Ashwood School is a specialist school for students aged between 5 and 18 with mild intellectual disabilities offering a diverse range of programs aimed at building individual capabilities in all learning areas, independence, self-esteem, and confidence. Students in this class are working in Level D and Foundation in the Victorian Curriculum		
<b>Overview of teaching and learning activities:</b> In this sequence of lessons, students are learning how to write an algorithm, use coding and write a program with Bee-Bots and Cozmo. Each lesson is 45 minutes in the classroom with the furniture moved to the edges to allow for students to work easily in the room.		
Foundation - Level Desc	ription (relevant to the unit)	
In Level D Maths, students explore measurement attributes in practical situations and identify and describe the basic characteristics of a range of objects. Students show an understanding of 'location' and spatial concepts by responding to instructions to position items. In Foundation Level Maths, students play with objects and draw pictures to develop links between their immediate environment, everyday language and mathematical activity. They create and continue simple patterns. They use simple statements and gestures to describe location. In Level D Digital Technologies, students use a sequence of steps and decision-making processes to solve a simple problem. In Foundation to Level 2 Digital Technologies, students begin to develop their design thinking skills by conceptualising algorithms as a sequence of steps for carrying out instructions, such as identifying steps in a process or controlling robotic devices. Across the band, students will have had the opportunity to create a range of digital solutions through guided play and integrated learning, such as using robotic toys to navigate a map or recording science data with software applications.		
Content Description	ns (relevant to the unit)	
Level D Maths Location & Transformation: Follow simple directional words to locate or move an object 'on', 'in' or 'under' (VCMMG065)       Foundation Maths         Level D Digital Technologies Creating Digital Solutions: Follow and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD012)       Foundation Maths		
<ul> <li>Resources:</li> <li>one Bee-Bot for 2-4 students</li> <li>Bee-Bot mats https://www.bee-bot.us/bee-bot/Bee-Bot-mats.html</li> <li>One Cozmo per 2-4 students</li> <li>Videos demonstrating Cozmo https://www.anki.com/en-us/cozmo/cozmo-vi</li> <li>Stickers for hands to remind those students of left and right</li> <li>Large wooden blocks to make a maze to enable a Bee-Bot to move through.</li> <li>Laminated pictures of toys etc. from a shopping catalogue to use as <i>treasure</i></li> <li>Worksheets with headings: estimate code &amp; real code (could be used as an NB: Reasonable adjustments for Level C and D students:</li> <li>Student only moves the Bee-Bot forward/back to arrive at the destination to p</li> <li>Students are given a written list of instructions to move their Bee-Bot e.g. Inp</li> <li>Laminated forward, backward 15cm arrows, and turn arrows as visual guides</li> </ul>	e for the BeeBots to carry. estimate) bick up the object and return. but this code: $\uparrow x 4 \downarrow x3 \uparrow x5$ or $\uparrow X3$ $rretarrow X1$ $\downarrow X6$ $\downarrow$ X1	

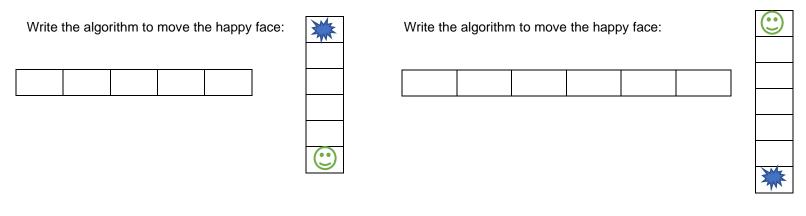
<ul> <li>1. Review last terms language of location and position and how to direct a person from one largorithm area to another using the correct language. Introduce the vocabulary <i>algorithm</i> as a well-argorithm area to another using the correct language. Introduce the vocabulary <i>algorithm</i> as a well-argorithm area to another using the correct language. Introduce the vocabulary <i>algorithm</i> area and respond to others:</li> <li>2. Demonstrate the Bee-Bot - how to to turn on and off, how to program to move forwards and back and how to reset. Est the algorithm.</li> <li>2. Demonstrate the Bee-Bot - how to to uturn on and off, how to program to move forwards and back and how to reset. Students thave a turn to estimate the womany <i>steps forward/back</i> to reach a destination prior to testing their code.