SCRATCH CHALLENGES

Activity description: learn Scratch through a series of challenges

note 1: pair programming (working in pairs on one computer) is great for this activity although working individually is also fine.

note 2: this activity expects that the students have already been introduced to Scratch.

note 3: for a competitive activity one could offer a reward for students who successfully work through and demonstrate their solution to each challenge.

Introduction
Scratch is a great tool but you might not know about the variety of different things that you can do with it. This activity is designed to offer you 5 short challenges to learn about a few more things that Scratch can be used for.

Challenge 1 – animation
By using two or more similar costumes and switching between them you can animate your sprite.

1. import two similar costumes for your sprite. You'll notice that many animals have two similar looks, e.g. the standard cat, the parrot, the shark, the octopus and many, many more! Take your pick.
2. now write a script that moves your sprite, changes the costume, waits, and then repeats all of this.
3. Does it look like your sprite is animated? If you want some hints ask a leader for the "Moving Animation" sheet.
4. Share your animation with a friend or one of the activity leaders!

Challenge 2 – mouse input
By using a few simple commands you can control your sprite with the mouse.

1. pick any sprite that you like, and then under the motion blocks find the "point towards …" block and drag it to you scripts pane
2. put this into a forever block and see what it does
3. it might be even better if you have it move a few steps after the "point towards" block
4. Does the sprite move towards your mouse? If you want some hints ask a leader for the "Follow the Mouse" sheet.
5. Share your accomplishment with a friend or one of the activity leaders!

Challenge 3 - clicking on things

Have you noticed what happens when you click on a button? For instance, if you click on the OK button in most programs it will change colour, and then something happens. You can do this very easily in Scratch!

1. Pick a sprite that a person might want to click on. For instance, the drum would make a good button. You could even name it "drum button" if you want.
2. Look in the Control blocks for a block called "When xxx clicked" where xxx is the name of your sprite. Drag it into the script pane.
3. When it is clicked get it to change color by using the "change color effect" block in the Looks blocks. How much will you change it by? Hint: a larger value will be more noticeable.
4. What should it do? How about making it play a noise? There is even a drum noise under the Sound blocks!
5. When the button is done being clicked and the action has happened it should go back to its original color.
6. Try it out – does it work as you expected? If you need hints ask a leader for the "Surprise Button" sheet.
7. Share your button with a friend or a leader!

Challenge 4 – special effects

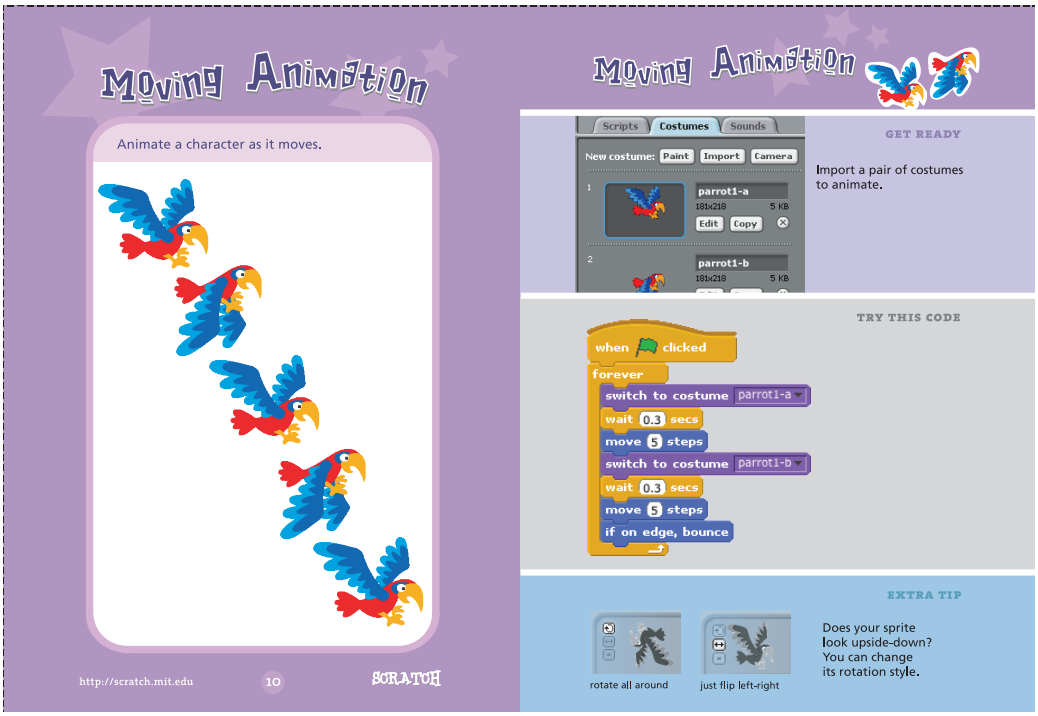
You can create some really neat effects with pictures using Scratch.

