Robogals Science Challenge

Minor Challenge Set #1
STEM Field: Software Engineering (Programming)
Level: Junior
Challenge Name: Beaver Achiever
Project Cost: 0 USD
Materials Required:
- Laptop with internet access

Duration:
- The challenge takes approximately 1-2 hours to finish, however, the time guideline is an estimation only, and students and mentors can complete the tasks around their schedules.

Introduction:

Beaver Achiever is a block-based coding game. Instead of writing out codes, you will drag and connect blocks to help the beaver achieve its goals. This game has 12 levels, and will introduce you to some basic programming concepts, such as if loop, repeat loop, and more.

Instructions:

On your computer, click on the link - https://hourofcode.com/codemonkeybeaver to navigate to the coding game.

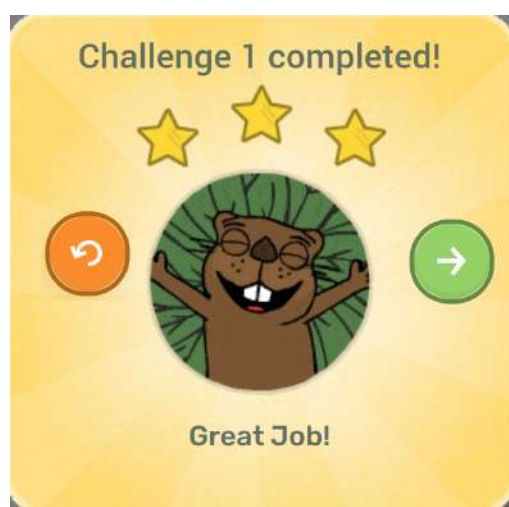**Note:** No registration is required.

Click on the **START PLAYING** to skip the login process and start playing the game.

There are 12 challenges in this game. Each challenge involves coding with the given blocks. Drag and drop the block into the white canvas similar to the figure below.

Then, click on the ▶ button to run the program. When you have successfully completed each challenge, a screen similar to the figure below will appear. Your goal is to achieve three stars for each challenge.

Click on the → button to progress to the next challenge.

When you have completed all 12 challenges, click on the 🗺 button.

You will see a screen of all the challenges you completed. Take a screenshot (similar to the figure below) and submit alongside the reflection questions later on.

You can also get a completion certificate by clicking on the button.

Extension

Try more hands-on activities with block-based coding!

This Blockly puzzle is a fun activity that involves connecting blocks with information on different types of animals:
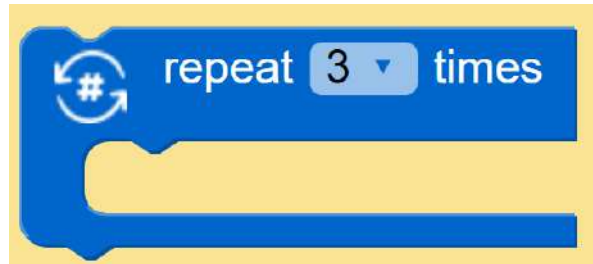
https://blockly.games/puzzle?lang=en

For a greater challenge, try this Blockly puzzle where you code in blocks to help the person reaches the destination:

https://blockly.games/maze?lang=en

Reflection Questions:

- Are there any improvements you would make to this challenge?
- Was this challenge easier / harder than you expected?

- In level 6, you are introduced to the repeat block. In your own words, when will we need to use the repeat block?

- What problem did you face while completing this game? How did you solve it?

Submission Guidelines:

- Submit a photo of your completed game, or attach the completion certificate. Include a short summary that addresses the reflection questions.

> Note: Remember, if you want to upload pictures of your Minor Challenge that also include you, please check if it is OK with your parent or guardian first.

- The submission form is on the Minor Challenges page: https://sciencechallenge.org.au/index.php/minor-challenges/ Fill out the details and make sure you upload your submission.

Learn More! Resources:

- Try more activities with block-based coding - https://blockly.games/?lang=en

Bibliography:

- *Beaver-achiever* (no date) *CodeMonkey*. Available at: https://hourofcode.com/codemonkeybeaver (Accessed: March 13, 2023).