



Belfield CP School



Medium Term Plan

Subject: ICT		Term: Spring 2			Year: Two			
Topic: Routes: Controlling a floor turtle		Teacher: Mrs Helen Crompton						
SoW	Week	Learning Objectives	Pupil Activities	Assessment Evidence	Resources	Key Vocabulary	EAL	Cross-Curr.Links
Unit 2D	1	Be able to use the appropriate keys to make the floor turtle go forward, backward, left and right by using instructions such as F1, Right 90° etc	<p>Discuss prior knowledge of the basic functions, forward = F. backwards = B. R90</p> <p>Discuss prediction – not a guess, what do they know to help them predict. (That it moves the distance of itself)</p> <p>Predict how many moves forward / backwards it takes to get onto or close to the red floor spot.</p> <p>Test some of the predictions.</p> <p>Then place the three shops on the floor in close proximity to the Roamer.</p> <p>Pupils have to fill in a chart to predict what instructions the Roamer will need to get to the shops. (Should need no more than three simple instructions.)</p> <p>Test some of the predictions. Using the red cross on the floor, so you know where the Roamer started from, to replace the Roamer back on the spot before testing another prediction.</p>	Q&A notes, completed task, observation notes.	Teaching Assistant Floor Spot. Blank charts	Floor Turtle, instructions, commands.	Oracy 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.	Numeracy

			<p>Discuss as a group how this form of technology which follows instructions can be used e.g. Mars Rover, bomb disposal services.</p> <p>How can this type of technology be used?</p> <p>How could this technology be used to look at other planets, when it is not safe for humans?</p> <p>What is used to look at bombs, is it safe for humans to do this job?</p>					
Unit 2D	2	Know that instructions can be sequenced for more complicated tasks.	<p>Re-cap knowledge of the basic functions, forward = F. backwards = B. R90°</p> <p>State lesson objectives.</p> <p>Demonstrate writing then completing a sequence of instructions, with the Roamer.</p> <p>“Now I will type in these instructions to make the shape of a letter ‘P’ ” Type in instructions, with a pen in the top of the Roamer and a large sheet of paper underneath. (F5, R90, F2, R90, F2, R90, F2)</p> <p>Split into three / four groups and ask the pupils to predict the shape from the instructions on a card, all pupils to have paper, but to work as a team.</p> <p>Please note; Green title easier card, 2 orange middle group, red for the more</p>	Q&A notes, completed task, observation notes.	Teaching Assistant Roamer Instruction cards Large sheet of paper Felt tip.	Floor Turtle, instructions, commands, 90°.	Oracy 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.	Numeracy

			<p>able group.</p> <p>Green = 'L' Orange 2 = '' Orange 3 = 'b' Red = ''</p> <p>Pupils come back together as a group to test predictions.</p> <p>(If the pupils manage easily and work fast, they could try one of the other instruction cards and again test predictions.)</p>					
Unit 2D	3	Know that devices can carry out repeated instructions	<p>Very quick re-cap knowledge of the basic functions, forward = F. backwards = B. R90°</p> <p>State lesson objectives.</p> <p>Describe that devices can repeat instructions, e.g. photocopiers, robots (production line)</p> <p>Write on the board and program a square shape into the Roamer F2, R90, F2, R90, F2, R90, F2, R90. Now show the repeat button and add this to the instructions on the board R3[F2, R90, F2, R90, F2, R90, F2, R90] and program the Roamer to complete this task.</p> <p>Give the group other sets of instructions with repeat included, getting the pupils to program it in with another pupil writing the instructions on the board with support.</p>	Q&A notes, completed task, observation notes.	Teaching Assistant Roamer	Roamer, instructions, 90°, repeat instruction.	Oracy 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.	Numeracy

