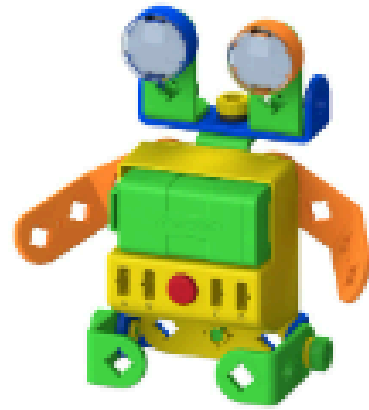
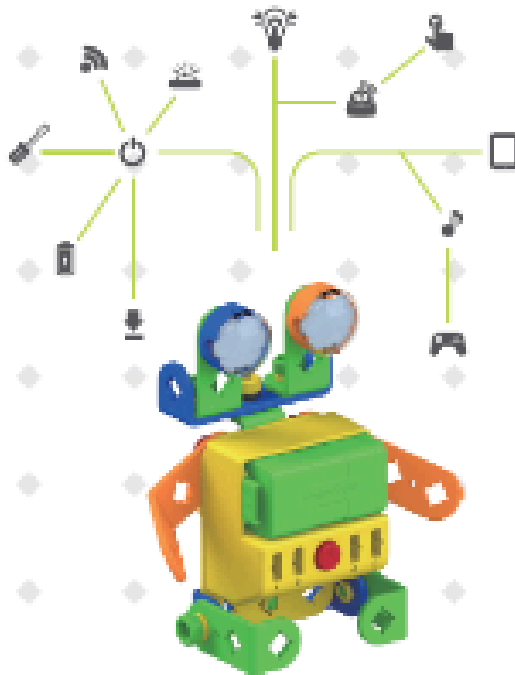


UARO 1 Lesson Plans

*CAPS
aligned
(South Africa)*



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uaro
CODING ROBOT
Interactive Coding World



STEAM
curriculum

Logical
thinking

Problem
solving
skills

Coding
education

1

UARO Lesson Plan 6: Puppy

Core Objectives: Students will build a robot puppy and review the purpose of the wheel and motors. They will manipulate the movement of the puppy going forwards and backwards. Students will then use a grid to help the puppy get to its food and describe the pattern (code) in which the puppy should move.

40-60 min lesson

Workbook: They will also learn about pets and baby animals by practicing and expanding their vocabulary knowledge.

CAPS standards (Robotics & Coding)

Coding: C. 2,3,5,6

Robotics: R.3,5,6,7

Digital concepts: D.7,8,9

Materials:

For UARO

- Assembly Book
- UARO-kit level 1
- A 3x3 block grid for coding activity (mat/tape/tiles)

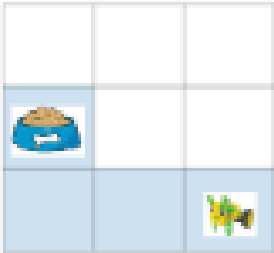
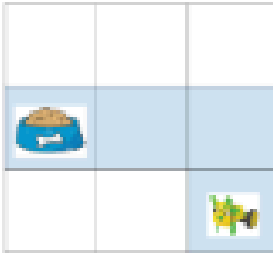
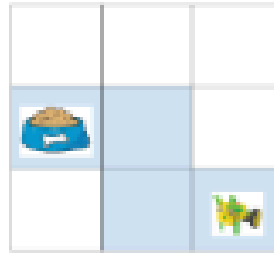




For cross curricular content

- Animal posters (pets/baby animals)
- Visuals of baby animals and their parents (flash cards)
- UARO Workbook

Cross-Curricular connections:

Language: Initial sounds & blends, talking about favourite things, compare & contrast
Math: Counting, position, orientation, symmetry (assembling), patterns
Life Skills: Following rules & instructions, taking turns, teamwork, pets & how to take care of them

Comments	Lesson Activity	
<p>Suggestion: Complete during circle time, or English block.</p>	<p>Introduction (10min) Connection to prior knowledge & cross curricular concepts.</p> <p>Video suggestion: Pets Guess the pet Baby Animals</p>	<p>Learn about pets: Workbook p.21-22 T: What is a pet? Is it different from wild animals like lions and tigers? T: Pets are also called companion animals. Let's mark the pets on p.21. T: Let's play "Guess the pet" (<i>play the video or make riddles for the kids</i>)</p> <p>T: Do you have a pet? Introduce your pet (p.22). This can be a real pet or one that you would want to have. T: Now introduce your pet to the friend next to you.</p> <p>Practice spotting the difference: Workbook p.23 T: These 2 pictures look the same, but they are different. Let's see if we can find 4 differences!</p> <p>Learn about baby animals: Workbook p.24 T: Let's learn about baby animals! What do you call a baby dog/cat/cow/bear etc. <i>Play the video as introduction.</i></p>

