ul style="list-style-type: none"> <li>• In pairs or in groups learners are guided to write for mass, weight and density in braille.</li> <li>• Learners practice writing mathematics expressions involving units of measurement in braille.</li> </ul>	1. Why would you use braille signs to denote mass, weight and density?

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**Core Competencies to be developed:**

- **Communication and collaboration:** This is developed as learners work in groups to discuss braille notations denoting units of measurement.
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- **Critical thinking and problem solving:** This is developed as learners discuss why braille notations for units of measurement are important in solving problems involving measurement

**Link To Pertinent and Contemporary Issues:**

**effective communication;** as learners participate in discussions

**Link to Values:**

**Respect;** as learners listen to each other's opinion.

**Responsibility;** as learners store digital devices appropriately after use.

**Link To other Learning Areas:**

**Integrated science;** this occurs as learners talk about units of measurement in motion.

**Languages;** this is developed as learners discuss in group using English

**Suggested Community Service Learning:** learners may visit the nearby hospital and help to record the weights of patients as they report to the hospital

**Suggested Non Formal Activity that Support Learning:**

As learners record the weight of their peer in a PE lesson

**Suggested Assessment:** Oral, written, observation, portfolio peer and self-assessment

**Suggested Learning Resources:**

braille work cards,braille machine, braille paper ,

### Suggested Assessment Rubric

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
The learner is able to identify units of measurement in braille and further arrange them from the smallest to the largest and vice versa.	The learner is able to identify units of measurement in braille.	The learner makes progressive effort to identify units of measurement in braille.	The learner makes minimal effort to identify units of measurement in braille.
The learner is able to write units of measurement in braille and further give examples of mathematics statements.	The learner is able to write units of measurement in braille.	The learner is able to write most units of measurement in braille.	The learner is able to write a few units of measurement in braille.

### INTEGRATED SCIENCE (CHEMISTRY)

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
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<p><b>7.0 SCIENCE BRAILLE NOTATION</b></p>	<p>7.1Atomic structure 3 lesson</p>	<p>By the end of the sub strand the learner should be able to:</p> <p>a) Identify tactile structures of various ions showing arrangement of electrons and charge number,  b) Write braille representation of ions showing the charge number,  c) Identify chemical formulas of compounds and radicals in braille,  d) Write chemical formulas of compounds and radicals in braille,  e) Write a balanced chemical equation in braille.  f) Develop curiosity in reading and writing chemical formulas and equations in braille.</p>	<ul style="list-style-type: none"> <li>• In groups learners are guided to manipulate tactile structures of elements showing formation of ions on a braille work card for example tactile structures representing lithium, calcium ,chloride and aluminium ions.</li> <li>• Learners are guided to identify braille representations of ions showing arrangement of electrons and charge number on the braille work card.</li> </ul> <p>for example: Mg <math>\longrightarrow</math> Mg<sup>2+</sup></p> <p>Cl <math>\longrightarrow</math> Cl<sup>-</sup></p> <ul style="list-style-type: none"> <li>• Learners to write braille representations of ions showing the charge number using digital devices with refreshable braille display, such as Fe<sup>3+</sup> , CO<sub>3</sub><sup>2-</sup></li> <li>• Learners are guided to identify chemical formulas of compounds and radicals in braille such as,  Fe<sub>2</sub>O<sub>3</sub> , Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, NaClNO<sub>3</sub><sup>-</sup>  HSO<sub>3</sub><sup>-</sup></li> </ul>	<p>1. Why do we learn how to write ions in braille?</p>
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			<ul style="list-style-type: none"> <li>• Learners are guided to write formulas of compounds and radicals using digital devices with refreshable braille display or braille writing materials.</li> <li>• Learners are guided to write chemical equation in braille such as  <math display="block">2\text{Na}_{(s)} + 2\text{H}_2\text{O}_{(l)} \rightarrow 2\text{NaOH}_{(aq)} + \text{H}_{2(g)}</math> </li> </ul> <p><b>Project:</b> In groups learners prepare tactile structures showing ion formation using locally available resources and braille writing materials.</p>	
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### Core Competencies To Be Developed

**Communication and collaboration:** This is developed as learners interact effectively while working in groups.

**Creativity and innovation:** This is developed as learners prepare a tactile structure showing ion formation using locally available resources and braille writing materials.

**Digital literacy:** This is developed as learners use digital devices with refreshable braille displays to write formulas of compounds.

### Link To Pertinent and Contemporary Issues:

**Environmental issues in education:** This is developed as learners use locally available materials to prepare tactile structures showing ion formation.

