REPUBLIC OF KENYA

MINISTRY OF EDUCATION

JUNIOR SECONDARY SCHOOL CURRICULUM DESIGN

BRAILLE SKILLS
FOR LEARNERS WITH BLINDNESS

GRADE 7

KENYA INSTITUTE OF CURRICULUM DEVELOPMENT

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FOREWORD

Curriculum is a tool, which a country employs to empower its citizens. The Kenya Institute of Curriculum Development in meeting its core mandate *'to develop curriculum and curriculum support materials'* has spearheaded curriculum reforms in the education sector. The reforms are based on rigorous research, monitoring and evaluation activities conducted on the 8-4-4 system of education to inform the Competency-Based Curriculum through a phase-in phase-out model. The reforms were informed by the Summative Evaluation Survey (2009), Needs Assessment Study (2016) and the Task Force Report on Re-alignment of Education Sector (2012), 21st century learning and approaches, the East Africa Protocol on harmonisation of education, among many others.

The curriculum reforms aim at meeting the needs of the Kenyan society by aligning the curriculum to the Constitution of Kenya 2010, the Kenya Vision 2030 and the East African Protocol, among other policy requirements as documented by the Sessional Paper No. 1 of 2019 on 'Reforming Education and Training in Kenya for Sustainable Development'. The reforms adopted the Competency-Based Curriculum (CBC) to achieve development of requisite knowledge, skills, values and attitudes that will drive the country's future generations as documented by the Basic Education Curriculum Framework (BECF). Towards achieving the mission of Basic Education, the Ministry of Education has successfully and progressively rolled out curriculum implementation for Early Years Education and Foundation level, Grades 4, 5 and Intermediate Level. The roll out for Grade 6, Junior Secondary (Grade 7-9) , and Prevocational Level will subsequently follow.

It is my hope that the curriculum designs for learners with Visual Impairment in Grade 7 will guide the teachers, among other educational stakeholders, for progressive achievement of the curriculum vision, which seeks to have engaged, empowered and ethical citizens.

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PREFACE

The Government of Kenya embarked on the national implementation of the Competency Based Curriculum in January, 2019 for Early Years Education (Pre-Primary 1 and 2, and Lower Primary Grade 1, 2 and 3) and Foundation Level. The implementation progressed to Upper Primary (Grade 4, 5 and 6) and Intermediate Level based on the reorganisation of the Basic Education structure. Grade 7 curriculum furthers implementation of the Competency-Based Curriculum to Junior Secondary education. This level marks the zenith of Middle School education whose main feature is to offer a broad opportunity for the learner to explore talents, interests and abilities before selection of pathways and tracks in Senior Secondary education level. This is similar to the Pre-vocational and Vocational Level.

The Grade 7 curriculum designs for learners with Visual Impairment in the respective learning areas will enable the development of 21st Century competencies. Ultimately, this will lead to the realization of the vision and mission of the Competency Based Curriculum as documented in the Basic Education Curriculum Framework (KICD, 2017).

It is my hope that all Government agencies among other stakeholders in education will use the designs to guide effective and efficient implementation of the learning activities as well as provide relevant feedback on various aspects of the curriculum. Successful implementation of the Grade 7 curriculum for learners with Visual Impairment will be a significant milestone towards realization of the curriculum mission 'Nurturing Every Learner's Potential'.

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DRAFT

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TIME ALLOCATION

	Subject	Number of Lessons Per Week (40 minutes per lesson)
1.	English	5
2.	Kiswahili/KSL	4
3.	Mathematics	5
4.	Integrated Science	4
5.	Health Education	2
6.	Pre technical Studies	4
7.	Social Studies	3
8.	Religious Education (CRE/IRE/HRE)	3
9.	Business Studies	3
10.	Agriculture	3
11.	Life Skills Education	1
12.	Physical Education and Sports	2
13.	Optional Subject including Sign Language Skills	3
14.	Optional Subject	3
	Total	**45**

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 modernizati on. 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.

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 per 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 21st 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.

STRAND 1.0: BRAILLE WRITING AND READING EQUIPMENT AND MATERIALS

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Key Inquiry Question
1.0 Braille Writing and Reading Equipment and Materials	1.1 Braille writing equipment 4 lessons	By the end of the sub-strand the learner should be able to; a) identify the parts of a braille machine for familiarization, b) use the braille machine for writing, c) appreciate the use of a braille machine in writing.	• In pairs or groups, learners should be guided to manipulate and locate different parts of a braille machine such as: grooved roller, paper release lever, carriage lever, embossing head, braille keys, line spacer, backspacer, paper feed knob, spacer, left and right margin. • Learners are guided to identify and write names of the different parts of a braille machine on braille cards. • In groups or pairs learners demonstrate the use of different parts of a braille machine. • Learners use a braille machine to write words and sentences. • Learners to sing a song on different parts of a braille machine and their functions.	1. Why do we learn functions of the different parts of a braille machine?

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Core competencies to be developed:

Communication and collaboration: This is developed as learners discuss various parts of a braille machine in groups.

Self-efficacy: This is developed as learners gain proficiency while using the braille machine to perform their tasks.

Link To Pertinent and Contemporary Issues: **Social cohesion;** This is developed as learners interact with others from different backgrounds when working in groups. **Mentorship and peer education;** This is developed learners guide each other on performing tasks using various parts of a braille machine appropriately.	**Link to Values:** **Respect**; this is achieved as learners appreciate each other's opinion while working together in groups. **Responsibility;** this is achieved as learners handle braille machines with care while using.
Link To other Learning Areas: **All learning Areas;** as learners use braille machines perform their tasks.	**Suggested Community Service Learning:** Learners visit a nearby public library and work with librarians to make tactile labels and use them to label the shelves.
Suggested Non Formal Activity that Support Learning: Learners sing songs on parts of a braille machine and their functions .	**Suggested mode of Assessment:** Peer assessment, self-assessment and observation.

Suggested Learning Resources:

 Braille cards, Braille machine , Braille paper.

Assessment Rubrics.

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify and categorize the parts of a braille machine.	The learner is able identify the parts of a braille machine.	The learner is able to name some of the parts of a braille machine.	The learner is able to name very few parts of a braille machine .
The learner is able to use the braille machine for writing and critique its efficiency.	The learner is able to use the braille machine.	The learner makes progressive effort to use the braille machine for writing .	The learner makes minimal effort to use the braille machine for writing..

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	1.2 Digital devices with assistive technology 2 lessons	By the end of the sub-strand the learner should be able to; a) identify digital devices with braille display in a learning situation, b) use digital devices with braille display in a learning environment, c) care for digital devices with braille display during and after use, d) appreciate the importance of digital devices with braille display in learning.	● In groups or pairs learners identify digital devices with braille displays such as braille me, dot mini,orbit reader 20 in the school resource room. ● In groups or pairs learners discuss how to use digital devices with braille display in note taking. ● In pairs or in groups learners write an essay using digital devices with braille display. ● Learners share their written assignment to the teacher using digital devices with braille display and receive feedback. ● In pairs or groups learners use digital devices with braille displays to search for learning materials from the internet. ● In pairs or in groups learners use digital devices with assistive technology to play games. ● Learners should be guided to care for digital devices with braille display when using. ● Learners are guided to store digital devices with braille displays appropriately after use.	1. How would you use a digital device with a braille display?

Core competencies to be developed:

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

Learning to learn: This is developed as learners use digital devices with braille display to carry out search in their respective learning areas.

Link to Pertinent and Contemporary Issues:	Link to Values: Responsibility; this is promoted as learners take care for digital devices with braille display while using and also store them appropriately after use.
Mentorship and peer education;this is developed as learners show their leadership qualities while working in groups. **Disaster risk reduction;** this is developed as learners care for and store the digital devices with braille display.	**Love;** this is promoted as learners share the digital devices with braille display.
Link to other Learning Areas:	**Suggested Community Service Learning:**
Science and technology, Kiswahili, English and Mathematics. as learners use digital devices with assistive technology to take notes and collect data on plant species, read and write passages, count and record tallies of scores of different games.	Learners could visit a nearby worship center, write their programme using digital devices with braille display, emboss the programme and display it in the place of worship for use by people with blindness.
Suggested non formal activity to support learning: Learners could use digital devices with braille display to take note of scores of different games being played in the field during games time.	**Suggested modes of assessment:** Observation, oral questions. Self-assessment and peer assessment.
Suggested learning resources: Smart braille machine, orbit reader, dot mini and braille me.	

Suggested Assessment Rubrics

Exceeding Expectation	Meeting Expectation	Approaching Expectation	Below Expectation
The learner is able to identify and categorize digital devices with braille display depending on the number of cells, size of the braille display and function.	The learner is able to identify digital devices with braille display.	The learner is able to identify some digital devices with a braille display.	The learner is able to identify a few digital devices with a braille display.

The learner is able to use digital devices with braille display and further explore other features of the device not learnt during the lesson.	The learner is able to use digital devices with a braille display.	The learner is able to use digital devices with braille displays to perform most of the tasks.	The learner is able to use digital devices with braille displays to perform the basic tasks.
The learner is able to care and store digital devices with braille display with order and organization.	The learner is able to care and store digital devices with a braille display.	The learner is able make progressive effort to care and store digital devices with braille display.	The learner is able to make little effort to care and store digital devices with braille display.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	1.3 Measurement equipment with tactile calibration. 2 lessons	By the end of the sub-strand the learner should be able to; a) identify equipment with tactile calibration used for measuring, b) read the tactile calibration on the measurement equipment, c) use measurement equipment with tactile calibration to perform measurement activities, d) enjoy using measurement equipment with tactile calibration to carry out measurement activities.	● In groups or pairs learners identify equipment with tactile calibration used for measurement such as calibrated geometrical instruments, calibrated laboratory measuring apparatus and tactile meter rule. ● Learners could be guided to manipulate equipment with tactile calibration to identify the type of calibration, to identify the type of units and their position on the equipment. ● In pairs or in groups learners read tactile calibration on measurement equipment such as degrees, cm and m. ● Learners identify the scale on measurement equipment, such as; 0,5,10, 15. ● In groups or in pairs learners compare their findings on features of equipment with tactile calibration. ● Learners are guided to use equipment with tactile calibration to measure length, angles, mass and capacity. ● Learners are guided to position calibrated equipment appropriately during measurement. ● Learners practice using equipment with tactile calibration to measure various objects and surfaces.	1. How do you measure using equipment with tactile calibration? 2. How do we use equipment with tactile calibration for measuring?

Core competencies to be developed:

Self-efficacy: This is developed as learners use equipment with tactile calibration to measure length, angles, mass and capacity.

Communication and collaboration: This is developed as learners work in groups to identify equipment with tactile calibration used for measurement.

Link to Pertinent and Contemporary Issues: learner support Programmed: - **Sports and Games** – This is developed as learners use equipment with tactile calibration to mark and measure the field for different games.	**Link to Values:** **Responsibility:** This is developed as learners take care of measuring equipment with tactile calibration during and after use. **Respect:** This is developed **as** learners appreciate each other's opinion during group activities. **Unity:** This is developed **as** learners work together in groups.
Link to other Learning Areas: **Science and technology and Mathematics**: as learners use equipment with tactile calibration to perform measurement activities.	**Suggested Community Service Learning:** learners could use measuring equipment with tactile calibration to measure and mark different playing fields for different sports in the community playground.
Suggested non formal activity to support learning: Learners work in groups to improvise measuring equipment with tactile calibration used in day to day life for example a string with knots at intervals to indicate distance.	**Suggested modes of assessment:** Observation, oral question, self-assessment and peer assessment.
Suggested learning resources: spring balance with tactile calibrations, tactile rulers and tactile geometrical instruments,	

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify and categorize equipment with tactile calibration for measuring depending on the quantity to be measured.	The learner is able to identify equipment with tactile calibration used for measuring.	The learner is able to make progressive effort to identify equipment with tactile calibration for measuring.	The learner makes little effort to identify equipment with tactile calibration for measuring.
The learner is able to read and interpret the tactile calibration on the measurement equipment.	The learner is able to read the tactile calibration on the measurement equipment.	The learner makes progressive effort to read the tactile calibration on the measurement equipment.	The learner makes little effort to read the tactile calibration on the measurement equipment.
The learner is able to use measurement equipment with tactile calibration to perform measurement activities and improvises the equipment.	The learner is able to use measurement equipment with tactile calibration to perform measurement activities.	The learner is able to use some measurement equipment with tactile calibration to perform measurement activities.	The learner is able to use few measurement equipment with tactile calibration to perform measurement activities.

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STRAND 2.0: BRAILLE READING SKILLS

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
2.0 Braille Reading Skills	2.1 Tactile graphics 3 lessons	By the end of the sub-strand the learner should be able to: a) identify different texture on tactile texture display, b) identify tactile graphics by touching, c) interpret tactile, materials through tracing, d) care for and store tactile graphics safely after use, e) appreciate the use of tactile materials in the learning process.	● In pairs learners could be guided to touch different textures such as smooth, rough, mumpy, pattern textures. ● In groups learners could be guided to differentiate textures of various types on a graphic material such as representation of different features on a tactile map. ● Learners are guided to trace and identify tactile graphics on braille work cards such as tactile charts, embossed globes, line graphs, curves, row and column tables, square and square root grid , flow chart and pie charts and shapes-triangle, circle and rectangle. ● Learners should be guided to trace and interpret information on the tactile materials through manipulation. ● In pairs or groups learners could practice tracing and interpreting tactile graphics. ● Learners should be guided to take proper care while handling tactile materials. ● Learners are guided to store tactile materials carefully after use.	1. How do you interpret tactile graphics?

