



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

# **CODING AND ROBOTICS GRADE 1 LESSON PLANS**

DEPARTMENT OF BASIC EDUCATION

# Contents

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Annexure A – Learning Intentions and Success Criteria

Annexure B – Problem Statements

Annexure C – Assessment – Grade 1

Annexure D - Annual Teaching Plan

Annexure E – Competencies and Concepts Clarification

### **Notes to the teacher:**

Annexures are provided as separate documents.

For Grade 1, Annexure B contains learner readable problem statements that can be displayed to encourage learners to read the problem statements themselves.

The teacher can read the problem statement in the lesson plan, then focus on the learner readable problem statements displayed for learners to read and then explain in their own words what the problem is.

Also refer to Annexure B.

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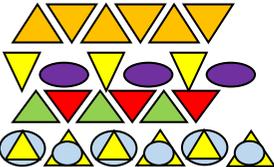
GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 1			
2 x 30 minute lessons per week: ME			
TERM 1 WEEK 1	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (40 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>• Interpret directional arrow symbols (up, down, left, right).</li> <li>• Move according to directional arrow symbols (up, down, left, right).</li> <li>• Match arrow directions with corresponding visual representations.</li> </ul>	C3	<p><b>Problem statement:</b> Bogosi often forgets which side of the line he should stand on when walking to class with his teacher. The teacher looks in the direction where Bogosi needs to move. Can you help Bogosi understand directional arrows so he can follow the teacher's instructions?</p> <p><b>Practical activity</b> (Whole class/ pair). Half of the learners have arrows; the other half have eyes looking in different directions. Learners run around and find the set of eyes that display the same direction as a learner with an arrow. <i>Learners can also be in groups of 8. (1 of each directional arrow + 1 of each picture displaying a direction).</i></p> <p>The teacher can draw the arrows on the board and point to the arrows for the learners to follow or on A4 paper (1 arrow per page) and flash the arrows.</p> <div style="text-align: center;">  </div> <p>Make the learners aware: While using your arms, the learners point <b>right, up, left, down</b>. If you step in the direction of the arrows, <b>step forward</b> for the <b>up-arrow</b>, and you <b>step back</b> for the <b>down-arrow</b> (The movement of up or down, is still the same as the movement of forward and backwards).</p>	<p>Learners demonstrate their understanding of the directional arrows by pointing and moving in the direction of the arrows shown by the teacher.</p> <p><b>Book / worksheet activity:</b> Have pictures of eyes indicating different directions. They must match the arrows with the eyes. Or Learners can do an activity in their workbook based on their practical activity, e.g. a grid with a given code. The learners draw a route with crayons on the grid.</p>
	COMPETENCIES	TEACHER GUIDELINES for THEORY	LEARNING ACTIVITY for Theory
<p><b>Success Criteria:</b> <b>I can...</b></p>	<ul style="list-style-type: none"> <li>• Point my body/finger in the direction shown by an arrow symbol.</li> <li>• Move my body in the direction indicated by a sequence of arrow cards</li> <li>• Match arrow symbols to images showing the same direction (eyes, objects, etc.).</li> </ul>		

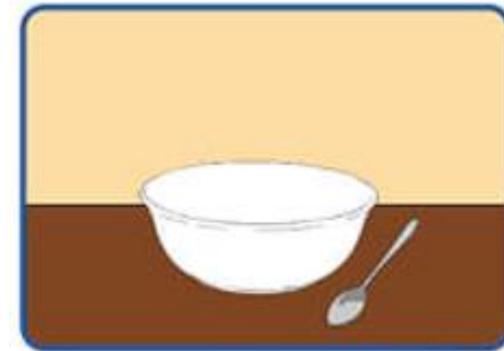
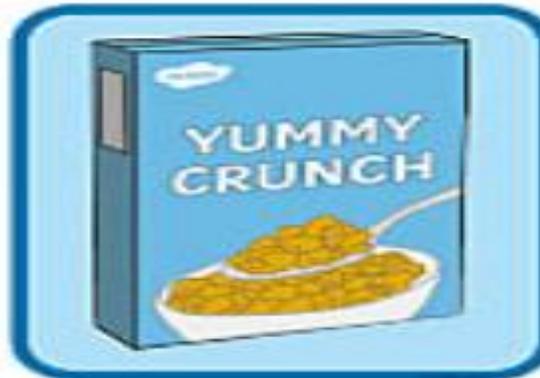
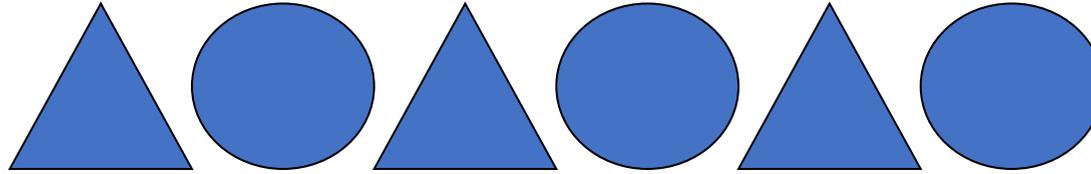
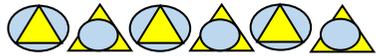
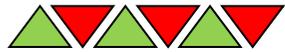
Match the correct arrows with the correct eyes. (This can be used for both practical activities as well as the book/ worksheet activity).



**GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 2**

2 x 30 minute lessons per week: ME

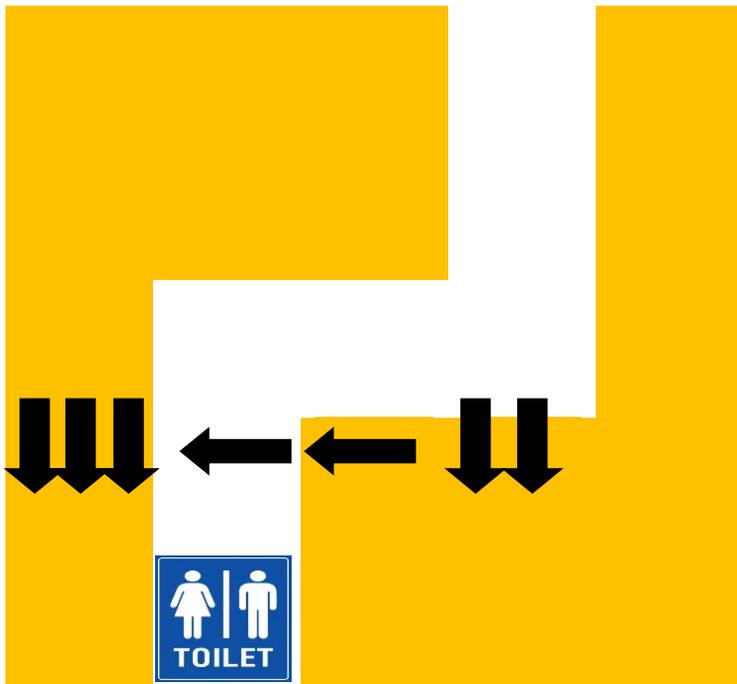
TERM 1 WEEK 2	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (35 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>Identify repeating elements in a visual pattern or sequence.</li> <li>Describe what makes a pattern a pattern (repetition of elements).</li> <li>Arrange images in a logical sequence (e.g., breakfast routine steps).</li> <li>Articulate the rule or logic behind a pattern. (Explain the pattern)</li> <li>Explain what a robot is in simple terms (a machine that follows instructions)</li> </ul>	<p>C1 C6</p>	<p><b>Problem statement:</b> Patty and Hlengiwe invented a fun game: when Patty calls out 'triangle,' Hlengiwe sits down. When Patty calls 'circle,' Hlengiwe jumps up. They do this action-sequence three times in a row. Is this a pattern? How can you tell? Let's become pattern detectives and figure it out!</p> <p><b>The teacher will:</b></p> <ul style="list-style-type: none"> <li>Prepare sets of shapes for each learner to use and extra sets of shapes for learners who need more activities for consolidation.</li> <li>Identify the pattern using colour and shape.</li> </ul>  <p><b>Teacher will ask learners:</b></p> <ul style="list-style-type: none"> <li>Is this a pattern?</li> <li>Why do you say it is a pattern?</li> <li>What is the sequence?</li> <li>To copy the pattern using shapes given to them.</li> </ul> <p><b>For learners who have mastered the activity:</b></p> <ul style="list-style-type: none"> <li>The teacher will give more complex activities with more colours and shapes to interpret the different sequences within the patterns.</li> </ul> 	<p><b>Book / worksheet activity:</b> The learners will paste the breakfast pictures in correct sequence in their workbooks. Learners might have a different order of sequence in the mornings – if they can explain their thinking, it is still considered as correct.</p> <ul style="list-style-type: none"> <li>Give each learner pictures to tell the sequence of preparing and eating breakfast. Learners should be specific with their sequence.</li> </ul> 
	<p><b>COMPETENCIES</b></p> <p>R1</p>	<p><b>TEACHER GUIDELINES for THEORY (5 min)</b></p> <p>What is a robot? Discuss and ask questions: Cannot make own decisions Specific robots specific tasks</p>	<p><b>Learner activity for THEORY - Discussion</b></p> <p>This will take place as a discussion between the teacher and the learners. Ask questions and learners can answer “yes” or “no”.</p>
<p><b>Success Criteria:</b> <b>I can...</b></p>		<ul style="list-style-type: none"> <li>spot something that repeats at least three times and say, “This is a pattern!”</li> <li>name the shapes, colours, or objects that repeat in a pattern.</li> <li>tell what comes next in a pattern and explain how I know.</li> <li>put pictures in the right order and explain my thinking using words like “first,” “next,” and “last.”</li> <li>describe a robot as a machine that follows human instructions to complete tasks.</li> </ul>	



GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 3			
2 x 30 minute lessons per week: MY SCHOOL			
TERM 1 WEEK 3	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<b>Learning Intentions:</b>  <b>Learners will learn to:</b> <ul style="list-style-type: none"> <li>• Create a sequence of directional commands (code) to solve a navigation problem.</li> <li>• Interpret and physically follow a given set of directional instructions.</li> <li>• Test if a code solution successfully solves the problem.</li> <li>• Identify different types of robots and their specific purposes</li> </ul>	C2	<b>Problem statement:</b> Pulane is new to our school and doesn't know where the bathroom is located. Using directional arrows, can you create a clear set of instructions to guide her from the classroom to the bathroom? Remember, robots need exact commands—and so does Pulane!  <b>Practical activity:</b> <a href="http://www.instagram.com/reel/C5phpUTvm3R/?igsh=YzAyMDM1MGJkZA">http://www.instagram.com/reel/C5phpUTvm3R/?igsh=YzAyMDM1MGJkZA</a>  ☒  The teacher will explain simple coding instructions forward, left, right, and backwards. <ul style="list-style-type: none"> <li>➤ In groups of 4 or 5, learners will use a set of symbolic commands to assist Pulane to find her way to the toilet by acting it out physically on the floor grid.</li> <li>➤ Learners will pack the arrows below the grid to code Pulane to the toilet.</li> <li>➤ Groups can swop and interpret another group's commands.</li> </ul>	<b>Book work / worksheet:</b>  The teacher will give the learners a grid to find a different route to assist Pulane to reach the toilet and pack out the arrows below the grid.
	C3		
	<b>COMPETENCIES</b>	<b>TEACHER GUIDELINES for THEORY (10 min)</b>	<b>Learner activity for Theory - discussion</b>
	R2	Discuss types of robots done in grade R – Show pictures and learners must identify – vacuum cleaner robot, medicine delivery robot, and add assembly line robot putting cars together	Show pictures of robots and learners must identify the correct one.
<b>Success Criteria: I can...</b>	<ul style="list-style-type: none"> <li>• Arrange arrow cards to create a path from start to destination.</li> <li>• Follow arrow instructions step-by-step to navigate on a grid.</li> <li>• Explain whether my code worked and why or why not.</li> <li>• Name 2-3 different types of robots (like vacuum cleaners, delivery robots, or assembly robots)</li> </ul>		

**Use arrows to guide Pulane to the toilet.**

Learners can make use of the 4 directions provided (forward, backwards, left right).





