

Computing Lesson Plan – Peacocks Yr1

Control & Programming – Curriculum Link: Map Work/Treasure Hunt – ICT Unit Link 1.2

<p>Aims/Objectives: Estimate and create a set of instructions to control devices and achieve predicted outcomes. Learn that carrying out a task accurately, in a specific sequence, and using a common language, brings about a desired outcome.</p>	<p>About this Unit: In these lessons, children use Smart Notebook, Textease Turtle or 2Simple2Go to plan and record sequences of instructions. They set themselves and each other challenges using the Bee Bot Mats, if possible - including the Electro-Mat. NC Program of Study: Developing ideas and making things happen; how to plan and give instructions to make things happen. Resources Needed: Bee Bot or Roamer, Textease Turtle and/or 2Simple 2Go, Instruction/Record Sheets, Direction/Activity cards, Game cards. Reviewing, modifying and evaluation work as it progresses: (a) review what they have done to help them develop their ideas; (b) describe the effect of their actions; (c) talk about what they might change in future work.</p>
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Key stage 1 (New computing curriculum)
Pupils should be taught to:

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions
- Write and test simple programs
- Use logical reasoning to predict the behaviour of simple programs
- Organise, store, manipulate and retrieve data in a range of digital formats
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information beyond school

<p>Some children will not have made as much progress (Level Score 1-2) Level 1: I understand that instructions need to be given in a correct order; I can give simple instructions using directional language and numerical units.</p>	<p>Most children have met the expectation through the teaching experiences (Level Score 2-3) Level 2: I know that control devices follow instructions that can contain numerical data; I can give instructions using directional language and numerical units for distance and angle; I can record a sequence of instructions in a common format; I know that results can be predicted and that predictions can be tested; I can review what has been done to help develop ideas</p>	<p>Some children will exceed the expectation (Level Score 3-5 depending on extension work) Level 3: I can predict, test and refine a set of instructions to move a programmable toy and/or screen turtle around objects with accuracy; I know that instructions can be recorded for replication and amendment; I can retrieve information that has been stored.</p>
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Lessons 1-2

Programmable Toys

Topic Link – “Map Work – Treasure Hunt”

Objectives – ♦ Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of

instructions. ♦ Use logical reasoning to predict the behaviour of simple programs. ♦ Write and test simple programs.

Vocabulary – forward, back, left, right, turn.

Success Criteria – To predict where the Bee Bot will be after a sequence of instructions.

Computer Activities/Bee Bot

Activities: Some children will complete onscreen activities while other groups go into the classroom with the **Class TA** to use the Bee Bot Mat activities.



Lessons 2-3

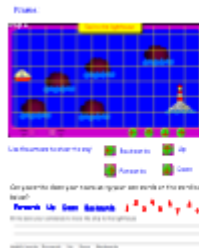
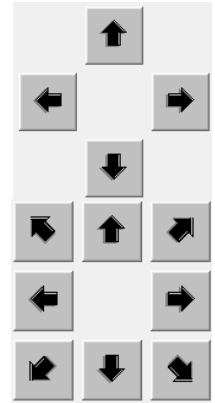
Use online Sail to the Lighthouse activity. Then recording their route on the Smart Notebook document provided. They will save their work.

Objectives – That the screen turtle can be moved on screen.

Vocabulary – forward, back, left, right, turn

Success Criteria – To predict where the screen turtle will be after a sequence of instructions.

Children will use these resources to firstly complete the task online and then represent their route on this Smart Notebook activity. They will record their route either using their own vocabulary (Higher Ability) or the word bank provided.



Lessons 2-5

All of these lessons will overlap as each week children will go in groups to use Bee Bot with TA.

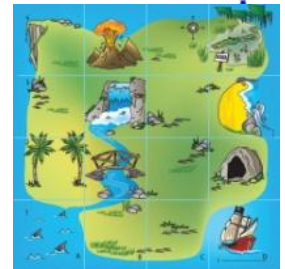
Learning Objectives

Geography - Use (directional) geographical vocabulary

Mathematics

- Identify objects that turn about a point or about a line: recognise and make whole and half turns
- Follow and give instructions involving position, direction and movement.
- Recognise and use whole, half and quarter turns, both clockwise and anticlockwise: know that a right angle represents a quarter turn (HA).

ICT - How to plan and give instructions to make things happen (for example, programming a floor turtle, putting instructions in the right order).

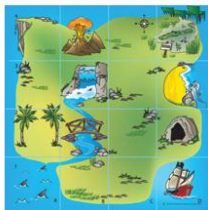


Use this mat to help develop understanding of North, South, East and West and to plan routes.

Activity Outline: This activity gives children a chance to develop their understanding of the concepts North, South, East West. By using a robot to turn, the children will need to think carefully about which way is North, use their lefts and rights and also realise that North stays North all the time. Planning complete routes is a hard skill and will need some support. Will also use the “Electro-Mat” to record directions and actions *if possible*.