Comments	Lesson Activity	
<p>Robotics Class</p>	<p>Building the robot (25-30 min)</p>	<p>INTRO: Pets T: What is a pet? What animals can we have as pets? T: How do we look after pets?</p> <p>Robot Assembly: Puppy <i>Do the first page together to reinforce/review certain skills. Remind students:</i></p> <ul style="list-style-type: none"> - gather supplies first - count holes and make sure the placement is correct - don't tighten the bolts too much (nuts can break) <p><i>Let students build while teacher(s) walk around and assist where necessary.</i></p>
	<p>Play with the robot (coding) (10-15 min)</p>	<p>Review Robotic concepts: T: Let's turn on the robot puppy. What happened? What is making the puppy move forward? (motors=legs)</p> <p>Coding Concepts: T: The puppy is very hungry. We need to help him get to his food.</p> <ol style="list-style-type: none"> 1. Use the student worksheet (next page) and let students colour in the path for the puppy to get to his food. 2. Let students show friends their path physically using their robot and the 3x3 grid made by the teacher. <p>TIPS: <i>This might be difficult for some, so use a physical object for them to move on the paper (#1) like counters/eraser/bottle caps to represent the puppy. Make sure to demonstrate the activity first without giving them the answer.</i></p> <p><u>Possible answers:</u></p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>Reflect on activity: <i>Teacher chooses one path to demonstrate while using directional terminology ex. My puppy will move 1 block forward and 2 blocks left (while moving the puppy). If possible, write the pattern with arrows:</i></p> <div style="display: flex; align-items: center; justify-content: center;">     </div>
	<p>Disassemble the robot (5min)</p>	<p>Students disassemble their robot and pack it away to use in the next class.</p>