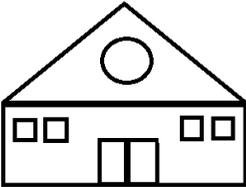
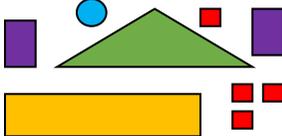
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## GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 4

2 x 30 minute lessons per week: MY SCHOOL

TERM 1 WEEK 4	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (35 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>Identify basic shapes (squares, rectangles, triangles, circles) within a complex image</li> <li>Break down a picture of a school building into its component shape</li> <li>Reconstruct the school building using cut-out or drawn shapes</li> <li>Collaborate with peers to complete a building task using blocks or shapes</li> <li>Explain that we use digital devices (phones, tablets, computers) in our daily lives</li> </ul>	<p>C1 Decomposition</p>	<p><b>Problem statement:</b> Our school is building a new Grade 1 classroom! Before construction begins, the architects need to understand all the shapes that make up a school building. Can you break down the building into individual shapes, then rebuild it using those pieces? Ready to be construction coders?</p> <p><b>Practical activity</b> (Group act/individual act): <u>Picture of school building</u></p> <ul style="list-style-type: none"> <li>Show learners a <b>picture of a school building</b>.</li> <li>Learners <b>draw or cut out</b> the shapes they identified (squares, rectangles, triangles, circles, etc).</li> <li>Each learner or group keeps their set of shapes. Learners now use the shapes they identified to repack/ rebuild the school building without seeing the picture. Leave room for collaboration between the learners.</li> <li>Learners <b>use their cut-out shapes</b> to rebuild the school from memory, working together in small groups.</li> <li>They must <b>use the same number of each shape</b> they identified earlier.</li> <li>Show the original picture again. Ask guiding questions: "Did we build our school the same way?", "Did we use all the shapes?", "Which shapes did we forget?", "What could we do differently next time?"</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p><b>Extension: (Blocks or Six Bricks)</b></p> <ul style="list-style-type: none"> <li>In small groups (2–3 learners), give each group <b>12 building blocks</b> or <b>Six Bricks sets</b>.</li> <li>Instruction: "Build a school using all 12 bricks."</li> <li>Learners work together, discuss, and problem-solve.</li> <li>The teacher observes how they decompose the "school" into smaller building parts (walls, roof, windows, etc.).</li> </ul> 	<p><b>Book / worksheet activity:</b></p> <ul style="list-style-type: none"> <li>Provide learners with a <b>picture of a school</b>.</li> <li>Learners <b>colour each shape</b> in the building a different colour (e.g., all triangles red, rectangles blue).</li> <li>Then, without looking at the picture, they <b>recreate or draw</b> the school again in their books using the coloured shapes.</li> </ul> <p><b>Differentiation:</b></p> <ul style="list-style-type: none"> <li>For stronger learners: add more complex shapes (e.g., diamonds, semicircles).</li> <li>For developing learners: use fewer or simpler shapes.</li> </ul>
	<b>COMPETENCIES</b>	<b>TEACHER GUIDELINES for THEORY (15 min)</b>	<b>Learner activity for Theory – discussion + worksheet</b>
	D2	<p><b>Live in a digital world</b></p> <p><b>Objective:</b> Learners understand that they are part of a digital world. We use digital tools every day – phones, tablets, computers,</p>	<p>Discuss different digital devices Show pictures</p>

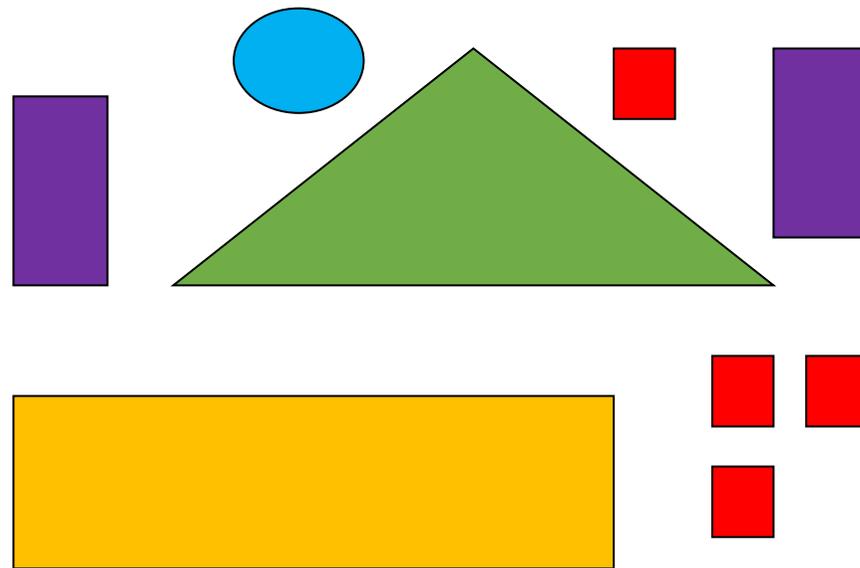
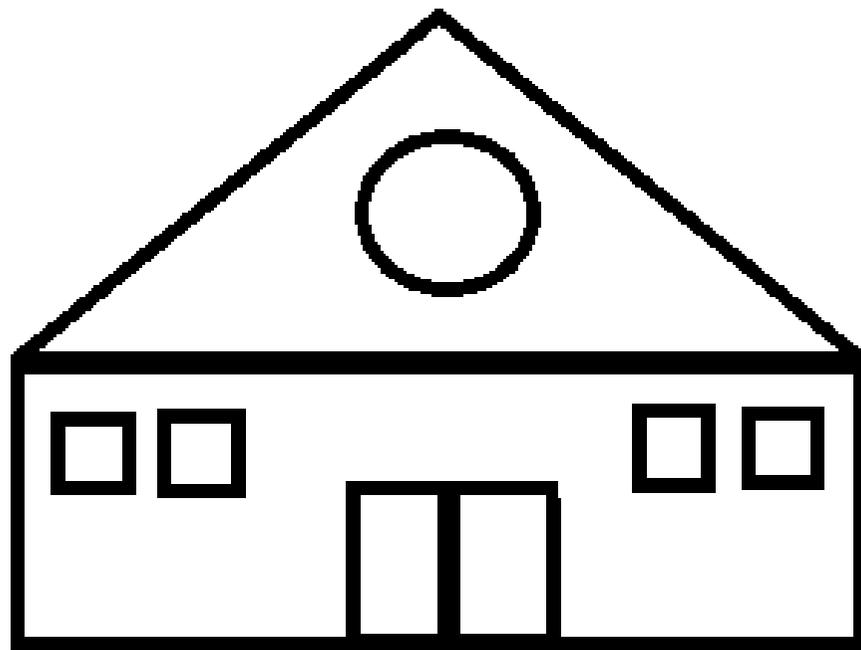
**GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 4**

**2 x 30 minute lessons per week: MY SCHOOL**

Show pictures of digital devices. Learners draw devices they use at home or school or find pictures in magazines.

