Kai's Clan Lesson Plan – Driver's Licence Level 1

Now that you have a Yellow Learners Permit it's time to "Play" and build skills to gain a Level 1 Red Provisional Driver Licence.

"Let's Play"

Level 1: Red Provisional Driver Licence
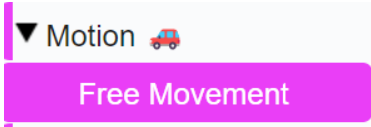
The skills to demonstrate effectively are:

- move forward and backward
- turn left and right
- open and close grippers
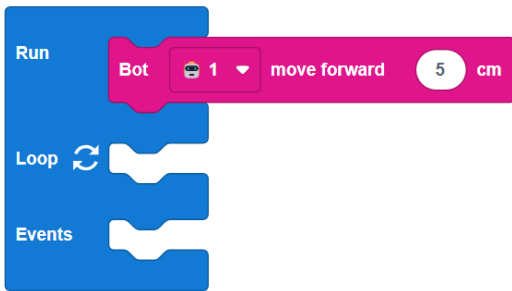- change speed
- change eye colour
- make a sound

Discover moving Kai robot with Free Movement

Introduce students to programming the robot freely on the floor. Students work in pairs or groups of three and together play with the programming features of free movement. The teacher allocates robots to students. Remember to follow the connection process first.
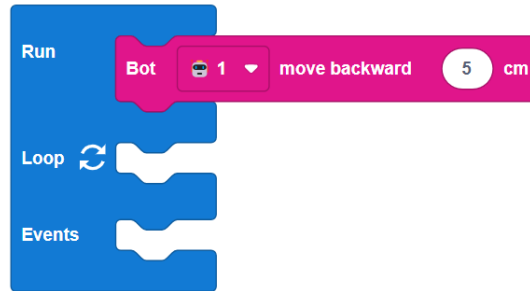
The easiest way to get started is to learn how to **move**, **rotate** and use the **grippers**.

Code using the easier NEWBIE blocks.	
Beginners choose **NEWBIE** coding blocks.	Click **Motion** and select **Free Movement**.
Kai Blocky has special blocks that use a drop down to select the robot you want to control	

