

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



These series of lessons were created in collaboration with the STEM Specialist teacher from Mackay Christian College, Queensland.

Unit Overview

This unit of work is specifically designed to be used within the first term of Foundation. Students will be introduced to the concepts of data collection (collecting data about themselves), defining and learning about digital devices we use at school and algorithms. Students will briefly explore these subjects. It is the intention to introduce the students to key vocabulary found throughout the Digital Technologies Curriculum and increase student confidence and capability to use and manage digital devices in the classroom.

Other Curriculum Targeted Areas

Other curriculum areas can be targeted and assessed within this unit. Areas of interest may include:

- Mathematics
- English – Reading

Further investigation into these areas is required to ensure they align with the following activities. Activities may need to be modified to ensure content descriptions and achievement standards are met.

Australian Curriculum Alignment

The following sessions have been created using the Australian Curriculum: Digital Technologies Curriculum. Tasks may need to be modified to ensure state Digital Technologies Curriculum content descriptions and achievement standards are met. ACS has support and documents to help align this unit to other Digital Technology Curricula.

Session

'Session' has been used to define the order of tasks to complete the unit. It does not define a set time required to complete the task. Time allocated to complete a session is the teacher's discretion. This allows for flexibility for the teacher to drive the duration of the task and make modifications if necessary. Sessions can be merged into one set period or one session may run over multiple periods.

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Key Preparation

ACS Resources

Resources have been created to help teachers and students unpack and understand topics found within the Digital Technologies Curriculum. These give brief explanations of the topic and the expectations to teach the topic at the curriculum year level. It is intended the information is presented in a way that will set the foundation for further research.

Access the resources via: <https://www.acs.org.au/ict-educators.html>

Digital Systems

Some activities (learning to use iPads and Bee-bits) are included in this units. If digital devices are unavailable, modifications may need to occur to suit students/school and lessons. There are a range of Sequence of Steps activities found within out ICT Educators Community that can easily be replaced with those that are not applicable. To assist with modifying the sequence of steps for your school or students, we have set up and open file in Canva, access is [here](#).

Key Understandings

Students will:

- Collect data, sort and interpret data that is associated with a personal data
- Use digital systems to display data creatively
- Identify digital systems used at school
- Identify the main hardware and software of an iPad.
- Follow instructions to complete everyday tasks.
- Identify the correct sequence when completing everyday task.
- Create a sequence of steps to program a Bee-Bot to solve a simple problem.

Key Questions

- Why is it important to collect data?
- What data will you collect?
- How will you sort and represent your data?
- How will your data influence the design of your significant place?
- What are sequence of steps?
- What is an algorithm?
- Why is it important to give correct instructions?
- What instructions do you need to follow to do everyday tasks?
- What instructions do you need to follow to use the iPad?

Key Vocabulary

Data, collect, sort, represent, pictures, diagrams, hardware, software, algorithms, sequence, sequence of steps, instructions, iPad, Bee-bots.

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Theme: Collecting Data About Our Class				
Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
1.	Collecting and sorting data (representing their name with blocks)	<p>Learning Intention Students will collect and sort data about themselves and compare this data with their peers.</p> <p>Success Criteria I can collect and sort data about me.</p>	<p>Introduce students to the concept of collect and sorting data. Discuss the importance of sorting data into easy to read graphs using pictures.</p> <p>Students are asked to represent the letters in their name with unifix blocks (or block that can be attached together). Each block is to represent one letter. Put in the front of the classroom without any guidance of how to sort. Discuss the best options to sort and organise the blocks. As a range of questions related to the data e.g. which name do you think this is? Before ordering the graph how many names do you think have 5 letters?</p>	<p>Use blocks to complete a range of number exercises to collect data.</p> <p>Students complete the activities in small groups and look at how the graph changes from each group. In the small groups they can extend the graphs by making graphs with first name, middle name and surnames, house number, age, shoe size (anything that can be represented with a numerical value).</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> • Unifix blocks • Names of students printed as blocks 		<p>Teacher Resources</p> <p>ACS Teacher Resource: Data</p>	
2.	Collecting and sorting and representing data	<p>Learning Intention Students will complete a</p> <p>Success Criteria I can collect and sort data about my class mates.</p>	Read a picture story book that is focused on data and numbers.	Students collect their own data based off the picture storybook.
Session Resources	<ul style="list-style-type: none"> • ACS Teacher Resource: Data 			