### Link to Values:

**Responsibility** as learners take care of digital devices with refreshable braille displays.

**Unity** as learners work harmoniously during group activities.

### Link to other Learning Areas:

### Suggested Community Service Learning:



<p><b>Integrated Science:</b> as learners apply the skills acquired on ion formation in learning of integrated science.</p>	<p>Learners to collect materials for preparing tactile structures of ion formation from the local community.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners use a tactile periodic table in learning of integrated science during science contests.</p>	<p><b>Suggested Assessment:</b></p> <ul style="list-style-type: none"> <li>● Oral</li> <li>● Observation</li> <li>● Self and peer assessment</li> </ul>
<p><b>Suggested Learning Resources:</b></p> <p>Wood glue, thread, soft wire, braille reading and writing materials</p>	

### Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p>The learner is able to:</p> <p>Identify tactile structures of various ions showing arrangement of electrons and charge number.</p>	<p>The learner is able to:</p> <p>Identify tactile structures of various ions showing arrangement of electrons and charge number.</p>	<p>The learner is able to:</p> <p>Make progressive effort in identifying tactile structures of various ions showing arrangement of electrons and charge number.</p>	<p>The learner is able to:</p> <p>Show minimal effort identifying tactile structures of various ions showing arrangement of electrons and charge number.</p>
<p>Write braille representation of ions showing the charge number</p>	<p>Write braille representation of ions showing the charge number.</p>	<p>Write braille representation of most ions showing the charge number.</p>	<p>Write braille representation of a few ions showing the charge number.</p>

Identify chemical formulas of compounds and radicals in braille	Identify chemical formulas of compounds and radicals in braille	Make progressive effort in identifying chemical formulas of compounds and radicals in braille	Show little effort in identifying chemical formulas of compounds and radicals in braille
Write several chemical formulas of compounds and radicals in braille	Write chemical formulas of compounds and radicals in braille	Write some chemical formulas of compounds and radicals in braille	Write few chemical formulas of compounds and radicals in braille
Write several balanced chemical equations in braille.	Write a balanced chemical equation in braille.	Makes progressive effort in writing a balanced chemical equation in braille.	Show little effort in writing a balanced chemical equation in braille.

## Physics

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>7.0 SCIENCE BRAILLE NOTATION</b>	7.2 Derived units  2 lessons	By the end of the sub strand the learner should be able to:  a) identify derived unit symbols in braille,  b) write derived unit symbols in braille,	<ul style="list-style-type: none"> <li>In groups learners are guided to identify derived unit symbols in braille on a braille work card. They include: Speed/ velocity=<math>m/s</math>,  Acceleration = <math>m/s^2</math>  Frequency=<math>Hz</math>,  Volume flux=<math>m^3/s</math>.</li> </ul>	1. Why do we learn braille symbols for derived units?

		c) develop curiosity in reading and writing derived unit symbols in braille.	<p>Mass flux = Kg/s.</p> <ul style="list-style-type: none"> <li>• In pairs or groups learners are guided to write derived unit symbols in braille.</li> <li>• Learners practice reading and writing derived unit symbols in braille using digital devices with refreshable braille display or braille materials and equipment.</li> </ul>	
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#### Core Competencies to be Developed

- **Communication and collaboration:** This is developed as learners interact while working in groups.
- **Digital literacy:** This is developed as learners use digital devices with refreshable braille displays to read and write derived unit symbols in braille.

#### Link to Pertinent and Contemporary Issues:

- **Critical thinking and problem solving:** This is developed as learners write expressions involving derived unit symbols in braille.
- **Social Awareness skills:** This is developed as learners interact effectively during group activity.

#### Link to Values:

**Responsibility;** this is enhanced as learners take care of digital devices with refreshable braille display.

**Respect is enhanced ;**this is enhanced as learners appreciate each other's opinion while working in groups.

**Unity;** this is enhanced as learners work in groups to accomplish the common task.

<p><b>Link To other Learning Areas:</b></p> <ul style="list-style-type: none"> <li>● <b>Integrated science and Mathematics</b> –as learners apply skills acquired for writing the derived unit symbols in learning of the aforementioned learning areas.</li> </ul>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners write braille charts on derived unit symbols and share them with the peers from the neighboring school.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners record distance and time taken during short races then make a list of their speed on a school sport day.</p>	<p><b>Suggested modes of Assessment:</b></p> <p>Peer and self-assessment, Observation, Oral questions.</p>
<p><b>Suggested Learning Resources:</b></p> <p>Digital devices with refreshable braille display, braille machine, braille papers and braille work cards.</p>	

**Suggested Assessment Rubric**

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p>The learner is able to identify derived unit symbols in braille and cite relevant examples.</p>	<p>The learner is able to identify derived unit symbols in braille.</p>	<p>The learner is able to identify most derived unit symbols in braille.</p>	<p>The learner is able to identify a few derived unit symbols in braille.</p>

The learner is able to write derived unit symbols in braille and further write examples.	The learner is able to write derived unit symbols in braille.	The learner is able to write most derived unit symbols in braille.	The learner is able to write a few derived unit symbols in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>7.0 SCIENCE BRAILLE NOTATION</b>	7.3 Formulas  2 lessons	By the end of the sub strand the learner should be able to: <ul style="list-style-type: none"> <li>Identify braille formulas in braille,</li> <li>Write formula in braille,</li> </ul>	<ul style="list-style-type: none"> <li>In groups learners are guided to identify formulas in braille on braille work cards which includes: Velocity in radiations <math>(v) = f\lambda</math>  Mirror formulae <math>1/f = 1/v + 1/u</math></li> </ul>	1. Why do we learn how to write formulas in braille?

		<ul style="list-style-type: none"> <li>● make tactile triangle charts with formulas in braille ,</li> <li>● Enjoy reading and writing formulas in braille used in learning.</li> </ul>	<p>Period (T) = <math>\frac{1}{f}</math></p> <ul style="list-style-type: none"> <li>● In pairs learners are guided to write formulas in braille.</li> <li>● In groups, learners are guided to make tactile triangle charts entailing formulas in braille using locally available materials such as wood glue, thread, wires, braille reading and writing materials.</li> <li>● Learners practice reading and writing formulas in braille using digital devices with a refreshable braille display or braille materials and equipment.</li> </ul>	
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#### Core competencies to be Developed

- **Communication and collaboration:** This is developed as learners interact while working in groups.
- **Creativity and imagination-** This is developed as learners make tactile triangle charts entailing formulas in braille using locally available materials.
- **Digital literacy** -This is developed to use digital devices with a refreshable braille display to write formulas in braille.