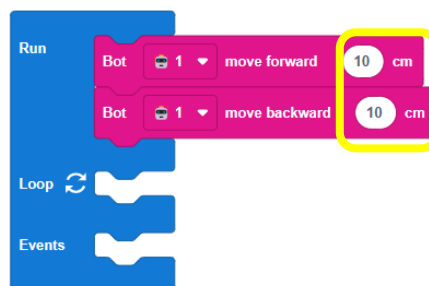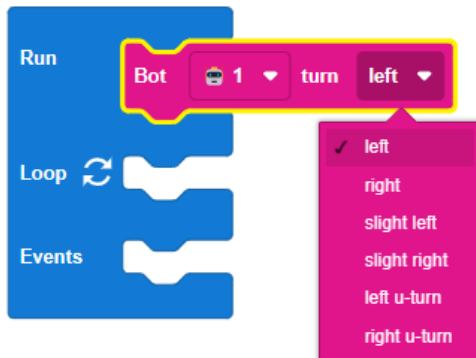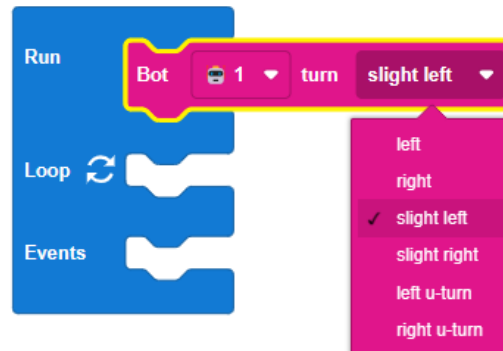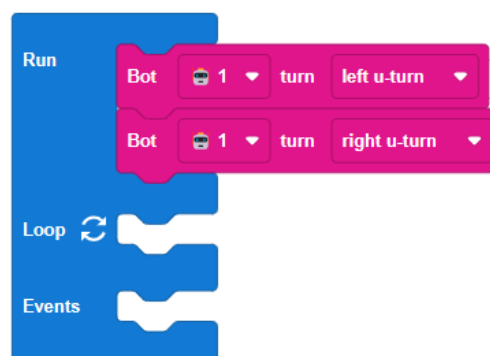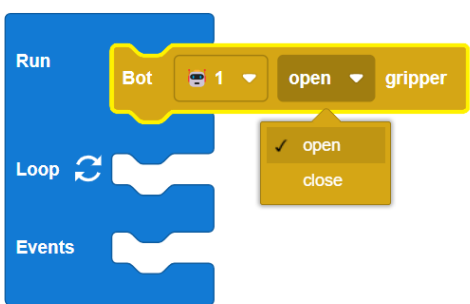|	
Find the pink **move forward** block and snap it next to **Run**.	Find the **move backward** (reverse) block and snap it next to **Run**.
Task 1 Can you move the robot different distances? Get your robot to do the following actions: • Drive forward 10 cm • Drive backwards 10 cm	**Answer**
Now try the **turn** block – left and right options.	Try to **turn** slight left and slight right.
Task 2 Try to make a u-turn? • What happens? • How far is a u-turn? • Try both directions	**Answer**
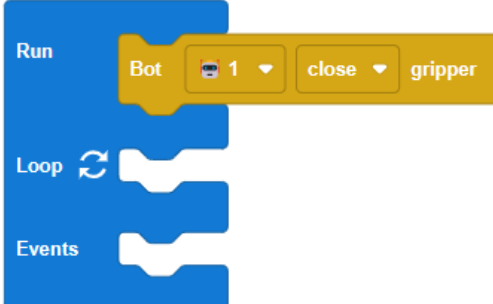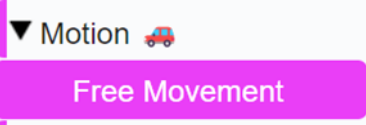
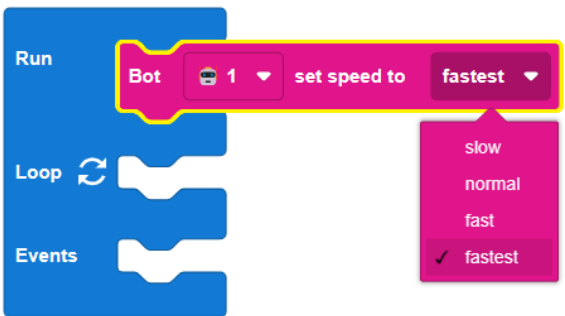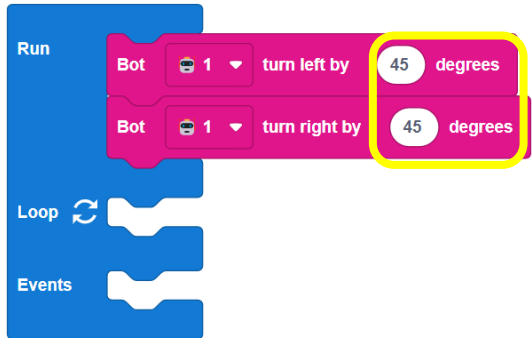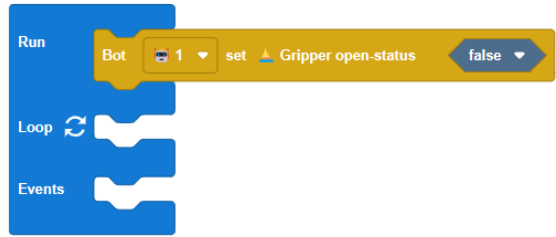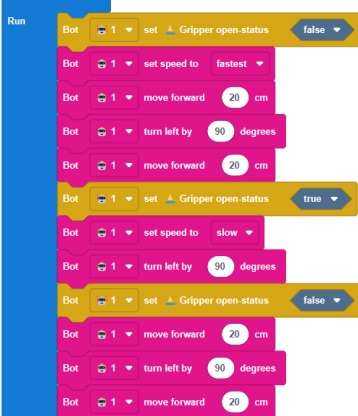| Next use the **gripper** block to open the gripper.	Use the same block to close the gripper.
Task 3 Add together a robot turn and opening the grippers. Turn again and close the grippers.	**Task 4** Try and put together a **move**, **turn** and **gripper** and see what happens.
Advanced options with **Expert** coding blocks. 	Click **Motion** and select **Free Movement**.
Find the **set speed to** block and try the options. 	Explore how to **turn left by** and **turn right by** using degrees.
The **set Gripper open-status** block has changed to true or false instead of open or close. 	What happens when you select **false**?

