



Our Heroines

Hour of Code 2020

Scratch Workshop





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Our Heroines – Creating my first game using Scratch

Creation workshop based on the theme of the book "Nos héroïnes".

Text by Anaïs Barbeau-Lavalette and illustrations by Mathilde Cinq-Mars.

Theme

Choose one of the following Canadian heroines:

- **Jeanne Mance (1606 - 1673)**: Co-founder of the city of Montreal and founder of the Hôtel Dieu, the first hospital in New France. Everyone was treated there. However, there was no electricity. Jeanne made lamps by catching fireflies and putting them in glass jars to light up the rooms at night.
- **Maud Watt (1894 - 1987)**: Nicknamed the "Hudson Bay Angel", she and her children traveled to Quebec from the Hudson Bay by dog sled to demand and obtain a protected beaver reserve.
- **Hide Hyodo Shimizu (1908-1999)**: The daughter of Japanese immigrants, she was the first Japanese Canadian to teach in the British Columbia school system. She was later instrumental in organizing education for Japanese Canadian children in internment camps in British Columbia during the Second World War. She was also an activist fighting for Japanese Canadians to have voting rights in the 1930s.
- **Hilda Strike (1910 - 1989)**: She participated in the 1932 Olympic Games in Los Angeles and was a medalist in the 100m and 4x100m: 100m in 12.2 seconds!
- **Viola Desmond (1914-1965)**: A business woman and activist, she built a career as a beautician and was a mentor to young Black women in Nova Scotia. In 1946 she challenged racial discrimination by refusing to leave the segregated Whites-only section of the Roseland Theatre in New Glasgow, Nova Scotia. In 2018, she became the first Canadian woman to be featured by herself on the face of a banknote - the \$10 bill.
- **Lilly Singh (1988-)**: Born and raised in Scarborough, Toronto, Singh began making YouTube videos in 2010. By 2017, she was ranked 10th on the *Forbes* list of the world's highest paid YouTube stars. Since September 2019, Singh acts as executive producer and host of the NBC late-night talk show, *A Little Late with Lilly Singh*. She is the first person of Indian descent to host an American major broadcast network late-night talk show.



Learning objectives

- Familiarity with Scratch
- Familiarity with basic programming concepts of sequencing and loops

Target audience

8 - 12 years old

Recommended duration

60 minutes

UN SDG #5: “Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. There has been progress over the last decades: More girls are going to school, fewer girls are forced into early marriage, more women are serving in parliament and positions of leadership, and laws are being reformed to advance gender equality. “

Materials

- Computer with a reliable Internet connection
- Optional: Scratch account
- [Starter project](#)

Activity – Our Heroines (60 min.)

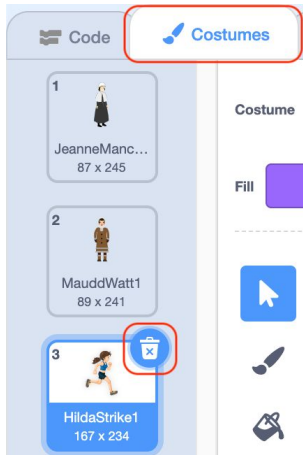
Introduction to the Scratch interface (3 min.)

- Change the language (if needed).
- Look at the 3 “S” of Scratch:
 - **Stage:** where the action happens.
 - **Sprite:** the characters that are part of the program.
 - **Script:** where the code is written.
- Practice adding, deleting (right-click) and connecting blocks together.



Choose your heroine and create the scene (10 min.)

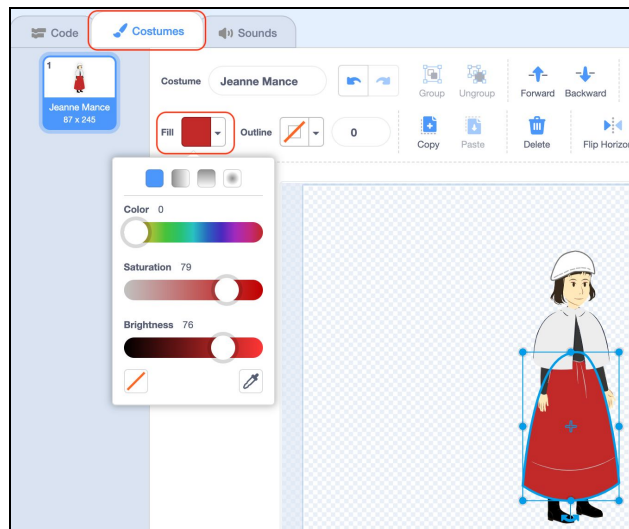
Open the starter project, then choose your heroine.



1. Click on the **Costumes tab**.
2. Click on the costume of the heroine you prefer.
3. Optional: delete the five other costumes.

Customize the sprite

- Modify the size.
- Option: Select the **Costumes** tab and modify the color of any part of the sprite.