#### Link To Pertinent and Contemporary Issues:

- **Mentorship and Peer education** ; this is developed as learners support one another in groups to make tactile triangle charts for formulas in braille.

#### Link to Values:

- **Respect:** This is developed as learners appreciate each other's opinion during group activities.
- **Responsibility:** This is developed as learners take care of the braille materials and equipment.

<p><b>Link To other Learning Areas:</b></p> <ul style="list-style-type: none"> <li>● <b>Integrated science and Mathematics</b> as The skills acquired for writing formulas in braille is applied in the learning of integrated science and mathematics.</li> </ul>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners make tactile triangle charts of formulas in braille and share them with their peers in other schools.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners come up with a tactile triangle of formulas in braille and present them during science clubs.</p>	<p><b>Suggested modes of Assessment:</b></p> <ul style="list-style-type: none"> <li>● Peer and self-assessment,</li> <li>● Observation,</li> <li>● Oral questions,</li> <li>● Written question.</li> </ul>
<p><b>Suggested Learning Resources:</b></p> <ul style="list-style-type: none"> <li>● Thread, wood glue, soft wires, soft board, braille machine, braille papers, digital devices with refreshable braille display and braille work cards.</li> </ul>	

**Suggested Assessment Rubric**

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
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The learner is able to identify formulas in braille and further state the meaning of each symbol	The learner is able to identify formulas in braille.	The learner is able to identify most formulas in braille.	The learner is able to identify a few formulas in braille.
The learner is able to write formulas in braille and further make each quantity the subject of the formula.	The learner is able to write formulas in braille.	The learner is able to write most formulas in braille.	The learner is able to write a few formulas in braille.
The learner is able to make tactile triangle charts with formulas in braille using a variety of materials.	The learner is able to make tactile triangle charts with formulas in braille	The learner is able to make progressive effort in preparing tactile triangle charts with formulas in braille	The learner is able to make minimal effort in preparing tactile triangle charts with formulas in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>7.0 SCIENCE</b>	<b>7.4 Tactile representatios</b>	By the end of the sub strand the learner should be able to:	<ul style="list-style-type: none"> <li>In pairs learners are guided to manipulate tactile representation of circuit symbols on braille work cards such as fuse, capacitors, fixed</li> </ul>	1. How do you make tactile representation of circuit symbols?



<b>BRILLE NOTATION</b>	<b>of circuit symbols</b>  <b>3 lessons</b>	<p>a) Identify tactile representation of circuit symbols,</p> <p>b) Make tactile representation of circuit symbols using locally available resources,</p> <p>c) Develop interest in identifying and assigning names to the tactile representation of circuit symbols used in learning.</p>	<p>resistors, variable resistors, potential dividers and galvanometers.</p> <ul style="list-style-type: none"> <li>● In pairs learners are guided to identify tactile representations of circuits symbols on the braille cards.</li> <li>● In groups learners assign names to the tactile representation of circuit symbols using braille writing and reading materials.</li> <li>● In pairs learners make tactile representation of circuit symbols using locally available materials such as wood glue, thread, soft wires, soft board, braille reading and writing materials.</li> <li>● Learners practice identifying and assigning names to the tactile circuit symbols for learning.</li> </ul>	
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### Core Competencies To Be Developed

- **Creativity and innovation.** This is developed as learners prepare tactile representation of circuit symbols using locally available resources.
- **Communication and collaboration.** This is developed as learners interact while working in groups.

### Link To Pertinent and Contemporary Issues:

- **Mentorship and Peer education.** This is developed as learners work in groups to make tactile representation of circuit symbols from braille work cards.

### Link to Values:

- **Unity:** this is developed as learners work in groups harmoniously to accomplish a common task
- **Responsibility:** this is developed as learners take care of braille work cards

<ul style="list-style-type: none"> <li>● <b>Analytical thinking skills.</b> This is developed as learners use locally available materials to prepare tactile representation of circuit symbols.</li> </ul>	
<p><b>Link To other Learning Areas:</b></p> <ul style="list-style-type: none"> <li>● <b>Integrated science</b> as learners apply the skills of tactile circuit symbols in learning integrated science.</li> </ul>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners collect locally available materials from their community to make tactile representation of circuit symbols.</p>
<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners make tactile charts on representation of circuit symbols using locally available materials.</p>	<p><b>Suggested Assessment:</b></p> <ul style="list-style-type: none"> <li>● Peer and self-assessment,</li> <li>● Observation,</li> <li>● Oral questions.</li> </ul>
<p><b>Suggested Learning Resources:</b></p> <ul style="list-style-type: none"> <li>● Thread, wood glue, soft wires, soft board, Braille material and equipment</li> </ul>	

### Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The Learner is able to identify tactile representation of circuit symbols and further state their functions.	The Learner is able to identify tactile representation of circuit symbols.	The Learner is able to identify tactile representation of most circuit symbols.	The Learner is able to identify tactile representations of few circuit symbols.