</li> <li>Activity: In groups of 2-4, students rotate through all the mats using estimate and test on each mat.</li> <li>Adjustment: A 15cm arrow is placed on the mat as a visual of the direction the Bee-Bot square is? Using a ruler measure the length and width of the Bee-Bot square is? Using a ruler measure the length and width of the Bee-Bot square. Will knowing this help with future programming of the Bee-Bot? NB: move forward to ackward on backward to reacher: Ask the students how would were find untow big each Bee-Bot square is? Using a ruler measure the length and width of the Bee-Bot form previous week's lesson.</li> <li>Streacher: Ask the students will back and how arost of students will back and how to a demonstrate coding with the Bee-Bot.</li> <li>Students to demonstrate a code on the Bee-Bot on the Bee-Bot square is? Using a ruler measure the length and width of the Bee-Bot form previous week's lesson.</li> <li>Streacher: Ask the students will back and how the Bee-Bot on the Bee-Bot and at the beginning of the Bee-Bot.</li> <li>Students to demonstrate a code and fstudent to</li></ul>	Learning Intent & Success Criteria	Lesson Activities	Assessment		
<ul> <li>Learning Intention: I can write an algorithm as a well-specific the correct language. Introduce the vocabulary <i>algorithm</i> as a well-specific the designed set of steps used to solve a problem. Complete a shared writing of an algorithm as a well-specific the designed set of steps used to solve a problem. Complete a shared writing of an algorithm as a well-specific the designed set of steps used to solve a problem. Complete a shared writing of an algorithm as a well-specific the designed set of steps to take. Test the algorithm.</li> <li>are at a datom to pick up an object in the classroom using directional language and number of steps to take. Test the algorithm.</li> <li>be can later and respond to others'.</li> <li>Chemostrate the Bee-Bot - how to turn on and off, how to program to move forwards and back and how to reset. Students have a turn to estimate how many <i>steps forward/back</i> to reach a destination prior to testing their code.</li> <li>Activity: In groups of 2-4, students cate through all the mats using estimate and test on each mat.</li> <li>Adjustment: A 15cm arrow is placed on the mat as a visual of the direction the Bee-Bot?</li> <li>Teacher: Ask the students how would we find out how big each Bee-Bot?</li> <li>Teacher: Ask the students how would we find out how big each Bee-Bot?</li> <li>Teacher: Ask the students how would we find out how big each Bee-Bot?</li> <li>Teacher: Ask the student or right.</li> <li>Whole group introduction: Introduce the vocabulary <i>coding</i> – Coding is the sequence of instructions or commands for a computer or other digital device to follow. Teacher invites students to demonstrate a code on the Bee-Bot mat. The other should not be beer abors on the Bee-Bot mat. The other should be availed as a trast of and return to the initial place using different and interesting codes to arrige cate and return to the initial place using different and interesting codes to arrige code and Students the area and return to the initial place using different and interesting codes to</li></ul>	Session 1: Introduce the Bee-Bot	Whole Group introduction:	Observe how well		
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Whole group conclusion: Did you get better at guessing the actual number of steps it would take? Why do you think? What do you know about the Bee-Bot? Teacher: Ask the students how would we find out how big each Bee-Bot square is? Using a ruler measure the length and width of the Bee-Bot square. Will knowing this help with future programming of the Bee-Bot? NB: move forward or backward in 15 cm intervals, or to turn at a 90 degree angle to the left or right.Assessment: anecdotal notes based on the Bee-Bot square.Session 2 - 4:Whole Group introduction: Introduce the vocabulary coding – Coding is the sequence of instructions or commands for a computer or other digital device to follow. Teacher invites students to demonstrate a code on the Bee-Bot from previous week's lesson.Assessment: anecdotal notes based on the see-Bot move on a grid using the aguage of forward/back/turn right S/or leftAssessment: anecdotal notes based on the students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot. During these sessions students will be invited to demonstrate coding with the Bee-Bot and to use the Bee Bots. Student A <i>inters/draws</i> their code and Student B tests to see if they were orrect. E.g. one student places a <i>treasure</i> . Students have a turn on each Bee-Bot mat rotating approximately at 10-minute intervals. Adjustment: place a L & R sticker on student's hands to remind them of left and right. Whole group con					
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Learning Intent & Success Criteria	Lesson Activities	Assessment
<ul> <li>Session 5-6: Navigating a maze with the Bee-Bot</li> <li>Learning Intention: I can build a maze with blocks and program the Bee-Bot to navigate the maze in a team.</li> <li>Success Criteria: <ul> <li>I will build a maze using blocks of different lengths to enable the Bee-Bot to move easily through it.</li> <li>I will program a Bee-Bot to move through another groups maze.</li> </ul> </li> </ul>	<ul> <li>Whole group introduction: Teacher introduces the word algorithm. program. A (computer) program is an algorithm – or set of algorithms – that a computer can execute to perform behaviour that has been pre-determined by the programmer to solve a solution or meet some other need. It has been coded into something that can be understood by a computer.</li> <li>Teacher demonstrates how to build a maze using large wooden blocks. Students are invited to program the Bee-Bot to move through the teacher-built maze. Were you able to accurately move the Bee-Bot? Remind the students of how far each Bee-Bot step is and what that means for the building of the maze? Invite a student to use a ruler to measure the 15cm on wooden blocks of different sizes. Ask them how they will solve the issue of the length of each section of their maze.</li> <li>Activity: Students are in groups of 2 or 3 to work together to build their maze and program the Bee-Bot. Once students have tested their maze they swap to a maze built by another group and program the Bee-Bot in their maze.</li> <li>Whole group conclusion: Is it easier to program a Bee-Bot to navigate a Bee-Bot map or student-made maze? Did you have challenges in building the maze to allow the Bee-Bot to move easily? How did you solve them? E.g. change the length of each section by using different-sized blocks.</li> <li>Additional challenges from https://www.digitaltechnologieshub.edu.au/teachers/lesson-ideas/buzzing-with-bee-bots (accessed 12/5/2018)</li> </ul>	Observation & anecdotal notes – how well do they work in a team? Are they able to build a maze? How do they problem solve when the Bee-Bot program doesn't work.
Session 7: Introduce Cozmo	Whole group introduction: Introduce the robot Cozmo to the students. Watch some of the videos demonstrating Cozmo https://www.anki.com/en-us/cozmo/cozmo-videos.	Observation of student's in their
Learning Intention: I can play a game with Cozmo	Discuss some safety rules for working with Cozmo. Show them what Cozmo can do highlighting the connection procedure. Use the Interactive White Board (IWB) to	interaction with the robot and their
I can do a trick with Cozmo	demonstrate the Feed and Tune-Up modes. Demonstrate how to locate the sleep mode and return the robot to the charger. Invite students to have-a-go with Cozmo.	capacity to experiment.
Success Criteria:	Activity: students work in groups of 2-4 exploring Playmode games &/or tricks depending	
<ul> <li>I will use Playmode to explore games</li> </ul>	on their level.	
• I will explore <i>tricks</i> and use cubes	Whole group conclusion: Name some differences between Bee-Bots and Cozmo? Which is easier to use? What do you like to do with Cozmo?	

