







1-10.4 Scrumping

Activity Page

Computing 1-10-4 Scrumping

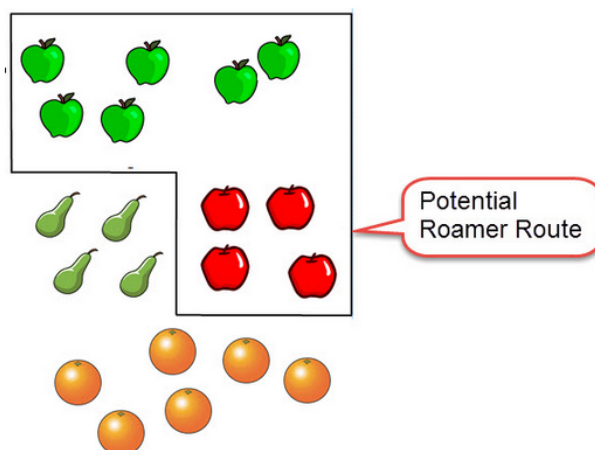
 Published Wednesday, May 28th, 2014 |  By Dave Catlin, Kate Hudson, Alan Coode

The children write a program that will make Roamer "gather" a basket full of apples.

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

Description

The fourth and final task of Roamer's labours is based on Hercules' eleventh labour: Stealing the apples of the Hesperides. Place images of apples and other fruit in a pattern on a drawing surface. The children write a program to "gather" the apples and not the other objects. This involves programming Roamer to draw a line around the apples, leaving out the other objects. The children should count the number of apples they collect.



Objectives

In this activity students will have the opportunity to:

1. Understand algorithms
2. Write and test programs to achieve a goal
3. Become aware of issues relating to closed polygons
4. Develop an understanding of sets of objects
5. Gain experience of Venn Diagrams

Secondary Objectives

Students will have the opportunity to develop their:

1. Teamwork skills
2. Problem solving skills
3. Communication skills

Vocabulary

1. Sets
2. Venn Diagrams

KS1 Computing Pack

[Index to KS1 Computing Pack Activities.](#)



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Lesson Plan and Assessment

Preparation

1. Set up tables - Using Dry Wipe Mats

1. Print a copy of each fruit
2. Use the set up program to draw the L shape on the Wipe Clean Drawing Mat.
3. Use prints as templates to mark out fruit on the mat
4. Wipe off the L shape marking
5. Place mats on 1m x 1m tables



2. Set up tables - Without Mats

1. You need a 1m x 1m table per group
2. If you have to put two tables together consider using a Clear Grid Mat
 - a. This eliminates any problems with the joins between the tables.



Infant K1 Roamer Coding Pack

Activity

1. Introduce the Activity

1. Read 'The Apples of the Hesperides' story.
2. Explain that to gather the apples they have to draw a line a line around them.
3. Open discussion, "What problems will you need to solve?"
 - a. Not gathering other fruit.
 - b. Starting and finishing at the same point.
4. Set Up [Learning Intentions](#) and Success Criteria through discussion.
 - a. Focus on the problem of closing the shape
 - b. We are finding out how to draw a closed shape
 - c. We can tell you about drawing closed shapes
 - d. Use students words from discussion summary



2. Gather the Apples

1. Show students how to put pens into pen tubes.
2. Show them how to put pens tubes into Roamer.
3. Tell them to use the [Traffic Lights](#) if they struggle.
4. Start them doing the activity.
5. Monitor their progress.





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Lesson Plan and Assessment

3. Write a Report

1. Split each group into **Buddy Pairs**
2. Each pair to discuss the task and its issues
3. Bring group back together and compare their ideas
4. Group write a report



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Assessment

1. Review the Reports

1. Each team presents their report to the class
2. Other teams ask questions
3. Ask the teams how they could improve their solution



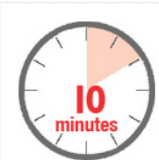
2. Review Programming Progress

1. Did they follow the algorithm, program, test procedure?
2. If they did not, discuss and find out why they didn't



3. Complete Evaluation

1. Ask the students what they learnt
2. Did they achieve the success criteria?
3. Complete the online evaluation forms





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Teacher's Notes

Subject Comments

This task offers the opportunity to consolidate on some of the key ideas of working out an algorithm, and writing and testing a program. The activity offers you an option of not just checking a student's grasp of earlier work, but setting a challenge that tests a student's understanding by asking them to apply what they know to an unfamiliar problem. This is achieved by students writing a program for the 'L' shape rather than a regular polygon. At the same time this activity sets up an experience that the student will build on in future activities – closed pathways.