The Learner is able to make several tactile representations of circuit symbols using locally available resources.	The Learner is able to make tactile representation of circuit symbols using locally available resources.	The Learner is able to make tactile representation of some circuit symbols using locally available resources.	The Learner is able to make tactile representation of few circuit symbols using locally available resources.
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## MUSIC

Strand	Sub strand	Specific learning outcome	Suggested learning experiences	Key inquiry question
<b>8.0 MUSIC  BRAILLE NOTATION</b>	<b>8.1  WRITING AND ALIGNING MELODIES IN BRAILLE USING MAJOR KEYS.  2 lessons</b>	By the end of the sub stand, the learner should be able to: a) Identify features and alignment of melodies in braille. b) Read melodies in different alignments in braille. c) Write melodies in different alignments in braille. d) Enjoy writing and reading melodies in different alignments in braille.	Learners are guided to: <ul style="list-style-type: none"> <li>Identify features and alignments of melodies in braille, they include; clef signs, position of key signatures, time signatures, octave signs on notes, bars, bar lines, double bar lines, opening and closing frase marks.</li> <li>In groups learners are guided to read melodies in different alignments in braille.</li> <li>In pairs, learners are guided to write melodies in different alignments in braille.</li> <li>In groups learners practice reading and writing melodies in different alignment in braille.</li> </ul>	<ol style="list-style-type: none"> <li>Why do you identify features and alignments of melodies in braille?</li> <li>How do you read and write melodies in different alignments in braille. .</li> </ol>

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**Core competencies To Be Developed**

- **COMMUNICATION AND COLLABORATION**-This is developed as learners work in groups reading and writing melodies in different alignments.
- **LEARNING TO LEARN**-This is developed as learners apply knowledge and skills learned to compose their own melodies
- **SELF EFFICACY**—This is developed as learners gain self confidence and self esteem as they practice writing and reading melodies in Braille.

**Link To Pertinent and Contemporary Issues:**

- **Analytical thinking skills**—This is developed as learners apply critical thinking skills while identifying features of melodies as well as reading and writing the melodies using such features in braille.
- **clubs and societies**-- this is developed as learners create their own melodies with their peers in the music club.

**Link to Values:**

- **Unity**—This is developed as learners work together in groups and in pairs.
- **Responsibility**---This is developed as learners take care of the materials provided in their groups.

**Link To other Learning Areas:**

- **Performing arts**--As learners apply knowledge and skills learnt in melody writing in Braille using major keys to learn composing and creating melodies in performing arts as a learning area.

**Suggested Community Service Learning:**

- The learners could write and align melodies in bars using major keys in braille then bind them into booklets. They could then visit a nearby community library and donate them to the library for persons with visual impairment to use.

<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <ul style="list-style-type: none"> <li>● Learners could write and create melodies in Braille then practice reading them together with their peers in music and Braille club.</li> </ul>	<p><b>Suggested Assessment</b></p> <ul style="list-style-type: none"> <li>● -Oral questions</li> <li>● self assessment</li> <li>● -peer assessment</li> <li>● -Written question</li> <li>● -observation</li> </ul>
<p><b>Suggested Learning Resources</b></p> <ul style="list-style-type: none"> <li>● -Braille papers</li> <li>● -Braille machines</li> <li>● -music Braille books.</li> <li>● braille cards.</li> </ul>	

**Suggested Assessment Rubrics**

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p>The learner is able to: Identify features and alignments of melodies in braille and even explain the features.</p>	<p>The learner is able to: Identify features and alignments of melodies in braille.</p>	<p>The learner is able to: Progressively Identify features and alignments of melodies in braille.</p>	<p>The learner is able to: Make minimal effort in identifying features and alignments of melodies in braille.</p>
<p>Read and interpret melodies using different alignments in braille.</p>	<p>Read melodies using different alignments in braille.</p>	<p>Progressively read melodies using different alignment in braille.</p>	<p>Make minimal effort in reading melodies using different alignment in braille.</p>

write melodies in different alignments and even create his or her own in braille.	Write melodies in different alignments.	Progressively write melodies in different alignments.	Make minimal effort in writing melodies in different alignments.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
<b>8.0 MUSIC BRAILLE NOTATION</b>	<b>8.2 NATURAL, MELODIC AND HARMONIC MINOR SCALES IN BRAILLE  2 lessons</b>	By the end of the sub stand, the learner should be able to: a) identify features of natural, melodic and harmonic minor scale in Braille b) read natural ,melodic and harmonic minor scales in Braille c) write natural, melodic and harmonic minor scales in Braille d) enjoy writing and reading natural, melodic and harmonic minor scale in Braille.	<ul style="list-style-type: none"> <li>• Learners are guided to identify features of natural, melodic and harmonic minor scales in Braille. They include; clefs, key signature, time signature, opening and closing frase marks, position of octave on notes, bars, barlines, double bar lines, accented marks, accidentals and accent marks.</li> <li>• In groups learners are guided to read natural, Melodic and harmonic minor scales ascending and descending with and without key signature in Braille.</li> <li>• In pairs learners are guided to write natural, melodic and harmonic minor scales ascending in discendig with and without key signature in braille.</li> <li>• In groups learners practice reading and writing natural, melodic and harmonic minor scales ascending and descending with and without key signature in Braille.</li> </ul>	1. Why do you identify features of natural, melodic and harmonic minor scales in Braille?

