Fairisle Infant and Nursery School Medium Term Plan

'We have the right to learn"

'We have the right to be safe'

'We have the right to be the best we can be'

Subject: Computing Computer Science – bee bots/ pro bots	Year Group: Year 2 Spring 2	Unit: Let's Explore the Titanic
Learning Objective: - Understand what algorithms are, how they are implemented as programs on digital devices, and that programmes execute by following precise and unambiguous instructions - Create and debug simple programs - Use logical reasoning to predict the behaviour of simple programs - Recognise common uses of information technology beyond school Success Criteria: - I can give instructions to my friend using; forward, backwards and turn and physically follow	Key Skills and reference to National Curriculum: • can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation • can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems	Resources: **beebots**
	Hook and content: Titanic topic (visit to the Sea City Museum) Step 1 Use this session as an exploratory session and identify what the children can do and how much they can programme. Things to look for: • Do they programme instructions one thing at a time or can they programme several instructions in a row? • Do they know that they have to delete previous instructions? Using a blank grid, place pictures of different part of the titanic in pockets (cards could have information on back to help with history knowledge). Have	Cross-curricular links: Geography / Literacy S&L links: • Participate in discussions, presentations, performances, role play,

their instructions to move in a shape - I can tell you the order I need to do things to make something happen and talk about this as an algorithm - I can look at my friends programme and tell you what will happen - I can use programming software to make objects move - I can watch a programme, execute and spot where it goes wrong so I can debug it	2 copy of cards. In small groups, children pick a card from the pile and then programme the bee bot to go to the correct part of the ship. *Challenge: If can do this task with ease, have pro bots ready to give them to programme. Can they transfers their skills to the pro bot?* *If chd do use them, discuss how they used them in a plenary ready for next session.* <u>Step 2</u> Use same cards and mats from last session. Have a copy of the mats on the smart screen. Briefly discuss what they did last session and what they were learning. Read a scenario card about a person who was on board the titanic and the events that lead up to the crash. We need to recreate that persons events using the pro bot. Discuss how we are going to do this. Point out how many places they have been to on the ship (there is more than one place so we will need several algorithms. Work through the programme and model how they could record their programme ie rt turn, fw 10 etc. Remind children of 'debugging' (if an algorithm doesn't work, we need to change it!) Children to work in small groups and complete their scenario programming their robot to visit the right places. Make sure that children know that they are going to be sharing their routes with everyone at the end so don't delete them! TOGETHER Allow each group to read their card and show their route using the pixie. TEACHING POINT: do we need to put the programme in each time? It stays in the memory so we just have to press go! <u>Step 3</u> Show children the flow chart and read it together (draw comparison to algorithms and programming). Weather permitting – take children outside and let them work in groups to work through the flow chart and complete the game. Give them the hide and seek flowchart and tell them that it is 'bugged'. Give them time as a group to read through it and try and find the 'bug'. When each group has done this, give them time to carry out the flow chart and see if they were right.	improvisations and debates. SMSC: ESafety: Revise lock it, block it show it, tell it at the beginning of each session.

	<u>Step 4</u> Write up a route for titanic on the board and show a matt with titanic pictures in it. Tell then the programme is 'bugged'…can they find it! At tables in groups, have a mat with pictures titanic pictures on them. Children to select a start and end destination and write a set of algorithms to get there…But put a bug in it!!! Children to then swap w/b and see if they can find each other's bugs! Step 5 Extend to challenging the children to recreating their algorithm using Purple Mash: 2logo. Can children create a background, write and programme their algorithm?	