The activity also provides an opportunity for the student to consolidate the mathematical concepts associated with sets, counting and Venn diagrams. This includes offering the students the chance to see Venn diagrams enclosed in a non-circular shape. It shows that set membership is free of location. It is not proposed this understanding is made explicit to the students, but it is tacit knowledge which adds to the richness of the learning environment.

Prior Knowledge

Preferably students should:

1. Understand basic Roamer programming (Move, Turn, GO, Clear Memory, etc.)
2. Have some basic understanding of the notions of sets and Venn diagrams

Practical Hints

1. Space Required about 1m x 1m

Technical Help



[Using Roamer - Classroom Tips - Layout Techniques.](#)



[Using Roamer - Roamer Activities - Activity Structure.](#)



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Teacher's Notes

Science of Learning

Learning with Understanding is a key element of the Science of Learning. It is important to know facts. However, studies of experts shows they do not simply know a collection of facts; they understand the meaning and relationship between information. The power of understanding becomes apparent when students are asked to apply or extend their knowledge to solve unfamiliar problems. (Bransford, Brown, & Cocking, 2000). One of the hallmarks of Roamer Activities is they promote learning through understanding. This is done in several ways through the ERA Principles. (Catlin, D. and Blamires, M., 2010)

The value of early experiences of handling a variety of things and playing with them freely is that a child builds up a large number of mental pictures and stores up memories of patterns of actions. They can recall these and use them for identification of similar objects. Recognition comes from this recall of touch, sound or movement, and their association with a mental picture of the thing itself. From a wealth of such activities there gradually emerges a notion of a whole class of things which are alike in some way and can be distinguished from all others. It starts with recognising that there is another thing like the first and the another, and so on. This is the beginning of true classification and the idea of set or a recognisable collection of things. Young children need a lot of different experiences of grouping things into sets. (Williams and Shuard 1970)

References and Useful Links

[Bransford, J. D., Brown, A. L., & Cocking, R. R. \(Eds.\). \(2000\). *How People Learn: Brain, Mind, Experience and School*.](#)

[Catlin, D. and Blamires, M. \(2010\). *The Principles of Educational Robotics Applications \(ERA\): A framework for understanding and developing educational robots and their activities. Constructionism 2010*. Paris: Proceedings of Constructionism 2010.](#)

Williams, E. M., & Shuard, H. (1970). *Primary Mathematics Today*. London: Longman.



[Paper Clips and Silicon Chips \(contains a similar to this Scrumping\)](#)

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Resources

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

Standard Roamers

[1520-402 Infant K-1 Roamer](#)

General Accessories

[1522-108 Roamer Power Pack](#)

[1522-107 Pen Pack](#)

[1522-113 Dry Wipe Pens](#)

Mats

[1526-106 A1 Wipe Clean Drawing Mat](#)

Preparation Resources

Roamer Set Up Program

Templates Green Apples, Red Apples, Pears, Oranges

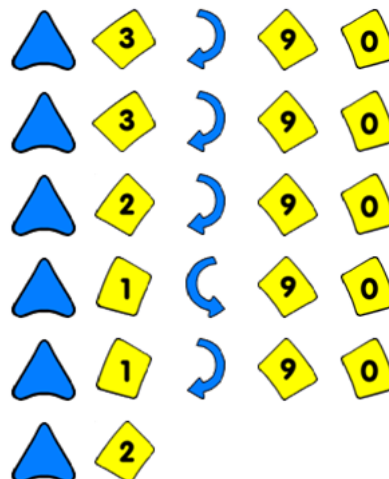
Other Resources

Damp cloth for cleaning mat

Teacher's Resources

Set Up Program

Use the program below to draw the L Shape. If you want to increase the size, go forward a bigger number.





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Student Resources

Infant K1 Roamer Coding Pack