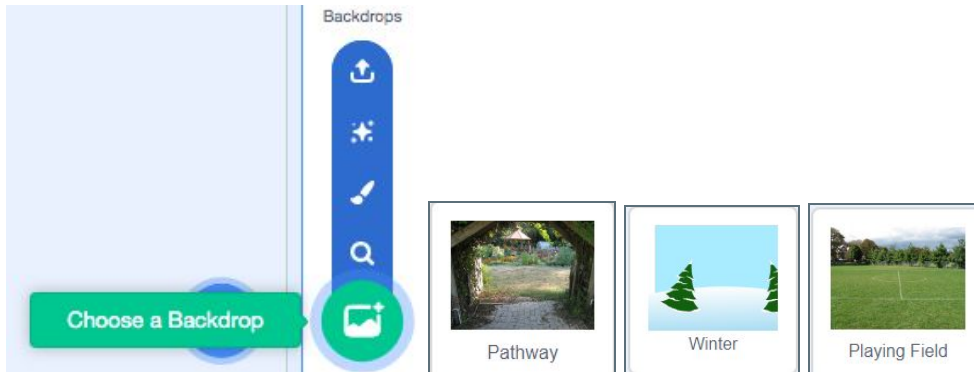


Choose the backdrop from the Scratch library related to the theme:

- Jeanne Mance: Pathway
- Maud Watt: Winter



- Hilda Strike: Playing Field



The Goal (5 min.)

Select the sprite the hero needs to catch (your goal).

Examples:

- Jeanne Mance : "Dragonfly"



- Maud : "Dog1"



- Hilda : "Star"



Customize the sprite just like you did for the hero:

- Rename it "Goal".
- Modify its size.
- Option: Select the **Costumes** tab and modify the color of any part of the sprite.



Make the characters move

The Heroine's movements (15 min.)

Control your heroine with the arrows on your keyboard.

Choose a starting point in the stage:

1. Move your heroine sprite to its starting point in the scene and add the **when green flag clicked** event in your script.
2. Add the **go to x...y...block** underneath; it will already contain the right coordinates.

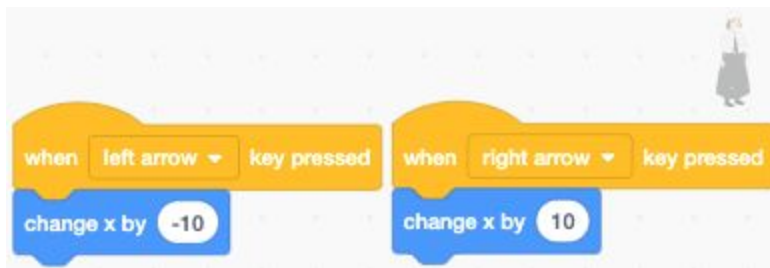
Code on



the movements that will be triggered by using the arrow keys your keyboard :

- To move horizontally (left-right):

1. Add two blocks **when "space key" pressed** and in the menu, select **right arrow** and **left arrow**.
2. Below each of these blocks, add a **change x by** block. Under the **left arrow** change the value of x to **-10** and under the **right arrow** change the value of x to **10**.



- To move vertically (top-bottom) :

1. Add two blocks **when "space key" pressed** and in the menu, select **up arrow** and **down arrow**.



2. Below each of these blocks, add a **change y by** block. Under the **down arrow** change the value of y to **-10** and under the **up arrow** change the value of y to **10**.



- OPTIONAL: Modify the sprite's orientation so that it is "looking" in the direction it is moving.
 1. Under the **Green flag**, add a **set rotation style left-right** block.
 2. Add **point in direction** block under **when right arrow key pressed** and change the value to 90.
 3. Add **point in direction** block under **when left arrow key pressed** and change the value to -90.



The Goal's movements (10 min.)

Choose a starting point in the stage.

Move the "Goal" sprite in the stage and add the **when green flag clicked** event in its script.



The "Goal" will glide in a continuous manner and the game can be made easier or harder by modifying the number of seconds it takes to glide.

Use the **pick random** block for the x and the y coordinates in order to make the "Goal" sprite keep on moving in random fashion.

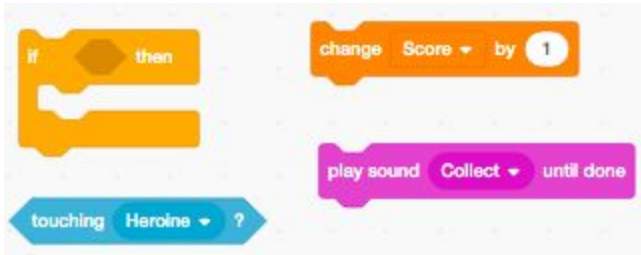


If the sprite has many costumes (see **Costumes** tab), add the block **next costume** to create an animation. If the sprite only has one costume, you can duplicate, by doing a right-click on the costume and change its color to create an interesting visual effect.