<p><b>Competencies To Be Developed</b></p> <p><b>Communication and collaboration</b>—This is developed as learners read and write natural ,melodic and harmonic minor scales while in groups and in pairs.</p> <p><b>Critical thinking and problem solving</b>—this is developed as learners identify features and position on natural, melodic and harmonic minor scales in Braille.</p> <p><b>Self efficacy</b>---This is developed as learners show confidence and self esteem as they practice writing and reading natural, melodic and harmonic minor scales in braille.</p>	
<p><b>Link To Pertinent and Contemporary Issues:</b></p> <p><b>Mentoring and peer education.</b> This is developed as learners work in groups supporting each other in writing and reading natural, melodic and harmonic minor scales in braille.</p> <p><b>clubs and societies;</b> this is developed as learners in music clubs in their schools practice writing and reading natural, melodic and harmonic minor scales in braille.</p>	<p><b>Link to Values:</b></p> <p><b>Love</b>—This is developed as learners support each other while reading and writing natural, melodic and harmonic minor scales in braille.</p> <p><b>Respect</b>—This is developed as learners appreciate each others views as they work in groups and in pairs.</p>
<p><b>Link To other Learning Areas:</b></p> <p><b>Performing arts</b>---As learners apply knowledge and skills learned in braille to learn natural, melodic and minor scales in performing arts.</p>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners could visit a nearby school to write natural, melodic and harmonic minor scales in Braille and in print together with their sighted counterparts , Then perform the scales together to create awareness on how minor scales are written in Braille.</p>

<p><b>Suggested Non Formal Activity that Support Learning:</b></p> <p>Learners could visit the school library to familiarize themselves with minor scales in Braille.</p>	<p><b>Suggested Assessment</b></p> <ul style="list-style-type: none"> <li>● Observation</li> <li>● Written questions</li> <li>● Oral questions</li> </ul>
<p><b>Suggested Learning Resources:</b></p> <ul style="list-style-type: none"> <li>● Braille papers</li> <li>● Braille machines</li> <li>● Music Braille books</li> <li>● braille cards</li> </ul>	

**Suggested Assessment Rubrics**

<b>Exceeding expectations</b>	<b>Meeting expectations</b>	<b>Approaching expectations</b>	<b>Below expectations</b>
<p>The learner is able to: identify features of natural, melodic and harmonic minor scale in Braille as well as giving brief explanation of the features.</p>	<p>The learner is able to identify features of natural, melodic and harmonic minor scale in Braille.</p>	<p>The learner is able to: Identify most features of natural, melodic and harmonic minor scale in Braille.</p>	<p>The learner is able to: Identify few features of natural, melodic and harmonic minor scale in Braille.</p>



read natural ,melodic and harmonic minor scales in Braille and even go ahead to touch sing the scales.	read natural ,melodic and harmonic minor scales in Braille.	make progresive efforts in Reading natural ,melodic and harmonic minor scales in Braille.	make minimal effort in reading natural ,melodic and harmonic minor scales in Braille.
Creates and writes natural, melodic and harmonic minor scales in Braille.	write natural, melodic and harmonic minor scales in Braille	make progresive efforts in writing natural, melodic and harmonic minor scales in Braille	make minimal effort in writing few natural, melodic and harmonic minor scales in Braille

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
9.0 FRENCH BRAILLE	9.1 ORDINAL NUMBERS  2 lessons	By the end of the sub-strand the learner should be able to;  a) Identify ordinal numbers in French braille b) Read ordinal numbers in French braille c) Write ordinal numbers in French braille.  d) appreciate the use of ordinal umbers in French braille.	<ul style="list-style-type: none"> <li>● Learners be guided to identify ordinal numbers in French braille</li> <li>● I pairs ,learners read ordinal numbers in French braille.</li> <li>● Leaners be guided to write ordinal numbers in French braille.</li> <li>● In groups Learners practice reading and writing ordinal numbers in French braille for self-efficacy</li> </ul>	1. How are ordinal numbers written in braille?

<p><b>Core Competencies to Be Developed</b></p> <p><b>Communication and collaboration:</b> this is developed as learners work together in pairs to read and write ordinal numbers in French braille.</p> <p><b>Self-efficacy:</b> this is developed as learners gain confidence through practicing reading and writing ordinal numbers in French braille.</p>	
<p><b>Link to Pertinent and Contemporary Issues:</b></p> <p><b>Social cohesion:</b> this could be developed as learners work together in harmony while reading and writing ordinal numbers in French braille.</p> <p><b>Life skills ;</b> This could be developed as learners show fellow feeling as they cooperate to read and write ordinal numbers in French braille.</p>	<p><b>Link to Values: unity:</b> this could be achieved as learners cooperate in reading and writing ordinal numbers.</p>
<p><b>Link To other Learning Areas:</b></p> <p><b>French-</b>as learners use the acquired skills to read and write their braille work in French.</p>	<p><b>Suggests Community Service Learning:</b> Learners could fully participate in a community sports event and record the competitors positions using ordinal numbers in French braille. .</p>
<p><b>Suggested Non-Formal Activity that Support Learning:</b></p> <p>Learners could measure their heights and record the figures on paper using ordinal numbers. They could then proceed to rank themselves from first to last according to their height.</p>	<p><b>Suggested Assessment:</b> self-assessment, oral questions, peer assessment and observation.</p>
<p><b>Suggested Learning Resources:</b></p> <p>Braille machines, braille paper and French braille books.</p>	