			Project- Learners to prepare tactile graphics such as line graphs, curves or pie charts, using locally available materials such as wood glue, thread, soft wires, braille writing materials.	

Competencies To Be Developed

Communication and collaboration: This is developed as learners work in pairs and in groups to trace and interpret the information on tactile graphics.

Critical thinking and problem solving: This is developed as learners use their critical thinking skills and problem-solving skills to interpret and analyze information from tactile graphics.

Self-efficacy: This is developed as learners trace and interpret tactile graphics.

Link To Pertinent and Contemporary Issues:	**Link to Values:**
● **Environmental issues in education:** This is achieved as learners prepare tactile graphics using locally available materials.	**Responsibility:** This is achieved as learners handle and store tactile graphics with care. **Unity:** This is developed as learners work in groups to accomplish a common task.
Link to other Learning Areas: **Mathematics, Social studies, Creative Arts, music and integrated science:** as learners apply the acquired skills to trace and interpret tactile graphics in the aforementioned learning areas.	**Suggested Community Service Learning:** Learners could visit a nearby regular school during club time and engage in interpreting maps with their sighted peers. Learners with blindness could use tactile maps while their sighted counterparts use print maps.
Suggested Non-Formal Activity that Support Learning:	**Suggested modes of Assessment:**

Learners could visit the school resource room and practice tracing and interpreting information on tactile graphics.	Oral questions, observation, self-assessment and peer assessment.

Suggested Learning Resources:

Tactile line graphs, curves, embossed globes, pie charts, regular shapes and flow charts.

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify different textures on tactile texture display and categorize them.	The learner is able to identify different textures on tactile texture display.	The learner is able to make progressive effort in identifying different texture on tactile texture display.	The learner is able to make minimal effort in identifying different textures on tactile texture display.
The learner is able to identify tactile graphics by touching and citing relevant examples.	The learner is able to: identify tactile graphics by touching.	The learner is able to identify most tactile graphics by touching.	The learner is able to identify few tactile graphics by touching.
The learner is able to interpret tactile materials through a variety of ways.	The learner is able to interpret tactile materials through tracing.	The learner is able to interpret some tactile materials through tracing.	The learner is able to interpret few tactile materials through tracing.
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 is able to care for and store some tactile graphics safely after use.	The learner makes minimal effort to care for and store tactile graphics safely after use.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	2.2 Models **3 lessons**	By the end of the sub strand the learner should be able to: a) discuss different types of models in the learning situation, b) interpret different types of models in a learning situation, c) make different types of model for learning, d) care for and store models safely after use, e) appreciate the use of models in the learning process.	● Learners are guided to manipulate the models. such as: models of cubes, cuboids, cylinders, prisms, cell, cell organelles, leaf, flowers, heart, blood vessels, female and male reproductive system, digestive system, tactile globe, vessels of transport. ● In pairs, learners discuss different types of models. ● In groups learners are guided to interpret different types of models through manipulation. ● In groups, learners make different types of models using locally available materials such as clay or plasticine, threads, sand, soft wire and embossed labels. ● Learners are guided to take proper care of models after using them. ● Learners are guided to store models safely after use. ● Learners use models to enhance learning in specific learning areas for example a model of a cell to learn internal structures of a cell in integrated science.	1. Why do we make models? 2. Why are models used in learning?

Core Competencies To Be Developed

Creativity and innovation. This is developed as learners make models for learning using locally available materials.

Learning to learn: This is developed as learners use models to enhance learning in specific learning areas.

Link To Pertinent and Contemporary Issues: **Environment issues in Education:** This is developed as learners use locally available resources to make models. **Safety issues:** this is developed as learners ensure their own safety themselves while making models.	**Link to Values:** **Responsibility** this is achieved as learners care for and store models safely after use. **Integrity:** this is achieved as learners show honesty in developing their projects. **Love:** this is achieved as learners work in groups harmoniously.
Link To other Learning Areas: **Mathematics, Social studies, Creative Arts and Integrated science:** as learners apply the acquired skills to interpret and make models in the aforementioned learning areas.	**Suggested Community Service Learning:** Learners make models and donate them to the neighboring learning resource center for use by other learners.
Suggested Non Formal Activity that Support Learning: Learners collect materials of different textures that could be used to make different models for learning.	**Suggested Assessment:** Oral questions, observetion,self-assessment, and peer assessment.
Suggested Learning Resources: Different Models, sands, wood glue, sticks, soil, thread, soft wires, shapes and tactile globes.	

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to discuss different types of models in a learning situation and further categories them into different learning areas.	The learner is able to discuss different types of models in a learning situation.	The learner is able to discuss some types of models in a learning situation.	The learner is able to name different types of models in a learning situation.
The learner is able to interpret different types of models in a learning situation citing relevant examples.	The learner is able to Interpret different types of models in a learning situation.	The learner is able to interpret some different types of models in a learning situation.	The learner is able to interpret simple models in a learning situation.
The learner is able to make different types of models for learning using a variety of materials.	The learner is able to make different types of models for learning.	The learner is able to make some types of models for learning.	The learner makes little effort in making models for learning.
The learner is able to care for and store models safely after use in a variety of ways.	The learner is able to care for and store models safely after use.	The learner is able to care for and store some models safely after use.	The learner makes minimal effort in caring for and storing models safely after use.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	2.3 Key features of a braille text **2 lessons**	By the end of the sub strand the learner should be able to: a) identify key features of a braille text, b) read braille text with key features, c) identify features of functional writing items, d) appreciate learning of the key features of a braille text.	● In pairs learners are guided to identify key features of a braille text such as headings – centering, indenting, paragraphing, indenting, numbering and line spacing of braille text. ● Learners are guided to read braille text on a braille work card. ● In pairs, learners are guided to identify the layout of functional writing items on a braille work card such as a friendly letter, packing list, shopping list, notices and posters. ● Learners to read functional writing items on braille books.	1. Why do we learn the key features of a braille text?

Core Competencies to be Developed:

● **Communication and collaboration:** This is developed as learners communicate effectively while working in groups.
● **Self-efficacy:** This is developed as learners read functional writing items fluently such as friendly letters.

Link To Pertinent and Contemporary Issues:	Link to Values:
  ● **Mentorship and Peer education:** This is developed as learners support each while working in groups to identify key features of braille text. ● **Social cohesion:** This is developed as learners work in groups to promote values of sharing, tolerance and respect.	● **Unity** ; this is promoted as learners work harmoniously in groups. ● **Respect :this is developed ;**this is promoted as learners appreciate each other's opinion during group work.
Link To other Learning Areas:	**Suggested Community Service Learning:**

English: as learners learn the layout of functional writing documents.	Learners to support their parents, guardian or houseparent to prepare a shopping list.
Suggested Non Formal Activity that Support Learning: Learners to write a friendly letter to a friend including the necessary braille text features.	**Suggested modes of Assessment:** observation, Oral questions, self-assessment and peer assessment.
Suggested Learning Resources: Braille work cards, braille machines and braille papers.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify key features of braille text citing examples.	The learner is able to identify key features of braille text.	The learner is able to identify some key features of braille text.	The learner is able to identify a few key features of braille text.
The learner is able to read braille text with their key features and write the braille text.	The learner is able to read braille text with key features.	The learner makes progressive effort in reading braille text with their key features.	The learner makes little effort in reading braille text with their key features.
The learner is able to identify features of more functional writing items.	The learner is able to identify features of functional writing items.	The learner is able to identify some features of functional writing items.	The learner is able to identify few features of functional writing items

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	2.4 Good reading habits **3 lessons**	By the end of the sub strand the learner should be able to: a) take an appropriate posture while reading a braille text, b) position hands appropriately while reading a braille text, c) move hands in coordinating manner when reading a braille text, d) touch the dots gently when reading braille texts, e) enjoy reading braille text by practicing good reading habits.	● Learners are guided to stay in an upright posture when reading a braille text. ● Learners are guided to position the hands slightly raised from the braille reading material for free movement of the hand to prevent erasing the dots. ● Learners are guided to use lead finger and support fingers when reading braille. ● Learners are guided on how to move the fingers to a new braille line. ● Learners are guided to place their fingers gently on the dots while reading to avoid erasing the dots. ● In groups, learners practice reading braille text while observing upright posture, positioning of hands movement and coordination of the hands and touching dots gently.	1. Why do we maintain good body posture when reading braille texts? 2. Why is it important to maintain proper hand movement and coordination while reading braille text?

Core Competencies to be Developed

Self-efficacy: this is developed as learners position themselves in appropriate posture in readiness to read a braille text.

Communication and collaboration: this is developed as learners communicate effectively while working in groups.

Link To Pertinent and Contemporary Issues:	Link to Values:
Social cohesion : this is achieved as learners work in groups to promote values of sharing, tolerance and respect.	● **Responsibility:** this is promoted as learners take care of the braille dots in the reading materials. ● **Respect:** this is promoted as learners appreciate each other's opinion while working in groups.

Sustainable consumption : this is achieved as learners place their fingers gently in dots when reading braille text to avoid erasing dots in the braille text for future use of the braille reading material.	
Link to other Learning Areas: **All learning areas at this level** as learners acquire skills on proper reading habits of braille texts.	**Suggested Community Service Learning:** Learners visit the Education Assessment Resource Center (EARC) to get guidance from officers on appropriate body posture, hand positioning, hand movement while reading a braille text.
Suggested Non Formal Activity that Support Learning: Learners visit a resource room and practice reading braille text observing proper reading habits.	**Suggested mode of Assessment:** Observation, oral questions, peer assessment and self-assessment.
Suggested Learning Resources: Braille reading materials.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to take an appropriate posture while reading a braille text and appropriately position the braille text .	The learner is able to take an appropriate posture while reading a braille text.	The learner makes progressive effort in taking an appropriate posture while reading a braille text.	The learner makes little effort in taking an appropriate posture while reading a braille text.
The learner is able to position hands appropriately while reading a braille text and appropriately position the braille text.	The learner is able to position hands appropriately while reading a braille text.	The learner is able to Show progressive effort in positioning hands appropriately while reading a braille text.	The learner makes minimal effort in position hands appropriately while reading a braille text.
The learner is able to move hands in a coordinating manner when reading a braille text and further controls the position of the braille text.	The learner is able to move hands in a coordinating manner when reading a braille text.	The learner makes progressive effort in moving hands in a coordinating manner when reading a braille text.	The learner makes minimal effort in moving hands in a coordinating manner when reading a braille text.
The learner is able to touch the dots gently when reading braille texts and store braille text safely.	The learner is able to touch the dots gently when reading braille texts.	The learner makes progressive effort in Touching the dots gently when reading braille texts.	The learner makes minimal effort to touch the dots gently when reading braille texts.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	2.5 labels 2 lessons	By the end of the sub strand the learner should be able to: a) locate the labels on items and surfaces, b) position the item and apparatus in readiness to read the label, c) read the label on items, apparatus and surfaces, d) appreciate the importance of reading braille labels on items, apparatus and surfaces in learning.	● In groups learners are guided to manipulate items, apparatus and surfaces to locate the position of braille labels. ● In pairs, learners are guided to position items and apparatus appropriately in readiness to read the braille labels. ● Learners read braille labels on items, surfaces and apparatus as used in learning. ● Learners practice reading labels on items for identification.	1. Why is it important to position labeled items appropriately?

Core Competencies To Be Developed

Communication and collaboration: this is developed as learners work in groups to locate labels on items and surfaces.

Self-efficacy: this is developed as learners position items and apparatus appropriately in readiness to read the braille labels.

Link To Pertinent and Contemporary Issues:	Link to Values:
Social cohesion: this is developed as learners interact harmoniously during group activity.	**Responsibility;** this is developed as learners take care of the items and surfaces on which labels are to read from. **Unity**; this is developed as learners appreciate each other's opinion during group discussions.
Link to other Learning Areas:	**Suggested Community Service Learning:**

Integrated science and Mathematics: as learners apply the skills learned to read labeled items in the above areas.	Learners to visit modern storey-building and read braille labels on the lifts.
Suggested Non Formal Activity that Support Learning: Learners visit their school laboratory and practice locating and reading braille labels on the apparatus.	**Suggested Assessment:** ● Oral question, ● Self and peer assessment, ● Observation.

Suggested Learning Resources:

Items, apparatus and surfaces with braille labels.

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to: Locate the labels on the item and surface.	The learner is able to: Locate the labels on the item and surface.	The learner is able to: Show progressive effort to locate the labels on the item and surface.	The learner is able to: Show minimal effort to locate the labels on the item and surface.
Position the item and apparatus in readiness to read the braille label and safely store the items and apparatus.	Position the item and apparatus in readiness to read the braille label	Make progressive effort in positioning the item and apparatus in readiness to read the braille label.	Make little effort in positioning the item and apparatus in readiness to read the braille label
Read the label on the item and apparatus surface while touching the dots gently.	Read the label on items, apparatus and surfaces.	Make progressive effort in reading the label on items, apparatus and surfaces.	Make little effort in reading the label on the item, apparatus and surfaces.