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
3.	Digital Systems	<p>Learning Intention Students will identify a range of digital devices used at school. They will explain the purpose of the device.</p> <p>Success Criteria I can identify the different digital systems we use at school.</p>	Discus with students what digital devices they use at home and school.	<p>Walk around the school and find different devices. Label the devices and explain what the purpose for the device is.</p> <p>Take photos of the devices around the school and have them printed ready to use.</p> <p>Finish the sentence – ‘We use..... at school to...’.</p>
Session Resources	Student Resources		Teacher Resources	
4.	Digital Systems	Learning about the ipad		Match the parts of an iPad to the iPad picture. Eg: where is the speaker located, monitor etc.
Session Resources	Student Resources		Teacher Resources	
	•		• ACS Teacher Resource: Digital Systems iPad	

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
5.	Sequence of Steps (unplugged)	<p>Learning Intention Students will identify and explain simple steps when getting ready to learn in the classroom.</p> <p>Success Criteria I can follow and explain a sequence of steps.</p>	<p>Discuss and define sequence of steps and 'algorithms'. Students share different experience about following sequences of steps at home and in school.</p> <p>Together create hand/body actions to accompany each step.</p>	Students are provided with a sequence of steps to show the actions needed when they come into the lesson. Students are provided with the sequence of steps out of order and they need to put them back into the correct order.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Get Ready to Learn (out of order) – sequence of steps (located at the end of the unit) Blank Sequence of Steps activity sheet (located at the end of the document). 		<p>Teacher Resources</p> <ul style="list-style-type: none"> ACS Teacher Resource: Sequence of Steps Get Ready to Learn (in order) – sequence of steps (located at the end of the unit) 	
6.	Sequence of Steps (iPad)	<p>Learning Intention Students will identify and explain simple steps to use the iPad in classes.</p> <p>Success Criteria I can follow and explain a sequence of steps to use the classroom iPad.</p>	Discuss with the students expectations of using digital devices in the classroom.	Read the 5 step sequence of steps when using the iPad to the students. Students are provided with a copy that is out of order and they need to put the sequence of steps back in the correct order.
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Using the iPad (out of order) – sequence of steps (located at the end of the unit). Blank Sequence of Steps activity sheet (located at the end of the document). 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Using the iPad (in order) – sequence of steps (located at the end of the unit). 	

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
7.	Sequence of Steps (taking a photo with the iPad)	<p>Learning Intention Students will identify and explain simple steps to use the iPad in classes.</p> <p>Success Criteria I can follow the instructions to take a photo on an iPad.</p>	Together read through and follow the sequence of steps to take a photo with the iPad.	<p>Students are provided with the sequence of steps out of order and they need to put them back into the correct order.</p> <p>Students then commence practicing following the instructions and taking photos with the iPad.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Taking a photo (out of order) – sequence of steps, located at the end of the unit. Blank Sequence of Steps activity sheet (located at the end of the document). 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Taking a photo (in order) – sequence of steps, located at the end of the unit. 	
8.	Sequence of Steps (using iPad apps)	<p>Learning Intention Students will identify and explain simple steps to use the iPad in classes.</p> <p>Success Criteria I can follow the instructions to take a photo on an iPad.</p>	Take students through the common apps that are used at school with in Foundation classes. Read the sequence of steps with the students.	<p>Students are provided with the sequence of steps out of order and they need to put them back into the correct order.</p> <p>Students then commence practicing using designated apps.</p>
Session Resources	<p>Student Resources</p> <ul style="list-style-type: none"> Selection of instructions to use for known apps for iPads (out of order), located at the end of the document. Blank Sequence of Steps activity sheet (located at the end of the document). 		<p>Teacher Resources</p> <ul style="list-style-type: none"> Selection of instructions to use for known apps for iPads (in order), located at the end of the document. 	

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Session Number	Session Focus	Learning Intention and Success Criteria	Introduction/Teacher Instruction	Whole Class Activity
9.	Sequence of steps (Bee-Bots)	Learning Intention Students will follow instructions to program a Bee-Bot. Success Criteria I can follow instructions to move and program the Bee-Bots.	Introduce students to the sequence of steps activity sheet that explains how to use and program a Bee-Bot. Demonstrate and follow the instructions.	Do cut and paste of how to use the Bee-Bots. Students free play with the Bee-Bots, following the instructions to learn to program the Bee-Bot.
Session Resources	Student Resources <ul style="list-style-type: none">Using the Bee-Bot (out of order) - sequence of steps activity sheet, located at the end of the document.Blank Sequence of Steps activity sheet (located at the end of the document).		Teacher Resources <ul style="list-style-type: none">Using the Bee-Bot (in order) - sequence of steps activity sheet, located at the end of the document.	