**Suggested Assessment Rubrics**

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
<ul style="list-style-type: none"> <li>• The learner is able to identify ordinal numbers in French braille and pronounce them correctly.</li> <li>• The learner is able to read ordinal numbers in French braille with fluency.</li> <li>• The learner is able to write ordinal numbers in French braille with ease and speed.</li> </ul>	<ul style="list-style-type: none"> <li>• The learner is able to identify ordinal numbers in French braille</li> <li>• The learner is able to read ordinal numbers in French braille.</li> <li>• The learner is able to write ordinal numbers in French braille.</li> </ul>	<ul style="list-style-type: none"> <li>• The learner is able to identify most of the ordinal numbers in French braille</li> <li>• The learner is able to read most of the ordinal numbers in French braille.</li> <li>• The learner is able to write most of the ordinal numbers in French braille.</li> </ul>	<ul style="list-style-type: none"> <li>• The learner is able to identify few ordinal numbers in French braille.</li> <li>• The learner is able to read few ordinal numbers in French braille</li> <li>• The learner is able to write few ordinal numbers in French braille.</li> </ul>

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
<b>9.0 FRENCH BRAILLE</b>	9.2 NUMBERS 2 lessons	By the end of the sub-strand the learner should be able to; a) Identify decimals and percentages in French braille texts. b) Read text involving decimals and percentages in French braille. c) Write text involving decimals and percentages in French braille.	<ul style="list-style-type: none"> <li>• Learners could be guided to identify decimals and percentages in French braille texts.</li> <li>• Learners could be guided to read decimals and percentages in French braille texts.</li> <li>• Learners could be guided to write text involving decimals and percentages in French braille.</li> <li>• In pairs learners practice reading and writing texts with decimals and percentages in French braille using</li> </ul>	1. How is the literacy comma different from the mathematical comma?

		d) appreciate the use of decimals and percentages in French braille texts .	digital assistive devices with refreshable braille display.	
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**Core Competencies to Be Developed**

**Communication and collaboration:** this is developed as learners work together in pairs to read and write ordinal numbers in French braille.

**Critical thinking and problem solving:** this is developed as learners discover other tasks that may require the use of ordinal numbers.

**Link to Pertinent and Contemporary Issues:**

**Environmental issues in education-**this could be achieved as learners label trees around the school using ordinal numbers.

**Life skills ;** This could be developed as learners show fellow feeling as they cooperate to read and write ordinal numbers in French braille.

**Link to Values: unity:** this could be achieved as learners cooperate in reading and writing ordinal numbers.

**Link To other Learning Areas:**

**French-**as learners use the acquired skills to read and write their braille work in French.

**Suggested Community Service Learning:**

Learners could fully participate in a community sports event and record the competitors positions using ordinal numbers in French braille. .

**Suggested Non-Formal Activity that Support Learning:**

Learners could measure their heights and record the figures on paper, using ordinal numbers. they could then proceed to rank themselves from first to last according to their height.

**Suggested Assessment:** self-assessment, oral question, peer assessment.

**Suggested Learning Resources:**

Braille machines, slate and stylus, braille paper and French braille books.

## Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify decimals and percentages in French braille texts and pronounce them correctly.</li> <li>● Read texts involving decimals and percentages in French braille with fluency.</li> <li>● Write texts involving decimals and percentages in French braille with ease and speed.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify decimal and percentages in French braille texts</li> <li>● Read text involving numbers with decimals and percentages in French braille.</li> <li>● Write text involving numbers with decimals and percentages in French braille</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify most of the decimals and percentages in French braille texts</li> <li>● Read most of the decimals and percentages in French braille texts.</li> <li>● Write most of the decimal and percentages in French braille texts.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify few decimals and percentages in French braille texts.</li> <li>● Read few decimals and percentages in French braille texts.</li> <li>● Write few decimals and percentages in French braille texts.</li> </ul>

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>9.0 FRENCH BRAILLE</b>	9.3 PUNCTUATIONS AND INDICATORS 2 lessons	By the end of the sub-strand the learner should be able to: a) Identify punctuation signs and indicators in a French braille text.	<ul style="list-style-type: none"> <li>● Learners could be guided to locate punctuation signs and indicators in French braille texts that is ellipses, slash, percentages and abbreviation sign.</li> </ul>	1. How do you identify punctuation marks and indicators in

		b) read out punctuation signs and indicators in a French braille text c) Write punctuations signs and indicators in a French braille text. d) Appreciate the use of punctuation signs and indicators in French braille.	<ul style="list-style-type: none"> <li>● In pairs, learners could be guided to read punctuation signs and indicators in French braille texts.</li> <li>● Learners could be guided to write texts with punctuations signs and indicators in French braille.</li> <li>● In groups learners could practice reading and writing texts with punctuation marks and indicators.</li> </ul>	a French braille text?
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### Core Competencies to Be Developed

**Self-efficacy:** this is developed as learners gain mastery in using punctuation marks and indicators in their French work.

**Communication and collaboration:** this is developed as learners work together in groups to read and write texts with punctuation marks and indicators in French braille

#### Link to Pertinent and Contemporary Issues:

**social cohesion;** this could be achieved as learners of diverse backgrounds work together in reading and writing texts with punctuation marks in French braille.