STRAND 3.0: BRAILLE WRITING SKILLS

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
3.0BRAILLE WRITING SKILLS	**3.1 Braille work layout** 3 lessons	By the end of the sub-strand the learner should be able to; a) Identify the different alignment of letters and numbers, b) Align number values vertically, c) Arrange number values in rows and columns, d) Appreciate the use of alignment in braille work when working with different items.	● In groups or pairs learners identify vertically aligned numbers. ● Learners are guided to read numbers which are vertically aligned. ● Learners are guided to write numbers vertically. ● In groups or pairs learners identify different alignment of letters; horizontal - left to right or right to left,vertical - upwards or downwards ● Learners are guided to read words aligned vertically or horizontally. ● In groups or pairs learners identify rows and columns. ● In groups or pairs learners read numbers in rows and columns. ● Learners are guided to write numbers in rows and columns. ● In groups or pairs learners practice reading and writing words identified from the puzzles.	1. Why do we align numbers and letters vertically?

Core competencies to be developed:

Communication and collaboration: This is developed as learners discuss various alignments in groups.

Self-efficacy: This is developed as learners arrange number values in rows and columns.

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Critical thinking and problem solving: This is developed as learners identify words from the puzzle.	

Link To Pertinent and Contemporary Issues:	**Link to Values**
Social cohesion: This is developed as learners interact in groups.	**Respect:** This is promoted as learners appreciate each other's opinion while working in a group.
Mentorship and peer education: This is developed as learners support each other while working in groups to identify rows and columns.	
Link to other Learning Areas:	**Suggested Community Service Learning:** Learners prepare word puzzles in braille and donate them to nearby community libraries.
Mathematics as learners perform tasks involving vertical arrangement of numbers.	
Languages; as learners identify words from puzzles.	
Suggested Non Formal Activity that Support Learning:	**Suggested mode of Assessment:**
Learners could play scrabble so as to boost their skills in identification of words vertically and horizontally.	Observation, peer and self-assessment.
Suggested Learning Resources:	
Braille work cards, word puzzles, braille machines and braille papers.	

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectation
The learner is able to identify and apply the different alignment of numbers and letters in learning.	The learner is able to identify the different alignment of numbers and letters.	The learner makes progressive efforts to identify the different alignment of numbers and letters.	The learner makes little effort to identify the different alignment of numbers and letters.
The learner is able to align and examine number values vertically.	The learner is able to align number values vertically.	The learner is able to align some number values vertically.	The learner is able to align a few number values vertically.
The learner is able to arrange and compare number values in rows and columns.	The learner is able to arrange number values in rows and columns.	The learner makes progressive effort to arrange number values in rows and columns.	The learner makes little effort to arrange number values in rows and columns.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	3.2 Making of braille labels 2 lessons	By the end of the sub-strand the learner should be able to; a) identify different items and surfaces to be labelled in a learning situation, b) make braille labels using adhesive braille paper and other materials,	● In groups or pairs learners identify different items, apparatus and surfaces to be labeled within the environment. ● Learners are guided to identify materials used to make labels. ● In pairs or in groups learners are guided to make braille labels using adhesive braille paper and other materials by doing the following: i) Write an inscription on the label.	1. Why do we label items, apparatus and surfaces in braille ?

			ii) Cut or peel the label depending on the size of the item or surface to be labelled.	
		c) label items and surfaces using adhesive braille paper and other materials, d) Appreciate the labelling of different items and surfaces in braille.	● In groups or in pairs learners to label different surfaces, apparatus and items. ● In pairs or in groups learners practice the labelling of different items, apparatus and surfaces in braille.	

Competencies To Be Developed:

Self-efficacy; This is developed as learners make braille labels.

Communication and collaboration: This is developed as learners work in groups.

Creativity and innovation: This is developed as learners make labels using different materials.

Link To Pertinent and Contemporary Issues:	**Link to Values:**
Safety Issues; This is developed as learners ensure their safety when using sharp tools to make labels. **Social Awareness Skills:** This is developed as learners discuss in groups.	**Unity;** This is developed as learners work together in groups. **Peace;** This is developed as learners work harmoniously in groups.
Link To other Learning Areas:	**Suggested Community Service Learning:**
Creative arts; as learners make labels for models. **Integrated science;** as learners make labels for different apparatus.	Learners could visit a nearby library and label shelves in the community library.

Suggested Non-Formal Activity that Support Learning:	Suggested mode of Assessment: Self, peer assessment, oral questions, written test and observation.
Learners participate in labelling chairs in the assembly hall during school functions.	

Suggested Learning Resources:

Adhesive braille paper, glue, razorblades, pair of scissor, braille paper, braillons and sellotape.

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify different items and surfaces to be labelled and further categorize them.	The learner is able to identify different items and surfaces to be labelled.	The learner is able to identify some items and surfaces to be labelled.	The learner is able to identify a few items and surfaces to be labelled.
The learner is able to make braille labels using a variety of materials.	The learner is able to make braille labels.	The learner makes progressive efforts to make braille labels.	The learner makes little effort to make braille labels.
The learner is able to label items, apparatus and surfaces using different types of labels.	The learner is able to label items, apparatus and surfaces in braille.	The learner is able to label some items, apparatus and surfaces.	The learner is able to label a few item, apparatus and surfaces.

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BRAILLE WRITING SKILLS

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	3.3 Tactile Graphics **3 lessons**	By the end of the sub-strand the learner should be able to: a) draw tactile graphics using 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.	● Learners are guided to identify materials and equipment for drawing tactile graphics which include; spur wheel, tracing mat, braille machine, cut out shapes, adhesive labels, outlines and braille paper. ● Learners are guided to draw tactile graphics using braille material and equipment. The tactile graphics may include; lines, shapes, food chain and angles. ● Learners are guided to name and label the tactile graphic drawn, for example labeling the line at the start and the end using letters. ● 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. ● Learners are guided to make tactile graphics using locally available materials for example; bar graphs, line graphs and diagrams of a cell. ● Learners are guided to name and label the tactile graphics made. ● In groups or pairs learners are guided to take proper care of tactile materials. ● Learners are guided to store tactile materials carefully. ● learners practice drawing and making tactile graphics.	1.How do you make tactile graphics?

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:	Link to Values:
Environmental issues in education; this is developed as learners make tactile graphics using locally available materials to minimize pollution. **Safety issues**; this is developed as learners observe safety measures while using sharp objects when making tactile graphics.	**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
Link to other Learning Areas:	**Suggested Community Service Learning:**
Mathematics, Social studies, Creative Arts, Music, Integrated science. as learners apply the acquired skills in performing tasks in the aforementioned learning areas.	Learners to collect locally available materials and use them to draw and make tactile graphics, then showcase them during parents' day or open day.
Suggested Non Formal Activity that Support Learning:	**Suggested mode of Assessment:**
Learners could visit the school resource room and work with school transcriber to draw and make tactile graphics.	Oral questions, self-assessment, peer assessment and observation.

Suggested Learning Resources:

Pairs of scissors, braille material, sands, wood glue, sticks, soil, thread, cotton, cardboard, tracing mat, spur wheel, adhesive labels, thumb pins and grains.

Assessment Rubric

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

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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 4.0: ENGLISH BRAILLE

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
4.0 ENGLISH BRAILLE	**4.1 POETRY LAYOUT 4 lessons**	By the end of the sub-strand the learner should be able to: a) identify features of facsimile method on a poem in braille, b) read a braille poem in facsimile method, c) write a poem in braille using facsimile method, d) appreciate the use of facsimile method in reading and writing poetry in braille.	• Learners are guided to identify features of facsimile method on a poem written in braille. • Learners are guided to read a braille poem in facsimile method. • Learners are guided to write a poem in braille using a facsimile method. • In groups learners could practice reading and writing poems in a facsimile method.	1. How do you identify a poem in a facsimile method?

Core competencies to be developed
Creativity and innovation: This is developed as learners apply the knowledge acquired to compose their own poems and write them in braille using facsimile method. **Self – efficacy:** This is developed as learners write, share and do peer evaluation of their poems written correctly in braille using facsimile method.

Link to Pertinent and Contemporary Issues – **social cohesion** - This is realized as learners work together during peer review of their own written poems in braille using facsimile method.	**Link to values: unity:** Learners demonstrate unity as they work harmoniously in groups while reading and writing poems using facsimile method in braille.
Links to other learning areas: English language, Kiswahili French, German, Chinese: this could be achieved as learners use the knowledge acquired to perform tasks involving poetry in the aforementioned learning areas.	**Suggested community service learning:** Learners could visit a nearby place of worship and present religious poems written in facsimile method then share braille copies to persons with blindness.

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Suggested non formal activity to support learning: learners could copy poems and write them in braille and hang them in class noticeboard for reference.	Suggested assessment: peer assessment, self-assessment, oral questions, observation
Suggested learning resources: Braille machines, braille work cards, braille papers.	

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify features of facsimile method on a poem written in braille and further stating the rules.	The learner is able to identify features of facsimile method on a poem written in braille.	The learner is able to identify most of the features of facsimile method on a poem written in braille.	The learner is able to identify a few features of facsimile method on a poem written in braille.
The learner is able to read with ease and fluency a braille poem written in facsimile method.	The learner is able to read a braille poem written in facsimile method.	The learner is able to read a braille poem written in braille using facsimile method with prompt.	The learner is able to show little ability in reading a poem written in braille using a facsimile method.
The learner is able to write a poem in braille in a facsimile method and even compose and write in braille his/her own poem using the same method.	The learner is able to write a poem in braille using facsimile method.	The learner is able to write a poem in braille in facsimile method incorporating most of the features	The learner is able to write a poem in braille in facsimile method incorporating few of the features.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry questions
	4.2 Indicator, punctuation signs and other characters	By the end of the sub-strand the learner should be able to:	● The learners are guided to identify punctuation signs used in writing text such as print page indicator, short or unstressed syllable, italic sign, double italic, part word	1. How do you identify an indication of a print page in a braille book?

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2 lessons	a) identify braille signs for punctuation marks used in writing text, b) read out the braille signs for punctuation marks when reading a braille text, c) write the braille signs for punctuation marks in a braille text, d) appreciate the use of punctuation signs and indicators in braille texts for effective communication.	italic sign, italic terminator, phonemic brackets, commercial @ sign and ampersand. ● The learner could be guided to read braille text with punctuation marks. ● The learner could be guided to write text in braille with punctuation marks. ● In pairs or groups, learners could practice writing and reading text in braille with punctuation marks. ● In pairs learners could use digital devices with assistive technology to read braille text identifying the punctuation used.	2. Why do you use double italic signs?

Core Competencies to be developed

Digital literacy – this is developed as learners use digital devices with assistive technology to read braille text with punctuation marks.

Learning to learn: this is developed as learners look for more punctuation marks in braille texts in braille books and digital devices with assistive technology and include them in their list.

Link to Pertinent and Contemporary Issues: -	**Link to values:**
Effective communication: this is achieved as learners use the knowledge acquired on use of punctuation marks to perfect their reading and writing skills.	**Responsibility:** This is achieved as learners take good care of the digital devices as they use them to perform class tasks on punctuation marks.
Link to other learning areas:	**Suggested Community Service Learning:**
English, Kiswahili, Integrated science and Performing arts: as learners use punctuation marks indicators and other characters when taking notes and performing other tasks in the above-mentioned learning areas.	Learners could write a story, poem, or song in braille incorporating the punctuation marks indicators, bind them into booklets and donate them to the community library within their locality.

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Suggested non formal activity to support learning:	Suggested modes of assessment: Oral questions, written questions, observation, peer and self-assessment.
Learners could go to the resource room, write a story, poem or song in braille putting appropriate punctuation marks.	
Suggested learning resources: Braille machines, braille papers and braille books.	

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify braille signs for punctuation marks used in writing text and explain how they are used.	The learner is able to identify braille signs for punctuation marks used in writing text.	The learner is able to identify most braille signs for punctuation marks used in writing text.	The learner is able to identify a few braille signs for punctuation marks used in writing text.
The learner is able to read a braille text with punctuation marks and observe the punctuation marks.	The learner is able to read a braille text with punctuation marks.	The learner makes progressive effort to read a braille text with punctuation marks.	The learner makes little effort to read a braille text with punctuation marks.
The learner is able to write the braille text for punctuation marks and observe the punctuation marks.	The learner is able to write the braille text for punctuation marks.	The learner makes progressive effort to write braille text for punctuation marks.	The learner makes little effort to write braille text for punctuation marks.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	4.3 General Rules for the Use of Contractions **3 Lessons**	By the end of the sub-strand the learner should be able to; a) identify rules on use of contractions, b) read braille text with contractions, c) write braille text in conformity with the rules governing contractions, d) appreciate use of rules in reading and writing braille text for communication.	● Learners be guided to identify rules on use of contractions in these categories: ★ Contraction signs used more than once in braille such as: dot 2, lower middle c, lower d, lower e, lower f, lower g, lower h and lower j. ★ Position of the contraction in a word - such as: begging of the word, middle or end of a word. ★ Choice of contractions when there are two options. ● Learners are guided to read braille text with contractions. ● Learners are guided to write braille text in conformity with the rules governing contractions. ● In groups, learners practice reading and writing braille text observing general rules for the use of contractions. ● in groups or pairs learners could be guided to use digital devices with assistive technology to read and write contracted braille text.	1. How do you identify specific signs with more than one use?