**Success Criteria:**  
**I can...**

- Point out specific shapes (triangles, rectangles, circles) within a building picture.
- Sort shapes by color, size, or type.
- Reconstruct a building using separated shape pieces without looking at the original picture.
- Work with my group to rebuild the structure and explain our strategy.
- Name 2-3 digital devices we use at home or school and say what they are for



**L e b o**

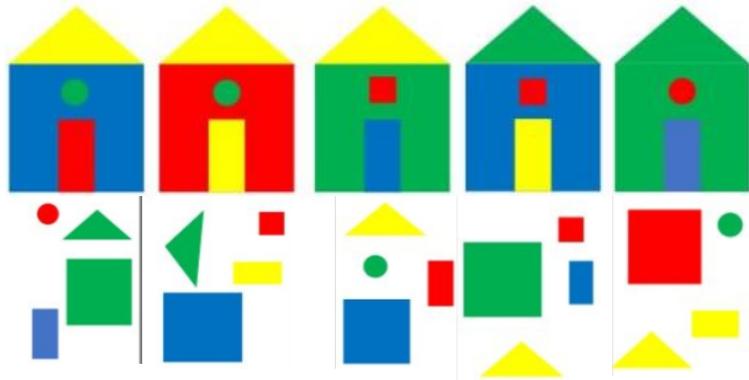
Example for D2 activity (encoding their name)

## GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 5

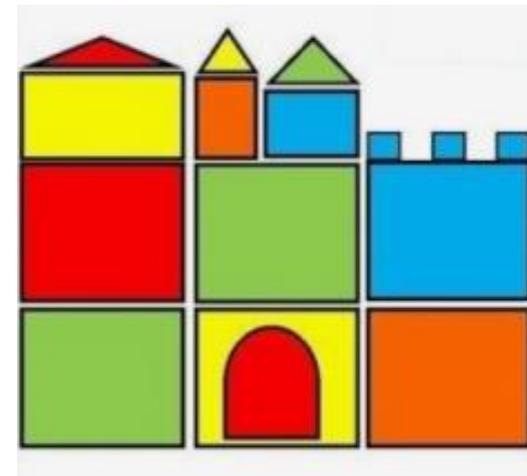
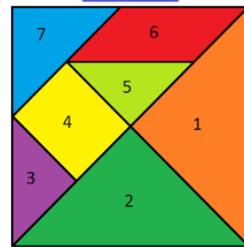
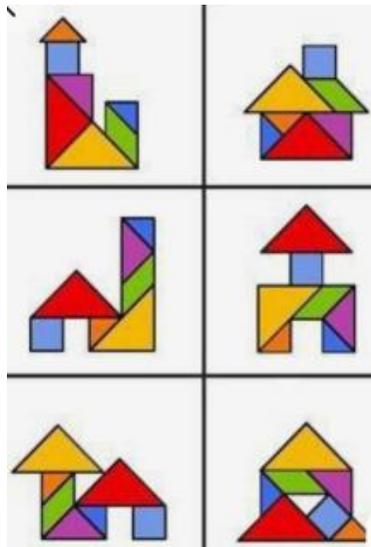
2 x 30 minute lessons per week: MY SCHOOL

TERM 1 WEEK 5	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>Identify the key attributes needed to recognize a specific building (color and shape).</li> <li>Focus on relevant details while ignoring irrelevant information.</li> <li>Select the correct object from multiple options based on essential characteristics.</li> <li>Describe what a computing device is and give examples.</li> </ul>	C1 Abstraction	<p><b>Problem statement:</b> Biancke is lost! She needs to find her friend's school, but there are SO many schools. All Biancke knows is that her friend's school is RED with a YELLOW roof. Can you help by focusing on the important details?</p> <div style="text-align: center;">  </div> <p>Learners will use shapes and colours to identify and represent Biancke's friend's school (red with yellow roof), showing their ability to focus on relevant details and ignore others.</p> <p>The teacher provides several paper or LEGO "schools" made of shapes (different colours and roof colours). Display 4-6 different "schools". Learners must look carefully and choose the correct school based on the key description. The teacher asks:</p> <ul style="list-style-type: none"> <li>"How did you know this was the right one?"</li> <li>"What colours did you focus on?"</li> <li>"Did you look at the shape or the colour first?"</li> </ul> <p>It can also be done as follows: The teacher provides colour paper or LEGO blocks in different colours and shapes, instruction cards or an image showing the rules (red building, yellow roof). Learners must build or draw up the school that matches the instruction. Encourage them to only use the important details (colour and shape). Discuss what parts were important for the design.</p>	<p><b>"Find the correct school" grid game</b></p> <p>Resources needed:</p> <ul style="list-style-type: none"> <li>A simple 5x5 grid</li> <li>Cut-outs or icons of different buildings (different colours/roofs)</li> <li>A small toy or paper Biancke</li> </ul> <p>Place the buildings randomly on the grid. Give learners the instructions: <b>"Biancke needs to go to the school that is red with a yellow roof".</b></p> <p>Learners must plan and move Biancke step-by-step (forward, left, right) until she reaches the correct building. If they go to the wrong building, discuss why – they may have focused on the wrong details.</p>
	COMPETENCIES	TEACHER GUIDELINES for THEORY (10 min)	Learner activity for Theory - discussion
	D3	<p><b>What is a computing device?</b> Learners understand what a computing device is. A computing device is a machine that helps us do tasks using information. Show and tell with real or picture examples (phone, tablet, computer).</p>	<p>Do computing devices do physical tasks like picking up or moving things? No, but they do tasks using information (maps, meaning of words, a restaurant's contact details, etc)</p>
<p><b>Success Criteria: I can...</b></p>	<ul style="list-style-type: none"> <li>Find the building with specific features (e.g., 'red with yellow roof') from several choices.</li> <li>Explain which details were important for finding the right building.</li> <li>Name examples of computing devices (phone, tablet, computer).</li> <li>Describe what computing devices help us do.</li> </ul>		

