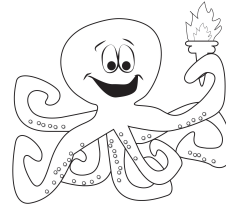


LESSON PLAN, ACTIVITY 3 : SENDING MESSAGES



GRADE: 4th - 5th Grades

OVERVIEW:

In Scratch programming, as well as in many parallel programs, in which many independent components are operating at the same time, sending messages is critical to coordinating action. While this is often an advanced concept, Scratch programming requires that it come early because all sprites in the project are configured as separate, independent entities that coordinate through messages. Sending a message is called a broadcast. In order to do something as a result of a broadcast, others must receive the message (and have actions associated with receiving the message).

This is not a foreign concept to people. In classrooms, it is often the case that teachers broadcast and message, and some or all students respond to that message. We are using this activity to connect what students already do in class (or at outside activities) to what they will make the computer do in Scratch.

OBJECTIVES:

The purpose of this activity is to reinforce several concepts having to do with coordination between many independent components (students, sprites, etc.)

Concepts include:

This communication requires two components – the facilitator needs to know what to broadcast, and each individual that needs to do something needs to listen for the message and perform its action.

Some messages are meant for everyone, while others are meant for only a subset.

The original message broadcast is arbitrary (could have been something else) – what matters is that everyone understands what it is, and what to do when it occurs

MATERIALS: Five flags, each with a different color.

PREPARATION:

Think of several rituals / commands you have in your classroom that cause definite responses in all of the students. For example, when you put your hand up in the air with the two fingers apart (peace symbol), that might mean to be silent. When you say “Good morning, class”, the class may

respond "Good morning, Mrs/Mr. So-and-so." Decide which three you want to use for this lesson. For the purposes of explanation, I will use these three.

message	action	purpose	who
bell	line up by classroom	gather everyone after recess	kids outside
peace symbol	be silent	pay attention for next lesson	everyone
good morning, class	good morning, Teach	gather attention to begin class	everyone

Second, think of a time when your class is split in some way. Does half the class do one math level while half does another? Do you go to the books in your in-class library in groups? You need a time in your classroom when some students do one thing and some students do another.

DIRECTIONS:

1. Begin by explaining the important purpose that communication holds when communicating with a group. Give a few examples of rituals at your school or in your classroom. Categorize them by message, action, purpose, and what students need to listen to it.
2. Invite the students to add more messages, maybe something that occurs in their home, extracurricular activities, or other places.
3. Choose three of these that you will use for this activity. Replace the message with a flag color. Make sure the things you choose are appropriate for this (verbal or visual response).
4. Practice with the flags until most students are able to respond with the proper action with the proper flag.
5. Invite the students to, at their tables (in some groups), make up their own response to the 4th flag.
6. Now assign the 5th flag to an activity that not all of the students do. Instead of being a flag that is meaningful to all, it is a flag that only some of the students need to notice and respond to.

REFLECTIONS:

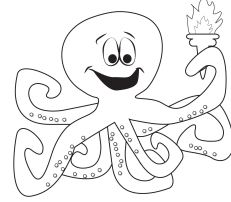
At the conclusion of your activity, pass out the following worksheet for the students so that they can connect what they learned (and do every day) with what we are going to be implementing in Scratch.

STANDARDS:

FiredUp Activity 3: Message Activity Reflections

Username:

For this exercise, your teacher assigned specific flag colors to specific actions.



What did you do when the red flag was raised?

Could your teacher have chosen to have a purple flag cause this action instead?

What color flag could some students ignore, and why?

While the color of the flag was not important, there were some very important steps to make this activity work.

- 1) Decide on what flag goes with what action
- 2) Teach students what to do when they see that flag
- 3) Raise the flag when teacher wants the students to perform action

These are the same three actions you will need to take when you want to coordinate actions between different sprites in Octopi. Good luck!