Core competencies to be developed:

Digital literacy: this is developed as learners use digital devices with assistive technology to read and write contracted braille text taking keen interest in the rules applied.

Self-efficacy: this is developed as learners apply the skills learnt to write composition, notes, and exercises in class observing rules for contractions.

Link to Pertinent and Contemporary Issues –**analytical thinking skills -** this is realized as learners use the skills learnt to read, write and collect data as they observe rules on use of contractions.	**Link to values: Love -** this is promoted as learners share the digital devices during class activities.

Links to other learning areas: English, integrated science, performing arts and Mathematics; as learners use the skills learnt to perform class tasks in the learning areas mentioned above.	Suggested community service learning: Learners could visit an animal orphanage and with the help of the wardens prepare braille cards with descriptions of animals in the park and then leave the braille card with the wardens to be offered to the visitors with visual impairment.
Suggested non formal activity to support learning: learners could prepare tactile charts with key rules on use of contractions and hang them at the back of their classroom for reference.	Suggested mode of assessment: Oral questions, peer assessment, observation, self assessment and written texts.
Suggested learning resources: Braille machines, braille cards, braille papers, glue, scissors and threads.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify rules on use of contractions giving relevant examples.	The learner is able to identify rules on use of contractions.	The learner is able to identify most of the rules on use of contractions.	The learner is able to identify few of the rules on use of contractions.
The learner is able to read braille text with contractions and even state the rules used.	The learner is able to read braille text with contractions.	The learner makes progressive effort to read braille text with contractions.	The learner makes minimal effort to read braille text with contractions.
The learner is able to write braille text in conformity with the rules governing contractions and even apply more advanced rules.	The learner is able to write braille text in conformity with the rules governing contractions.	The learner is able to write braille text in conformity with the most of the rules governing contractions	The learner is able to write braille text in conformity with a few rules governing contractions.

STRAND 5.0: KISWAHILI BRELI,

Mada	Mada ndogo	Matokeo Maalum yanayotarajiwa	Mapendekezo ya shughuli za somo	Maswali dadisi
5.0 **BRELI YA KISWAHILI**	**5.1** **MPANGILIO WA MASHAIRI** **Vipindi 2**	Kufikia mwisho wa mada ndogo mwanafunzi aweze; a) kutambua vipengele mbalimbali katika mpangilio wa mashairi yalioandikwa kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino, b) kusoma mashairi yalioandikwa kwa breli yanayozingatia mpangilio unaoambatana na ule wa makala ya wino, **c)** kuandika mashairi kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino. d) kufurahia kusoma na kuandika mashairi kwa breli yanayozingatia mpangilio unaoambatana na ule wa makala ya wino.	● Wanafunzi waelekezwe kutambua vipengele mbalimbali katika mashairi yanayozingatia mpangilio wa vipengele unaoambatana na ule wa makala ya wino kwa mfano; mpangilio wa beti, na mistari, ● kwa vikundi wanafunzi waelekezwe kusoma mashairi kwa urahisi wakizingatia mpangilio unaoambatana na ule wa makala ya wino, ● Wanafunzi wakiwa wawili wawili waelekezwe kuandika mashri kwa breli wakizingatia mpangilio unaoambatana na ule wa makala ya wino. ● kwa vikundi wanafunzi waelekezwe kufanya mazoezi na kusoma na kuandika mashairi wakizingatia mpangilio unaoambatana na ule wa makala ya wino.	**1)** Ni vipi utatambua vipengele mbalimbali katika mpangilio muafaka wa mashairi kwa breli?

Umilisi wa kimsingi unaokuzwa

- **Mawasiliano na ushirikiano---**hukuzwa wakati wanafunzi wanaposoma na kuandika mashairi wakiwa wawili wawili au kwa vikundi, huku wakizingatia mpangilio unaoambatana na ule wa makala ya wino kwa breli.
- **Ufanisi wa kibinafsi**—hukuzwa wakati wanafunzi wanapoonyesha umahiri kwa kusoma na kuandika mashairi wakizingatia mpangilio unaoambatana na ule wa makala ya wino.

Uhusiano na masuala mtambuko	Uhusiano wa maadili
Utangamano wa kijamii—hukuzwa wakati wanafunzi wanaposoma na kuandika mashairi kwa pamoja.	- **Upendo na umoja** —huonekana wakati wanafunzi wanaposoma na kuandika mashairi kwa pamoja.
Uhusiano na masomo mengine Kiswahili, Kiingereza, Kifaransa,kijerumani: Wakati wanafunzi wanaposoma na kuandika mashairi kwa breli.	**Mapendekezo ya shughuli za huduma za kijamii zinazochangia ujifunzaji:** - Wanafunzi wanaweza kuandika mashairi ya kidini kwa breli yanayozingatia mpangilio unaoambatana na ule wa makala ya wino kisha watembelee sehemu ya ibada iliyoko karibu nao ili wasome na kuwakaririra waumini.

<table>
<tr><td>**Shughuli za kila siku zisizoratibiwa zinazochangia ujifunzaji:**

Wanafunzi wanaweza kutembelea maktaba shuleni mwao ili kujifahamisha kuhusu mpangilio wa mashairi.</td><td>**Mapendekezo ya tathmini**

● maswali kwa sauti
● maswali kwa kuandika
● tathmini ya rika
● kujitathmini</td></tr>
</table>

NYENZO

● Karatasi za breli , Mashine za breli and Vitabu vya mashairi
● Nakala ya mashairi ya breli
● Nakala ya mashairi ya wino

WANGO CHA TATHMINI

ANAZIDI MATARAJIO	ANATIMIZA MATARAJIO	ANAKARIBIA MATARAJIO	CHINI YA MATARAJIO
Mwanafunzi anaweza kutambua na kuelezea vipengele mbalimbali katika mpangilio wa mashairi yalioandikwa kwa breli kwa kuzingatia mpangilio	Mwanafunzi anaweza kutambua vipengele mbalimbali katika mpangilio wa mashairi yalioandikwa kwa breli kwa kuzingatia mpangilio	Mwanafunzi anaweza kutambua baadhi ya vipengele mbalimbali katika mpangilio wa mashairi yalioandikwa kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino.	Mwanafunzi anaweza kutambua vipengele vichache mbalimbali katika mpangilio wa mashairi yalioandikwa kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino.

unaoambatana na ule wa makala ya wino.	unaoambatana na ule wa makala ya wino.		
Mwanafunzi anaweza kusoma kwa ufasaha mashairi yalioandikwa kwa breli yanayozingatia mpangilio unaoambatana na ule wa makala ya wino.	Mwanafunzi anaweza kusoma mashairi yalioandikwa kwa breli yanayo zingatia mpangilio unaoambatana na ule wa makala ya wino.	Mwanafunzi anaweza kusoma mashairi yalioandikwa kwa breli akizingatia baadhi ya mipangilio inayoambatana na ile wa makala ya wino.	Mwanafunzi anaweza kusoma mashairi yalioandikwa kwa breli akizingatia mipangilio michache inayoambatana na ile wa makala ya wino.
Mwanafunzi anaweza kuandika na tunga mashairi kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino.	Mwanafunzi anaweza kuandika mashairi kwa breli kwa kuzingatia mpangilio unaoambatana na ule wa makala ya wino.	Mwanafunzi anaweza kuandika mashairi kwa breli akizingatia baadhi ya mipangilio inayoambatana na ile ya makala ya wino.	Mwanafunzi anaweza kuandika mashairi kwa breli akizingatia mipangilio michache inayoambatana na ile ya makala ya wino.

Mada	Mada ndogo	Matokeo Maalum yanayotarajiwa	Mapendekezo ya shughuli somo	Maswali dadisi
	5.2 **Sheria zinazo zingatiwa katika matumizi ya mikato katika na mwisho wa neno.** **Vipindi 2**	Kufikia mwisho wa mada ndogo,mwanafunzi aweze; a) kutambua mahali mikato inafaa kutumika katika maneno kwa breli, b) kusoma sentensi zilizoandikwa kwa kutumia maneno yenye mikato katikati na mwisho, c) kuandika sentensi kwa kutumia maneno yenye mikato katikati na mwisho, d) kuthamini matumizi ya mikato katikati na mwisho.	● Wanafunzi waelekezwe kutambua sehemu ambayo mikato hutumika aidha katikati au mwisho wa neno kwa mfano:-ote,-enye,-lia,-lea,-ond,-ong. ● Kwa vikundi wanafunzi waelekezwe kusoma sentensi zilizoandikwa kwa kutumia maneno yenye mikato katikati au mwisho. ● Wanafunzi wawiliwawili waelekezwe kuandika sentensi kwa kutumia maneno yenye mikato katikati au mwisho. ● Kwa vikundi wanafunzi wafanye mazoezi ya kusoma na kuandika sentensi kwa kutumia maneno yenye mikato katikati au mwisho.	1. Ni kwa nini baadhi ya mikato hutumika tu katikati au mwisho wa neno?

Umilisi wa Kimsingi Unaokuzwa

Mawasiliano na ushirikiano—hukuzwa wakati wanafunzi wanapokuwa katika vikundi wakifanya mazoezi ya kuandika maneno kwa pamoja.

Ufanisi wa kibinafsi--- hukuzwa wakati wanafunnzi wanapoonyesha umahiri katika kusoma na kuandika maneno kwa kutumia mikato ya breli.

Uhusiano na Masuala Mtambuko. **Uongozi hitajika**—hukuzwa wakati wanafunzi wanapofanya kazi katika vikundi kutambua sehemu ambapo mikato inafaa kutumika katika maneno. o mikato inafaa kuwekwa katika breli	**Uhusiano wa maadili** **Heshima na amani**— hukuzwa wakati wanafunzi wanapokuwa na nafasi ya kutoa hoja na kuzijadili katika vikundi
Uhusiano na masomo mengine **Kiswahili** - wakati wanafunzi wanaposoma na kuandika maneno ya kiswahili kwa kwa kuzingatia sheria za mikato.	**Mapendekezo ya shughuli za huduma za kijamii zinazochangia ujifunzaji** Wanafunzi wanaweza kutembelea mji wa wazee ili kusaidia kazi ya usafi.Baadaye wawatumbuize kwa kuwaimbia nyimbo zilizoandikwa kwa kuzingatia mikato ya breli.

Shughuli za kila siku zisizoratibiwa zinazochangia ujifunzaji:	**Mapendekezo ya tathmini**
Wanafunzi katika vilabu vyao vya shule, wanaweza kushiriki katika zoezi la kuandika taarifa fupi kwa kutumia maneno yenye mikato.	Maswali kwa sauti, maswali ya kuandika, tathmini ya rika, kutathmini na tathmini ya kutazama

NYENZO

Karatasi za breli, vitabu vya breli ya kiswahili na mashine ya breli.

KIWANGO CHA TATHMINI

Anazidi matarajio	**Anatimiza matarajio**	**Anakaribia Matarajio**	**Chini ya matarajio**
Mwanafunzi anaweza kutambua na kuelezea mahali mikato inafaa kutumika katika maneno kwa breli,	Mwanafunzi anaweza kutambua mahali mikato inafaa kutumika katika maneno kwa breli,	Mwanafunzi anaweza kutambua mahali baadhi ya mikato inafaa kutumika katika maneno kwa breli.	Mwanafunzi anaweza kutambua maneno machache sana yaliyo andikwa kwa kuzingatia sheria za mikato.

Mwanafunzi anaweza kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa.
Mwanafunzi anaweza kutunga na kuandika sentensi kwa kutumia maneno yenye mikato katikati na mwisho kwa breli	Mwanafunzi anaweza kuandika sentensi kwa kutumia maneno yenye mikato katikati na mwisho kwa breli.	Mwanafunzi anaweza kuandika sentensi kwa kutumia baadhi maneno yenye mikato katikati na mwisho kwa breli.	Mwanafunzi anawezakuandika sentensi kwa kutumia maneno machache sana yenye mikato katikati na mwisho kwa breli.

Mada	Mada ndogo	Matarajio Maalum	Mapendekezo ya shughuli za somo	Maswali dadisi
	5.3 **Matumizi ya alama ya italiki na herufi kubwa.** **Vipindi 2**	Kufikia mwisho wa madandogo mwanafunziaweze a)kutambua alama ya italiki na alama ya herufi kubwa katika breli. b) kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa. c) kuandika aya fupi akitumia alama ya italiki na alama ya herufi kubwa. d) Kuthamini matumizi ya alama ya italiki na alama ya herufi kubwa katika maandishi ya breli.	● Wanafunzi waelekezwe kutambua alama ya italiki na alama ya herufi kubwa katika breli. ● Wanafunzi wakiwa wawili wawili wasome aya ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa katika breli. alama ya italiki ikitumika mara moja kabla ya neno,alama ya italiki ikitumika mara mbili kabla ya neno,alama ya italiki ikitumika mara tatu kabla ya neno na hitimisho. alama ya herufi kubwa ikitumika mara moja kabla ya neno, ikitumika mara mbili kabla ya neno, ikitumika mara tatu kabla ya neno na hitimisho. ● Wanafunzi wakiwa kwa vikundi, waandike aya fupi wakitumia alama ya italiki an alama ya herufi kubwa kwa breli. ● Wanafunzi wafanye mazoezi ya kutumia alama ya italiki an alama ya herufi kubwa katika kuandika aya fupi kwa muktadha mbalimbali.	**1.** Ni vipi alama ya italiki na alama ya herufi kubwa hutumika katika uakifishaji?

