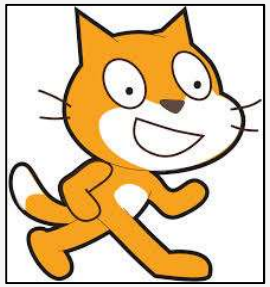
Scratch

in the classroom



http://scratch.mit.edu

What is Scratch?

- Scratch is an intuitive programming language that makes it easy to create interactive stories, animations, games, music, and art whilst sharing creations on the web.
- Based on block programming.
- Block programming uses graphical blocks to represent programming commands eliminating typing and syntax errors. Block programming is relatively easy, even for young children.


SCRATCH

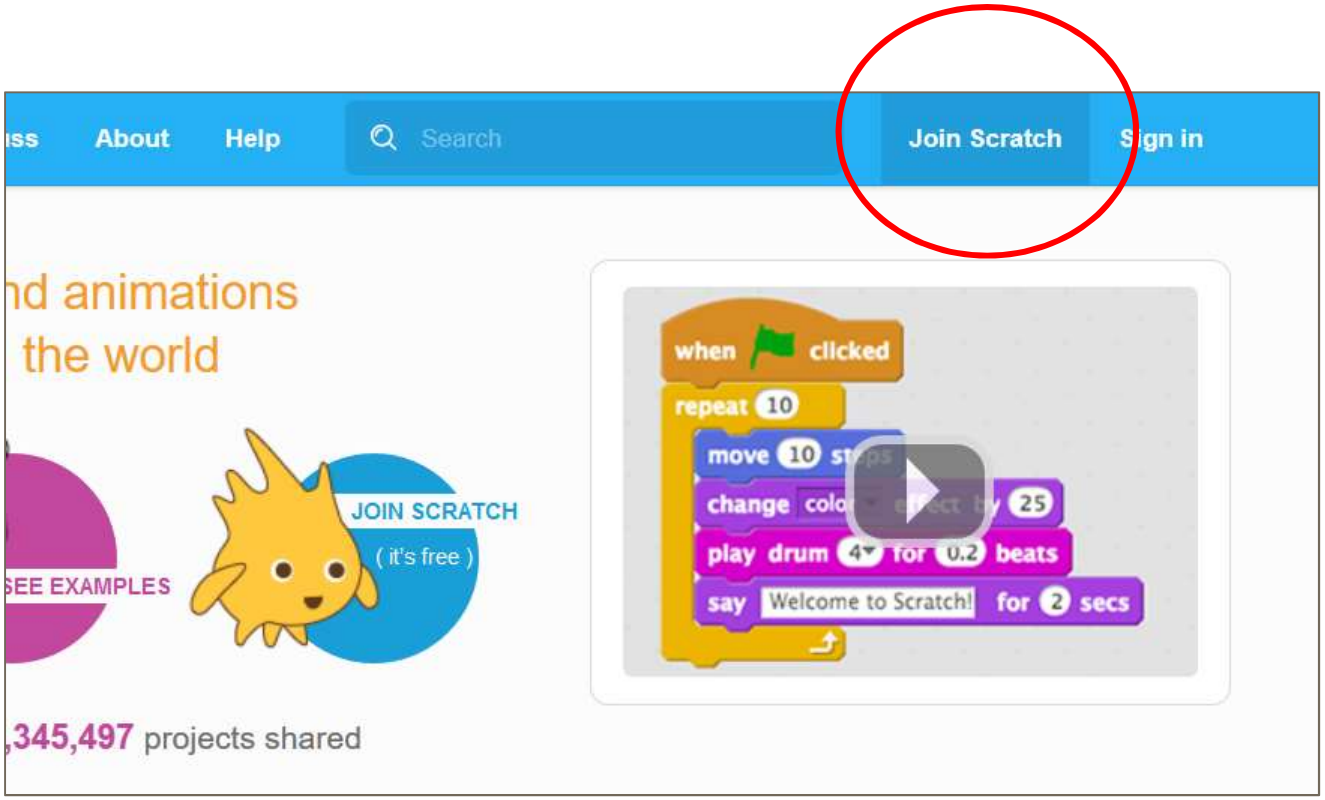
Scratch Versions

- Scratch 1.4
- Scratch 2.0
- Scratch Junior

Scratch Account

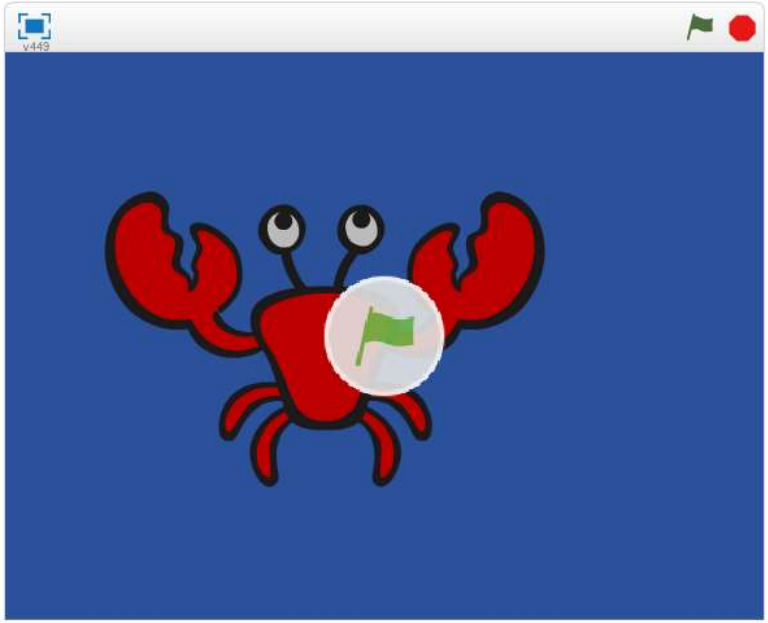
- Browse to http://scratch.mit.edu and click on join. You should create a free Scratch online account.
- By creating a Scratch account you will be able to save, share your own creations, play and edit projects created by other users.
- Note that the username will by visible to other members. Your work can be shared and you can collaborate in projects.

Scratch Account



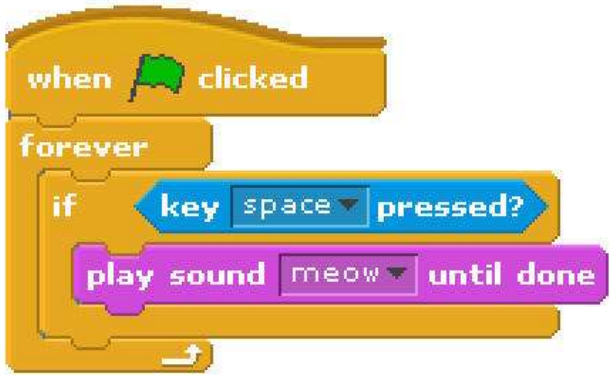
Scratch Example Project

Let's take a look at an available project ***Animate the Crab***



Scratching d Code

- Completing code
- Mixing code
- Correcting code



Completing Code

- Completing code enables students to reflect on and apply Scratch programming knowledge and skills to complete the code in a working project.

Mixing Code