**Link to Values; peace-**this is achieved as learners work together in harmony In pairs and groups

#### Link To other Learning Areas:

**French-**this is achieved as learners apply the acquired skills in their French work.

English-this is achieved as learners use ordinal numbers to organize their assignments.

#### Suggested Community Service Learning:

Learners could visit a local cultural center and present to the audience, songs and poems written In conformity with rules on punctuation.

**Suggested Assessment:** observation, written questions ,self-assessment and presentations.

#### Suggested Learning Resources:

Braille paper, braille machine, braille charts and French books.

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>Identify punctuation signs and indicators in a French braille text and even go further to name more punctuation marks .</li> <li>read a french braille text with punctuation signs and indicators with fluency</li> <li>write punctuations signs and indicators in a French braille text with ease and speed.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>Identify punctuation signs and indicators in a French braille text.</li> <li>The learner is able to read a french braille text with punctuation signs and indicators</li> <li>write punctuations signs and indicators in a French braille text.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>Identify most of the punctuation signs and indicators in a French braille text.</li> <li>Make progressive effort In reading a french braille text with punctuation signs and indicators</li> <li>write most punctuation marks and indicators in a French braille text.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>Identify few punctuation signs and indicators in a French braille text.</li> <li>Make minimal effort In reading a french braille text with punctuation signs and indicator</li> <li>Write few punctuations signs and indicators in a French braille text.</li> </ul>

## GERMAN BRAILLE

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
<b>10.0 GERMAN BRAILLE</b>	<b>10.1 Contracted Braille</b>	By the end of the sub- strand, the learner should be able to: a) Identify contractions in German braille	<ul style="list-style-type: none"> <li>Learners be guided to identify contraction in German braille that is sch sign ch sign and st sign etc .</li> </ul>	1. Why is the use of contractions in German

	2 lessons	b) read out words with contraction in German braille. c) Write words with contractions in German braille. d) Show interest in the use of contractions in German braille.	<ul style="list-style-type: none"> <li>● Learners be guided to read out words with contractions in German braille.</li> <li>● Learners be guided to write contractions in German braille.</li> <li>● In groups learners could be guided to practice reading and writing contractions in German braille using digital assistive devices with refreshable braille display</li> </ul>	braille necessary?
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### Core Competencies To Be Developed

**Digital literacy:** this is developed as learners use digital devices with refreshable braille display to read and write German texts with contractions in braille.

**Self- efficacy:** this is developed as learners gain confidence as they read and write German words with contractions in braille.

#### Link to Pertinent and Contemporary Issues:

**Clubs and societies** - this could be realized as learners use the acquired skills to read and write songs, poems, articles and other entertainment items for the german club..

**Link to Values – love** this is achieved as learners assist each other in reading and writing contractions in German braille.

#### Link To other Learning Areas:

**German:** As learners apply learned skills in reading and writing German work.

**Suggested Community Service Learning:** learners could visit a children’s home, help in cleaning work and then entertain the children with German songs and poems written in braille contractions.

**Suggested Non-Formal Activity that Support Learning:** Learners could extract excerpts from German story books and write them in braille using German contraction.

**Suggested Assessment:** peer assessment, written question and observation.

#### Suggested Learning Resources



Braille paper, braille machine, slate stylus, braille cards excerpts from German books and digital assistive devices with refreshable display like Orbit reader and Braille Me.

### Assessment Rubrics

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
<b>The learner is able to:</b> Identify contractions in German braille and even explain their formation.	<b>The learner is able to:</b> Identify contractions in German braille	<b>The learner is able to:</b> Identify most of the contractions in German braille	<b>The learner is able to:</b> Identify few contractions in German braille
read out words with contractions in German braille with fluency.	read out words with contraction in German braille.	read out most words with contraction in German braille.	read out few words with contraction in German braille.
Write contractions in German braille with ease and speed.	Write contractions in German braille.	Write most of the contractions in German braille.	Write few contractions in German braille.

<b>Strand</b>	<b>Sub Strand</b>	<b>Specific Learning Outcome</b>	<b>Suggested Learning Experiences</b>	<b>Key Inquiry Question</b>
<b>10.0 GERMAN BRAILLE</b>	10.2 NUMBERS 2 lessons	By the end of the sub-strand the learner should be able to; a) Identify decimals and percentages in German braille texts.	<ul style="list-style-type: none"> <li>Learners be guided to identify decimals and percentages in German braille texts.</li> </ul>	1. How is the literacy comma different from the

		<p>b) Read text involving decimals and percentages in German braille.</p> <p>c) Write text involving decimals and percentages in German braille.</p> <p>d) Appreciate the use of decimals and percentages in German braille texts.</p>	<ul style="list-style-type: none"> <li>● Learners be guided to read decimals and percentages in German braille texts.</li> <li>● Learners be guided to write text involving decimals and percentages in German braille.</li> <li>● In pairs learners practice reading and writing texts with decimals and percentages in German braille using digital assistive devices with refreshable braille display.</li> </ul>	<p>mathematical comma?</p>
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### Core Competencies to Be Developed

**Communication and collaboration:** this is developed as learners work together in pairs to read and write ordinal numbers in German braille.

**Self-efficacy:** this is developed as learners gain confidence through practicing reading and writing ordinal numbers in German braille.