UMILISI WA KIMSINGI UNAOKUZWA

-Mawasiliano na ushirikiano—hukuzwa wakati wanafunzi wanapokuwa katika vikundi na kufanya kazi ya kusoma na kuandika kwapamoja.

Ufanisi wa kibinafsi --- hukuzwa wakati wanafunzi wanapoonyesha umahiri katika kutumia alama ya italiki na alama ya herufi kubwa katika maandishi.

Uhusiano na masuala mtambuko **Uongozi hitajika—** hukuzwa wakati wanafunzi wanapofanya kazi kwa vikundi huku kila mmoja akipata nafasi ya kutoa mwongozo.	**Uhusiano wa maadili** **Heshima na Upendo—** hukuzwa wakati wanafunzi wanapokuwa na nafasi ya kutoa hoja na kuzijadili kwa upendo katika vikundi na pia wanaposaidiana.
Uhusiano na masomo mengine Kiswahili, kiigereza kijerumani, kifaranza—wakati wanafunzi wanapotumia ujuzi na maarifa kwa kusoma na kuandika wakizingatia alama ya italiki na alama ya herufi kubwa.	**Mapendekezo ya shughuli za huduma za kijamii zinazochangia ujifunzaji** Wanafunzi wanaweza kutembelea maktaba iliyo karibu na kusoma vitabu vya breli ili kujifahamisha zaidi kuhusu matumizi ya alama ya italiki na alama ya herufi kubwa.

Shughuli za kila siku zisizoratibiwa zinazochangia ujifunzaji:	Mapendekezo ya tathmini
Wanafunzi wanaweza kushiriki katika mashidano ya kusoma na kuandika makala yanayozingatia alama alama ya italiki na alama ya herufi kubwa.	Maswali kwa sauti, maswali ya kuandika, tathmini ya rika kujitathmini na tathmini ya kutazama.

Nyenzo

Karatasi za breli, vitabu vya breli kwa kiswahili na mashine za breli.

KIWANGO CHA TATHMINI

Anazidi Matarajio	Anatimiza matarajio	Anakaribia matarajio	Chini ya matarajio
Mwanafunzi anaweza kutambua na kuelezea matumizi ya alama ya italiki na alama ya herufi kubwa katika breli.	Mwanafuzi anaweza kutambua alama ya italiki na alama ya herufi kubwa katika breli.	Mwanafunzi anaweza kutambua alama ya italiki na alama ya herufi kubwa katika breli katika baadhi ya muktadha .	Mwanafunzi anaonyesh bidii kidogo katika kutambua alama ya italiki na alama ya herufi kubwa katika breli.

Mwanafunzi anaweza kusoma kwa ufasaha makala ya breli iliyo na alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kusoma makala ya breli ili kutambua matumizi ya alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kusoma makala ya breli bila kutilia maanani alama ya italiki na alama ya herufi kubwa katika baadhi ya sentensi.	Mwanafunzi anaweza kusoma makala ya breli bila kutilia maanani ya alama ya italiki na alama ya herufi kubwa.
Mwanafunzi anaweza kutunga na kuandika aya fupi akitumia alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kuandika aya fupi akitumia alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kuandika aya fupi akizingatia baadhi ya matumizi ya alama ya italiki na alama ya herufi kubwa.	Mwanafunzi anaweza kuandika aya fupi akizingatia moja wapo ya matumizi ya alama ya italiki na alama ya herufi kubwa.

STRAND 6.0: MATHEMATICS BRAILLE NOTATION

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
6.0 MATHEMATICS BRAILLE NOTATION	6.1 **Numbers In Braille** **2 lessons**	By the end of the sub-strand the learner should be able to; a) read number values from left to right and right to left in braille, b) Identify recurring decimals in braille, c) Write recurring decimals in braille, d) Enjoy reading and writing numbers in braille.	• In groups or pairs, learners read numbers from left to right and right to left on braille work cards. • Learners are guided to identify the recurring decimals on braille work cards. • In groups or pairs learners could be guided to write the symbol for recurring decimals in braille. • In groups or pairs learners write recurring decimals in braille. • Learners practice reading and writing number values from left to right and right to left. • Learners practice reading and writing recurring decimals.	1. Why do we read numbers from right to left and from left to right?

Core competencies to be developed:

Communication and collaboration: this developed as learners work in groups to write the symbols for recurring decimal.

Self-efficacy: this is developed as learners acquire self confidence to write recurring decimals.

Link To Pertinent and Contemporary Issues: **Financial literacy;** this is developed as learners apply the knowledge of decimals when dealing with money.	**Link to Values:** **Respect is** achieved as learners appreciate each other's opinions as they work together in groups. **Unity;** is achieved as learners work harmoniously in groups to accomplish a common task.
Link to other Learning Areas: **Mathematics;** as learners apply skills learned to apply the skill learned to work out the place value of numbers. **Integrated science:** as learners record weight and length in decimals.	**Suggested Community Service Learning:** Learners to sensitize a shopkeeper on how to group money according to the value.

Suggested Non Formal Activity that Support Learning:	Suggested mode of Assessment:
Learners could perform mathematical operations involving recurring decimals during mathematics club.	Oral questions, written texts, observation, peer and self-assessment.

Suggested Learning Resources:

Braille work cards**,** braille machine and braille paper.

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to read number values from left to right and right to left in braille and further state the value of each digit.	The learner is able to read number values from left to right and right to left.	The learner makes progressive effort to read number values from left to right and some from right to left.	The learner makes minimal effort to read number values from left to right and some from right to left.

The learner is able to Identify recurring decimals in braille and categorize them.	The learner is able to Identify recurring decimals in braille.	The learner shows progressive effort to identify recurring decimals in braille.	The learner shows minimal effort to identify recurring decimals in braille.
The learner is able to write recurring decimals in braille and further categorize them.	The learner is able to write recurring decimals in braille.	The learner makes progressive effort in writing recurring decimals in braille.	The learner makes minimal effort in writing recurring decimals in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	6.2 Mathematics Signs **3 lessons**	By the end of the sub-strand the learner should be able to; a) identify mathematics signs in braille, b) read mathematics expressions involving mathematics signs in braille, c) write mathematics expressions involving mathematics signs in braille, c) appreciate the use of mathematics signs in learning	• In groups or pairs learners are guided to identify mathematics signs on a braille work card which include; square and square root sign, ratio sign, angle sign, mathematical @ sign, variation sign, circle, triangle and square sign, therefore and since sign. • learners are guided to read mathematics expression involving mathematics signs in braille • In groups or pairs learners are guided to write mathematics expressions involving mathematics signs in braille. • In groups or in pairs learners practice writing mathematics expressions involving the mathematics signs.	1. Why do we learn the different mathematics signs in braille?

Core competencies to be Developed:

Communication and collaboration: This is developed as learners work in groups to identify and write mathematics signs.

Self efficacy: This is developed as learners use mathematics signs in writing different mathematics expressions.

Link to Pertinent and Contemporary Issues: **Mentorship and peer education:** This is developed as learners support each other in groups while identifying mathematics signs on a braille card.	**Link to Values:** **Unity;** This is promoted as learners work together in groups. **Respect;** This is promoted as learners appreciate each other's opinion while working in groups.
Link to other Learning Areas; **Mathematics and integrated scienc**e; as learners apply the acquired skills in solving problems related to the above mentioned learning areas.	**Suggested Community Service Learning:** Learners visit nearby hotels and prepare a menu in braille then donate it to be used by persons living with blindness.
Suggested Non Formal Activity that Support Learning: Learners make shopping lists at home using mathematics signs.	**Suggested Modes of Assessment** Observation, oral questions, written assignment, peer assessment and self assessment.

Suggested Learning Resources

Braille work cards, braille machines and braille papers.

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
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.	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
	6.3 **Mathematics Formulas** **3 lessons**	By the end of the sub-strand the learner should be able to; a) read mathematics formulas in braille, b) write mathematics formulas in braille, c) appreciate the use of mathematical formulas in braille in the process of learning.	● In groups or pairs learners are guided to read mathematics formulas on braille work card which include; formula for pythagoras theorem, the perimeter of plane figures , area of parallelogram, rhombus and trapezium,volume of cubes and cuboids, cylinder and prisms. ● In pairs or groups learners write mathematics formulas in braille. ● In pairs or groups learners practice writing mathematical expressions with mathematics formulas.	1. Why do we learn different mathematics formulas in braille?

Core competencies To Be Developed

Communication and collaboration: This is developed as learners work together in groups as they read and write mathematics formulas in braille.

creativity and imagination: this is developed as learners apply the skills learnt in writing formulas using different numbers or letters.

Link To Pertinent and Contemporary Issues:	Link to Values:
social cohesion; This is developed as learners interact while working in groups. **Mentorship and peer education;** this is developed as learners support each other in writing mathematics formulae.	**love**; This is developed as learners share braille work cards. **Unity**; This is developed as learners work towards achieving set goals of writing mathematics formulae.
Link To other Learning Areas: **Mathematics and Integrated Science**: as learners apply formulas when solving problems in the above stated learning areas.	● **Suggested Community Service Learning:** Learners prepare formulas in braille and present them during the county Trade Fair.
Suggested Non Formal Activity that Support Learning: Learners prepare braille formulae charts and display them for reference during mathematics club.	**Suggested mode of Assessment:** Oral questions, observation, written tests, peer and self-assessment.

Suggested Learning Resources:

Braille machines, braille papers and braille number work cards.

Suggested Assessment Rubric

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

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	6.4 Units Of Measurement **2 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: Length in mm, cm, m, km. Area in $mm^2, cm^2, m^2.$ Volume in mm^3, cm^3, m^3. Time – seconds, min, hours Speed – m/s , km/h Temperature – Celsius, kelvin Currency –ks, k£, dollar, euro, Angle- degrees	1. Why are signs for units of measurement written in braille?

			● In groups or pairs learners are guided to write the units of measurement of length, area, volume, time, distance, Speed, Temperature, Currency and Angles in braille. ● Learners practice writing mathematics expressions involving units of measurement n braille.	

Core Competencies to be developed:

● **Communication and collaboration:** This is developed as learners interact while working in groups.
● **Self-Efficacy:** This is developed as learners write mathematics expressions involving units of measurement in braille.

Link To Pertinent and Contemporary Issues: **Social Awareness Skills;** this is developed as learners participate in discussions. **Financial literacy:** This is developed as learners learn other units of money such as dollars.	**Link to Values:** **Respect;** this is achieved as learners appreciate each other's opinion during group activity. **Unity;** this is achieved as learners work harmoniously in groups.
Link To other Learning Areas: **Mathematics and integrated science;** as learners record the units of measurement for the quantity measured such as time, length.	**Suggested Community Service Learning:** Learners could prepare a playing ground in their community allocating portions for different sports using measurement equipment with tactile calibration**.**
Suggested Non Formal Activity that Support Learning:	**Suggested Assessment:** Oral questions, written test, observation, peer and self-assessment.

Learners could measure the perimeter of the football pitch and record it in different units for measuring length.	
Suggested Learning Resources: Braille machine, braille paper and braille work cards.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
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 of 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.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	6.5 Mathematics brackets in braille **1 lesson**	By the end of the sub-strand the learner should be able to;	● In pairs or in groups learners are guided to identify different types of brackets in braille on braille work cards which include square, round, curly and angle brackets.	1. Why would you use different types of brackets in braille?

| | | a) identify different types of mathematics brackets in braille,
b) read expressions with different types of mathematics brackets in braille,
c) write expressions with different types of mathematics brackets in braille,
d) enjoy reading and writing expressions with different types of mathematics brackets in braille. | ● In pairs or groups learners are guided to read algebraic expressions which have different types of mathematics brackets in braille.
● In pairs or groups learners write different types of expressions which have different types of mathematics brackets in braille.
● Learners practice to read and write algebraic expression which involve mathematics brackets in braille. | |

Competencies To Be Developed

Self-efficacy: This is developed as learners write algebraic expression involving mathematics brackets.

Communication and collaboration: This is developed as learners communicate effectively in groups.

Link To Pertinent and Contemporary Issues:	**Link to Values:**
Social Awareness skills: This is developed as learners make friends while working in pairs or groups.	**Love:** This is promoted as learners share braille work cards while working in groups. **Respect:** this is promoted as learners discuss and taking turns
Link To other Learning Areas:	**Suggested Community Service Learning:**
Mathematics and integrated science: as learners apply the skills learned to perform tasks in the above stated learning areas.	Learners could write algebraic expressions involving mathematics brackets and donate them to the community library to be used by persons with blindness.
Suggested Non Formal Activity that Support Learning:	**Suggested Assessment:**

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Learners could make braille charts with algebraic expressions involving mathematics brackets and hang them in class notice boards for reference.	Oral, observation, written work, portfolio, peer assessment and self-assessment.

