Outdoor Chalk Code Game

What if play-based learning was universally respected as a way of preparing youth for their professional futures? Learn basic coding skills like problem solving, logic and critical thinking without using a computer.

Setup

Check with an adult to make sure your outdoor play area is safe.Create a fun interactive hands-on chalk game to explore the beginning concepts of coding.

Content

Computer programming is giving directions to a computer. A chalk game could give directions to a person. Create your own coding game using symbols, colors or verbal commands to direct another person on what to do.

Call to make

What if we spent more time during the school day playing to learn? By creating your own coding game, you will learn more about programming, problem solving and critical thinking! Plus, you will have fun!

When I am playing, do I learn? What sorts of things can I learn through play?
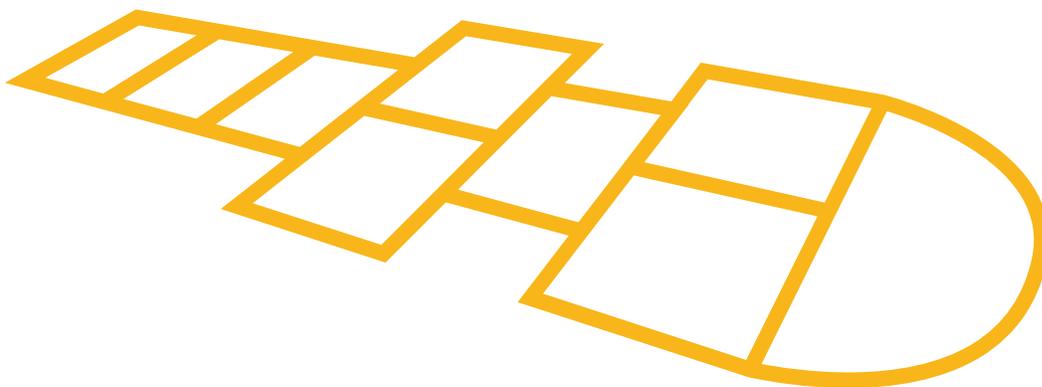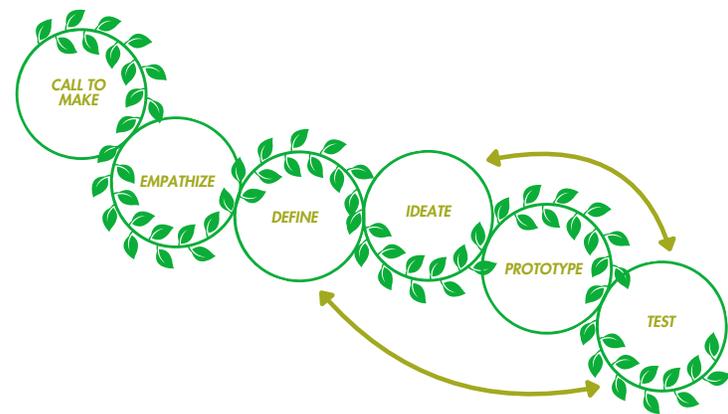
Skills

- Sequencing
- Problem solving
- Creating through collaboration

Materials

- Chalk
- Tape
- Markers
- Cardboard
- Outdoor area

CALL TO MAKE

EMPATHIZE

DEFINE

IDEATE

PROTOTYPE

TEST

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Empathize

- How does schooling look for children around the world?
- Does it include play?
- Does it include coding?
- Are there benefits to learning code?
- What do you think kids and adults need to know about play and coding?
- How do your friends feel about coding?
- Are they afraid of making mistakes or failing?
- How could you get them to persist in coding?
- How is coding done without technology or a computer?
- What are the concepts that you'll need to learn about?
- How would a programmer design this game?
- How is coding helping teach problem-solving skills?

Define

- What do you need to take into consideration when designing an outdoor game for friends?
- Where will you make this game? How much space do you need?
- Will your game be a series of events or a grid of 9, 16, ... squares?
- Will the player be able to go in different directions or will there be a unique path?
- Will you draw a game, use recycled cardboard and paper, use painter's tape on the garage floor?

Ideate

- What types of symbols, colors or verbal cues will you use to code your person in your game?
- How many events or moves will you include in your game?
- How many players will be needed for this game?
- What will be their role? Programmer? Computer? Robot?
- What types of materials are needed for your game? A dice, coding commands or cards etc.?

Prototype

- What will be the destination or the goal of your game?
  - For example: Get the red rock? Go to the "exit" square without stepping on yellow squares.
- Explore and test your game. What else can you add?
- Are you able to move from one point to the other?
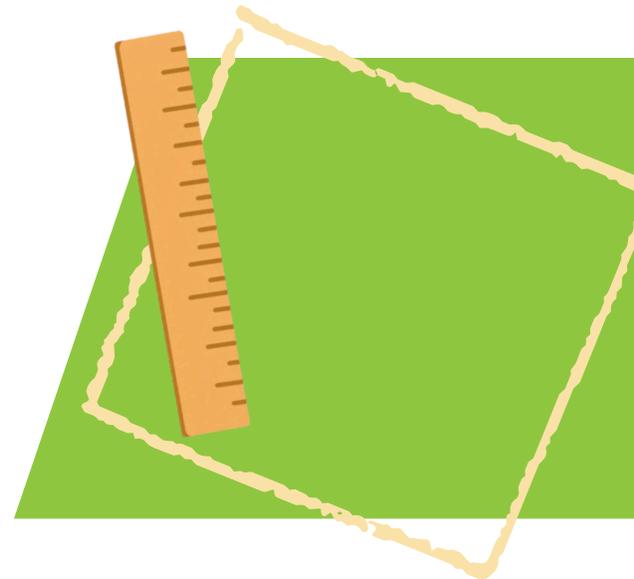- How can you use other game designs to inspire your new game?