			<p>As an extension activity the pupils could try a staircase movement. (Square getting one less each time)</p> <p>Discuss other areas of technology that carry out repeated instructions, which are stored in the memory e.g. washing machines and how this is useful.</p>					
Unit 2D	4	To develop and record sequences of instructions to control the Roamer, predict and test results.	<p>State lesson objectives. Recap prediction.</p> <p>Tell the pupils a short story about a search for Pirate Pete's hidden treasure. How many people have tried to find the treasure and failed. Remind about last weeks work.</p> <p>Tell the pupils that you have been given a copy of Pirate Pete's old treasure map, with instructions on how to find the treasure and that you have done copies for them to help find the treasure.</p> <p>Tell the pupils that you have been given a copy of Pirate Pete's old treasure map, with instructions on how to find the treasure and that you have done copies for them to help find the treasure.</p> <p>Re-cap knowledge of the basic functions, forward = F. backwards = B. R90°. Remind the pupils that the Roamer moves the length of itself, for estimating the moves forward and backwards on the map. The length of the Roamer is 1cm, this will help them</p>	Q&A notes, completed task, observation notes.	Teaching Assistant, treasure sheets, rulers.	Roamer, instructions, 90°.	Oracy 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.	Numeracy

		<p>with the instructions.</p> <p>Ask the pupils to follow the instructions to find Pirate Pete's treasure. Pupils can be paired with a more able pupil or a table with the teaching assistant for support. Explain that the first instruction is done for them.</p> <p>Come back together as a group. Who thinks that they have found the treasure? Check with Teacher's map. Who struggled and why, looking for solutions.</p> <p>Explain to the pupils that they will be working in pairs, they have to write instructions for their partner to follow (encourage less able to do more simple instructions than others, also support will be given by T.A. to L.A.) Teacher will move around classroom questioning and testing instructions.</p> <p>To write the instructions the pupils have to this time write the instructions for a person's step not the length of the Roamer, demonstrate this. The pupils also have to think about where the person has to start from.</p> <p>Back together as a group, did the pupil find that writing the results for people was more difficult than for the Roamer? Any other problems.</p>					
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Unit 2D	5	To develop and record sequences of instructions to control the Roamer, predict and test results.	<p>State lesson objectives. Write on board reminder of instructions.</p> <p>Divide the class into groups, less able with support. The pupils have to decide where in the classroom they want their treasure to be hidden. They then have to write their own treasure map, as a group, for other groups to follow.</p> <p>Remind the pupils to make it quite simple.</p> <p>If some are finished early they could make another set of instructions to another piece of hidden treasure. When the groups have finished their instructions, as a class we can try to follow some of the instructions to find the hidden treasure.</p> <p>Pupils write their instructions on a classroom treasure map, they can draw in some of the tables in the classroom and other furniture before writing instructions.</p> <p>Re-cap on objectives. Discuss difficulties in predicting.</p>	Q&A notes, completed task, observation notes.	Roamer, instructions, 90°, prediction.	Teaching Assistant	Oracy 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.	Numeracy
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Belfield CP School

Lesson plan



Lesson	Year group	Term	Lesson Length	Lesson
I.C.T.	2	Spring 2	60 minutes	1 of 5

Aims / Outcomes:	Be able to use the appropriate keys to make the floor turtle go forward, backward, left and right by using instructions such as F1, Right 90° etc
Key Vocabulary	Floor Turtle, instructions, commands.

Introduction	Discuss prior knowledge of the basic functions, forward = F. backwards = B. R90°
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Main Activities	<p>Discuss prediction – not a guess, what do they know to help them predict. (That it moves the distance of itself)</p> <p>Predict how many moves forward / backwards it takes to get onto or close to the red floor spot.</p> <p>Test some of the predictions.</p> <p>Then place the three shops on the floor in close proximity to the Roamer. Pupils have to fill in a chart to predict what instructions the Roamer will need to get to the shops. (Should need no more than three simple instructions.)</p> <p>Test some of the predictions. Using the red cross on the floor, so you know where the Roamer started from, to replace the Roamer back on the spot before testing another prediction.</p>
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Plenary	<p>Re-cap objectives</p> <p>Discuss as a group how this form of technology which follows instructions can be used e.g. Mars Rover, bomb disposal services.</p> <p>How can this type of technology be used?</p> <p>How could this technology be used to look at other planets, when it is not safe for humans?</p> <p>What is used to look at bombs. Is it safe for humans to do this job?</p>
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Resources	Assessment Evidence
Teaching Assistant Floor Spot. Blank charts Roamers	Q&A notes, completed task, observation notes.