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Assessment – Australian Digital Technologies Curriculum			
Content Description	Session Number	Assessment Piece	Assessment Statement
Recognise and explore digital systems (hardware and software) components for a purpose (ACTDIK001)	3 & 4	Explanation of digital devices used at school	Students identified the different digital devices used at school and explained their purpose. Students become familiar with the different features of an iPad and explained their purpose.
Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)	1 & 2	Data collection and interpretation	Students collected data and represented their data in the form of blocks, pictures and symbols. Students found patterns in the data and used those patterns to interpret the data.
Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003)	N/A		
Following, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)	5-9	Sequence of steps recorded in correct order Bee-Bot programming activities (unplugged and with bots)	Students followed and described a simple sequence of events to solve everyday task such as brushing teeth, classroom expectations and washing hands. Students followed instructions to learn how to take photos on an iPad. Students followed instructions to use Bee-Bots in the classroom to program and solve simple problems.
Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)	N/A		
Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments (ACTDIP006)	N/A		

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Assessment – Victorian Digital Technologies Curriculum			
Content Description	Session Number	Assessment Piece	Assessment Statement
Identify and explore digital systems (hardware and software components) for a purpose (VCDTDS013)	3 & 4	Explanation of digital devices used at school	Students identified the different digital devices used at school and explained their purpose. Students become familiar with the different features of an iPad and explained their purpose.
Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (VCDTDI014)	1 & 2	Data collection and interpretation	Students collected data and represented their data in the form of blocks, pictures and symbols. Students found patterns in the data and used those patterns to interpret the data.
Collect, explore and sort data, and use digital systems to present the data creatively (VCDTDI015)	N/A		
Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (VCDTCD017)	5-9	Sequence of steps recorded in correct order Bee-Bot programming activities (unplugged and with bots)	Students followed and described a simple sequence of events to solve everyday task such as brushing teeth, classroom expectations and washing hands. Students followed instructions to learn how to take photos on an iPad. Students followed instructions to use Bee-Bots in the classroom to program and solve simple problems.
Explore how people safely use common information systems to meet information, communication and recreation needs (VCDTCD018)	N/A		
Independently and with others create and organise ideas and information using information systems, and share these with known people in safe online environments (VCDTDI016)	N/A		

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Assessment – New South Wales Science and Technology Syllabus			
Outcomes and Objectives	Session Number	Assessment Piece	Stage Statement
observes, questions and collects data to communicate and compare ideas (ST1-1WS-S)	1 & 2	Data collection and interpretation	Students collected data and represented their data in the form of blocks, pictures and symbols. Students found patterns in the data and used those patterns to interpret the data.
collect, sort, organise and present data to communicate information (ACTDIP003)	N/A		
Identifies digital systems and explores how instructions are used to control digital devices (ST-e7DI-T)	3 – 9	Explanation of digital devices used at school	Students identified the different digital devices used at school and explained their purpose. Students become familiar with the different features of an iPad and explained their purpose.
		Sequence of steps recorded in correct order	Students followed and described a simple sequence of events to solve everyday task such as brushing teeth, classroom expectations and washing hands.
		Bee-Bot programming activities (unplugged and with bots)	Students followed instructions to learn how to take photos on an iPad. Students followed instructions to use Bee-Bots in the classroom to program and solve simple problems.

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Assessment – Western Australian Digital Technologies Curriculum			
Year 1 Syllabus			
Content Descriptions	Session Number	Assessment Piece	Assessment Statement
Digital systems (hardware and software) are used in everyday life and have specific features (ACTDIK001)	3 & 4	Explanation of digital devices used at school	Students identified the different digital devices used at school and explained their purpose. Students become familiar with the different features of an iPad and explained their purpose.
Data can have patterns and can be represented as pictures, symbols and diagrams (ACTDIK002)	1 & 2	Data collection and interpretation	Students collected data and represented their data in the form of blocks, pictures and symbols. Students found patterns in the data and used those patterns to interpret the data.
Present data of any kind using a variety of digital tools (ACTDIP003)	N/A		
Use data to solve a simple task/problem (ACTDIP003)	N/A		
Share and publish information with known people in an online environment, modelling strategies to stay safe online (ACTDIP006)	N/A		
Explore opportunities for design (WATPPS06)	N/A		
Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps (WATPPS07)		Sequence of steps recorded in correct order Bee-Bot programming activities (unplugged and with bots)	Students followed and described a simple sequence of events to solve everyday tasks. Students followed instructions to learn how to take photos on an iPad. Students followed instructions to use Bee-Bots in the classroom to program and solve simple problems.
Use given components and equipment to safely make solutions (WATPPS08)	9	Use of technology and robotics	Students used a selection of robotics and technology to program a sequence a of steps to complete a task.
Use personal preferences to evaluate the success of design processes (WATPPS09)	N/A		
Work independently, or with others when required, to create and safely share sequenced steps for solutions (WATPPS10)	N/A		

INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



Assessment – Western Australian Digital Technologies Curriculum			
Year 2 Syllabus			
Content Descriptions	Session Number	Assessment Piece	Assessment Statement
Digital systems (hardware and software) are used for an identified purpose (ACTDIK001)	3 & 4	Explanation of digital devices used at school	Students identified the different digital devices used at school and explained their purpose. Students become familiar with the different features of an iPad and explained their purpose.
Data can have patterns and can be represented and used to make simple conclusions (ACTDIK002)	1 & 2	Data collection and interpretation	Students collected data and represented their data in the form of blocks, pictures and symbols. Students found patterns in the data and used those patterns to interpret the data.
Present data using a variety of digital tools (ACTDIP003)	N/A		
Use data to solve similar tasks/problems (ACTDIP003)	N/A		
Share and publish information in a safe online environment, with known people (ACTDIP006)	N/A		
Explore design to meet needs or opportunities (WATPPS11)	N/A		
Develop, communicate and discuss design ideas through describing, drawing, modelling and/or a sequence of steps (WATPPS12)	5-9	Sequence of steps recorded in correct order Bee-Bot programming activities (unplugged and with bots)	Students followed and described a simple sequence of events to solve everyday task such as brushing teeth, classroom expectations and washing hands. Students followed instructions to learn how to take photos on an iPad. Students followed instructions to use Bee-Bots in the classroom to program and solve simple problems.
Use components and given equipment to safely make solutions (WATPPS13)	9	Use of technology and robotics	Students used a selection of robotics and technology to program a sequence a of steps to complete a task.
Use simple criteria to evaluate the success of design processes and solutions (WATPPS14)	N/A		
Work independently, or collaboratively when required, to organise information and ideas to create and safely share sequenced steps for solutions (WATPPS15)	N/A		

SEQUENCE OF STEPS: GET READY TO LEARN

STEP 1

Line up outside the classroom.



STEP 2

Enter 2 students at a time.



STEP 3

Put your water bottle and hat away.



STEP 5

Show you are ready to learn.



STEP 4

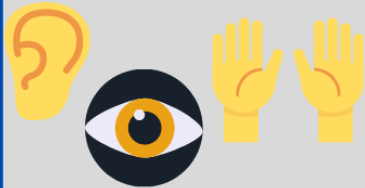
Sit on the mat.



SEQUENCE OF STEPS: GET READY TO LEARN

STEP 5

Show you are ready to learn.



STEP 3

Put your water bottle and hat away.



STEP 4

Sit on the mat.



STEP 1

Line up outside the classroom.



STEP 2

Enter 2 students at a time.



SEQUENCE OF STEPS: USING AN IPAD

STEP 1

Carry with 2 hands.



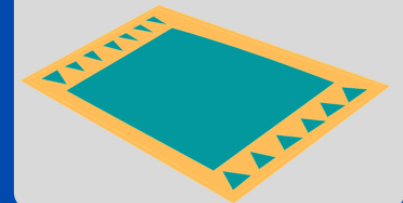
STEP 2

Disconnect earphones.



STEP 3

Sit down on the mat when using the iPad.



STEP 5

Turn off the screen when the teacher is talking.



STEP 4

Only use apps directed by the teacher.



SEQUENCE OF STEPS: USING AN IPAD

STEP 2

Disconnect earphones.



STEP 5

Turn off the screen when the teacher is talking.



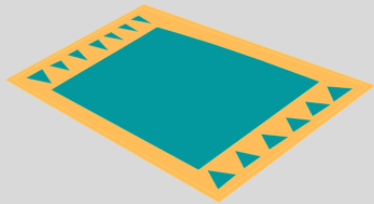
STEP 1

Carry with 2 hands.



STEP 3

Sit down on the mat when using the iPad.



STEP 4

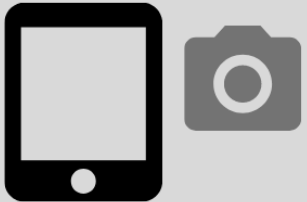
Only use apps directed by the teacher.