The interaction between the two sprites

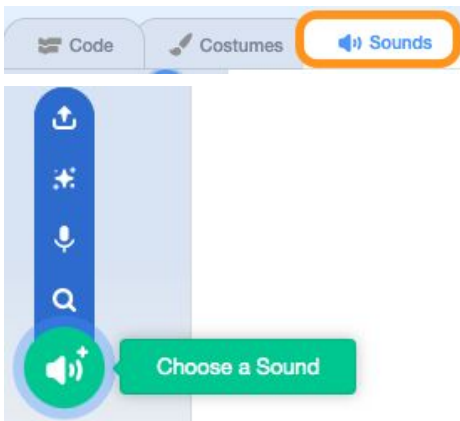
Now that all the elements are set and moving, add interactions. You can do this by adding conditions with blocks such as **if...touching...then**. In this game, a sound will be played. Then, the hero will go back to its starting point. You will need these blocks.



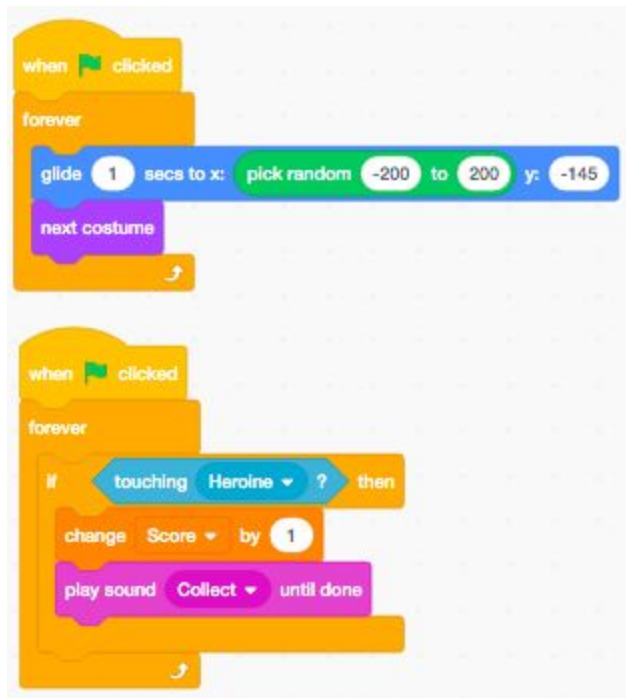
The "Heroine" vs. "Goal" (10 min.)

What happens to "Goal" when the "Heroine" touches it? It will make a sound.

1. Select the tab **Sounds** and add the sound named "Collect" from the Scratch library:



2. The last step is to add the blocks to the "Goal" 's movement sequence. Add a **when green flag clicked** and place the condition in the loop so that it is always being checked.



What happens when the “Heroine” touches “Goal” ?

The “Heroine” goes back to its starting point!

In the “Heroine”'s script section, add the following blocks :

Note that the **wait 1 sec** is used to make sure the computer “understands” that the two sprites touched each other.



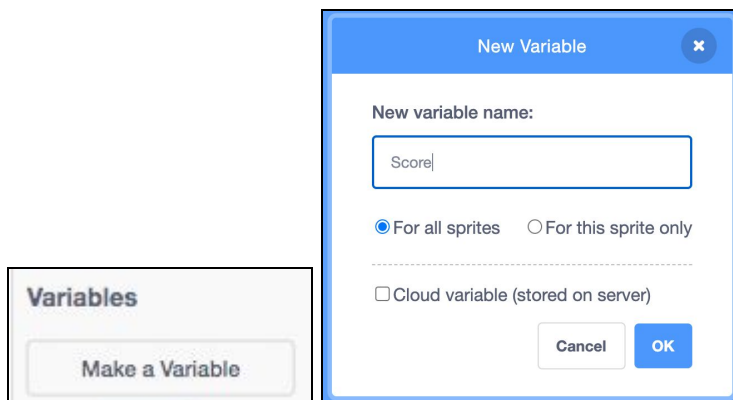


If time allows, add interesting game elements (score, etc.)

Keep the score

To add a box to keep your score, create a variable called “score”. Points will be added when the “Heroine” touches the “Goal”.

Go to the **Variables** category, select **Make a variable**, name it “score” and click on OK.



To make sure the “Heroine” starts with zero point, add the **set “Score” to 0** block in the starting point code sequence.





Every time the "Goal" sprite touches the "Heroine", add one point:

```
when clicked
forever
  glide 1 secs to x: pick random -200 to 200 y: pick random -200 to 200
  next costume
  if touching Heroine ? then
    change Score by 1
    play sound Collect until done
    wait 0.5 seconds
```

Add a timer

Give the "Heroine" a limited amount of time to accumulate points. Create a second variable and name it "Time".

Every second subtracts 1 from the *time* variable.

```
when clicked
set Time to 20
repeat 20
  wait 1 seconds
  change Time by -1
stop all
```



Wrap-up (2 min.)

Don't forget to save your project!

No Scratch account?

If a participant doesn't have a Scratch account, they can save their project on the computer or a USB stick. When the account will be created, it will be simple to reopen the project and make it public or private depending on their settings.

