<u>Title:</u> *Programming with SCRATCH* – Virtual Pet

**Subject Area:** Computer Science

**Grade Level:** 2 (suitable for 8 and older)

#### **Related Standards of Learning:**

CSTA K-12 Computer Science Standards

CPP - Computing Practice & Programming

CT - Computational Thinking

#### ISTE Standards for Students

- 1 Creativity and Innovation
- 2 Communication and Collaboration
- 4 Critical Thinking, Problem Solving, and Decision Making
- 6 Technology Operations and Concepts

Common Core English Language Arts Standards

L – Language

SL - Speaking & Listening

Common Core Math Standards

G – Geometry

MP - Math Practices

#### **Classroom Set-up:**

- 1. Students need a computer or tablet with Internet connection.
- 2. Students need accounts for SCRATCH. Instructor needs Teacher account and student accounts can be established under Teacher account. Accounts can be obtained at SCRATCH.MIT.EDU
- 3. Projector for Powerpoint slides and videos

#### **Objective:**

Create an interactive pet that can eat, drink and play using the programming language Scratch.

Scratch is a programming language and online community where you can create your own interactive stories, games, and animations -- and share your creations with others around the world. In the process of designing and programming Scratch projects, young people learn to think creatively, reason systematically, and work collaboratively. To learn more about Scratch, check out the About Scratch page.

The ability to code computer programs is an important part of literacy in todays society. When people learn to code in Scratch, they learn important strategies for solving problems, designing projects, and communicating ideas. Scratch is designed especially for ages 8 to 16.

#### **Summary:**

Please refer to <a href="https://resources.scratch.mit.edu/www/guides/en/PetGuide.pdf">https://resources.scratch.mit.edu/www/guides/en/PetGuide.pdf</a> for the Educator's Guide for this lesson. The guide is also pasted below in the Description section.

#### Vocabulary:

This lesson has two vocabulary word that are important to review:

- Al-go-ri-thm is a list of steps that you can follow to finish a task
- Pro-gram is an algorithm that has been coded into something that can be run by a machine

#### **Materials:**

Computers/laptops and power point slides.

#### **Procedure:**

Play introductory Computer Science videos. See Slides below for useful links.

Project on screen and demonstrate step by step instruction. See steps below.

Use Educator resources at https://scratch.mit.edu/tips.

Programming Steps: Virtual Pet

- 1. Choose Your Pet
- 2. Choose a Backdrop
- 3. Introduce Your Pet
- 4. Animate Your Pet
- 5. Time to Eat
- 6. Eat Some Food
- 7. Time to Play
- 8. Add More Activities
- 9. Monitor Your Pet
- 10. Share Your Pet





#### **Workshop Overview**

Here's a suggested agenda for a one-hour workshop:



First, gather as a group to introduce the theme and spark ideas.



Next, help participants as they create interactive pets, working at their own pace.



At the end of the session, gather together to share and reflect.

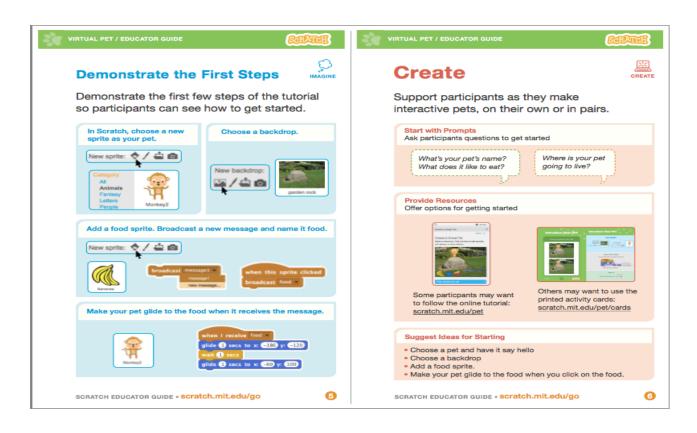
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# Algorithms and Programs

- Al-go-ri-thm is a list of steps that you can follow to finish a task
- Pro-gram is an algorithm that has been coded into something that can be run by a machine

### **SCRATCH**

- SCRATCH is a programming language
- You can use it to program your own interactive stories, games, and animations

   and share your creations with others in the online community.
- https://vimeo.com/144905435
- http://scratch.mit.edu/classes/29970/regist er/e47b5eb90b9d4761a53cb89d3a4da34

## Create a Virtual Pet

- Make a virtual pet. Find out how to add sounds, animations, or other effects.
- Computer Science Matters
- https://www.youtube.com/watch?v=\_liP LtP-jm8
- What is Computer Science?
- https://www.youtube.com/watch?v=Hs XaVV6fFDY

### **Discussion:**

• What was your favorite part about this activity?

Note: Most of the programming classes are very tight on time because of the hands-on help that is needed for the students so we had very little time for discussions after the lesson. Also, the teacher was very helpful with hands-on assistance. Depending on the number of students you might need additional help.

#### **References/Sources:**

Activity was adapted from Scratch.mit.edu at <a href="https://resources.scratch.mit.edu/www/guides/en/PetGuide.pdf">https://resources.scratch.mit.edu/www/guides/en/PetGuide.pdf</a>