

— DAILY LESSON PLANS —

Instructional Days: 1–2

Topic Description

What is computing? In this lesson the concepts of *computer* and *computing* are explored through examples of each.

Objectives

The student will be able to:

- Explain and give examples of the concepts of *computer* and *computing*.

Outline of the Lesson

- Journal Entry (10 minutes)
- Exploring computers (60 minutes)
- Classification of computing groups (10 minutes)
- Definition of the terms *computer* and *computing* (10 minutes)
- Computer Buying Project Assignment (20 minutes)

Student Activities

- Complete journal entry.
- Groups of students create lists of their ideas of what a computer is.
- Groups do presentations.
- Participate in discussion of classification groups and definition of computer and computing.

CURRICULUM (v9)	SPECIFIC INSTRUCTIONAL STRATEGIES	
	What teacher is doing?	What students are doing?
<u>Journal Entry (10 minutes):</u> How many computers are in the room? • Have students write responses to the question in their journals and then share the response with their elbow partner. • Ask a few student pairs to share their responses.	Say: “Welcome to Exploring Computer Science... This is a class for everyone. If you barely know how to turn on a computer, this is the place for you, you’ll learn. If you already program in Java, this is the place for you, you’ll be challenged to use that knowledge to create amazing things. Right in the title “Exploring Computer Science” is an important word to define, “Computer.” My first challenge is a quick one, that believe it or not, doesn’t have an easy answer. I want to know how many computers you think are in this room. Don’t say it out loud, yet. Just write it down on the first page of your Exploring Computer Science Journal (hold up example of journal). You have 1(?) minute(s) to write down a number... You may get up from your seats and walk around if you like” After one minute... Say: “Please share with an	Students walk around the room and count the number of computers in the room and note it down in their journals. Students share with their elbow partner.

	elbow partner your number, no judgement... "	
--	--	--

Opportunities for equity (from students new to computer science to those with extensive programming experience)	Modifications for virtual settings
Be sure to have needed supplies available so all students can access lessons (ie: extra pencils, journals)	Prepare prior to lesson: Create a shared google slide deck with edit permissions. Have each student assigned a "group." Have each student list and count computers on one or all of these settings: 1) In their "virtual classroom" 2) On a provided photo of a classroom 3) On a provided photo of a modern emergency room 4) On a provided photo of a modern auto mechanics garage

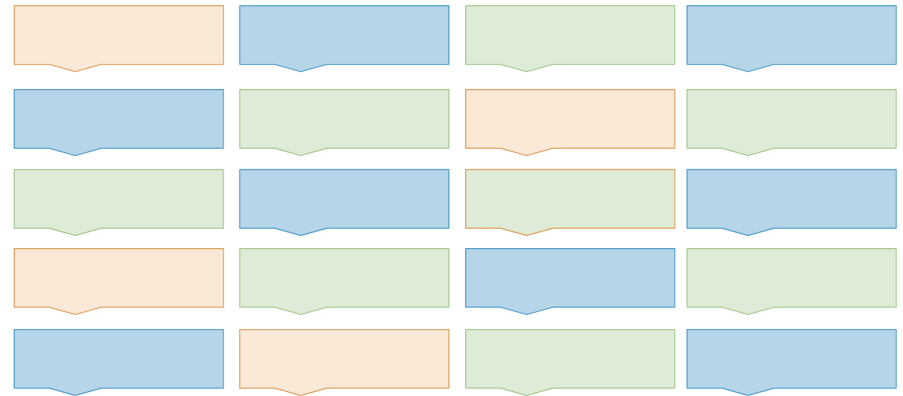
CURRICULUM (v9)	SPECIFIC INSTRUCTIONAL STRATEGIES	
	What teacher is doing?	What students are doing?
<u>Exploring computers (30 minutes)</u> • Some students may have counted only the desktop computers in the room while others may have recognized that there are other items that are computers as well. • Divide students into groups of 3 or 4. Ask the students to discuss additional examples of computers (or things containing computers). Have	"Now I'm going to group you into groups of 3-4. We are going to be moving around the room a lot!" <Divide up groups> Say: "In each group, find the highest number and the lowest number of computers in the room... Also figure out who is the oldest, as it's going to be their job to share this data with the entire class." <Give time then whip around the room getting the range... Put these ranges on the board for everyone to see the variation...>	Students move into groups if not already in groups. Students discussing in groups to come up with a range (highest number and lowest number) of computers in the room. They choose a share-out person based on age. Share out persons share out the ranges.

students write their examples on post-its and add them to a large chart at the front of the room or have groups make a list on flipchart paper and tape their list somewhere in the classroom. (Examples of computers include: Macintosh, Windows PC, cell phone, mp3 player, most appliances (television, coffee maker, washer, dishwasher, etc.), cars, medical equipment, planes, watches, cash registers, ATMs, traffic lights, scoreboards, humans, and calculators.) • Have student groups share their ideas. After each presentation, give the other students an opportunity to suggest why any particular example seems not to be a computer (or is not obviously a computer). If necessary, ask questions to draw out the student questions and responses. (For example, if the student says "dishwasher," you might ask, "why is a dishwasher a computer?") • Have a brief discussion of the power of cell phones. Mention collection of data as a foreshadowing of unit 5.	Say: "That's strange, within your groups, try to figure out why we didn't all have the exact same number." <Encourage brief discussion and wander listening for a group that is stumbling onto the fact that different student counted different devices as computers> Say: "Why did different groups get different answers?" <Call on person who stumbled into different devices counted> <Students will start coming up with things like we did not agree on a definition of a computer> <Place a large chart in the front of the room> Say: "What are some examples of computers or things containing computers (they may be outside this room). Think of different fields in which computers are used such as medical, sports, construction, space, etc. Come up with some unique items that other groups may not think of. Write your things on a post-it. Use the provided color markers and write big so students at the back can see what you have written. Add your post-its to the front of the room. Place only unique items on the poster in the front (no repeats please)." <Once the list is compiled, read out items from the list. Pick items that may spark some discussion. For example, is a dishwasher really a computer? Let the students give their justification or reasoning> <If there are items in the list that students cannot agree on, start moving such items into a second list - MAYBE a COMPUTER list. Tell students that	Small group discussing why we all did not have the exact same number Group share out why different groups had different answers. Groups discuss other examples of computers and compile a list in the front of the room. Whole class discussion of the items they count as computers, why are they computers?
---	---	---

	tomorrow we will add more items to this list and we will also create a list of items that are DEFINITELY NOT A COMPUTER > Say: "I see that cell phone is in this list. What makes a cell phone a computer?" <Students will start coming up with terms like processing, input, output etc. Start putting these terms on the board These terms will be used on day 2 when students start defining what is a computer.> <End the discussion, by talking about the power of cell phones and their impact on society highlighting how they are used for collecting data. Mention that we have a whole unit dedicated to data collection and its analysis> Say: "Tomorrow we will continue exploring computers and will try to come up with a definition of a computer"	Whole class discussion on cell phones and why they are a computer?
--	---	---

Opportunities for equity (from students new to computer science to those with extensive programming experience)	Modifications for virtual settings
	Prepare prior to lesson: Create a shared google slide with edit permissions. Include empty colored text boxes or rectangles on the slide that would mimic post-its where students can type. This would be a replacement for the large chart where students add examples of computers or things containing computers.

Computers or Contains a Computer



Create another similar slide for the “MAYBE A COMPUTER” list.

Maybe a Computer