Cross Curricular Links	SOW/NC ref and level	Differentiation	EAL
Numeracy		Q & A Support given Outcome	Oral 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.



Belfield CP School

Lesson plan



Lesson	Year group	Term	Lesson Length	Lesson
I.C.T.	2	Spring 2	60 minutes	2 of 5

Aims / Outcomes
Know that instructions can be sequenced for more complicated tasks.
Key Vocabulary
Floor Turtle, instructions, commands, 90°.

Introduction
Re-cap knowledge of the basic functions, forward = F. backwards = B. R90°

Main Activities
State lesson objectives.
Demonstrate writing then completing a sequence of instructions, with the Roamer. "Now I will type in these instructions to make the shape of a letter 'P' " Type in instructions, with a pen in the top of the Roamer and a large sheet of paper underneath. (F5, R90, F2, R90, F2, R90, F2)
Split into three / four groups and ask the pupils to predict the shape from the instructions on a card, all pupils to have paper, but to work as a team.
Please note; Green title easier card, 2 orange middle group, red for the more able group.
Green = 'L' Orange 2 = '' Orange 3 = 'b' Red = ''

Plenary
Pupils come back together as a group to test predictions.
(If the pupils manage easily and work fast, they could try one of the other instruction cards and again test predictions.)

Resources	Assessment Evidence
Teaching Assistant Roamer Instruction cards Large sheet of paper Felt tip.	Q&A notes, completed task, observation notes.

Cross Curricular Links	SOW/NC ref and level	Differentiation	EAL
Numeracy	Unit 2C	Q & A Support given Outcome	Oral 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.



Belfield CP School

Lesson plan



Lesson	Year group	Term	Lesson Length	Lesson
I.C.T.	2	Spring 2	60 minutes	3 of 5

Aims / Outcomes

Know that devices can carry out repeated instructions

Key Vocabulary

Roamer, instructions, 90°, repeat instruction.

Introduction

Very quick re-cap knowledge of the basic functions, forward = F. backwards = B. R90°
State lesson objectives.

Main Activities

Describe that devices can repeat instructions, e.g. photocopiers, robots (production line)

Write on the board and program a square shape into the Roamer F2, R90, F2, R90, F2, R90, F2, R90.
Now show the repeat button and add this to the instructions on the board R3[F2, R90, F2, R90, F2, R90, F2, R90] and program the Roamer to complete this task.

Give the group other sets of instructions with repeat included, getting the pupils to program it in with another pupil writing the instructions on the board with support.

As an extension activity the pupils could try a staircase movement. (Square getting one less each time)

Plenary

Discuss other areas of technology that carry out repeated instructions, which are stored in the memory e.g. washing machines and how this is useful.

Resources	Assessment Evidence
Teaching Assistant Roamers	Q&A notes, completed task, observation notes.

Cross Curricular Links	SOW/NC ref and level	Differentiation	EAL
Numeracy	Unit 2C	Q & A Support given Outcome	Oral 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.



Belfield CP School

Lesson plan



Lesson	Year group	Term	Lesson Length	Lesson
I.C.T.	2	Spring 2	60 minutes	4 of 5

Aims / Outcomes:	To develop and record sequences of instructions to control the Roamer, predict and test results.
Key Vocabulary	Roamer, instructions, 90°.

