

Blue Bots Shape Up



Year level band: F-2

Description: This learning sequence allows students to explore how BlueBot robots work. Using the buttons students can identify a simple user interface and how it works. By controlling the bees through the buttons and recording the process students are following and describing simple sequences of steps.

The lesson then moves on to using the BlueBot App to plan and control the BlueBot to move along a horizontal or vertical axis or around a floor mat or maze.

Resources:

- Blue Bots (1 per group of 2 students)
- iPads/computers (1 per group), with apps installed:
 - [Blue Bot](#)
- Bee Bot / Blue Bot shape mats
- Poster paper, pens, markers, etc
- [Tangram Template](#)

Prior Student Learning:

- Students may have had experience working with a Bee Bot.

Summary	
In this lesson students have the opportunity to expand on their previous knowledge of a Bee Bot and are introduced to a Blue Bot. They will explore the process of creating an algorithm to trace a letter shape.	
Year	Content Descriptors
F-2	Digital Technologies Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004) Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)
	English <u>Listen</u> for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions (ACELY1666)

Element	Summary of tasks



	<p><i>Could we create the algorithm another way to navigate to the shape?</i></p> <p><i>Can we make 'cleaner' code? How?</i></p>
Learning reflection	<p>Students reflect on: Did the BlueBot follow the most direct path to the shape? Were they successful when programming the app with the same instructions? What did they need to fix or debug their program?</p> <p>Students could record a video of their BlueBot moving around the shape. As an extension activity, they could put the BlueBot algorithm to music.</p>

Assessment:

Formative assessment:

Teacher:

- Observes student contributions to discussions.
- Uses questioning to elicit student understanding of the functions of the Blue Bot.
- Observes student contributions to group work.
- Records a video of the students implementing Blue-Bot algorithms.

Criteria	Quantity of knowledge			Quality of understanding	
	Pre-structural	Uni-structural	Multi-structural	Relational	Extended abstract
Algorithms	Design not implemented.	Design works with basic algorithm.	Design allows for Blue Bot functions to be used in algorithm design.	Design allows to all Blue Bot functions to be used in algorithm design.	Design allows to all Blue Bot functions to be used in algorithm design, and going beyond the design brief.
Vocabulary	When describing algorithm, no specific vocabulary is used	The term instruction may be used as a general description	The term algorithm is used as a general description	The term algorithm is used confidently with specific reference to learner's work	Specific vocabulary like decisions and repetition is used, going beyond the set language



CSER Professional Learning:

This lesson plan corresponds to professional learning in the following CSER Digital Technologies MOOCs:

F-6 Digital Technologies: Foundations. See: <http://csermoocs.adelaide.edu.au/moocs>

- Unit 7: Algorithms and Programming
- Unit 8: Visual Programming

Further Resources:

- Digital Technologies Hub: www.digitaltechnologieshub.edu.au
- CSER: <https://csermoocs.adelaide.edu.au>

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