#### Link to Pertinent and Contemporary Issues:

**Social cohesion:** this could be developed as learners work together in reading and writing ordinal numbers in German braille.

**Life skills ;** This could be developed as learners show fellow feeling as they cooperate to read and write ordinal numbers in German braille.

**Link to Values: unity:** this could be achieved as learners cooperate in reading and writing ordinal numbers.

#### Link To other Learning Areas:

**German-**as learners use the acquired skills to read and write their braille work in German.

**Suggests Community Service Learning:** Learners could fully participate in a community sports event and record the competitors positions using ordinal numbers in German braille. .

<p><b>Suggested Non-Formal Activity that Support Learning:</b></p> <p>Learners could practice ordering their assignments using ordinal numbers.</p>	<p><b>Suggested Assessment:</b> self-assessment, oral question, peer assessment.</p>
<p><b>Suggested Learning Resources:</b></p> <p>Braille machines, slate and stylus, braille paper and German braille books.</p>	

### Suggested Assessment Rubrics

<b>Exceeding Expectations</b>	<b>Meeting Expectations</b>	<b>Approaching Expectation</b>	<b>Below Expectations</b>
<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify decimals and percentages in German braille texts and pronounce them correctly.</li> <li>● Read texts involving decimals and percentages in German braille with fluency.</li> <li>● Write texts involving decimals and percentages in German braille with ease and speed.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● Identify decimal and percentages in German braille texts</li> <li>● Read text involving numbers with decimals and percentages in German braille.</li> <li>● Write text involving numbers with decimals and percentages in German braille</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● identify most of the decimals and percentages in German braille texts</li> <li>● read most of the decimals and percentages in German braille texts.</li> <li>● write most of the decimal and percentages in German braille texts.</li> </ul>	<p><b>The learner is able to:</b></p> <ul style="list-style-type: none"> <li>● identify few decimals and percentages in German braille texts.</li> <li>● read few decimals and percentages in German braille texts.</li> <li>● write few decimals and percentages in German braille texts.</li> </ul>

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
<b>10.0</b> <b>GERMAN</b> <b>BRAILLE</b>	10.3 PUNCTUATIONS AND INDICATORS  2 lessons	By the end of the sub-strand the learner should be able to:  a) Identify punctuation signs and indicators in a German braille text. b) read out punctuation signs and indicators in German braille text c) write punctuations signs and indicators in German braille text d) Appreciate the use of punctuation signs and indicators in German braille.	<ul style="list-style-type: none"> <li>● Learners could be guided to locate punctuation signs and indicators in German braille texts that is ellipses, slash, percentages and abbreviation sign.</li> <li>● Learners could be guided to write texts with punctuations signs and indicators in German braille.</li> <li>● Learners could be guided to read out German texts with punctuation signs and indicators in braille.</li> <li>● In groups learners could practice reading and writing texts with punctuation mark and indicators.</li> </ul>	1. How are punctuation marks different from indicators?

### Competencies to Be Developed

**Self-efficacy:** this is achieved as learners demonstrate courage in using punctuation marks and indicators in their German work .

**Communication and collaboration:** this is developed as learners work together in groups to read and write texts with punctuation marks and indicators in German braille

<p><b>Link to Pertinent and Contemporary Issues:</b></p> <p><b>Safety issues in education</b>-this could be achieved as learners adhere to safety rules as they interact in the classroom environment.</p>	<p><b>Link to Values; peace</b>-this is achieved as learners work together in harmony with each other to read and write texts with punctuation marks.</p>
<p><b>Link To other Learning Areas:</b></p> <p><b>German</b>-this is achieved as learners apply the acquired skills in their German work.</p>	<p><b>Suggested Community Service Learning:</b></p> <p>Learners could visit a local cultural center and arouse interest in German culture by reading texts with punctuation marks and indicators, with information on German civilization.</p>
<p><b>Suggested Non-Formal Activity that Support Learning:</b> Learners could get their favorite storybooks in German and locate punctuation marks and indicators for enjoyment.</p>	<p><b>Suggested Assessment:</b> observation, written questions, presentations portfolios.</p>
<p><b>Suggested Learning Resources:</b></p> <p>Braille paper, braille machine, charts and German books.</p>	

**Assessment Rubrics**

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to:	The learner is able to:	The learner is able to:	The learner is able to:

<ul style="list-style-type: none"> <li>● Identify punctuation signs and indicators in a German braille text and even go further to name more punctuation marks.</li> <li>● read out punctuation signs and indicators in German braille text with fluency</li> <li>● write punctuations signs and indicators in German braille text with ease and speed.</li> </ul>	<ul style="list-style-type: none"> <li>● identify punctuation signs and indicators in a German braille text.</li> <li>● The learner is able to read out punctuation signs and indicators in German braille text</li> <li>● write punctuations signs and indicators in German braille text.</li> </ul>	<ul style="list-style-type: none"> <li>● identify most of punctuation signs and indicators in a German braille text.</li> <li>● read out most of the punctuation signs and indicators in German braille text</li> <li>● write most punctuation marks and indicators in German braille.</li> </ul>	<ul style="list-style-type: none"> <li>● identify few punctuation signs and indicators in a German braille text.</li> <li>● read out few punctuation signs and indicators in German braille text</li> <li>● write few punctuations signs and indicators in German braille text.</li> </ul>
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