

This resource was developed with funding from the Government of Canada CanCode program. We are required to collect participant data; it helps the government administrators understand the breadth of access and the impact of these kinds of programs.

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Active Algorithms

Learning Kit (Gr. 1-3)



All classes are running differently right now. Our team is available to collaborate with you to adapt this for your classroom needs. Please do not hesitate to email us at techup@scienceworld.ca for any support you need with this kit.

Summary:

This kit contains resources for asynchronous and synchronous lessons. There is a teacher guide to walk you through the activities as well as parent guide that breaks down the key points of the activities, what to do, and questions to ask for your adult helpers if they are doing the activity asynchronously. All activities can be done offline.

In these activities, students will be introduced to thinking algorithmically which is an essential skill for learning how to code. They will explore the algorithms of dance, create algorithms to successfully navigate an obstacle course, and examine different algorithms while moving through and acting out a choose your own adventure story.

Kit Overview:

- Curriculum links
- Activity timeline suggestions
- Teacher's guide to activities
- Parent's guide to activities
- Choose your own adventure story blank map template

Required Technology and Materials:

For teachers:

- Computer with internet connection and ability to send students a document
- For remote synchronous lessons, ability to video chat with students

For students:

- Computer or tablet with internet connection to receive challenge documents
- Ability to print helpful but not necessary
- Paper, pencil
- Colouring supplies and scissors helpful but not necessary
- Sidewalk chalk or tape
- Space to move around

Timeline:

Activity 1: Dance as a Code	30 minutes
Activity 2: Obstacle Course Algorithms	30 minutes
Activity 3: Code Your Own Adventure	30 minutes

Curriculum links:

[ADST](#)

Ideating

- Generate potential ideas and add to others' ideas
- Choose an idea to pursue

Making

- Use trial and error to make changes, solve problems, or incorporate new ideas from self or others

Sharing

- Demonstrate their product, tell the story of designing and making their product

Applied Skills

- Develop their skills and add new ones through play and collaborative work

[Physical and Health Education](#)

Physical Literacy

- Develop and demonstrate safety, fair play, and leadership in physical activities
- Develop and demonstrate a variety of fundamental movement skills in a variety of physical activities and environments

Health and Active Living

- Participate in daily physical activity

Social and Community Health

- Describe ways to prevent and respond to a variety of unsafe and/or uncomfortable situations
- Develop and demonstrate respectful behaviour when participating in activities with others

Mental Well-being

- Identify and describe feelings and worries
- Identify personal skills, interests, and preferences

Curricular Content

- How to participate in different types of physical activities
- Managing and expressing emotions

Core Competencies

- [Communication](#)
 - Communicating their ideas and choices and sharing their algorithms
- [Thinking](#)
 - Creating new algorithms
 - Finding bugs in their algorithms and fixing them
 - Creating the choose your own adventure story
- [Personal and Social](#)
 - Persevering through difficult tasks and working towards finding a solution
 - Developing and utilizing strategies to manage frustrating situations when coding
 - Seeking feedback