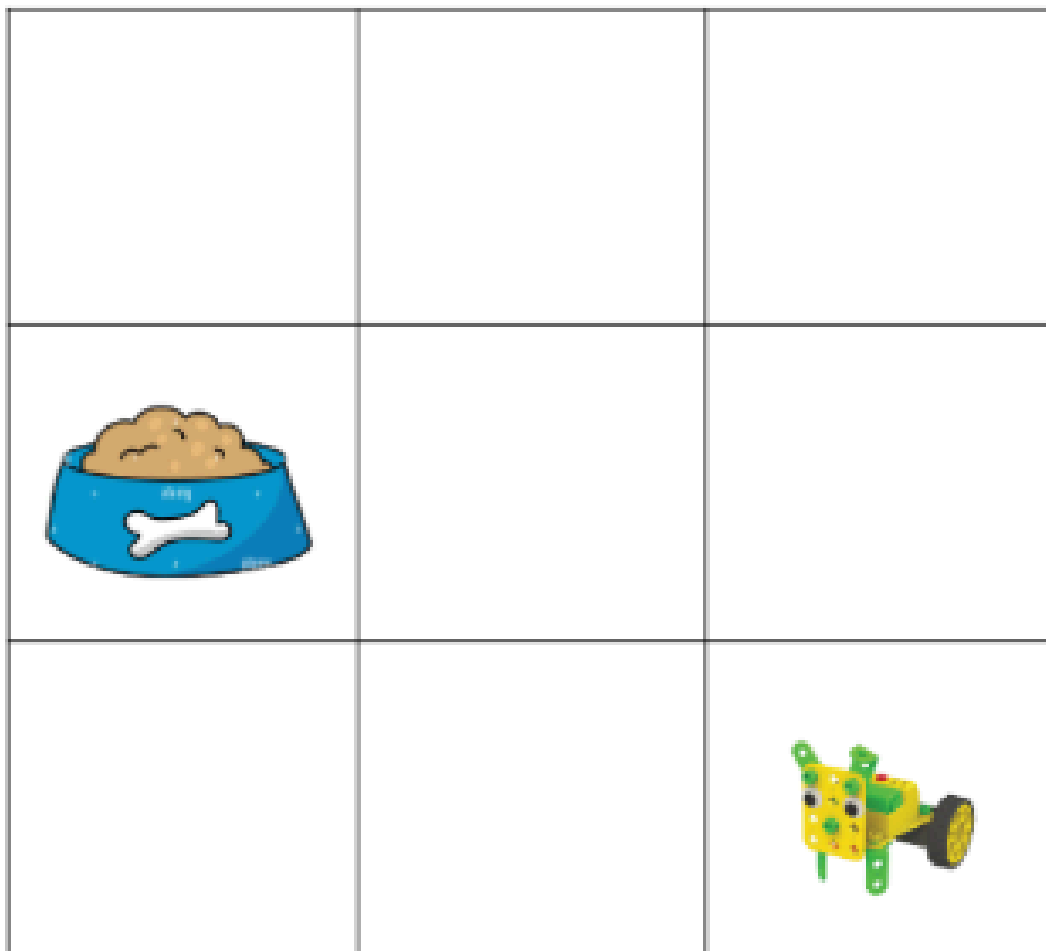
Name: _____

Date: _____

Coding Activity: Puppy

Help the puppy get to the food. The puppy can only move 1 block at a time.

1. Use a crayon to colour in the puppy's path.
2. Use your robot to show your friends how your puppy gets to his food. Use your coloured path to help you..



Name: _____



Date: _____

Butterfly Codes

1. In which direction do the butterfly's wings move? Draw arrows to describe the pattern:

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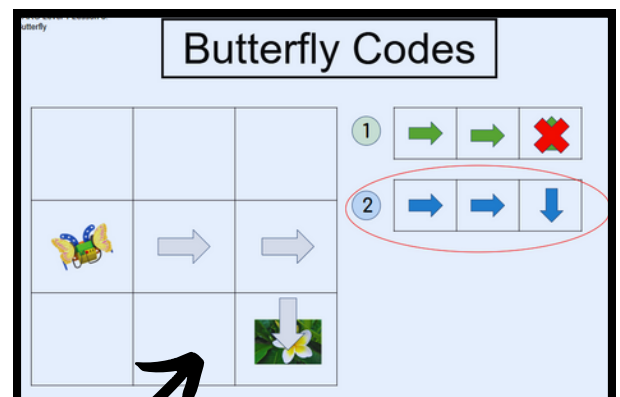
2. The butterfly needs to get to the flower.
 - a. Test the 2 algorithms.
 - b. Circle the correct one.
 - c. Put an X through the mistake.

1



2



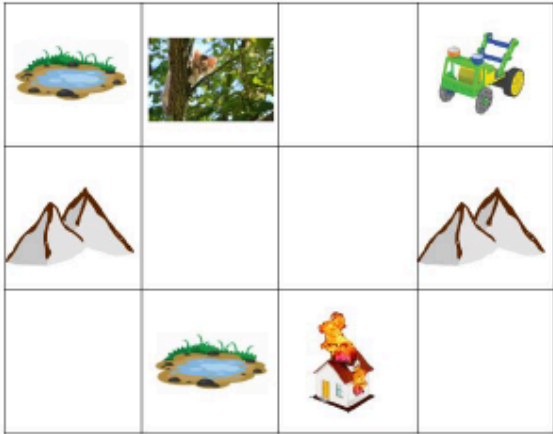
Butterfly Codes

			1			
			2			

Activities linked to teacher resource on ppt slides.

Name: _____ Date: _____

Fire Truck Debugging



1. Test the fire truck algorithm (arrows).

2. Was it correct?

3. Put an X through the mistake

4. Fix the mistake by writing down the algorithm here:

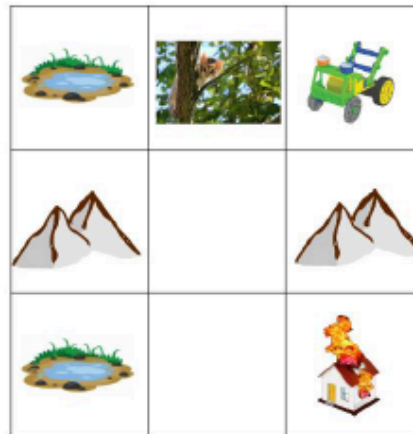
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Multiple Coding activities

Name: _____ Date: _____

Fire Truck Debugging



1. Test the fire truck algorithm (arrows).

2. Was it correct?

3. Put an X through the mistake(s).

4. Fix the mistake by writing down the correct algorithm here:

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with various difficulty levels.