Retrieval practice:



Practical activity:



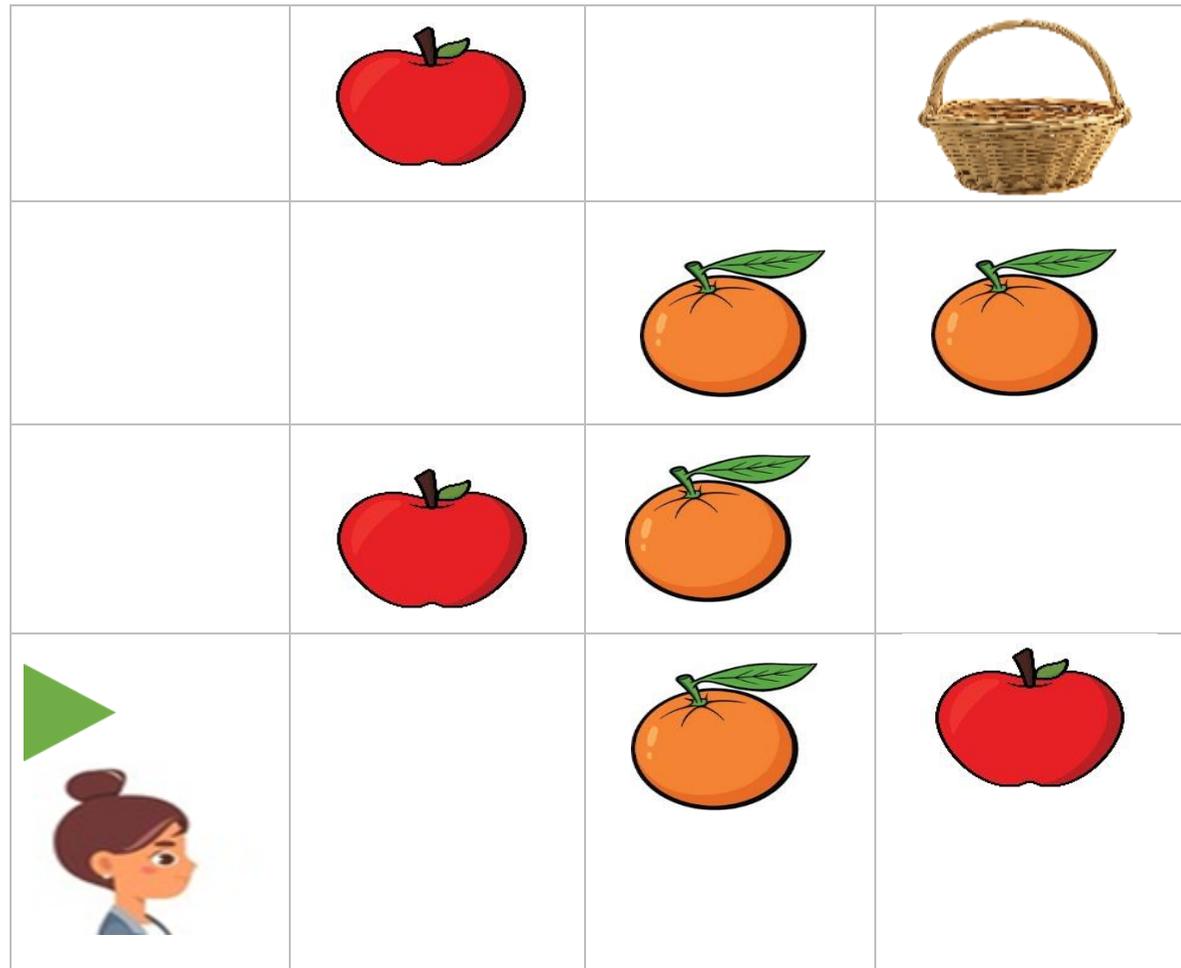
GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 6			
2 x 30 minute lessons per week: HEALTHY LIVING			
TERM 1 WEEK 6	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>• Design a complete code solution (sequence of arrows) to solve a navigation problem.</li> <li>• Use directional symbols systematically to represent movement instructions.</li> <li>• Test and revise code to ensure it achieves the goal (collecting all items).</li> <li>• Explain what a robot is</li> <li>• Name different robot parts based on their jobs</li> </ul>	C2	<p><b>Problem statement:</b></p> <p>Grace loves fresh fruit! Her basket is empty, and she wants to fill it with oranges from the garden. Can you write a code (using directional arrows) that helps Grace collect all the oranges and return to her basket? Avoid other fruits.</p> <p><b>Practical activity</b> (Use the grid below).</p> <ul style="list-style-type: none"> <li>➤ The learners listen to the problem statement.</li> <li>➤ They discuss how to solve the problem.</li> <li>➤ They pack the coding solution with arrows at the bottom of the grid.</li> <li>➤ One learner will code his/her peer that will execute the instructions. When they reached the basket, they would see if they had collected all the oranges.</li> <li>➤ If there are oranges left, they need to recode their peers and change the algorithm.</li> </ul> <div style="text-align: center;">  </div> <p>The teacher will distribute coding cards with arrows to use as directional symbols and words such as left, right, up and down to each learner to instruct them to match it.</p> <p>Learners match coding cards with words and act out the actions of a partner.</p> <ul style="list-style-type: none"> <li>➤ The teacher gives a grid with a starting point, finish, obstacles (apples) and oranges in another order as the first grid.</li> <li>➤ The teacher gives arrows or crayons and paper to write the coding solution.</li> <li>➤ The teacher instructs the learners to help her collect the oranges into the basket.</li> <li>➤ The learners put the coding solution at the bottom of the grid or write the solution under the grid.</li> </ul>	<p>The teacher gives each learner in the group a different grid with apples and oranges on it. Each learner develops a coding solution with a starting point to add the oranges into the basket. They write the coding solution with crayons under the grid.</p> <p>The above can be done in a classwork book for consolidation and assessment.</p>
	COMPETENCIES	TEACHER GUIDELINES for THEORY (10 min)	Learner activity for Theory - discussion
	R1	What is a robot? Discuss: It can perform actions according to instructions	How are the robots the same or different?

## GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 6

2 x 30 minute lessons per week: HEALTHY LIVING

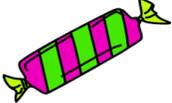
	<b>R2</b>	<p>Different robots, different parts based on what it must do</p> <p>Revise the parts of the vacuum cleaner robot, medicine delivery robot and assembly line robot</p>	<p>How are they adapted for the specific task they were programmed for?</p> <p>E.g. robot vacuum cleaner has small wheels and it is low to the ground to get under cupboards and couches.</p>
<b>Success Criteria: I can...</b>	<ul style="list-style-type: none"> <li>Create a path using arrow cards that collects all oranges and reaches the basket.</li> <li>Place arrows in the correct sequence to accomplish a task.</li> <li>Explain what robots do and how they help people.</li> <li>Describe the parts different robots have based on their jobs.</li> </ul>		

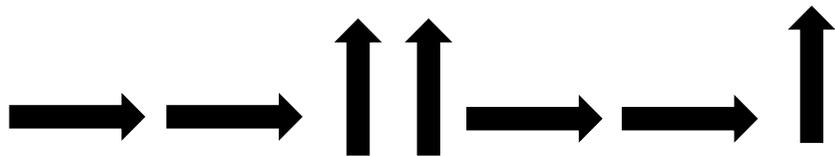
Grace's fruit basket is empty. Help her collect as many oranges as she can to add them to her basket.



GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 7			
2 x 30 minute lessons per week: HEALTHY LIVING			
TERM 1 WEEK 7	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<b>Learning Intentions:</b>  <b>Learners will learn to:</b> <ul style="list-style-type: none"> <li>Execute a given code while focusing only on relevant items (healthy food).</li> <li>Ignore distractors while following directional instructions.</li> <li>Understand the importance of balanced screen time and digital device safety.</li> <li>Explain what computing devices can do (games, videos, communication, learning).</li> </ul>	C1 C3	<b>Problem statement:</b> Dzunani wants to make healthy choices for lunch. The cafeteria has both healthy and unhealthy options. Follow the arrow code to help Dzunani collect exactly 4 healthy food items while avoiding the unhealthy ones.  Each learner receives a grid with pictures of healthy and unhealthy food items. Learners follow the code to help Dzunani collect healthy items on the grid. (Grid is attached to the next page).	Each learner gets a page folded in half. Learners have 1 minute to draw 2 healthy food items, and 2 unhealthy food items. 4 items in total. Ask a few learners to name the items they draw.  <b>Additional activity:</b> Learners complete the pattern cards on the pegboards. <div style="text-align: center;">  </div>
	<b>COMPETENCIES</b>	<b>TEACHER GUIDELINES for THEORY (10 min)</b>	<b>Learner activity for Theory - discussion</b>
	D2  D3	<b>Balancing screen time</b> Learners understand the importance of balancing screen time with other activities. Too much screen time is not healthy. We need time to play, read, and rest.  <b>What can computing devices do?</b> Learners explore the uses of computing devices. <ul style="list-style-type: none"> <li>Computing devices help us play games, watch videos, talk to people far away, and learn.</li> </ul>	Create a "My Day" chart showing screen time vs. other activities Learners can give feedback on how they spend their day.  You can have pictures of devices. Learners must match activities like talking on phone, watch a movie, games, etc to the computing device.
<b>Success Criteria: I can...</b>	<ul style="list-style-type: none"> <li>Follow arrow instructions to collect only healthy food items.</li> <li>Ignore unhealthy items while navigating the grid.</li> <li>Describe why we need to balance screen time with other activities.</li> <li>Match computing devices with their functions (phone for calls, tablet for games, etc.).</li> </ul>		

**Practical activity:** Help Dzunani collect 4 healthy food items for lunch by following the code below.



Did you collect all the healthy food items?

Example of computing devices:





GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 8			
2 x 30 minute lessons per week			
	COMPETENCIES	TEACHER GUIDELINES for THEORY (10 min)	Learner activity for Theory - discussion
<b>Success Criteria: I can...</b>		<ul style="list-style-type: none"> <li>• Listen and follow all steps to create a photo frame successfully.</li> <li>• Use materials (paper strips, glue, decorations) correctly and safely.</li> <li>• Write 3-5 clear instructions for my partner to follow.</li> <li>• Act as a 'robot' by doing exactly what my partner's instructions say.</li> <li>• Explain what happened when instructions weren't clear or were in the wrong order.</li> </ul>	



GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 9			
2 x 30 minute lessons per week: THE WEATHER			
TERM 1 WEEK 9	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>Identify and articulate complex repeating patterns in visual sequences.</li> <li>Describe what changes and what stays the same in a pattern.</li> <li>Use logical reasoning to match objects with their shadows or corresponding images.</li> <li>Explain the thinking process used to solve pattern problems.</li> <li>Identify that a robot is programmed for a specific task</li> <li>Identify different parts in robots to perform specific tasks</li> <li>Identify differences in robots (environment, job, parts)</li> </ul> <p><b>Success Criteria: I can...</b></p>	<p>C1</p> <p>C6</p>	<p><b>Problem statement:</b> Palesa is looking out the window on a rainy day and spots something amazing — raindrops are making a pattern! One drop, then two drops, then one drop, then two drops. Is this really a pattern, or is it just random raindrops?</p> <div style="text-align: center;">  </div> <p>The teacher draws a triangle with a dot on the top corner, a second triangle with a dot on the top and bottom left corner. Repeat this sequence 3 times to create a pattern.</p> <p>Ask the learners to identify and interpret the pattern The teacher will ask the learners:</p> <ul style="list-style-type: none"> <li>➤ What do you see?</li> <li>➤ Is it a pattern?</li> <li>➤ Why do you say so?</li> </ul> <p>The teacher will give learners worksheets to stimulate logical thinking and problem-solving skills to recognize a pattern in shadows or find five (5) differences between two (2) pictures.</p>	<p>Attachment: Can be an introduction to the lesson to show different ways pattern recognition can take place. <a href="https://pin.it/4k1SWnawB">https://pin.it/4k1SWnawB</a></p> <p><b>Pattern matching with popsicle sticks</b> <a href="https://www.facebook.com/share/r/16yJgeJB9H/">https://www.facebook.com/share/r/16yJgeJB9H/</a></p> <div style="text-align: center;">  <p>Pattern matching popsicle sticks.mp4</p> </div> <p><b>Book / worksheet activity:</b> Learners complete a worksheet where they find the correct shadow (pattern recognition).</p>
	<b>COMPETENCIES</b>	<b>TEACHER GUIDELINES for THEORY (10 min)</b>	<b>Learner activity for Theory - discussion</b>
	<p>R1</p> <p>R2</p>	<p><b>What is a robot?</b> A robot is programmed for a specific task. It works in a specific environment and has specific parts to perform the job</p> <p><b>Identify different types of robots:</b> Compare a vacuum cleaner robot with Finds-and-helps-people-robot (help in disaster zones)</p>	<p>Discuss previous robots – Do the parts they have help them in their environment?</p> <p>Compare the robots with regards to</p> <ul style="list-style-type: none"> <li>The job they do</li> <li>The environment they work in</li> <li>What parts do they have to help them do their job?</li> </ul>
<ul style="list-style-type: none"> <li>Describe which parts of the pattern repeat (e.g., 'triangle with one dot, then triangle with two dots').</li> <li>Predict what comes next in a pattern and explain why.</li> <li>Match each object to its shadow by comparing shapes carefully.</li> </ul>			

**GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 9**

**2 x 30 minute lessons per week: THE WEATHER**

- Spot differences between similar images and explain what I noticed.
- Tell others my strategy for solving the pattern problem.
- Name features of a robot, e.g. is programmed for a specific task
- Identify the parts that helps robots perform specific tasks
- Compare robots with regards to jobs, environment and different parts

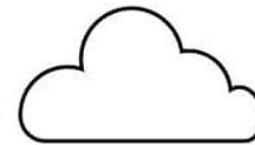
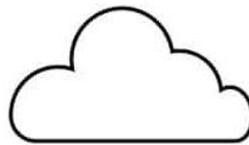
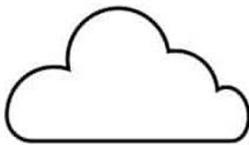
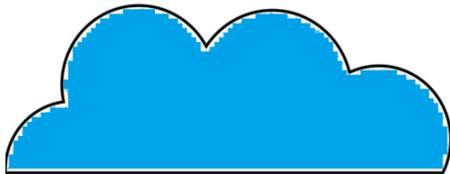
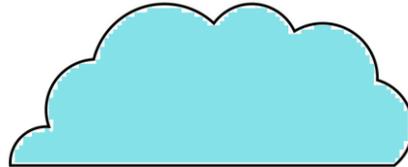
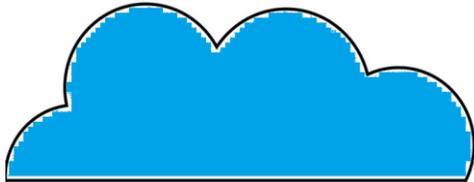
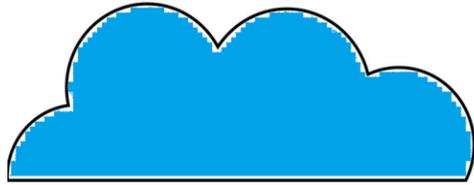


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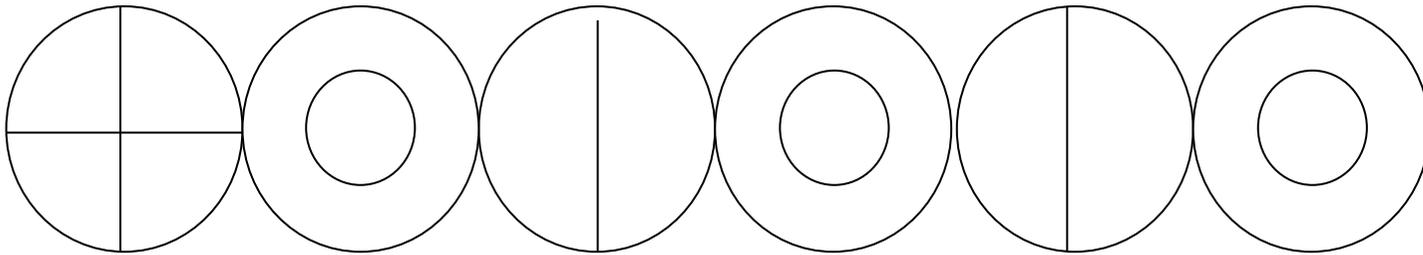


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This is for the problem statement. Paste on the board as you introduce the problem to the learners.

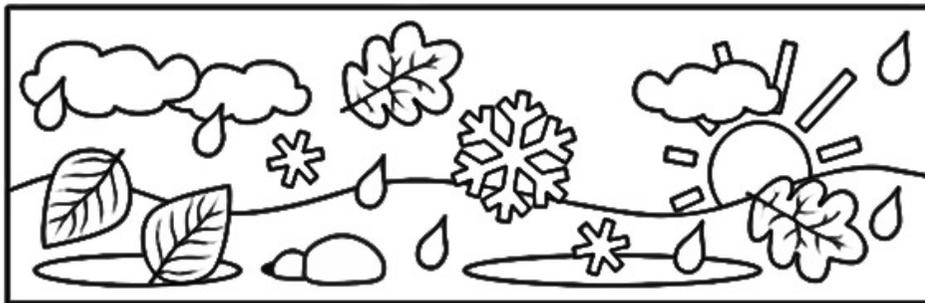
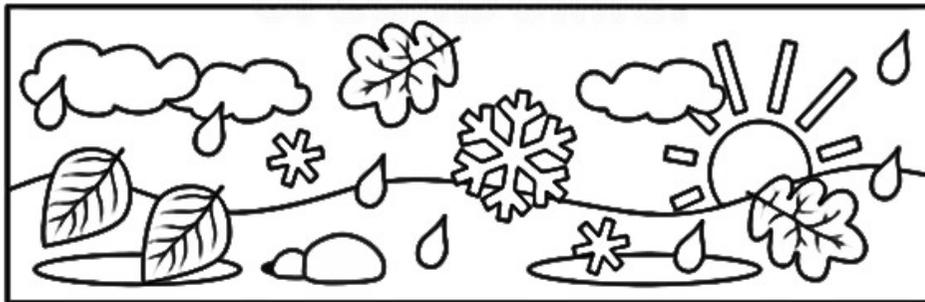


Book activities: Where are the elements? Identify the sequence. Is it a pattern? Why?



### FIND 5 DIFFERENCES

Try to spot five differences between the two pictures.