1. Choose a sprite, any sprite.
2. Grab a "forever" block from the Control blocks and put it in the scripts pane.
3. Now look under the Looks block for the "set … effect" block. It might say "set color effect", but you'll notice there is an arrow next to the word color. Put that block in your scripts pane.
4. You'll see that there is a number that it asks for – instead of a number, go to the Sensing blocks and find the "mouse x" block and drag it where the number is.
5. Now change the effect from "color" to "whirl" (or whatever you want).
6. Try it out -- what does it do to the picture? If you need a hint ask a leader for the "Interactive Whirl" sheet.
7. Show off your interactive artwork with a friend or a leader!

Challenge 5 – on your own!

We've shown you a few new things that you can do with Scratch. Now it is your turn to show us something neat! It doesn't have to be complicated -- some of the best scripts are only a few blocks.

1. Come up with your own neat thing that you've done in Scratch. Don't make it too complicated; simple is good. Need some more ideas? Open a browser (Firefox, Chrome, or Internet Explorer, for instance) and go to this url: http://info.scratch.mit.edu/Support/Scratch_Cards
2. Show it off to everyone! And most importantly, HAVE FUN.


Moving Animation
Animate a character as it moves.
http://scratch.mit.edu
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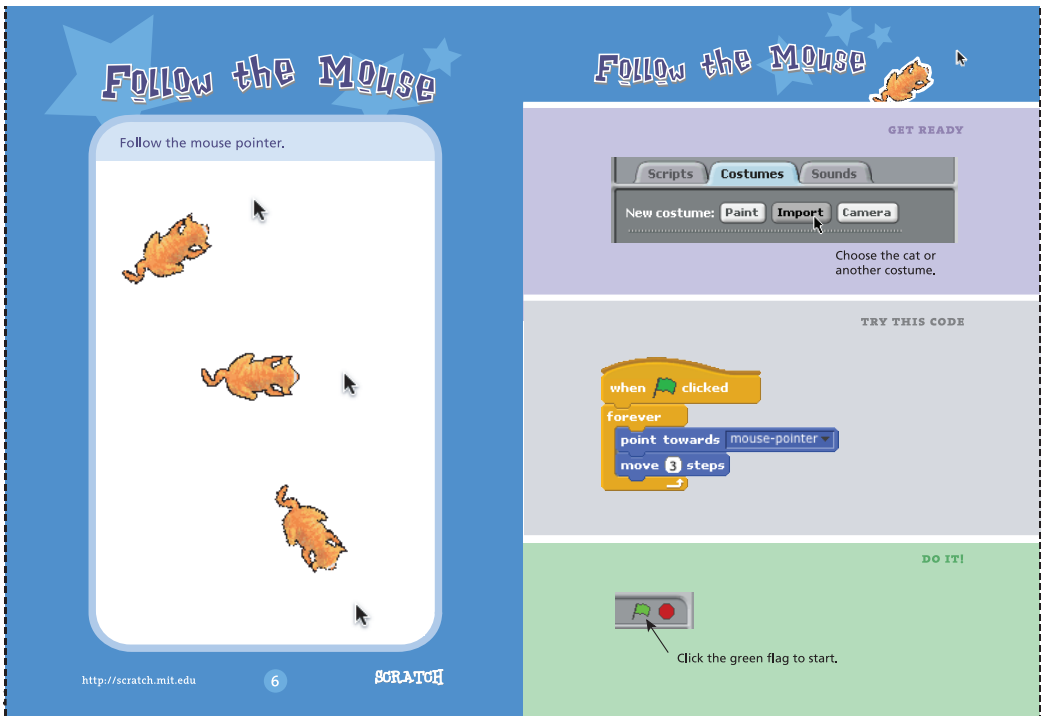
SCRATCH
Moving Animation
Scripts
Costumes
Sounds
New costume:
Paint
Import
Camera
parrot1-a
181x218
5 KB
Edit
Copy
parrot1-b
GET READY
Import a pair of costumes to animate.
TRY THIS CODE
when clicked
forever
switch to costume parrot1-a
wait 0.3 secs
move 5 steps
switch to costume parrot1-b
wait 0.3 secs
move 5 steps
if on edge, bounce
EXTRA TIP
rotate all around
just flip left-right
Does your sprite look upside-down? You can change its rotation style.