Introduction	<p>State lesson objectives. Recap prediction.</p> <p>Tell the pupils a short story about a search for Pirate Pete's hidden treasure. How many people have tried to find the treasure and failed. Remind about last weeks work.</p> <p>Tell the pupils that you have been given a copy of Pirate Pete's old treasure map, with instructions on how to find the treasure and that you have done copies for them to help find the treasure.</p>
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Main Activities	<p>Tell the pupils that you have been given a copy of Pirate Pete's old treasure map, with instructions on how to find the treasure and that you have done copies for them to help find the treasure.</p> <p>Re-cap knowledge of the basic functions, forward = F. backwards = B. R90°. Remind the pupils that the Roamer moves the length of itself, for estimating the moves forward and backwards on the map. The length of the Roamer is 1cm, this will help them with the instructions.</p> <p>Ask the pupils to follow the instructions to find Pirate Pete's treasure. Pupils can be paired with a more able pupil or a table with the teaching assistant for support. Explain that the first instruction is done for them.</p> <p>Come back together as a group. Who thinks that they have found the treasure? Check with Teacher's map.</p> <p>Who struggled and why, looking for solutions.</p> <p>Explain to the pupils that they will be working in pairs, they have to write instructions for their partner to follow (encourage less able to do more simple instructions than others, also support will be given by T.A. to L.A.) Teacher will move around classroom questioning and testing instructions.</p> <p>To write the instructions the pupils have to this time write the instructions for a person's step not the length of the Roamer, demonstrate this. The pupils also have to think about where the person has to start from.</p>
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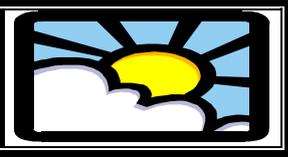
Plenary
Back together as a group, did the pupil find that writing the results for people was more difficult than for the Roamer? Any other problems.

Resources		Assessment Evidence	
Teaching Assistant, treasure sheets, rulers.		Q&A notes, completed task, observation notes.	
Cross Curricular Links	SOW/NC ref and level	Differentiation	EAL
Numeracy	Unit 2C	Q & A Support given Outcome	Oral 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.



Belfield CP School

Lesson plan



Lesson	Year group	Term	Lesson Length	Lesson
I.C.T.	2	Spring 2	60 minutes	5 of 5

Aims / Outcomes

To develop and record sequences of instructions to control the Roamer, predict and test results.

Key Vocabulary

Roamer, instructions, 90°, prediction.

Introduction

State lesson objectives.
Write on board reminder of instructions.

Main Activities

Divide the class into groups, less able with support. The pupils have to decide where in the classroom they want their treasure to be hidden. They then have to write their own treasure map, as a group, for other groups to follow.

Remind the pupils to make it quite simple.

If some are finished early they could make another set of instructions to another piece of hidden treasure. When the groups have finished their instructions, as a class we can try to follow some of the instructions to find the hidden treasure.

Pupils write their instructions on a classroom treasure map, they can draw in some of the tables in the classroom and other furniture before writing instructions.

Plenary

Discuss difficulties in predicting.

Resources		Assessment Evidence	
Teaching Assistant.		Q&A notes, completed task, observation notes.	
Cross Curricular Links	SOW/NC ref and level	Differentiation	EAL

Numeracy	Unit 2C	Q & A Support given Outcome	Oral 1, 2, 3, 4, 5, 6, 7, 8, 9. Lit. 3, 6.
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Classroom treasure map



Instructions

CM

CM

Going to the shops

	Prediction
The pet shop	
The video shop	
The sports shop	

Going to the shops

	Prediction
The pet shop	
The video shop	
The sports shop	

Roamer Workcard 1

Can you predict what letter the Roamer will draw, if it follows the instructions below.

B3, R90, F 1

Roamer Workcard 2

Can you predict what letter the Roamer will draw, if it follows the instructions below.

B2, R90, F 1, L90, F2.

Roamer Workcard 3

Can you predict what letter the Roamer will draw, if it follows the instructions below.

B3, R90, F1, L90, F1, L90, F1.

Roamer Workcard 4

Can you predict what letter the Roamer will draw, if it follows the instructions below.

