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CodeWeek

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Cold Feet

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Cold Feet   Cold Feet Guides

1. Outline

How is it that penguin's feet don't freeze with temperatures getting as low as -70 degrees? We know their bodies stay warm with all that blubber that lies beneath their skill but how do they keep their webbed feet free of frostbite?

Emperor penguins hunch down so their bellies cover their legs and can even rock back and forth to get their feet lifted on and off to reduce the amount of time the feet spend on the freezing ground. But that's not the only way; they have remarkable biological engineering features that help them adapt to the environment. They can control their blood flow by changing the diameter of their blood vessels so, when it is cold, the flow of blood is reduced and they hold onto the heat. You can find out more about this here: Click

2. Game Overview

You'll find yourself on the Antarctic ice, skating to the direction of your mouse cursor (pointer). You'll notice two seals that you bounce off and Fifi the llama who is skating uncontrollably across the ice. There's a frozen lake but we'll get to that later.

Try to create your own artwork as you avoid these obstacles. When you've finished your art press the space key.
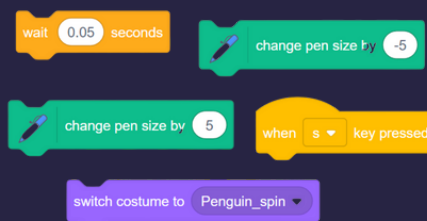
3. Tinker Time

Can you find where to change the speed of the penguin? Can you find out how to make Fifi go a little slower? Can you find what the code does when you collide into a seal or Fifi the llama?

Activities

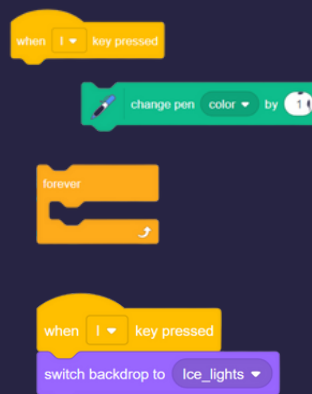### 1. Paint a dot with a spin! (sequence)

First, go to your Penguin sprite and then combine these blocks in the right sequence so that when we press the 's' key. The penguin should change to the spin costume and then draw a small circle:

wait `0.05` seconds

change pen size by `-5`

change pen size by `5`

when `s` key pressed

switch costume to `Penguin_spin`

2. Northern lights*! (repetition)

Go to the Penguin sprite and use a forever loop to change the colour of the skate marks left on the ice so they shine like a rainbow in the Northern lights. Can you combine these blocks to make this happen?

Let's also change the background so it shines in the Northern lights. You can do this by adding this code to the stage.

when `l` key pressed

change pen `color` by `10`

forever

when `l` key pressed

switch backdrop to `ice_lights`

*Of course penguins live in the Antarctic and not the north. However, they still get the effect of the northern lights but it is known as the 'aurora australis'!

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3. Fall into the lake (selection and repetition)

We want the penguin to sink into the lake when it touches it. We can do that with an if statement. We want it to look like the penguin is sinking into the water so we'll make the sprite reduce in size and then disappear. The code needs to go in the Penguin sprite. Here's some of the code but you'll need fill in the gaps with the disconnected blocks:

```
when [flag] clicked
forever
  if < touching [Lake v] ? > then
    stop [other scripts in sprite v]
    glide (1) secs to [Lake v]
    repeat (10)

change size by (-10)

wait (0.05) seconds

hide
```

4. Get arty with a friend.

With your friend next to you both run your games at the same time and agree on what you are going to draw. Don't forget to press space when you have finished drawing. You can then compare your art work. Here are some things you might want to try:

- Draw a snowman
- Draw a tree
- Draw a decoration!