







1-3 Stepping Out

Activity Page

Infant K1 Roamer Coding Pack 1-3 Stepping Out

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Students combine the skills learnt in the first two activities as they code their first Roamer program.

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

Description

Each student in the group writes down two Roamer instructions on a card. The group then puts the cards together to form a program, which they key into Roamer. They then Play Turtle and put a target where they think Roamer will stop. Finally, they run the program. How good was their estimation? They rearrange the program cards and repeat the task. Does the Roamer finish in a different place? You can do this several times.

Objectives

Students have the chance to:

1. Put instructions in an order (write a program)
2. Understand how the instruction order affects what a program does
3. Practice estimation of distance and turn
4. Develop spatial awareness

Secondary Objectives

Students have the chance to:

1. Develop their teamwork skills
2. Contribute to a group effort
3. Grow in social confidence

KS1 Computing Pack

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



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Lesson Plan and Assessment

Preparation

1. Book Resources

1. Large space like a school hall
2. Teaching assistant



2. Print Resources

1. Starter Mat.
2. Handwriting Infant K1 Instructions.



Activity

1. Introduce the activity

1. Demo an instruction
 - a. Ask the children: "What is an instruction?"
 - b. Ask: "What do you think a program is?"



2. Write the instructions

1. Handout the:
 - a. Handwriting Infant K1 Instructions.
 - b. Dry Wipe Pens.
 - c. Roamer Instruction Cards.
2. Ask children to write on the white side of the card:
 - a. Their name.
 - b. Two Roamer Instructions.
3. Get the children to swap cards and check the instructions.
4. Correct if necessary.



3. Play Turtle

1. Ask the children to arrange the cards in an order.
2. Place the starting mat on the floor.
3. Ask the children to Play Turtle to find out where Roamer will stop..
4. Key the program into Roamer.
5. Put Roamer on the Start Mat and run the program.
6. How close did Roamer get to the students.
7. Change the order of the cards.
8. Repeat the process several times.
9. Clean the cards at the end of each effort.





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Lesson Plan and Assessment

Assessment

1. What did we learn?

1. At the end of the lesson start a discussion about what the children learnt.
2. What did they find hard?
3. What did they enjoy doing?
4. Could they get better?
5. Add notes to the evaluation form.



Extensions

1. Hitting a Target

Using the sequence of instructions where does Roamer have to start to hit a target?



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Teacher's Notes

The Science of Learning

Mathematicians recognise three types of space:

1. Micro-Space: this is the space you can see in front of you, on the computer screen, or on the desk.
2. Macro Space: this is the space in your room.
3. Meso Space: this is the wide open spaces in the town, country, world or universe.

Research shows the lack of experience with meso and macro space restricts elementary school students' ability to cope with micro space – that is their ability to understand geometry. Working in the school hall students share the space with Roamer. When they work with the robot on a desktop they look down on the robot's space.

References and Useful Links

Berthelot, R. and Salin, M. (1994). Common spatial representations and their effects upon teaching and learning of space and geometry. In J.P. da Ponte & J.F. Matos (Editors.), Proceedings of the Eighteenth Annual Conference of the International Group for the Psychology of Mathematics.



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Teacher's Notes

Subject Comments

This Activity brings together the skills from the first two tasks. Students experiment with bits of code and see what happens when they use the same instructions in a different order.

At this age, pupils work a lot on ordering objects. A computer program is simply a set of instructions put into order and if the order changes the program does something different. Young children thrive on concrete experiences and the instructions become tangible when the children Play Turtle and watch the Roamer move. Thought, program and action become linked.

Doing this work in a large space helps develop a student's spatial awareness.

Prior Knowledge


Students should:


1. Have completed the first two activities in this package.
2. Know how to use the Clear Memory and GO commands.
3. Know how to write Roamer instructions on paper.

Classroom Tips

If you bought the Roamer Instruction Cards, the back of the card is white. This gives you an excellent surface for creating custom cards. Use a Dry Wipe Pen to draw pictures or symbols. Wipe clean to reuse. Get the students to write their two instructions on one card.

Training Links

 [Learning Intentions](#)

 [Space to Run Roamer](#)

 [Recording Programs](#)



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Teacher 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

[1520-402 Infant K1 Roamer](#)

Roamer Accessories

[1522-123 Roamer Instruction Cards](#)

[1522-123 Dry Wipe Pens](#)

[Roamer Starter Mat](#)

Student Resources

[Handwriting Infant K1 Instructions.](#)

Other Resources

Damp cloths for cleaning the backs of the cards.

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Student Resources

Infant K1 Roamer Coding Pack