1-10.1 Lion Taming

Activity Page

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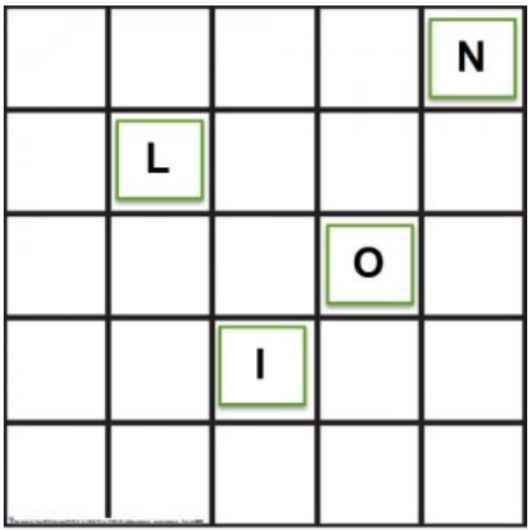
Task 1 Children will choose an algorithm and program Roamer to spell lion from letters placed on a grid mat.

Subjects	Age	Roamer Expertise	Student Grouping	Lesson Time	Availability
Computing	Year 2 Year 1				

Description

The Grand Torque, chief adviser to King Bot has set Roamer four tasks which he must do if he wants to marry Juliet. This task takes its name from Hercules' first Labour the Nemean Lion. Set up the Grid Mat with letters spelling the word lion; put each letter in a different grid-squares. Students randomly pick a card with algorithm, which they turn into a Roamer program and then enter it into the robot. The students must decide which square Roamer must start in, and in which direction it must face, so when they press GO Roamer will end on the square containing 'L'. They then using the same program they need to find the starting point and direction to collect the I, O, and N.



Objectives

Students have the chance to understand more about:

1. Algorithms
2. Programs
3. The connection between algorithms and programs

Secondary Objectives

Students have the chance to develop their:

1. Problem solving skills
2. Ability to work with others in a team
3. Communication skills

KS1 Computing Pack

Index to KS1 Computing Pack Activities.

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VALIANT

Lesson Plan and Assessment

Preparation

Basic set ups.

1. Set up Grid Mats with Letters.
2. Write Letters for Grid Mat.
3. Print out algorithms cards.

Activity

1. Starting the Activity

1. Organise students into groups and Buddy Pairs.
2. Shuffle algorithm cards.
3. Deal one card to each Buddy Pair.
4. Ask students, "What does the writing on the cards mean?"
5. Explain what students must do:
   a. Use the algorithm to write a program.
   b. Enter it into Roamer.
   c. Find starting points for Roamer so it can collect each letter of the word LION.

2. Do the Activity

1. Let each Buddy Pair find the starting points for their algorithm.
2. Get each group to discuss what they have learnt from the activity.
3. Write notes about their learning for a class presentation.

Assessment

1. Class Presentation and Discussion

1. Get groups to present their findings.
2. Get the class discussing the different ideas.
3. Complete the Online Lesson Evaluation form.

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Teacher's Notes

Subject Comments

By now students should have a basic grasp of algorithms and programs. They should know the difference between the two. This task helps students gain a deeper understanding of both ideas. Specifically,

1. What an algorithm and program do depends on the starting conditions.
2. You can solve the same problem with different algorithms.

All future work on these topics will simply help students internalise these basic ideas and broaden their experience.

Prior Knowledge

Students should have a basic grasp of:

1. What an algorithm is.
2. What a program is.
3. Basic Roamer instructions.

Training Links

Mats and Pathways - Setting Up Clear Grid Mats

Science of Learning

Jerome Bruner proposed, "…any subject may be taught to anybody at any age in some form." He claimed that basic ideas are simple. "To be in command of these basic ideas, to use them effectively, requires a continual deepening of one's understanding of them that comes from learning to use them in progressively more complex forms." He went on to say it is only when we formalise the ideas did they go beyond the reach of young children. This led Bruner to develop the idea of the spiral curriculum. You keep returning to a topic in a way that reminds students what they already know and helps them understand more.

Roamer fits this learning model well. Activities provide concrete starting points that often contain hidden subtleties. In this case, we make these intricacies clear.

References and Useful Links

Bruner, J.S. (1960). *The Process of Education.* Cambridge, MA: Harvard University Press

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Resources for Roamer Activities

This page lists the resources needed for this Roamer Activity. Note that you will access some resources by following the hyperlink. Others you will find on the Activity pdf.

CD Users: Click on Link icon to access links.

Roamer Products

1520-402 Infant K1 Roamer
1526-103 Clear Grid Mat

Student Materials

Algorithm Cards

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Algorithm Cards

Infant K1 Roamer Coding Pack

1 Forward 3 Left 90 Forward 1	2 Forward 3 Right 90 Forward 2 Left 90 Forward 1	3 Forward 2 Left 90 Forward 2 Left 90 Forward 2
1 Forward 3 Left 90 Forward 1	2 Forward 3 Right 90 Forward 2 Left 90 Forward 1	3 Forward 2 Left 90 Forward 2 Left 90 Forward 2
1 Forward 3 Left 90 Forward 1	2 Forward 3 Right 90 Forward 2 Left 90 Forward 1	3 Forward 2 Left 90 Forward 2 Left 90 Forward 2
1 Forward 3 Left 90 Forward 1	2 Forward 3 Right 90 Forward 2 Left 90 Forward 1	3 Forward 2 Left 90 Forward 2 Left 90 Forward 2

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Team Name:

1	2	3
Forward 3	Forward 3	Forward 2
Left 90	Right 90	Left 90
Forward 1	Forward 2	Forward 2
	Left 90	Left 90
	Forward 1	Forward 2