F2, R90, F1, R90, F2, R90, F1, R90

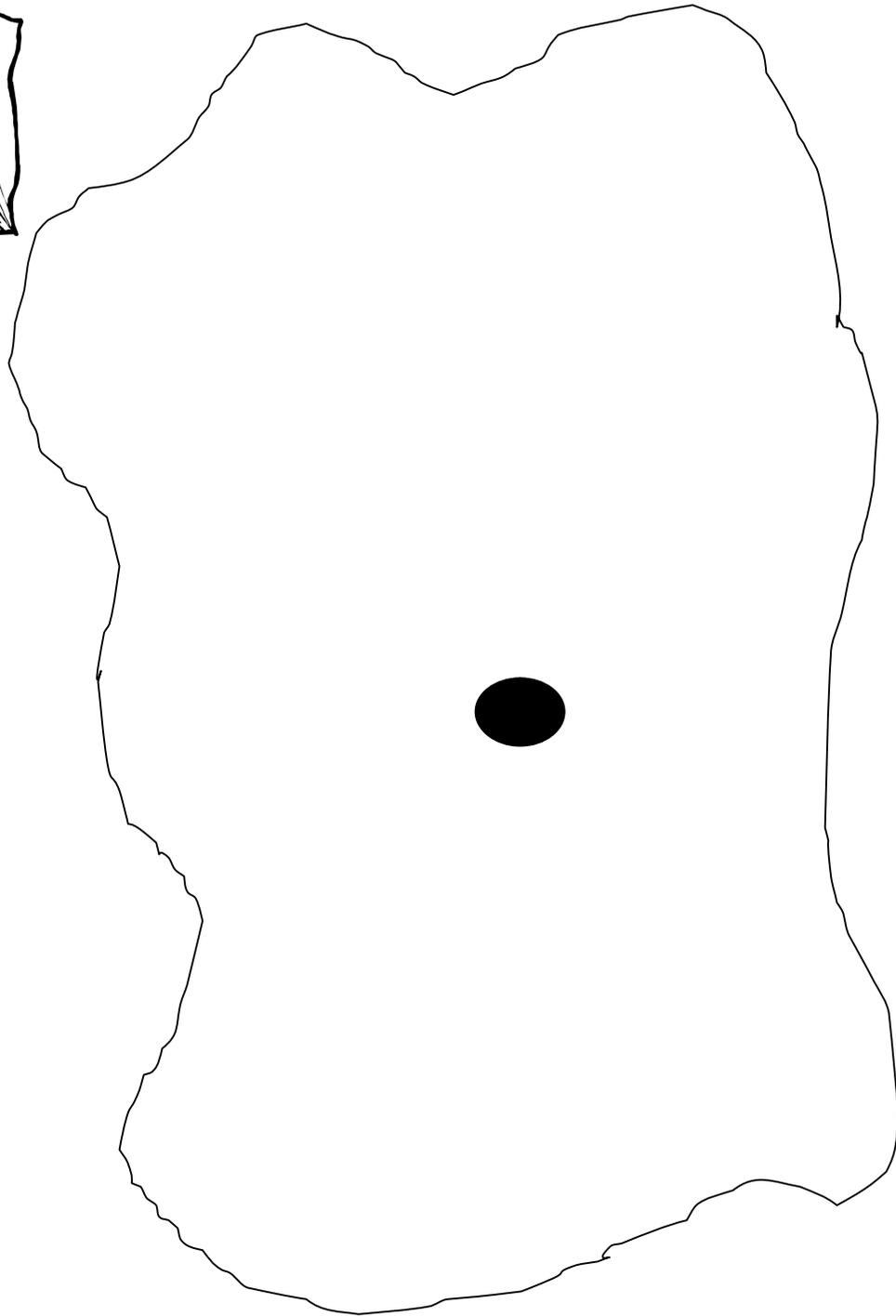


Pet Shop



Sports Shop





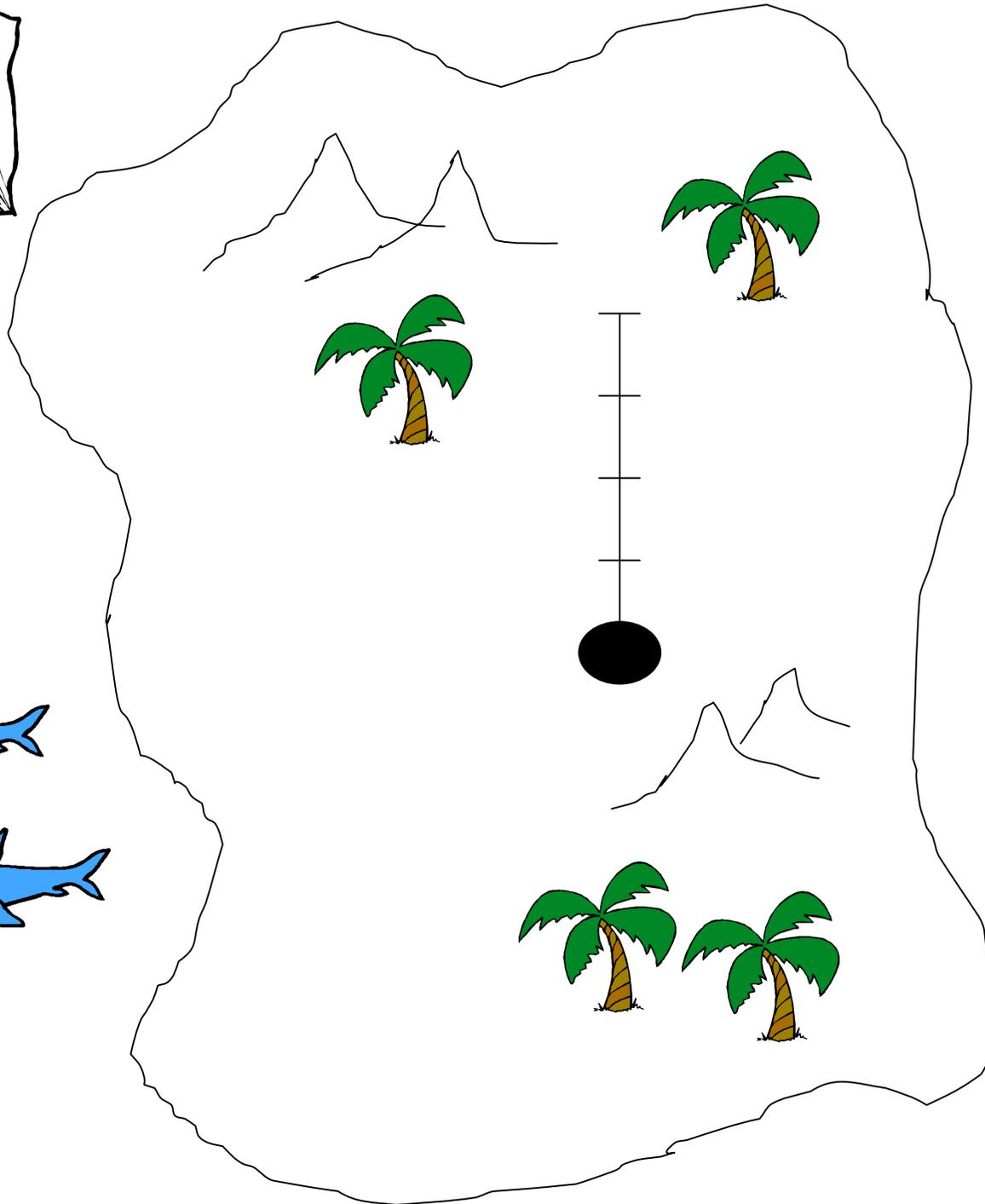
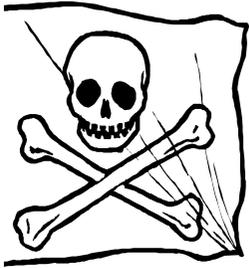
Pirate Pete's treasure.

Instructions to find the treasure.

Name; _____

Date; _____





Pirate Pete's treasure.

The first instruction has been done for you on the map.

