



Volunteer Guide for Coding

Prior to Day Starting:

1. Make sure computers can access internet. Identify whether students have to login with their accounts or not.
2. Make sure you understand functionality of computers. If Mac for example, to get a right mouse option, hold down Control button and click mouse.
3. Make sure you have agenda. Each of the nine sessions has a beginning and ending time. You will need to hit these marks each session. It's ok to end a minute or two early (not more than that) and you must send students to next rotation no later than the finish time.
4. Prior to first session it is a great idea to act as a student and follow the workbook. This should take you about 20 minutes to get to the first green box.

Session Outline:

As students enter the room, ask them to find a computer and (sign on if necessary) and then open an internet browser.

Opening comments of session:

- Welcome Students
- Introduce yourself, and your company, and job
- Have other volunteers introduce themselves.
- How many of you have done some computer coding? How many have used Scratch? (look for show of hands)
- In this session we are going to build the first part of a computer game called “dodgeball on the moon. Scratchy the cat is on the moon. To survive he eats fruit salad. Unfortunately, there are dodgeballs on the moon, and when he gets hit he loses energy. If he eats fruit salad, he gains energy. When he eats five fruit salads he wins the game, if his energy goes to zero the game is over”.
- This coding uses what’s called “event” programming. This is like the apps on your cell phone, when you touch something on the phone, it executes a program.
- Computers use coding to follow directions. They do exactly what you tell them to do.
- We only have about 20 minutes, so our goal today is to get scratchy the cat to move in all directions on the game board. So let’s begin.
- Turn to page 1 and on the internet browser go to “scratch.mit.edu”.
- Now tell students to begin following the directions in the orange boxes starting on page 2. Start by clicking on “Create” located in the upper left hand corner. Tell the students that they will be mainly using “Costumes” in the middle section. The green flags starts the action and the red circle stops the action. Follow each page until you get to page 10, where you can test your code.

Coding time:

Let the students work at their own pace. Some will move through the workbook on their own. Others will need some help and coaching.

Volunteers should walk around observing students. When a student gets off track, ask them to turn back to the workbook to the page where they were last.

Sometimes you'll need to help show a student how to drag, how to duplicate, how to delete, or how to separate blocks. Take a moment to work with them. Be careful not to get trapped helping just one student.

If students start getting off mission, remind them that we want to get the cat moving first before they experiment.

Debugging. Often students will drag the wrong box, or forget to put the (-) in front of values. You may want to make a comment along the way that says "when programs don't work, coders spend a lot of time trying to figure out why. This is called debugging."

Closing Comments:

- At about four minutes prior to stop time, tell students that we are going to wrap up our coding. Give them about a minute to test any changes. If you would like to finish your game, you can create a free account on scratch and build your program or create your own. Follow instructions on page 23.

Ask students to close down scratch site and exit internet browser. (Logoff if using student logon).

Take the next few minutes to add the following comments.

- The school will be emailing you a pdf file of these instructions. If you would like to finish your game, you can create a free account on scratch and build your program or create your own.
- How many of you thought that coding was fun?
- If you liked it or if you like computers or cellphones, you may want to think about a career in Computer Technology.
- About 70% of the STEM careers are computer based.
- Salaries range from in the \$40,000 range up to six figures based on experience.
- You do not need a college degree to do computer jobs, but it can be helpful in your career long term. A degree in Computer Science can open doors.
- Thanks again for your participation. Now it's time to move on to your next session.