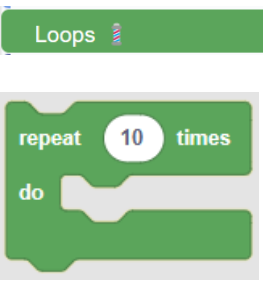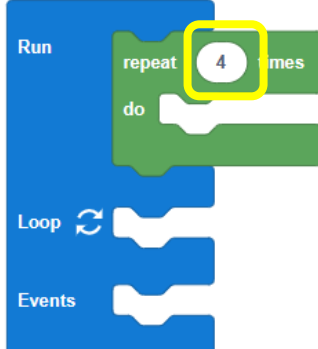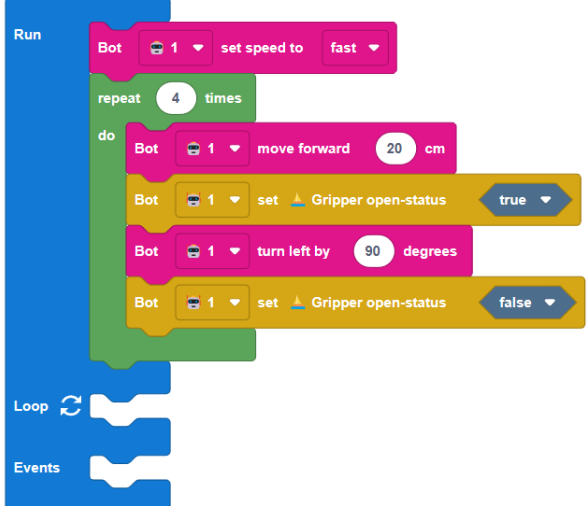| Task 5	Possible Answer
Move the robot in a square at different speeds? Hint: You will need blocks that **move turn**, and **set speed to**. Add openning and closing the gripper at different points.	
So far, the robot has only performed single commands in **Run**. Now we will look at the **repeat** block so there are less blocks used and the code is much shorter.	Click the **Loops** section and select **repeat** block.
Instead of using the same block 4 times the repeat block is used instead changing the number in the circle to 4. Try moving in a square using the repeat block. 	**Possible answer**
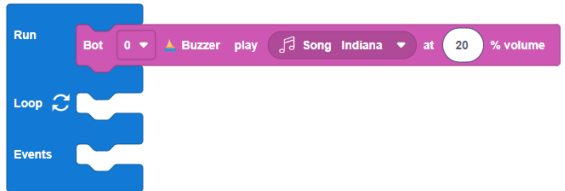
Inbuilt Sensors

The robot has 2 types of sensors: on-board and external. These activities are for the on-board sensors.

Start with Newbie coding blocks. 	Sensors are called Bits in the code blocks.
Play sound with a built-in song. 	Turn the lights on. Try different lights and colours.
Switch to the Expert options 	Sensors on-board
Adjust the volume of sound 	Change eye colours

Level 1 Red Provisional Licence test.

Now it's time to take the test to gain your Level 1 Provisional Licence. Set up a space so students can demonstrate the following:

1. Move forwards and backwards 15cm.
2. Open and close grippers
3. Do a right U-Turn.
4. Turn 45 degrees left and right.
5. Make the eye colour change.
6. Move forward 30cm – fast.
7. Play music of your choice.
8. Do a spin dance on the spot.

Did you pass? Well done!

Red P Plate Licence

Level 1 Kai Robot Licence

Awarded to _____

Class _____

I can successfully program a Kai robot to:

- move forwards and backwards
- turn and move in a straight line
- move at different speeds
- display different eye colours
- open and close gripper
- make sounds

Red P Plate Licence

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I can successfully program a Kai robot to:

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For more information

Please visit our webpage https://csermoocs.adelaide.edu.au/lending-library
Email cser@adelaide.edu.au