SEQUENCE OF STEPS: TAKING A PHOTO ON AN IPAD

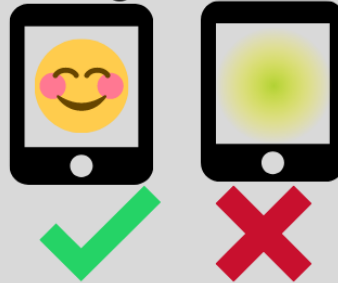
STEP 1

Open the Camera.



STEP 2

Make sure the image is clear.



STEP 3

Hold the iPad still with one hand.



STEP 5

Take 1 photo only.



STEP 4

Press the white button to take a photo.



SEQUENCE OF STEPS: TAKING A PHOTO ON AN IPAD

STEP 5
Take 1 photo only.



STEP 4
Press the white button to take a photo.



STEP 1
Open the Camera.



STEP 2
Make sure the image is clear.



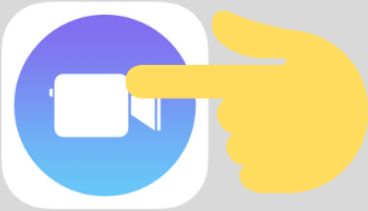
STEP 3
Hold the iPad still with one hand.



SEQUENCE OF STEPS: USING CLIPS

STEP 1

Tap on the app to open Clips.



STEP 2

Press and hold the pink button to record a video.



STEP 3

Press the round circle to take a photo.



STEP 5

Press the triangle to play your video.



STEP 4

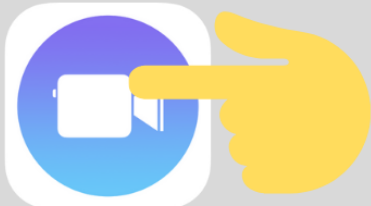
Press the coloured star to add effects.



SEQUENCE OF STEPS: USING CLIPS

STEP 1

Tap on the app to open Clips.



STEP 5

Press the triangle to play your video.



STEP 4

Press the coloured star to add effects.



STEP 2

Press and hold the pink button to record a video.



STEP 3

Press the round circle to take a photo.



SEQUENCE OF STEPS: USING BOOK CREATOR

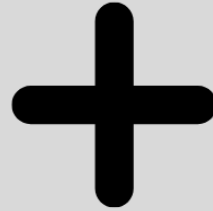
STEP 1

Tap on the app to open Book Creator.



STEP 2

Tap on the + add features to your book.



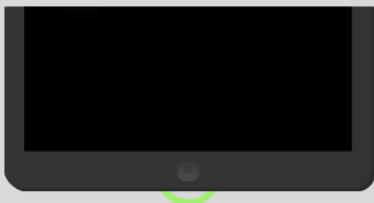
STEP 3

Press the microphone to add a sound.



STEP 5

Press the home button to exit the app.



STEP 4

Press the camera to add a picture.



SEQUENCE OF STEPS: USING BOOK CREATOR

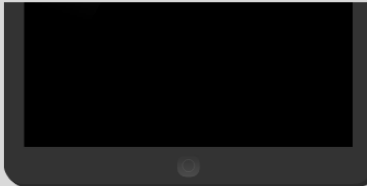
STEP 4

Press the camera to add a picture.



STEP 5

Press the home button to exit the app.



STEP 3

Press the microphone to add a sound.



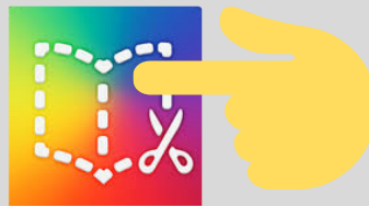
STEP 2

Tap on the + add features to your book.



STEP 1

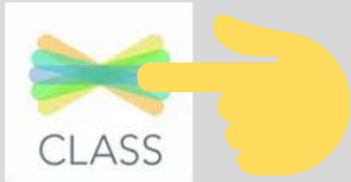
Tap on the app to open Book Creator.



SEQUENCE OF STEPS: USING SEESAW

STEP 1

Tap on the app to open Seesaw.



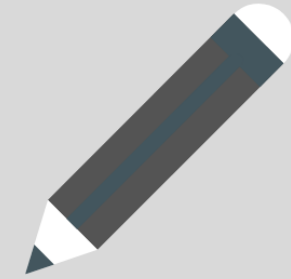
STEP 2

Press the green Add button.