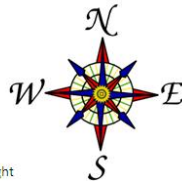
Searching for the Treasure

- Start the Bee-Bot on the pirate ship. Shuffle the printed cards and lay them face down in a pile.
- Individually ask the children to turn over the top picture, and then ask them to enter into the Bee-Bot the instructions they think will get it to that square on the mat.
- If they are successful then they keep the card, if they are not successful then that card goes back to the bottom of the pile.
- Keep playing until all the cards are gone.
- The child with the most cards is the winner.



Key Vocabulary:

- North South East West
- Forward Backward Left Right
- Clockwise Anti-clockwise Turn
- ¼ turn (90°) ½ turn (180°) ¾ turn (270°) 1 turn (360°)
- Ship Sharks Palm Trees Cave Beach
- Waterfall Cliffs Volcano Swamp



Giving Instructions – Control – Bee Bot Assessment Sheet

CLASS:		Activity:
Name	How did child give instructions? (e.g. single, sequence or mixture, how accurate?)	Comments on ability/progress/engagement; did child understand Bee Bot can be programmed to follow several instructions?

Hide and Seek



In pairs or small groups, ask the pupils to try this task. One group decides where to hide the treasure on the island but doesn't tell the other group where it is. (Make a note of which square it is in.)

The same group then plans a route around the island that leads to the treasure.

Give the plotted route to the other group and see if they can find the treasure.

- Ask the children to use descriptive and positional words to describe their route to the treasure e.g. Over the wood bridge, behind the waterfall and around the hot volcano. What geographical vocabulary can be developed?
- In all of these games the children could be introduced to simple recording of their instructions using the Bee-Bot sequence cards or by simply using a laminated whiteboard.
- While using this mat, encourage the children to use their imagination to develop a real adventure story for the activity i.e. imagine there is a secret passage out of the back of the cave or a hidden tunnel that leads around the back of the waterfall; there may even be a lost Bee-Bot in the swamp who was also looking for the treasure?

Hide the Treasure - Plan your route

Start Coordinates _____
 Beebot Instructions _____
 Treasure Coordinates _____

Key Vocabulary:
 North South East West
 Forward Backward Left Right
 Clockwise Anti-clockwise Turn
 ¼ turn (90°) ½ turn (180°) ¾ turn (270°) 1 turn (360°)
 Ship Sharks Palm Trees Cave Beach
 Waterfall Cliffs Volcano Swamp

Can you find the treasure?

Place Bee Bot on coordinates: _____

Instructions: _____

Where is the treasure? Coordinates _____

Key Vocabulary:
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The Pirates Treasure

Split the children into two groups, one group to be the **Pirates** and the other to be the **Treasure Hunters**.

The Pirates

Ask the Pirates to place the treasure chest symbol in a square on the mat in which they'd like to hide the treasure.

Place the remaining symbols face down and ask the children to select between 1-6 symbols, determined by the roll of a dice. Remove the cards that were not selected and turn over the ones that were.

The task is now to plot a route using all the chosen symbols in order of selection, to reach the spot of buried treasure. Plan out the route and then enter it into the Bee-Bot to check it. (Make sure the Treasure Hunters don't see the route planning.)

The Treasure Hunters

Re-shuffle the symbols, lay them face down and again ask the treasure hunters to select between 1-6 symbols, determined by the roll of a dice. (Watch out for the sharks and swamp.)

Now see if the treasure hunters can find the pirates' buried treasure via their chosen symbols. (Use the compass to help find your way around the Bee-Bot Treasure Island)

Pirate Map Activity Cards:



Lessons 3-4

- Further development of control skills through these online activities from the TES website using directional language as well as coordinates.
- These activities have been differentiated according to ability.

Subject Links:

- Identify objects that turn about a point or about a line: recognise and make whole and half turns
- Follow and give instructions involving position, direction and movement.
- Recognise and use whole, half and quarter turns, both clockwise and anticlockwise: know that a right angle represents a quarter turn.
- How to plan and give instructions to make things happen (for example, programming an onscreen turtle, placing instructions in the right order).



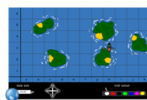
ICT Control Skills

Name: _____

Class: Peacocks

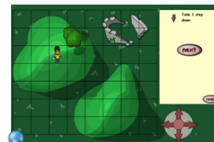


Row to the Islands



- Can you direct your boat to the Island in coordinates C2 do not cross any islands and you must land on the beach.
- Change your trail colour to red.
- Now can you direct your boat to the Island situated in coordinates B5, you must not cross other islands and you must land on the beach.
- Change your trail colour to green.
- Next we need to visit the Island in coordinates J4.
- Change your trail colour to blue.
- Finally your boat needs to finish by reaching coordinates A1, choose your own route that doesn't cross any islands on the way.
- Take a screen shot of your route and paste it onto this page.

Treasure Hunt



- Follow the instructions on the screen to find the treasure.
- Take a screen shot of your work and paste it onto this page.

Spiderweb



- Can you use your math skills and knowledge of angles and estimation of distance to catch and eat the dragonflies in the fewest moves possible?
- Take a screen shot of your progress.

Chameleon



- Can you use your math skills and knowledge of angles and estimation of distance to catch and eat the dragonflies in the fewest moves possible?
- Take a screen shot of your progress.