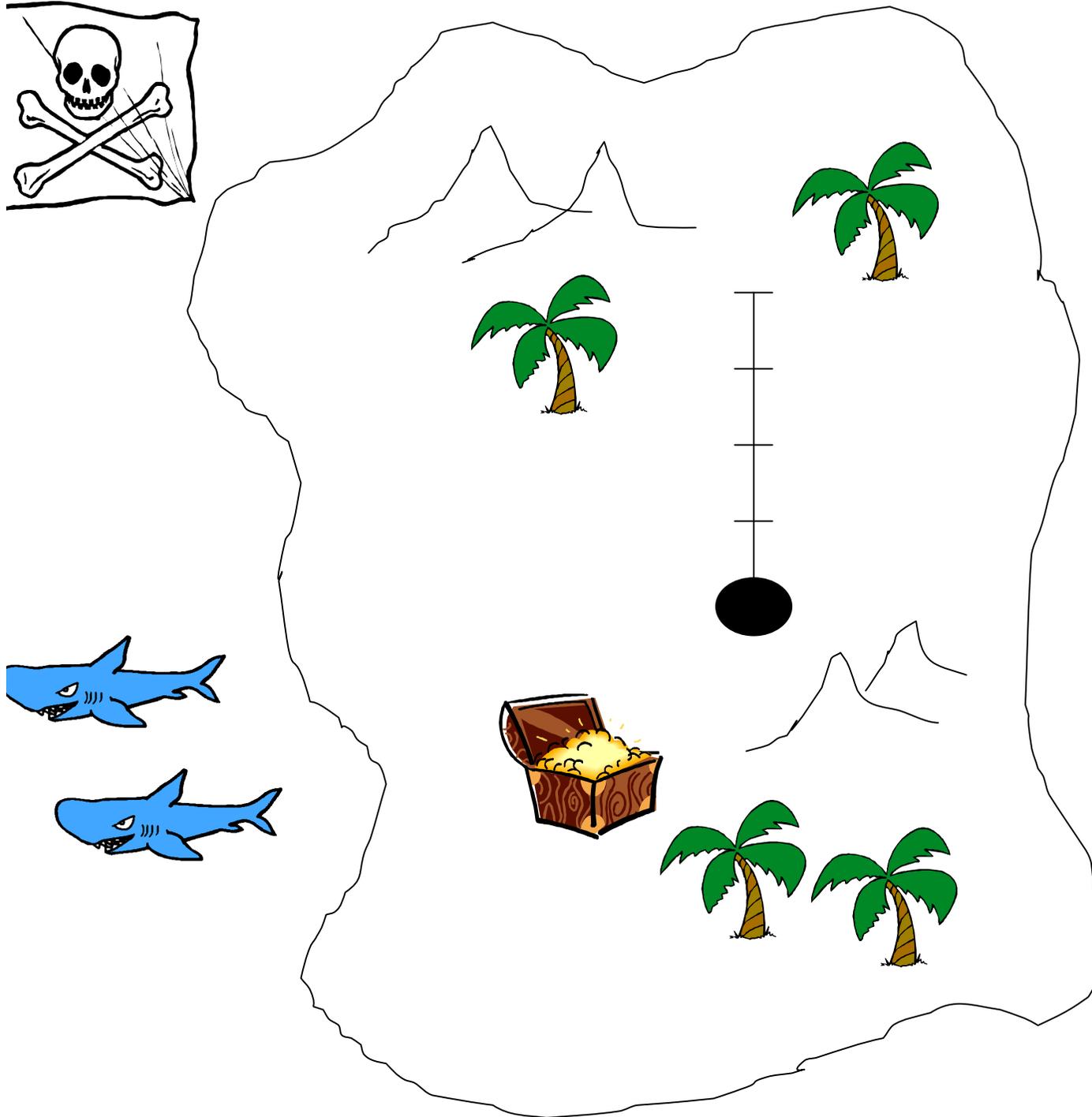
F4, L90, F3, L90, F2, L90,
F1, R90, F5.

Put a cross where Pirate
Pete's treasure is.



Name; _____

Date; _____



Pirate Pete's treasure.

The first instruction has been done for you on the map.

F4, L90, F3, L90, F2, L90,
F1, R90, F5.

Put a cross where Pirate
Pete's treasure is.



Name; _____

Date; _____

Using Repeat

If you want to repeat some commands you can use the repeat button - R

For example to make S in Morse Code you could press

R 3 [ 1 5  1 14]

This will make a short medium tone note followed by a short rest three times.

Using Procedures

Another short cut is to use procedures. You could make a procedure for each letter and use these to make procedures for each word. It works like this:

Make a procedure for letter **A** called **P20** like this:

P 20 [ 1 5  1 14  8 5  1 14]

Notice that when you are "writing" the procedure the sounds that Roamer makes change. When you press GO nothing happens.

To hear the morse for A press P 20 GO

If you have made procedures P21 for B, P22 for C, P23 for D and so on, a procedure (P10) to send the word BAD would be:

P 10 [P 21 P 20 P 23]