

Blue-Bots: Blue-Bot Bingo

Lesson idea: Mrs Bundy, NSW

Year level band: F-2

Description: During this lesson students will be required to consider the functions of the Blue-Bot and how a user can interact with this device. Students are asked to spell words of various difficulties.

Students can also be given Bingo cards. Students take turns to spell all the words. They get a counter when the Blue-Bot correctly pauses on each letter to spell the word on their Bingo chart. The Blue-Bot can be controlled with the app or via the buttons on the top of the Blue-Bot.

If students are playing in pairs with identical Bingo cards and they navigate the Blue-Bot correctly, they get a counter. If they make a mistake the other student gets the counter.

This game may be used during literacy groups as a spelling activity.

Resources:

- Blue-Bots, one per game.
- iPad or tablets
- Blue-Bot App iOS <https://itunes.apple.com/au/app/Blue-Bot/id957753068?mt=8>
- Downloads and user guides <https://www.bee-bot.us/downloads.html>
- Bingo Cards <https://goo.gl/Zn7aZV>
- Clear plastic table cloth, pocket mat or chalk/tape 15cm grid drawn on the carpet

Prior Student Learning:

- Students may have had previous experience using Bee-Bots or Blue-Bots, however, this is not necessary.
- An understanding of how to navigate the Blue-Bot, how to clear the memory and program Blue-Bot using the App.

Australian Curriculum alignment summary

Using the concept of abstraction, students define simple problems using techniques such as summarising facts to deduce conclusions. They record simple solutions to problems through text and diagrams and develop their designing skills from initially following prepared algorithms to describing their own that support branching (choice of options) and user input. Their solutions are implemented using appropriate software including visual programming languages that use graphical elements rather than text instructions. They explain, in general terms, how their solutions meet specific needs and consider how society may use digital systems to meet needs in environmentally sustainable ways.

Year	Content Descriptors
K-2	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)



	<p>Understand how to spell one and two syllable words with common letter patterns (ACELA1778)</p> <p>Listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions (ACELY1666)</p> <p>Write consonant-vowel-consonant (CVC) words by representing some sounds with the appropriate letters, and blend sounds associated with letters when reading CVC words(ACELA1820 - Scootle)</p> <p>Literacy</p> <ul style="list-style-type: none"> - Understand learning area vocabulary - Spelling words <p>Numeracy</p> <ul style="list-style-type: none"> - Estimate and calculate <p>Critical and creative thinking</p> <ul style="list-style-type: none"> - Seek solutions and put ideas into action
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Element	Summary of tasks
Learning hook	<p>The teacher explains to students that they will be playing a game of Bingo. It will involve navigating the BlueBot to spell words.</p> <p>This could be used in the context of literacy or reading groups as an activity in small groups.</p> <p>If students are not familiar with the Blue-Bot, they will need some time to explore and experiment or give a small demonstration and instructions on how to use these. https://youtu.be/T6SyP7lmygs</p>
Achievement Standards	<p>By the end of Year 2, students describe the purpose of familiar products, services and environments and how they meet a range of present needs. They list the features of technologies that influence design decisions and identify how digital systems are used.</p> <p>They design solutions to simple problems using a sequence of steps and decisions. With guidance, students produce designed solutions for each of the prescribed technologies contexts. Students evaluate their ideas, information and solutions on the basis of personal preferences and provided criteria including care for the environment. They safely create solutions and communicate ideas and information face-to-face and online.</p>
Learning Map (Sequence)	<ul style="list-style-type: none"> ● Students plan and construct algorithms to spell words. ● Students identify and perform an algorithmic solution. ● Students test and debug their solutions.
Learning input	Students will need to work either alone or in pairs to program the Blue-Bot to



	<p>spell familiar words. They will be asked to plan and program the Blue-Bot and be given the opportunity to debug their task</p> <p>Students may like to plan the path of the Blue-Bot prior to inputting their final solution. This will then allow them to test and debug the proposed solutions.</p> <p>In pairs students might like to discuss how to spell words with fewer blocks.</p>
Learning construction	<p>Once students understand how to program the Blue-Bot to move along a set path they would play the game using any of the Bingo cards. https://goo.gl/Zn7aZV</p> <p>If students are playing in pairs with identical Bingo cards and they navigate the Blue-Bot correctly they get a counter. If they make a mistake the other student gets the counter.</p> <p>Students might use paper and pencils to help with the planning of their algorithms.</p>
Learning demo	<p>At the completion of construction stage, students will then ask other students to attempt their course and try and pop the balloon.</p> <p>There is a possibility of using a buddy system in this stage, where younger students are invited to learn about the Blue-Bots and attempt the courses.</p> <p>Encourage students to assess their solution algorithm and compare this to the attempts that are made. What new thinking has arisen?</p>
Learning reflection	<p>Students are given a chance to think about and describe what happened during their game and to talk about what worked and what didn't. In pairs students might like to discuss how they could spell words with fewer blocks. Why is this useful? Students discuss what happened in their algorithm and what they would do differently next time. How could students improve their success next time?</p>
Modified game	<p>A modified version of this game could be that students give instructions to a partner to spell the words. This would require written procedures and debugging of instructions.</p>



Assessment:

Formative Assessment:

- Teachers observe students using the Blue-Bots, planning and playing their game and creating their algorithms, including debugging.
- Using questioning to elicit students understanding of the functions of the Blue-Bot and their understanding of why mistakes are made. Is it spelling or programming errors?
- You might take photos of the students' algorithms to document their progress. Videos of discussions and testing would also be useful in the testing stage.

Criteria	Quantity of knowledge			Quality of understanding	
	Pre-structural	Uni-structural	Multi-structural	Relational	Extended abstract
Algorithms	No algorithm shown	Algorithm only shows a limited number of instructions which are not linked	Algorithm has enough instructions to complete the task but not linked or not linked in the correct sequence	Algorithm has instructions linked in the correct sequence to achieve the task	Algorithm brings in prior learning and/or independent learning beyond the task and possibly includes repetition
Design	No design elements eg does not include turns, etc	Limited design elements	Uses a number of design elements, including require the user to move forward, backwards and turn	Uses many design elements, which may include more than one solution	Uses a large number of design elements, which includes a number of possible solutions
Vocabulary	When describing algorithm, no specific vocabulary is used	The terms 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, including directional language	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

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

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