STEP 3

Choose pencil.



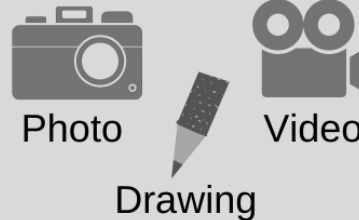
STEP 5

Press the green tick.




STEP 4

Choose Photo Drawing or Video.



SEQUENCE OF STEPS: USING SEESAW

STEP 3
Choose pencil.



STEP 5
Press the green tick.



STEP 4
Choose Photo
Drawing or
Video.



Photo



Drawing




Video

STEP 2
Press the green
Add button.



STEP 1
Tap on the app
to open Seesaw.



CLASS

SEQUENCE OF STEPS: USING A BEE-BOT

STEP 1

Turn the 3 switches **on**

power bumper sound



STEP 2

- GO** go forward
- GO** rotate right
- GO** reverse
- GO** rotate left



STEP 3

Press X and GO to clear the code

STEP 5

Turn the 3 switches **off**

power bumper sound



STEP 4

Waiting until the Bee-Bot eyes flash before next command



INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2



SEQUENCE OF STEPS: USING A BEE-BOT

STEP 4

Waiting until the Bee-Bot eyes flash before next command



STEP 3

Press X and GO to clear the code



STEP 1

Turn the 3 switches on

STEP 5

Turn the 3 switches off

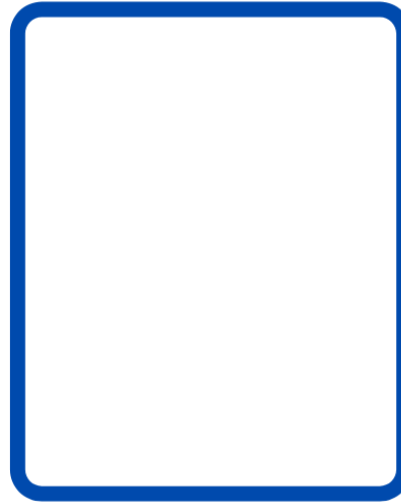
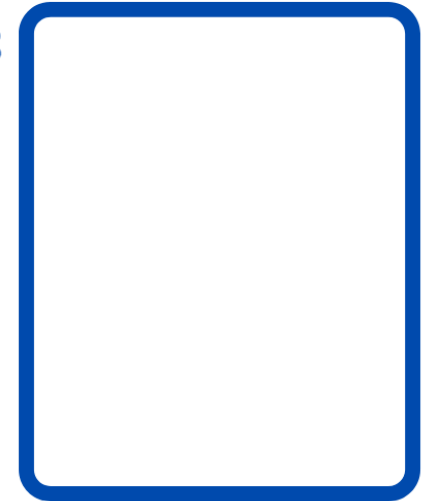
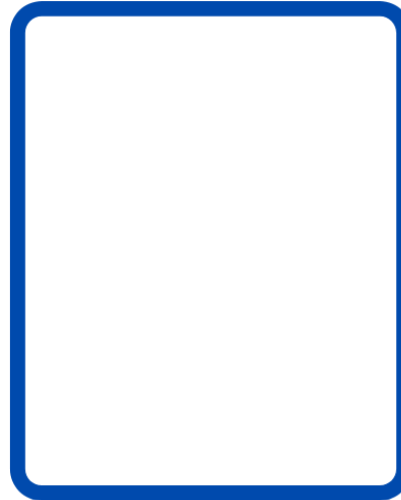
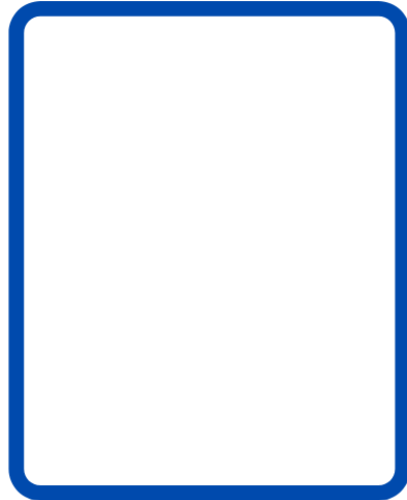


STEP 2

- GO go forward
- GO rotate right
- GO reverse
- GO rotate left



SEQUENCE OF STEPS: PUT IN ORDER



INTRODUCING DIGITAL TECHNOLOGIES

Levels F-2