Find the correct shadow

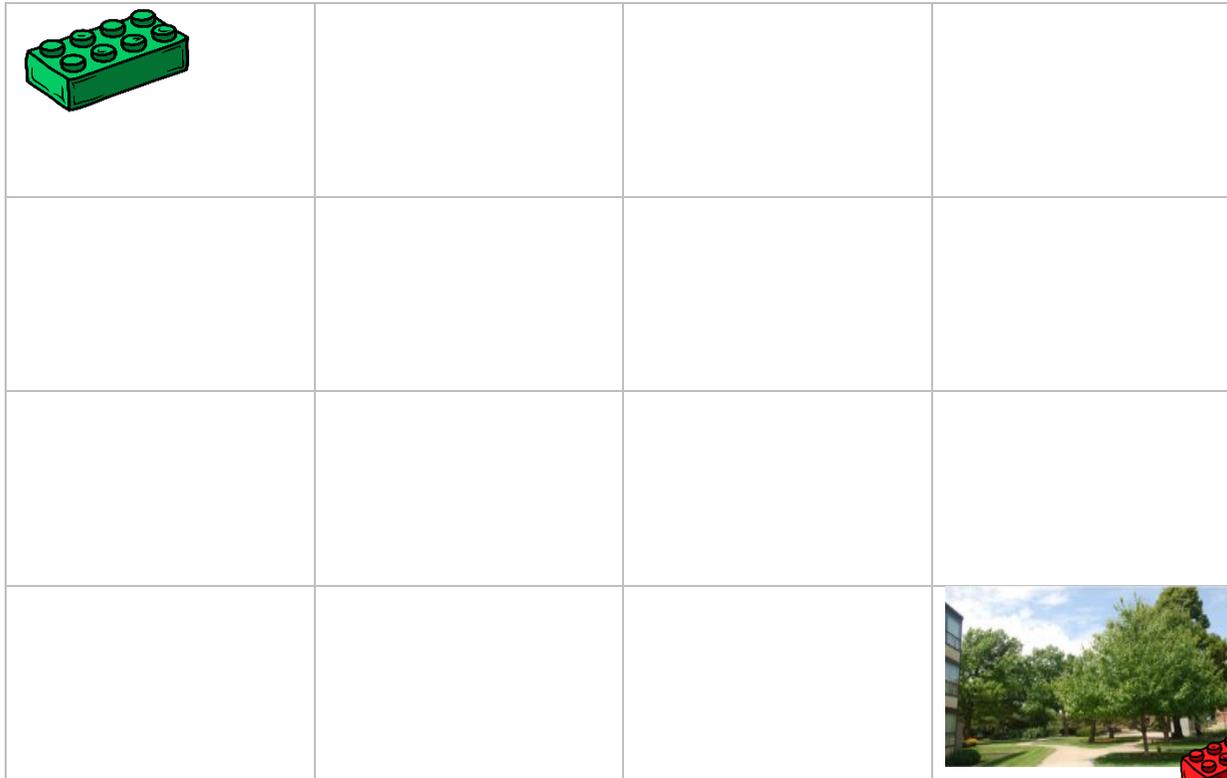


## GRADE 1 TERM 1 CODING & ROBOTICS LESSON WEEK 10

2 x 30 minute lessons per week: WEATHER

TERM 1 WEEK 10	COMPETENCIES	TEACHER GUIDELINES for PRACTICAL ACTIVITY (30 min)	RETRIEVAL PRACTICE (20min)
<p><b>Learning Intentions:</b></p> <p><b>Learners will learn to:</b></p> <ul style="list-style-type: none"> <li>Design an efficient code solution using the minimum number of commands.</li> <li>Represent a navigation path using symbolic directional arrows.</li> <li>Compare different code solutions and identify the most efficient route.</li> <li>Compare safe and unsafe use of electronic devices</li> <li>Identify the parts of a computing device (screen) and its purpose</li> </ul>	<p>C2</p>	<p><b>Problem statement:</b> It's a scorching hot day and Elizabeth needs to get out of the sun quickly! Can you create the best code (sequence of arrows) to help Elizabeth reach the shady tree? Challenge: Can you find the shortest possible route?</p> <p><b>Activity 1:</b> The teacher will distribute coding cards with arrows as well as a start (green) and end card (red).</p> <ul style="list-style-type: none"> <li>➤ The learners listen to the problem statement.</li> <li>➤ They discuss how to use coding cards to reach the tree.</li> <li>➤ They pack the coding solution using the coding cards provided.</li> </ul> <p><b>Activity 2:</b> The teacher will start a coding solution with arrows. The learners can discuss in their groups and give a solution to complete the coding solutions. Use the grid of activity 1, but use a different starting point.</p>	<p>Learners match coding symbols with words and act out to a partner.</p> <p><b>Book / worksheet activity:</b></p> <p>Learners write the coding solution with crayons under the grid/ in their book.</p>
	<p><b>COMPETENCIES</b></p> <p><b>D2</b> <b>D3</b></p>	<p><b>TEACHER GUIDELINES for THEORY (10 min)</b></p> <p>Safe use of electronic devices Learners learn how to use devices safely.</p> <ul style="list-style-type: none"> <li>We must be careful when using devices – no food or drinks near them, handle with care.</li> <li>Role-play safe vs. unsafe device use.</li> </ul> <p>Parts of a computing device – screen Learners identify the screen and its purpose.</p> <ul style="list-style-type: none"> <li>The screen shows pictures, videos, and information.</li> </ul>	<p><b>Learner activity for Theory – discussion + game</b></p> <p>Discuss how to use devices</p> <p>Role play safe vs unsafe use of devices – discuss why it is safe or unsafe</p>
<p><b>Success Criteria:</b> <b>I can...</b></p>		<ul style="list-style-type: none"> <li>Create a complete arrow code that guides Elizabeth from start to the tree.</li> <li>Arrange arrows in the correct sequence to solve the problem.</li> <li>Test my code by acting it out or following it step-by-step.</li> <li>Find a shorter route if possible and explain why it's better.</li> <li>Demonstrate the safe use of electronic devices</li> <li>Identify the purpose of parts of a computing device</li> </ul>	

It is a very hot day. Help Elizabeth get to the shade under the tree.



Empty rectangular box for writing a code or route.

Can you shorten the code or find a short route?

Empty rectangular box for writing a shorter code or route.