Learning Intent & Success Criteria	Lesson Activities	Assessment
Session 8: More with Cozmo Learning Intention: I can teach Cozmo to say my name. Success Criteria: I will record and save my name and face with Cozmo.	<ul> <li>Whole group introduction: Review the safety rules generated by the class last week. Invite students to demonstrate to the class how to connect and wake Cozmo. Ask a student to demonstrate a game or trick they experimented with last week. Watch some of the other videos demonstrating Cozmo https://www.anki.com/en-us/cozmo/cozmo-videos.</li> <li>Demonstrate Meet Cozmo enabling Cozmo to scan a face and register the face to the name.</li> <li>Activity: students work in groups of 2-4 recording and scanning their name and face with Cozmo (these are recorded on the iPad). Once complete students can continue their explorations from last week.</li> <li>Whole group conclusion: Why do you think it is useful to have your face and name recorded on Cozmo? Do you think you could trick Cozmo using your face and a different name?</li> </ul>	Monitor the capacity of each student to record and scan their name. Monitor the capacity of each student to experiment and explore.
<ul> <li>Session 9: What else can Cozmo do?</li> <li>Learning Intention: <ol> <li>will teach Cozmo how to say my name</li> <li>other short phrases.</li> </ol> </li> <li>Success Criteria: Cozmo can tell my peers my name.</li></ul>	<ul> <li>Whole group introduction: Discuss what the students know about Cozmo. What can he do, how does he work? Remind students about the Feed and Tune-Up modes using the IWB. Students are invited to have a turn to demonstrate what they can do with Cozmo to the class. Demonstrate the Discover mode in Cozmo enabling students to type in phrases and/or sentences for Cozmo to say. NB: teacher has some pre-set ask/answer phrases for students to use &amp;/or have joke books available.</li> <li>Activity: Students practise in groups of 2-3.</li> <li>Whole group conclusion: Students demonstrate their Cozmo phrases to their peers.</li> </ul>	Use a checklist to determine students capacity to be innovative with their phrases/sentences. E.g. work as a group to develop phrases; copy only from book; experiment with different ideas
<ul> <li>Session 10: Programming tools.</li> <li>Learning Intention: <ol> <li>I will use some of the programming tools in Cozmo</li> </ol> </li> <li>Success Criteria: <ol> <li>I can use the programming tools in Cozmo and demonstrate to my peers.</li> </ol> </li> </ul>	Whole group introduction: Revisit all the things we can do with Cozmo so far with students taking turns to demonstrate their favourite. Discuss the word <i>programming</i> . A program is a set of instructions or a code that you enter in to the computer to make it move or do something. Watch https://www.dkfindout.com/us/computer-coding/what-is-coding/what-is-coding/what-is-computer-program/ (accessed 8/12/2018). Demonstrate Discover Mode & Sandbox for Cozmo. N.B: blue = drive options; purple = actions; pink = animations; yellow = events; orange is control. Start the program with a green flag. Activity: Students practise in groups of 2-3 selecting two to three programming options. Whole group conclusion: Students demonstrate their peers.	Use a checklist to determine students capacity to experiment with Cozmo programming

Learning Intent & Success Criteria	Lesson Activities	Assessment
Session 11: Understanding what a	Whole group introduction: review previous week selecting students to demonstrate with	Observe the students
loop is in programming?	Cozmo. Introduce the term <i>loop</i> used in programming. A <b>loop</b> is a sequence of	attempting the loop
	instructions that is continually repeated until a certain condition is reached. Demonstrate	coding. Are they
Learning Intention:	how to find the loop coding block in Sandbox (in the Discover mode) in Cozmo on the	confident? Do they
I will create a loop block in Cozmo.	IWB.	understand what
Success Criteria:	<b>Activity:</b> In groups of 2-3 students take turns to select two to three programming options and add the loop. Students begin the coding challenges.	they are doing, why they are doing it.
I can demonstrate using loop block to my peers.	Whole group conclusion: Students demonstrate to the whole class. What is interesting about using the loop? Why would it be a useful tool in programming?	, , , , , , , , , , , , , , , , , , , ,

#### Assessment Examples



#### Follow the path from start to end and write the algorithm:

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Start		End