Test

- Did you reach the destination or goal of the game?
- Ask someone to try out your game and if they have any suggestions?
- How can it be more fun?
- How can you learn more while playing?

Teachable Moments

Math

What is the area of your space in decimeters? What's the biggest and smallest size your game shape can be to fit in this space? How could you use x and y coordinates in your game? How would you read and pronounce x and y coordinates? How can patterning be used in your game to create more intricate loops? What geometric shapes did you use in your design?

Science

How is coding used in space sciences? How do astronauts use play-based learning to prepare for a trip to space? What materials did you use to create your game? Did you create your own chalk? If so what factors were important in creating the best homemade chalk? What improvements could be made to your game? What suggestions do others have on how to improve your created game?

Visual Arts

How do color and symbols come into play in your game? Do they represent something?

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Language Arts

Create instructions to go along with your game. Could your game be played by anyone if you weren't involved? Develop a persuasive essay (or a Rick Mercer type rant) on your position about play based learning.

Music

How could you add dance movements and beats in your coding game?

Physical Education

How do players have to work togethers to play your game? How can you create your game to increase your physical activity?
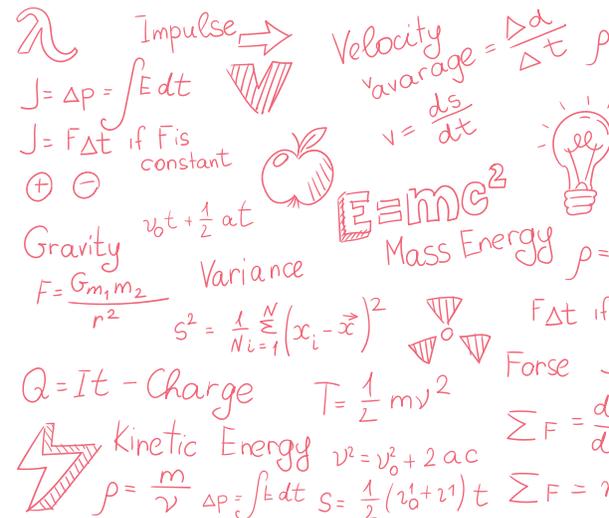
Social Studies

How does learning look in Canada compared to other places in the world? How does culture influence play? (Locally, nationally, internationally) Play is an important aspect of child development. In your opinion, describe what human rights issues are important related to rights of children

Health

How does outdoor play affect our day? How does it make you feel when you have the opportunity to play outside? What types of movements could we use in our game to encourage physical activity?

Take it Further

Does your school day have enough play for learning built in? Write a letter to your school principal or teacher explaining the importance of play in your learning. Suggest some learning topics that could be learned through play.

Glossary

Computer programming

Computer programming is writing a group of instructions for a computer to process/execute. These instructions are typically used to solve a problem, or, to make larger problems shorter and easier to solve.

Coordinates

Coordinates are numbers which determine the position of a point or a shape in a particular space (a map or a graph).
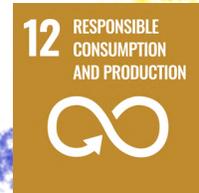
Resources

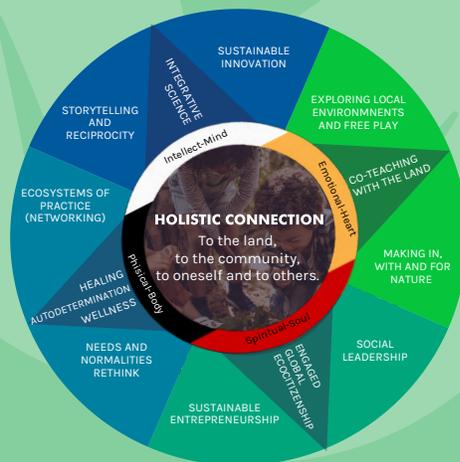### Sidewalk Chalk Code Game Video
Tutorial video

https://youtube.com/watch?v=PQArVDNtm0Y

4 QUALITY EDUCATION

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

15 LIFE ON LAND

Learning continuum:
Sustainable Innovation Through Holistic Connection

Based on **three emerging pedagogies*** and in recognition of indigenous knowledge, the natural maker educational continuum aims to support the learner through a holistic journey of connection to the earth, the community, oneself and others, in order to evolve globally towards a more open, humble, democratic and decolonized way of thinking, learning and living.

* wild pedagogies, conscious pedagogies and decolonization of education

#EarthDayInNature
#ActForEarth #ClimateAction

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