- Mixing Code enables the students to reflect on, and apply Scratch programming knowledge and skills to re-arrange mixed code.

Correcting Code

- Enable students to develop an awareness of programming errors commonly made in Scratch by novice programmers.

Using Scratch

Basics

Choose Your Sprite!

- You will notice that the default sprite is an orange cat.

  (A sprite is a small graphic that can be moved independently around the screen, producing animated effects.)
- You can choose a different sprite to program from a library in Scratch, or you can draw your own!

Choose Your Background!

- Right now, you have a plain, white background – boring!
- You can also change your background by choosing one from the Scratch library or creating your own!

Now, We're Ready to Program!

Now, you should have a sprite and a background that you'd like to work with!

Programming In Scratch!

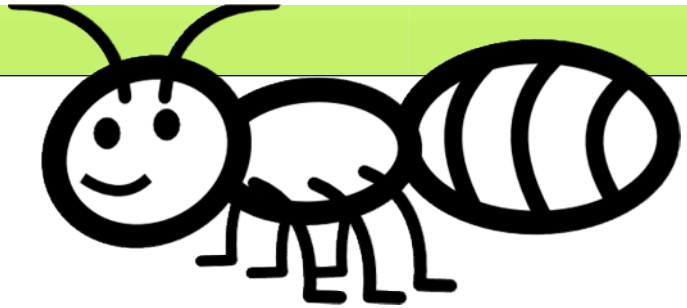
- The first thing you need to do is to click on the sprite you want to program, and select the "Scripts" tab.
- Since your sprite is the only thing that can be animated, make sure you have it selected.
- The Scripts area is where you "build" your program by using the programming blocks.

Programming In Scratch!

- In the upper, left-hand corner of your Scratch window, you will see 8 buttons .
- Each of these buttons have programming blocks in those particular areas.