Suggested Learning Resources:

Braille machine, braille papers and braille work cards.

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify different types of mathematics brackets in braille and further explain how they are used in learning.	The learner is able to identify different types of mathematics brackets in braille.	The learner makes progressive effort to identify different types of mathematics brackets in braille.	The learner makes minimal effort to identify different types of mathematics brackets in braille
The learner is able to read expressions with different types of mathematics brackets in braille and further interpret the expressions.	The learner is able to read expressions with different types of mathematics brackets in braille.	The learner makes progressive effort to read expressions with different types of mathematics brackets in braille.	The learner makes minimal effort to read expressions with different types of mathematics brackets in braille.
The learner is able to write expressions with different types of mathematics brackets in braille and further come up with more examples.	The learner is able to write expressions with different types of mathematics brackets in braille.	The learner makes progressive effort to write expressions with different types of mathematics brackets in braille.	The learner makes little effort to write expressions with different types of mathematics brackets in braille.

STRAND 7.0: SCIENCE BRAILLE NOTATION

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
7.0 SCIENCE BRAILLE NOTATIONS	7.1 Elements and compounds 3 lessons	By the end of the sub strand the learner should be able to: a) identify symbols for the common elements in braille, b) Write the braille representation of names of the compounds, c) Write braille representation of word equation, d) Develop curiosity in reading and writing symbols of elements in braille.	● In groups learners are guided to identify symbols for the first 14 elements of the reactivity series in braille, the elements include: potassium-K, sodium-Na, calcium-Ca, magnesium-Mg, Aluminum-Al, carbon-C, zinc-Zn, Iron- Fe, Tin-Sn, Lead-Pb, Hydrogen-H, copper-Cu, mercury-Hg, silver-Ag and Gold-Au. ● In pairs, learners are guided to read the names of the first 14 elements of the reactivity series and their symbols on the braille work card. ● In groups learners are guided to write braille symbols of the first 14 elements in the reactivity series. ● In groups learners are guided to manipulate and write braille representation of word equations for example: Copper(II)oxide + carbon ➤ Copper + carbon (IV) oxide Sun light Carbon (IV) oxide + water ➤ glucose + oxygen ● In groups learners are guided to write the names of the compounds for example copper (II) oxide, carbon (IV) oxide using either	1. Why do we learn how to write the names of the compounds in braille? 2. How are names of compounds different from other names?

| | | | | braille machines or digital devices with braille displays. |
| | | | | ● In groups, learners practice writing braille symbols of the first 14 elements in the reactivity series. | |

Core Competencies To Be Developed

- **Communication and collaboration:** This is developed as learners interact effectively in groups while reading and writing braille representation of word equations.
- **Digital literacy:** This is developed as learners use digital devices with braille displays to write names of different compounds.
- **Critical thinking and problem solving:** This is developed as learners arrange braille symbols of the first 14 elements as they appear in the reactivity series.

Link To Pertinent and Contemporary Issues:	**Link to Values:**
● **Social cohesion:** this is developed as learners work in groups to promote values of sharing, tolerance and respect. ● **Mentorship and peer education:** this is developed as learners support one another while working in groups. ● **Analytical thinking skills:** this is developed as learners manipulate braille cards and arrange the braille symbols of the first 14 elements as they appear in the reactivity series.	● **Responsibility** This is achieved as learners take care of the braille cards during discussion. ● **Love**: This is achieved as learners share the digital devices with refreshable braille display during discussions. ● **Respect:** This is achieved as learners take turns during discussions.
Link To other Learning Areas:	**Suggested Community Service Learning:**
● **Integrated science;** as learners apply skills for writing symbols of elements and names of compounds in braille in learning integrated science.	● Learners could visit the neighboring school with their digital devices and write braille symbols of the first 14 elements in the reactivity series to sensitize their peers.
Suggested Non Formal Activity that Support Learning:	**Suggested modes of Assessment:**
● Learners make braille representations of word equations and share with their peers during science club and societies.	● Oral questions, ● Peer and self-assessment,

| | ● Observation, |
| | ● Written assignments. |

Suggested Learning Resources: Braille cards, digital devices with refreshable braille display and tactile charts of the reactivity series.

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify symbols for the common elements in braille and give more examples.	The learner is able to identify symbols for the common elements in braille.	The learner makes progressive effort to identify symbols for the common elements in braille.	The learner makes minimal effort to identify symbols for the common elements in braille.
The learner is able to write names of the compounds in braille and further write their chemical formula.	The learner is able to write names of the compounds in braille.	The learner makes progressive effort to write the names of the compounds in braille.	The learner makes little effort to write names of the compounds in braille.
The learner is able to write several braille representations of word equations.	The learner is able to write braille representations of the word equation.	The learner is able to make progressive effort in writing braille representation of the word equation.	The learner is able to make little effort in writing braille representation of the word equation.

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Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	7.2 pH scale **3 lessons**	By the end of the sub strand the learner should be able to: a) identify different ranges of a pH scale represented in braille, b) write braille representation of a pH value, c) prepare a tactile representation of a pH scale using locally available materials, d) develop interest in using tactile pH scale in learning integrated science.	● In pairs, learners are guided to identify different ranges of pH scale indicating acid, neutral and bases using tactile representation of pH scale on a braille work card. ● Learners are guided to write braille representations of pH value, for example pH 7. ● In groups learners are guided to prepare tactile representation of pH scale using locally available materials such as thread, glue, sticks, soft wires, braille papers, and cardboard. ● Learners practice reading tactile representation of pH scale used in learning of integrated science.	1.Why do we learn how to interpret tactile representation of a pH scale?

Core Competencies to be Developed

Creativity and innovation; as learners prepare tactile representation of pH scale using locally available materials.

Learning to learn; as learners use tactile representation of pH scale in learning integrated science.

Link To Pertinent and Contemporary Issues:	Link to Values:
Environmental awareness; This is developed as learners prepare tactile representation of pH scale using locally available materials	● **Unity**: This is promoted as learners work in groups harmoniously. ● **Responsibility**: This is promoted as learners take care of the tactile pH scale.
Link To other Learning Areas:	**Suggested Community Service Learning:**

● **Integrated science:** as learners identify different ranges of a pH scale represented in braille.	Learners participate in preparing tactile pH charts and share them with the peers in other schools.
Suggested Non Formal Activity that Support Learning: Learners to compose and sing a song on ranges of a pH scale.	**Suggested Assessment:** ● Observation ● Oral questions ● Self and peer assessment
Suggested Learning Resources: Thread, glue, sticks, soft wires, cardboard, braille materials and equipment.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to: Identify different ranges of a pH scale represented in braille and further categorize the ranges.	The learner is able to: Identify different ranges of a pH scale represented in braille.	The learner is able to: Identify some ranges of a pH scale represented in braille.	The learner is able to: Make little effort to identify different ranges of a pH scale represented in braille.
Write braille representation of a pH value and further identify some substances with specific PH values.	Write braille representation of a pH value.	Make progressive effort to write braille representation of a pH value.	Make little effort to write braille representation of a pH value.
prepare a tactile representation of a pH scale using locally available materials in a variety of ways.	prepare a tactile representation of a pH scale using locally available materials.	Make progressive effort in preparing tactile representation of a pH scale using locally available materials.	Make little effort in preparing tactile representation of a pH scale using locally available materials.

PHYSICS

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	7.3 **Basic unit symbols** **3 lessons**	By the end of the sub strand the learner should be able to: a) identify basic unit symbols in braille, b) write basic unit symbols in braille, c) Show interest in reading and writing basic unit symbols in braille.	● In groups, learners are guided to identify basic unit symbols on braille work card which include: Length-mm, cm m, km. Mass- g, kg. Time- s, min, h. Temperature-^{0}c, K. Electrical current- A, mA Luminous Intensity- cd, Amount of substance-mol. ● In groups learners are guided to read braille cards with different basic unit symbols. ● In pairs, learners are guided to write basic unit symbols using digital devices with a refreshable braille display or braille writing machine. ● In pairs, learners practice writing expressions with basic unit symbols in braille.	1. Why do you learn how to write basic unit symbols in braille?

Core Competencies To Be Developed

● **Communication and collaboration:** This is developed as learners work in groups while reading braille work cards with different basic unit symbols.
● **Digital literacy:** This is developed as learners use digital devices with refreshable braille displays to write basic unit symbols in braille.

Link To Pertinent and Contemporary Issues:	Link to Values:
● **Social cohesion**: This is achieved as learners interact well during group activities. ● **Mentorship and peer education**: This is achieved as learners support one another while working in groups.	● **Respect**: This is promoted as the learners appreciate each other's opinion during group activity. ● **Responsibility:** This is promoted as learners take care of digital devices with refreshable braille display and other materials. ● **Love**: This is promoted as learners share the digital devices refreshable braille display and other materials during discussions.
Link To other Learning Areas: ● **Integrated science;** as learners apply skills learnt in writing basic unit symbols in braille in learning of integrated science.	**Suggested Community Service Learning:** Learners prepare basic unit symbols charts in braille and share them to the community learning resource center where persons with blindness can access them.
Suggested Non Formal Activity that Support Learning: ● Learners prepare braille charts on the basic unit symbols and share with their peers during club and societies.	**Suggested Assessment:** ● Peer and self-assessment ● Observation ● Oral and written texts
Suggested Learning Resources: Digital devices with braille display, braille reading and writing materials.	

Suggested Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to Identify symbols for basic units in braille and represent them in statements.	The learner is able to identify symbols for basic units in braille.	The learner makes progressive effort in identifying symbols for basic units in braille.	The learner makes little effort in identifying symbols for basic units in braille.

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The learner is able to write basic unit symbols in braille citing examples.	The learner is able to write basic unit symbols in braille.	The learner makes progressive effort in writing basic unit symbols in braille.	The learner makes little effort in writing basic unit symbols in braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
	7.4 Derived unit symbols 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, c) develop curiosity in reading and writing derived unit symbols in braille.	● In groups or pairs learners, be guided to identify derived unit symbols on braille work card, which include: Density (ρ) – Kg/m^3 , g/cm^3, g/l Force (F) – N Gravitational force (g)– N/kg Pressure (P)= N/m^2 / Pa, kPa, MPa ● In pairs or groups learners write braille symbols for derived unit symbols using digital devices with refreshable braille display. ● Learners practice reading and writing symbols for derived unit symbols in braille.	1. Why is it important to learn braille derived unit symbols?

Core Competencies To Be Developed

- **Communication and collaboration;** this is developed as learners work in groups to identify derived unit symbols in braille.
- **Digital literacy;** this is developed as learners use digital devices with refreshable braille display to write derived unit symbols.

Link To Pertinent and Contemporary Issues:	Link to Values:
Social awareness skills: This is developed as learners interact effectively during group activities. **Analytical thinking skills**: This is developed as learners assign derived unit symbols to derived quantities such as density, force, pressure	- **Responsibility; this** is promoted as learners take care of digital devices with refreshable braille display. - **Unity;** this is promoted as learners work harmoniously in groups to accomplish a common task. - **Respect**; this is promoted as learners appreciate each other's opinion while working in a group.
Link to other Learning Areas:	**Suggested Community Service Learning:**
- **Integrated science and mathematics** –as learners apply skills acquired for writing derived unit symbols in braille in learning of the above stated learning areas.	- Learners to visit the neighboring school and create awareness among their peers on how to write derived unit symbols in braille.
Suggested Non Formal Activity that Support Learning:	**Suggested modes of Assessment:**
- Learners prepare braille charts of derived unit symbols in braille and hang them in class for reference.	- Peer and self-assessment - Observation - Oral and written texts

Suggested Learning Resources:

- Digital devices with refreshable braille display,
- Braille writing materials and equipment.

Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify derived unit symbols in braille and cite relevant examples.	The learner is able to identify derived unit symbols in braille.	The learner is able to identify most derived unit symbols in braille.	The learner is able to identify a few derived unit symbols in braille.
The learner is able to write derived unit symbols in braille and further write statements.	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
7.0 SCIENCE BRAILLE NOTATIONS	**7.5 Formulas** **2 lessons**	By the end of the sub strand the learner should be able to: a) identify physics formulas in braille, b) write physics formulas in braille, c) prepare tactile triangle charts entailing Physics formulas, d) Enjoy reading and writing formulas in braille used in learning.	• In groups, learners be guided to identify braille formulas on a braille work card , which include: Force (F)= ma Weight W= mg Density ($\square$)= m/v Pressure in solids (P) = F/A Pressure in liquids (P) = h$\square$g • In pairs or groups learners are guided to write physics formulas in braille. • In groups or learners are guided on how to prepare tactile triangle charts entailing physics formula from locally available	1. Why do we learn how to write physics formulas in braille?

			materials such as wood glue, thread, soft wires, and braille writing and materials. ● Learners practice reading and writing formulas in braille.	

Core Competencies To Be Developed

● **Communication and collaboration:** This is developed as learners work in groups to prepare tactile Physics formula charts.
● **Creativity and innovation**: this is developed as learners make tactile charts for Physics formulas using braille materials and equipment.
● **Learning to learn;** this is developed as learners apply physics formulas in braille in learning of integrated science.

