

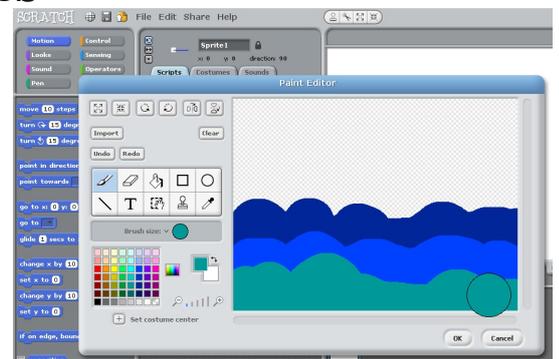


Programming a coastal erosion animation

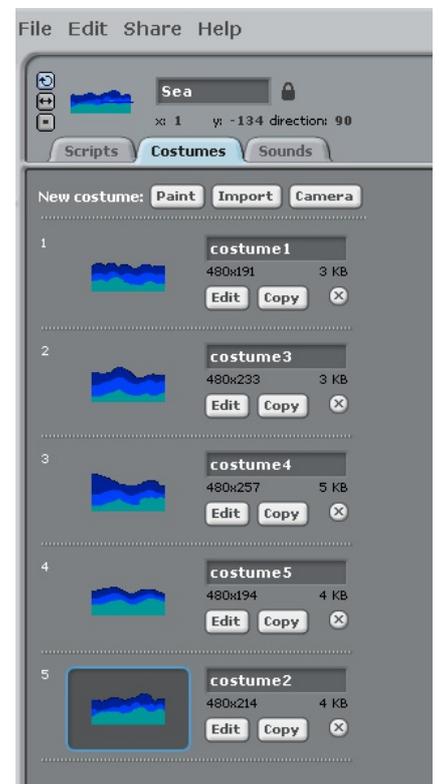
This is an excellent activity for children to do while studying coastal erosion; not only will it improve their computer science skills but it will also develop / consolidate their understanding of erosion. The activity could be used as an introduction to 'loops' in computer science or as part of a project to consolidate their understanding. Additionally the children will learn how to manipulate stage backgrounds and sprite costumes to create animations in Scratch. Lastly it will help the children to plan sequences of events using suitable time delays.

Create a sea sprite with different costumes

Step 1. First design a sea sprite like the one below. I've used 3 shades of blue and a large brush but you can do it any way that you want.



Step 2. Then copy and edit the costume 3 to 5 times to create an animation of the sea. Each picture should be just slightly different enough to create the illusion of movement. Try clicking on each costume in turn to get an idea of how good your animation is.



Programming the sprite

Step 3. Now you need to make your sea move. To animate our sea all we need to do is LOOP FOREVER through our costumes with a small delay of $\frac{1}{4}$ of a second so that it doesn't animate too fast. You can choose a different

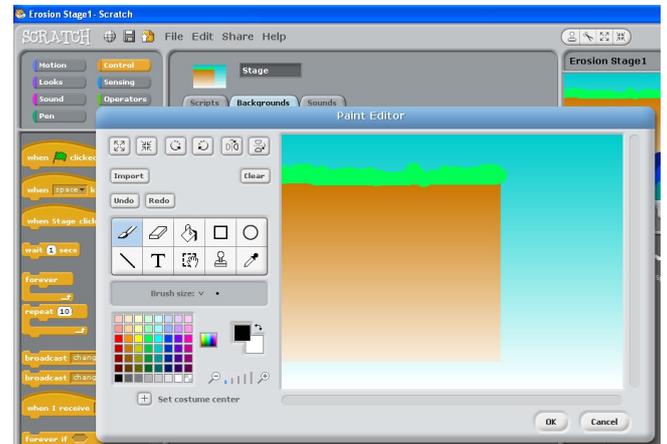




Programming a coastal erosion animation

Designing the cliff backgrounds

Step 4. You could create a cliff sprite but this example uses the stage's background to make a cliff. Use the square tool with a gradient fill from the bucket to create the cliff. Then use a medium green paint brush for the grass. Lastly use the bucket tool with a blue gradient to pour colour over the background. Of course you may decide to design the cliff in a different way.



Step 5. Next you will need to copy and edit the backgrounds a number of times to create the different coastal features (i.e., caves, arches and stacks).

Unlike the previous costumes for the sea sprite these different backgrounds need to have unique and relevant names. I suggest that you use headland, weakspots, erosion, cave, arch, stack and collapsed stack.



Programming the stage

Step 6. At this point of the process it will be enough to make the animation start with the



headland background and slowly animate through each stage by setting a constant time interval.