Follow the Mouse
Follow the mouse pointer.
http://scratch.mit.edu
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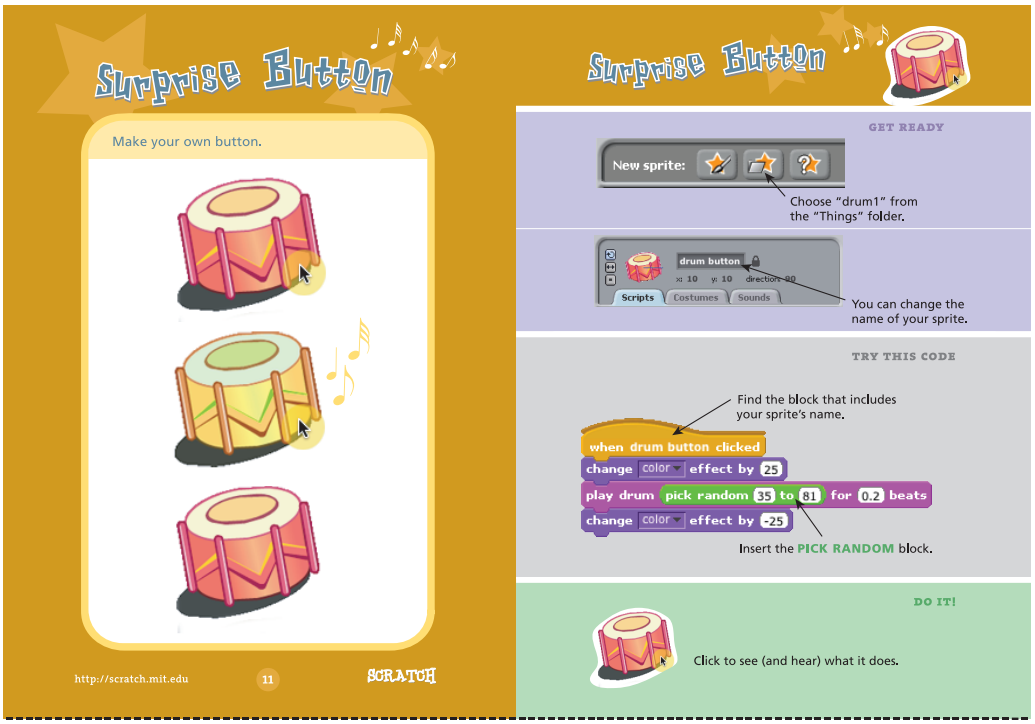
SCRATCH
Follow the Mouse
GET READY
Scripts
Costumes
Sounds
New costume:
Paint
Import
Camera
Choose the cat or another costume.
TRY THIS CODE
when clicked
forever
point towards mouse-pointer
move 3 steps
DO IT!
Click the green flag to start.


Surprise Button
Make your own button.
http://scratch.mit.edu
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SCRATCH
Surprise Button
GET READY
New sprite:
Choose "drum1" from the "Things" folder.
drum button
Scripts
Costumes
Sounds
You can change the name of your sprite.
TRY THIS CODE
Find the block that includes your sprite's name.
when drum button clicked
change color effect by 25
play drum pick random 35 to 81 for 0.2 beats
change color effect by -25
Insert the PICK RANDOM block.
DO IT!
Click to see (and hear) what it does.


Interactive Whirl
Whirl a photo by moving the mouse.
http://scratch.mit.edu
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SCRATCH
Interactive Whirl
GET READY
New sprite:
Choose the squirrel or other photo to whirl.
TRY THIS CODE
when clicked
forever
set whirl effect to mouse x
Insert MOUSE X block here.
Choose whirl from the menu.
DO IT!
Click the green flag to start.
x: 178 y: -149
EXTRA TIP
Notice how the numbers change as you move the mouse.