Link To Pertinent and Contemporary Issues:	**Link to Values:**
● **Mentorship and peer education**: This is developed as learners support each other while preparing tactile charts for Physics formulas. ● **Analytical thinking skills**: This is developed as learners use physics formulas in braille to solve physics problems.	● **Unity;** this is promoted as learners work in groups harmoniously to accomplish a common task. ● **Respect;** this is promoted as learners appreciate each other's opinion while working in their groups. ● **Responsibility** ; this is promoted as learners take care of the braille materials and equipment.
Link To other Learning Areas:	**Suggested Community Service Learning:**
● **Integrated science and mathematics:** as learners apply skills for writing formulas in braille in the learning of integrated science and mathematics.	Learners prepare tactile charts of Physics formulas and share them with the peers in other schools.
Suggested Non Formal Activity that Support Learning: Learners come up with a tactile of a triangle showing braille Physics formulas in braille and hang it in class for reference.	**Suggested Assessment:** ● Peer and self-assessment, ● Observation, ● Oral and written texts.

Suggested Learning Resources:

Braille machines, braille work card, braille papers, thread, wood glue, soft wires and soft board.

Assessment Rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to: Identify physics formulas in braille and further state the meaning of each symbol	The learner is able to: Identify physics formulas in braille.	The learner is able to: Identify most physics formulas in braille.	The learner is able to: Identify a few physics formulas in braille.
Write physics formulas in braille and further make each quantity the subject of the formula	Write physics formulas in braille.	Write some physics formulas in braille.	Write a few physics formulas in braille.
Prepare tactile Physics formulas charts used in learning using a variety of materials.	Prepare tactile Physics formulas charts used in learning.	Make progressive effort in preparing tactile Physics formulas charts used in learning.	Make minimal effort in preparing tactile Physics formulas charts used in learning.

STRAND 8.0: MUSIC BRAILLE NOTATION

strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
8.O **MUSIC BRAILLE NOTATION**	**8.1** **Rhythmic patterns in simple and compound time signatures**. 3 lessons	By the end of the sub strand, the learner should be able to; a) Identify features of rhythmic patterns in simple and compound time signatures in braille, b) read rhythmic patterns in simple and compound signatures in braille, c) write rhythmic patterns in simple and compound signatures in braille, d) enjoy writing and reading rhythmic patterns in braille.	● Learners could be guided to identify features of rhythmic patterns in simple and compound time signatures in braille which include: time signatures, bars, bar lines and double bar lines. ● In groups learners are guided to read braille representations of rhythmic patterns in simple and compound time signatures. ● In pairs learners are guided to write braille representations of rhythmic patterns in simple and compound time signatures. ● In groups learners could practice reading and writing braille representations of rhythmic patterns in simple and compound time signatures.	1. Why do we learn rhythmic patterns in music braille?

Core competencies To Be Developed:

Communication and collaboration---this is developed as learners carry out learning tasks in groups and pairs.

Critical thinking and problem solving-----this is developed as learners identify features of rhythmic patterns in simple and compound time signatures.

Self efficacy -----this is developed as learners master reading and writing rhythmic patterns in simple and compound time signatures.

Link To Pertinent and Contemporary Issues: **Clubs and societies**---This is developed as learners come together to discuss and share ideas on rhythmic patterns in braille. **Mentorship and peer education**—This could be developed as learners support each other while carrying out learning tasks in groups and pairs.	**Link to Values:** **Social justice**—This is achieved as learners ensure fairness in distribution of learning materials amongst themselves as well as giving equal opportunities while performing learning tasks. **Respect**—This is achieved as learners appreciate each other's opinion while carrying out learning tasks in groups or pairs.
Link To other Learning Areas: **Performing arts**—As learners apply the knowledge and skills learnt to interpret rhythmic patterns in performing arts.	**Suggested Community Service Learning**: -learners could write rhythmic patterns in simple and compound time signatures in Braille then showcase them during school Parents' Day/open days to the parents.
Suggested Non Formal Activity that Support Learning: Learners could visit a school resource room to familiarize themselves more on rhythmic patterns.	**Suggested modes of Assessment:** ● Observation, ● Oral questions, ● Peer assessments, ● Self-assessments.
Suggested Learning Resources: Braille papers Braille machines Slates and stylus Braille card with rhythmic patterns.	

Suggested Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify features of rhythmic patterns in simple and compound signatures and further explain the features.	The learner is able to identify features of rhythmic patterns in simple and compound time signatures. simple and compound time signatures.	The learner is able to identify some features of rhythmic patterns in simple and compound time signatures.	The learner is able to identify few features of rhythmic patterns in simple and compound time signatures. .
The learner is able to read braille rhythmic patterns in simple and compound time signatures and goes further to interpret some rhythms by tapping or clapping them.	The learner is able to read rhythmic patterns in simple and compound time signatures.	The learner is able to read some parts of the rhythmic patterns in simple and compound time signatures.	The learner is able to read very few parts of rhythmic patterns in simple and compound time signatures.
The learner is able to write rhythmic patterns in simple and compound time signatures and further create rhythmic patterns.	The learner is able to write rhythmic patterns in simple and compound time signatures.	The learner is able to write some of the rhythmic patterns in simple and compound time signatures.	The learner is able to write very few rhythmic patterns in simple and compound time signature

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
MUSIC BRAILLE NOTATION	**8.2** **Semi quaver and Demi semi quaver.** **2 lessons**	By the end of the sub strand, the learner should be able to; a) identify semi quaver and demi semi quaver notes by	● Learners are guided to identify and name dots that form semi quaver and demi semi quaver notes from braille cards. ● In groups learners are guided to read rhythmic patterns involving semi	1)Why do we learn to write semi quaver and demi semi quaver notes in braille?

		naming the dots that form them,	quaver and demi semi quaver notes in braille.	
		b) read rhythmic patterns involving semi quaver and demi semi quaver notes in braille,	● In pairs learners are guided to write rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	
		c) write rhythmic patterns involving semi quaver and demi semi quaver notes in braille,	● In pairs learners are guided to use digital devices with refreshable braille displays to write and read rhythmic patterns involving semi quaver and demi semi quavers in braille.	
		d) enjoy reading and writing rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	● In groups learners practice writing and reading rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	

Core competencies to be Developed:

Digital literacy—This is developed as learners use digital devices with refreshable Braille displays such as orbit readers to practice writing rhythmic patterns involving semi quaver and demi semi quaver notes in braille.

Learning to learn---This is developed as learners apply knowledge and skills learnt to learn how to construct their own rhythmic patterns in music braille.

Communication and collaboration---This is developed as learners work in groups and in pairs to read and write rhythmic patterns involving semi quaver and demi semi quaver notes in braille.

Link To Pertinent and Contemporary Issues:

Link to Values:-

| **Mentorship and peer education**—This could be developed as learners learn from one another while performing learning tasks in groups and pairs. | **Love-**This is achieved as learners work together in groups and in pairs assisting one another in the learning tasks. |
| **Clubs and societies---**This could be developed as learners participate in Braille and music clubs at school to carry out reading and writing rhythmic patterns involving semi quaver and demi semi quaver notes in braille. | **Unity**-This is achieved as learners work harmoniously in groups while carrying out learning tasks. |

| **Link To other Learning Areas:** | **Suggested Community Service Learning**: |
| **Performing arts---**As learners apply the knowledge and skills learnt to interpret rhythmic patterns involving semi quaver and demi semi quaver in performing arts. | Learners could visit a neighboring school and participate in writing rhythmic patterns involving semi quaver and demi semi quaver together with the sighted peers. |

| **Suggested Non Formal Activity that Support Learning:** | **Suggested modes of Assessment**: |
| Learners could visit their school transcription/ resource rooms to practice writing and reading rhythmic patterns from Music braille books. | Oral questions, Observation, Self-assessment, Peer assessment. |

Suggested Learning Resources:

Braille papers,

Braille machines,

Slates and stylus,

Digital devices with refreshable braille displays.

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Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to identify and name dots forming semi quaver and demi semi quaver notes in braille and further explain how they are used.	The learner is able to identify and name dots forming semi quaver and demi semi quaver notes in braille.	The learner makes progressive efforts in identifying and naming dots forming semi quaver and demi semi quaver notes in braille.	The learner makes minimal efforts in identifying and naming semi quaver and demi semi quaver notes in braille.
The learner is able to read rhythmic patterns involving semi quaver and demi semi quaver notes in braille with fluency.	The learner is able to read rhythmic patterns involving semi quaver and demi semi quaver notes in Braille.	The learner makes progressive efforts in reading rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	The learner makes minimal efforts in reading rhythmic partners involving semi quaver and demi semi quaver notes in braille.
The learner is able to write rhythmic partners involving semi quaver and demi semi quaver notes in braille and further uses the notes to create other rhythmic patterns.	The learner is able to write rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	The learner makes progressive efforts in writing rhythmic patterns involving semi quaver and demi semi quaver notes in braille.	The learner makes minimal efforts in writing rhythmic patterns involving semi quaver and demi semi quaver notes in braille.

Strand	Sub strand	Specific learning outcomes	Suggested learning experiences	Key inquiry question
	8.3 Major scales with and without key signatures in braille. 4 lessons	By the end of the sub strand, the learner should be able to; a) Identify features of major scales with and without key signatures in Braille b) Read major scales ascending and descending with and without key signatures in Braille. c) Right major scales ascending and descending with and without key signatures in Braille. d) Appreciate reading and writing major scales ascending and descending with and without key signature in Braille.	● Learners are guided to identify features of major scales with and without key signatures in Braille. They include Position of the clef, key signature, time signature, octave signs on the notes of the scale and sharp or flat when the scale is written without key signatures. ● In groups learners are guided to read major scales ascending and descending with and without key signature in Braille. ● In pairs learners be guided to write major scales ascending and descending with and without key signature in Braille ● In groups learners practice reading and writing major scales ascending and descending with and without key signature in Braille.	1. Why should you identify features of major scales in Braille music?

Core Competencies To Be Developed

S**elf efficacy**--This is developed as learners acquire self-confidence and self-esteem as they practice writing and reading major scales ascending and descending with and without key signatures in braille.

Communication and collaboration—This could be developed as learners perform learning tasks in reading and writing major scales in groups and in pairs.

Link to Pertinent and Contemporary Issues: **Self management skills**—this is developed as learners acquire self awareness as they practice writing and reading major scales ascending and descending with and without key signatures in braille.	**Link to Values**: **Unity**—This is achieved as learners work together in groups practicing writing and reading major scales in Braille.
Link To other Learning Areas: **Performing arts**--As learners apply knowledge and skills learnt in braille to learn major scales in performing arts.	**Suggested Community Service Learning**: The learners could write major scales, ascending and descending with and without key signatures, organize them into booklets then visit a nearby community library, donate them for other people with visual impairment to read.
Suggested Non Formal Activity that Support Learning: -learners could visit the school library/Braille resource room to learn more on how to read and write major ascending and descending with and without key signatures in music braille books.	**Suggested modes of Assessment**: Oral questions, Self-assessment, Peer assessment, Written question, Observation.
Suggested Learning Resources: Braille papers Braille machines Slates and stylus Music Braille books.	

Suggested assessment rubric

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
The learner is able to Identify features of major scales with and without key signatures in Braille and even state their uses in music braille.	The learner is able to Identify features of major scales with and without key signatures in Braille	The learner is able to Identify most features of major scales with and without key signatures in Braille	The learner is able to identify few features of major scales with and without key signature in Braille
The learner is able to read major scales ascending and descending with and without key signatures in Braille with fluency.	The learner is able to read major scales ascending and descending with and without key signatures in Braille.	The learner is able to read most of the major scales ascending and descending with and without key signatures in Braille.	The learner is able to read few major scales ascending and descending with and without key signature in Braille.
The learner is able to write major scales ascending and descending with and without key signatures in Braille and even interpret the scales	The learner is able to write major scales ascending and descending with and without key signatures in Braille.	The learner is able to write most of the major scales ascending and descending with and without key signature in Braille.	The learner is able to write few major scales ascending and descending with and without key signature in Braille.

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STRAND 9.0: FRENCH BRAILLE

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
9.0 FRENCH BRAILLE	9.1 FRENCH ACCENT MARKS 2 lessons	By the end of the sub- strand, the learner should be able to: a) locate accent marks on French texts in braille. b) read out texts with accent marks in French braille. c) write texts with accent marks in Frenchy braille. d) Practice reading and writing short dialogues using accent marks in French braille e) Appreciate the role of accent marks in Frenchy braille.	● Learners be guided to locate French accent marks on braille texts(accent aigu, accent grave, accent circonflexe, accent trema, c cedilla, oe diphthong.) ● Learners be guided to read out texts with accent marks in braille. ● Learners be guided to write texts with accent marks in braille. ● In pairs learners could practice reading and writing braille texts with French accent marks.	1. Why do we use accent marks in French braille?

Core Competencies to Be Developed:

Communication and Collaboration: this is developed as learners work together in pairs while practicing reading and writing braille texts with French accent marks.

Learning to learn: this is developed as leaners apply the learned skills to read and write texts in French.

Link to Pertinent and Contemporary Issues: career guidance: This is achieved as learners utilize French accent marks to improve reading, writing and speaking skills in the French language for future career prospects.	**Link to Values: Unity:** this is developed as learners cooperate to read and write braille texts with French accent marks.