Task: Remix a starter project

1. Browse to the Scratch site and sign in
2. Browse to http://scratch.mit.edu/info/starter_projects/
3. Choose one of the available project and press remix.
4. Experiment around to modify the selected project.



Task: The Ant Farm

- Browse to the Scratch site and sign in
- Browse to
- Choose one of the available project and press remix.
- Try to use what you have learnt so far for Scratch to modify the selected project. If you want to use more advanced features take a look at these Scratch Cards which are freely available online.

- I invite all of you at this collaborative project with Scratch: **The Ant Farm**. The idea is to have the stage full of different sprites, each one created by different persons.
  Each sprite represents a different ant.
- At the end we will have a big interactive Ant Farm
- How to participate

1) Remix the **LCL Zoo template39** project

2) Draw or import your sprite habitant. The sprite has to have fixed dimension so go into the costumes area and draw your sprite inside the black square (or import your picture and reduce it to fit in the black square). when you have finished, remove the black square

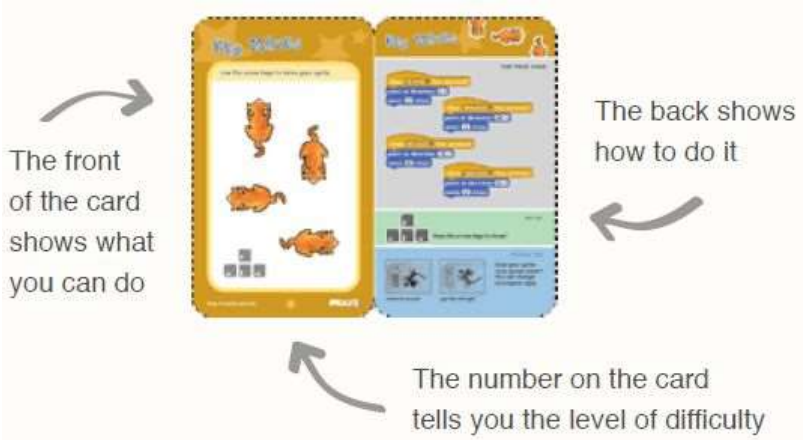
3) your habitant (sprite) has to have a script that starts with "***When this sprite is clicked***" (already in the template). When clicked, your habitant has to say something, or think something, or play short sounds (not more than 10 secs) or your voice, or spin around, or change color. I discourage you to use "move" or "glide" blocks, because the single sprite's movements can not be consistent when it will be uploaded in a big project with other sprites.

- 4) when you have completed the script for your habitant, press share and add your remix project to **LCL Zoo studio28**

Share & Remix

- Projects can be shared with other users.
- Shared projects can be reviewed and remixed by any other Scratch users.

Task 2: Scratch Cards



Curriculum Integration

- Scratch projects can be used by educators to introduce or support curricular objectives in academic subjects across the curriculum or it can involve the incorporation of more than one subject area of the curriculum. There are many examples of subject specific project galleries available on the Scratch website which can be easily viewed by making a quick search in the site. Other examples can also be found through a quick search on Google. Here are some examples that you might find interesting.

Curriculum Integration

- **Projects in Science:** http://scratch.mit.edu/galleries/view/15003
- **Math Projects:** http://scratch.mit.edu/galleries/view/6423 and http://scratched.media.mit.edu/sites/default/files/Scratch%20Dissertation%20Complete.pdf
- **Science Projects:** http://scratch.mit.edu/galleries/view/36449
- **Interactive Reading Projects:** http://scratch.mit.edu/galleries/view/61659
- **Book Reports and Projects:** http://scratch.mit.edu/galleries/view/9706
- **Learning Languages:** http://scratch.mit.edu/galleries/view/60538
- **Programming concepts**: http://info.scratch.mit.edu/sites/infoscratch.media.mit.edu/files/file/ScratchProgrammingConcepts-v14.pdf

http://voyager.egglescliffe.org.uk/mwc/mukoku/course/view.php?id=7

Curriculum Integration

- Try to find any other examples specific for your area (school level and/or subject)?
- Add the links, level and subject to the Google Sheet

21st Century Learning Skills

According to Scratch developers, Scratch supports the 21st century learning skills identified by the Partnership for the 21st Century (www.p21.org). These skills include;

- thinking creatively,
- communicating clearly,
- analysing systematically,
- collaborating effectively,
- designing iteratively,
- and learning continuously.

Scratch Online Community

- See what other educators are doing,
- Share your projects,
- Engage in discussions.

http://scratch.mit.edu/educators/