Link To other Learning Areas:	Suggested Community Service Learning: learners could visit a supermarket in their locality then buy goods as they list their names in French braille.
French: As learners apply the learned skill in reading and writing French work.	
Suggested Non-Formal Activity that Support Learning: Learners could visit the school library and read excerpts with French accent marks from French books for practice.	**Suggested Assessment:** observation, peer assessment ,oral questions and written questions.
Suggested Learning Resources	
Braille paper, braille machine, excerpts and French braille books.	

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
● The learner is able to locate French accent marks on braille texts and even goes further to articulate them orally. ● The learner is able to read texts with French accent marks in braille fluently ● The learner is able to write French accent marks on braille texts and even come up with more words bearing this accent marks	● The learner is able to locate French accent marks on braille texts. ● The learner is able to read texts with French accent marks in French braille. ● The learner is able to write French accent marks on braille texts.	● The learner is able to locate most of the French accent marks on braille texts. ● The learner makes progressive effort in reading braille texts with most of the French accent marks. ● The learner is able to write most of French accent marks in braille texts.	● The learner is able to locate few French accent marks on braille texts. ● The learner makes minimal effort in reading braille texts with French accent marks. ● The learner is able to write few accent marks in braille texts.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
9.0 FRENCH BRAILLE	9.2 UNCONTRACTED BRAILLE 2 lessons	By the end of the sub- strand, the learner should be able to: a) read out texts in uncontracted French braille.. b) write text in uncontracted French braille c) appreciate the role of uncontracted braille in reading and writing French work.	● Learners be guided to read text in uncontracted braille. ● Learners be guided to write text in uncontracted French braille. ● In groups learners could be guided to practice reading and writing texts in uncontracted French braille using digital assistive devices with braille display.	1. Why is the use of uncontracted braille in French necessary?

Core Competencies To Be Developed

Communication and Collaboration: this is developed as learners work together in groups while reading and writing texts using letters of the alphabet and accent marks in French braille.

Digital literacy and problem solving: this is developed as leaners read and write French texts in braille using digital devices with braille display.

Link to Pertinent and Contemporary Issues: Career guidance**:** This is achieved as learners utilize the acquired skills to perfect their pronunciation in the French language in preparation for future career opportunities. Life skills; this could be developed as leaners use the acquired orthographic skills in their day to day activities like labeling items keeping diaries and records.	**Link to Values: love:** this is developed as learners help each other while reading and writing texts in French braille.

Link To other Learning Areas:	Suggested Community Service Learning: learners could visit the local market and list fruits and vegetables in uncontracted French braille.
French: As learners apply the orthographic skill in reading and writing French work.	
Suggested Non-Formal Activity that Support Learning: Learners could visit the school library and practice reading uncontracted French braille in French brail books.	**Suggested Assessment:** peer assessmen,t written questions and observation.
Suggested Learning Resources	
Braille paper, braille machine, braille cards.	

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
● The learner is able to read uncontracted braille text in French with fluency. ● The learner is able to write uncontracted braille text in French braille with ease and speed.	● The learner is able to read uncontracted braille text in French ● The learner is able to write uncontracted braille in French	● The learner makes progressive effort in reading uncontracted braille texts in French. ● The learner makes minimal effort in writing French texts using uncontracted braille. ●	● The learner makes minimal effort in reading French texts in uncontracted braille. ● The learner makes minimal effort in writing French texts in uncontracted braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
9.0 FRENCH BRAILLE	9.3 PUNCTUATIONS AND INDICATORS 2 lessons	By the end of the sub-strand the learner should be able to: a) Identify punctuation signs in a French braille text. b) read braille text with punctuation signs. c) write punctuations signs in French braille text. d) Show interest in using punctuation signs in French braille.	• Learners could be guided to locate punctuation signs on French braille texts (full stop, comma, question marks, dash and apostrophe) • In pairs, learners could read out French texts with punctuation signs in braille. • Learners could be guided to write texts with punctuations signs in French braille. • In groups learners practice reading and writing sentences with punctuation marks	1. why do we use punctuation marks when writing braille work?

Competencies to Be Developed

Self-efficacy: this is achieved as learners master reading and writing braille texts in French, using punctuation marks.

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

Link to Pertinent and Contemporary Issues: **Life skills:** this could be achieved as learners use the braille skills to write poems, songs and chorales for contests and entertainment.	**Link to Values; Peace**-this is achieved as learners work together in harmony in their groups to read and write texts with punctuation marks.
Link To other Learning Areas: **French-**this is achieved as learners use the acquired skills to punctuate notes and assignment in French.	**Suggested Community Service Learning:** Learners could work with an IT expert and open a social media channel where they could display punctuation marks in French braille in order to educate the society.
Suggested Non-Formal Activity that Support Learning:	**Suggested Assessment:** observation, oral assessment and presentations.

Learners could visit the school library and look for simple story books in French braille.They could then locate different punctuation marks and write them down for practice.	

Suggested Learning Resources:

Braille paper, braille machines, braille texts in french, French storybooks.

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
• The learner is able to identify punctuation signs on French braille texts and even go father to name more punctuation marks . • The learner is able to read out punctuation signs in French braille texts with fluency • The learner is able to write punctuations signs in French braille text with ease and speed.	• The learner is able to identify punctuation signs on French braille texts. • The learner is able to read out punctuation signs in French braille texts • The learner is able to write punctuations signs in French braille texts.	• The learner is able to identify most of punctuation signs on a French braille texts. • The learner is able to read out most of the punctuation signs in French braille texts • The learner is able to write most punctuation marks in French braille.	• The learner is able to identify few punctuation signs on a French braille text. • The learner is able to read out few punctuation signs in French braille texts • The learner is able to write few punctuations signs in French braille.

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STRAND 10: GERMAN BRAILLE

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
10.0 GERMAN BRAILLE	10.1 GERMAN ACCENT MARKS 2 lessons	By the end of the sub- strand, the learner should be able to: a) locate accent marks on German texts in braille. b) read out texts with accent marks in German braille. c) write texts with accent marks in German braille. d) Practice reading and writing short dialogues using accent marks in German braille e) Appreciate the role of accent marks in German braille.	• Learners be guided to identify accent marks in words and sentences in German braille on braille cards – a umlaut, o-umlaut ,u-umlaut • In pairs, learners could read words and sentences with accent marks in german braille. • Learners could be guided to write words and sentences with accent marks in german braille. • In groups learners could practice reading and writing words and sentences with accent marks in German braille	2. How are accent marks written in german braille?

Core Competencies to Be Developed:

Communication and Collaboration: this is developed as learners work together in groups while practicing reading and writing words and sentences with German accent marks in braille.

Learning to learn: this is developed as learners look for more words with German accent marks to improve their reading skills in German braille

Link to Pertinent and Contemporary Issues: learner support program-career guidance: This is achieved as learners utilize the acquired skills to perfect their pronunciation in the German language for future career prospects.	Link to Values: Unity: this is developed as learners cooperate in their groups to read and write words and sentences with accent marks in German braille. Love: this is developed as learners support each other in pairs and groups and share the available resources
Link To other Learning Areas: German: As learners apply the learned skill in reading and writing German work in braille.	Suggested Community Service Learning: learners could visit a retailer's shop or supermarket in their locality then buy goods as they list them in German braille.
Suggested Non-Formal Activity that Support Learning: Learners could visit the school library and pick out words with German accent marks from German textbooks. They could then proceed to write these words down for practice	Suggested Assessment: self-assessment, peer assessment, observation and oral assessment.
Suggested Learning Resources Braille paper, braille machine, braille cards and German braille books.	

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
● The learner is able to identify German accent marks in words and sentences in braille and articulate them orally. ● The learner is able to read out words and sentences with German accent marks in braille fluently	● The learner is able to identify German accent marks in words and sentences in braille. ● The learner is able to read words and sentences with accent marks in German braille.	● The learner is able to identify most of the German accent marks in words and sentences in german braille. ● The learner is able to read most of the words and sentences with accent marks in German braille.	● The learner is able to identify few accent marks in words and sentences in German braille. ● The learner is able to read few words and sentences with German accent marks in braille

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	The learner is able to write accent marks in words and sentences in German braille and even come up with more words with accent m,arks		The learner is able to write accent marksin words and sentences in German braille		The learner is able to write most of German accent marks in words and sentences in German braille.		The learner is able to write few accent marks in words and sentences in German braille.

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
10.0 GERMAN BRAILLE	10.2 UNCONTRACTED BRAILLE 2 lessons	By the end of the sub- strand, the learner should be able to: a) Read short text in uncontracted German braille b) write text in uncontracted German braille c) appreciate the role of uncontracted braille in reading and writing German work.	● In pairs earners could be guided to read short text in uncontracted german braille. ● Learners could be guided to write short text in uncontracted German braille. ● In groups learners could be guided to practice reading and writing texts in uncontracted German braille using digital assistive devices with braille display.	2. Why is the use of uncontracted braille in German braille necessary?

Core Competencies To Be Developed

Communication and Collaboration: this is developed as learners work together in groups while reading and writing texts using letters of the alphabet and accent marks in German braille.

Digital literacy: this is developed as leaners read and write German texts in braille using digital devices with braille display.	
Link to Pertinent and Contemporary Issues: Career guidance**:** This is achieved as learners utilize the acquired skills to perfect their pronunciation in the German language for future career opportunities. Life skills; this could be developed as leaners use the acquired orthographic skills in their day to day activities like labeling items keeping diaries and records.	**Link to Values: love:** this is developed as learners help each other while reading and writing texts in German braille. Respect: this is developed as learners appreciate each other's opinion while working in pairs and groups
Link To other Learning Areas: **German:** As learners apply the orthographic skill in reading and writing German work.	**Suggested Community Service Learning:** learners could visit the local market and list fruits and vegetables in uncontracted German braille.
Suggested Non-Formal Activity that Support Learning: Learners could visit the school library and practice reading uncontracted German braille in brail books.	**Suggested Assessment:** peer assessment, self assessment written question ,oral question and observation.
Suggested Learning Resources Braille paper, braille machine, braille cards and german braille books.	

Assessment Rubrics

Exceeding Expectations	**Meeting Expectations**	**Approaching Expectation**	**Below Expectations**
● The learner is able to read uncontracted braille text in German with fluency. ● The learner is able to write uncontracted braille text in German braille with ease and speed.	● The learner is able to read uncontracted braille text in German ● The learner is able to write uncontracted braille in German	● The learner is able to read most of the words and sentences in uncontracted braille text in German. ● The learner is able to write most of the words	● The learner is able to read few words and sentences in uncontracted braille text in German. ● The learner is able to write few words and sentences Not for Sale

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			and sentences in uncontracted braille in German	in uncontracted braille in German

Strand	Sub Strand	Specific Learning Outcome	Suggested Learning Experiences	Key Inquiry Question
10.0 GERMAN BRAILLE	10.3 PUNCTUATIONS AND INDICATORS 2 lessons	By the end of the sub-strand the learner should be able to: e) Identify punctuation signs in a German braille text. f) read out punctuation signs in German braille text g) write punctuations signs in German braille text. h) Appreciate the use of punctuation signs in German braille.	● Learners could be guided to locate punctuation signs in German braille texts (full stop,comma, question marks, dash and apostrophe) ● In pairs,learners could be guided to read out German texts with punctuation signs in braille ● Learners could be guided to write texts with punctuations signs in German braille. ● In groups learners could be guided to practice reading and writing sentences with punctuation marks.	1. why do we use punctuation marks when writing german braille work? 2. How do you differentiate punctuation marks from letters of alphabet.

Competencies to Be Developed

Self-efficacy: this is achieved as learners gain mastery in punctuating braille texts in German.

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

Link to Pertinent and Contemporary Issues: Life skills: this could be achieved as learners use the braille skills to write poems, songs and chorals for contests and entertainment.	Link to Values; Peace-this is achieved as learners work together in harmony in their groups to read and write texts with punctuation marks in german braile.
Link To other Learning Areas:	Suggested Community Service Learning:

German-this is achieved as learners use the acquired skills to punctuate notes and assignments in German.	With the help of an IT expert, learners could open a social media channel where they could display punctuation marks in German braille in order to educate the society.
Suggested Non-Formal Activity that Support Learning: Learners could look for simple story books in German braille in the school library locate sentences with different punctuation marks and write them down for practice.	**Suggested Assessment:** observation, oral assessment and presentations.
Suggested Learning Resources: Braille paper, braille machine, cards, German storybooks.	

Assessment Rubrics

Exceeding Expectations	Meeting Expectations	Approaching Expectation	Below Expectations
• The learner is able to identify punctuation signs in a German braille text and even go father to name more punctuation marks . • The learner is able to read german braille texts with accent marks in German withfluency • The learner is able to write punctuations signs in German braille text with ease and speed.	• The learner is able to identify punctuation signs in a German braille text. • The learner is able to read german braille texts with accent marks • The learner is able to write punctuations signs in German braille text.	• The learner is able to identify most of punctuation signs in a German braille text. • The learner is able to read out most of the punctuation signs in German braille text • The learner is able to write most punctuation marks in German braille texts.	• The learner is able to identify few punctuation signs in a German braille text. • The learner is able to read out few punctuation signs in German braille text • The learner is able to write few punctuations signs in German braille text.