BITS & BOTS
TECHNOLOGY CURRICULUM

Lesson Plan K-1.NSD.2

BACKGROUND INFORMATION

LESSON TITLE: You Make Me Whole
STANDARD(S): K-1.NSD.2 Identify basic hardware components that are found in computing devices.
HOW THE LESSON FITS INTO AN INSTRUCTIONAL SEQUENCE: This progression focuses upon defining the interactions between software and hardware. This lesson establishes what the main hardware parts are for a computer. The following lesson seeks to establish what the main software types are. The final lesson examines how the two interact.
MATERIALS NEEDED: Whiteboard/chart paper/smart panel for the instructor to draw on, student devices for video recording, Labeling Activity Slides (forced copy) or Labeling Activity Slides (view).
PRIOR PREPARATION NEEDED: If engaging in the extension activity, the teacher will need to make a copy of the slides to their drive and then share this activity through their LMS.
SAFETY CONSIDERATIONS: When engaging in the extension activity, please be wary of students sharing video outside of a controlled network such as a closed LMS or password protected third party app. Student safety starts with you here!

LESSON SUMMARY

SUMMARY OF THE LESSON: Students learn about the major parts of a computer as classified by their function and put this knowledge to work by evaluating the most important hardware of a computer and seek to become YouTube unboxing stars through creating their own videos.
OBJECTIVES:

- I can identify the basic parts of a computer.
- I can categorize the parts of a computer to be either input or output devices.

ESSENTIAL VOCABULARY:

- Hardware - Parts of a computer that you can touch and feel.
- Input - Signals that go into a computer.
- Output - Signals that go out from a computer.
- Processing - The thinking or steps that a computer does.
- Monitor - The screen of a computer that displays information.

ACTIVATE PRIOR KNOWLEDGE

PRESENTATION OF INTERESTING PHENOMENON (IF APPLICABLE)/HAVE STUDENTS THINK AND DISCUSS PRIOR KNOWLEDGE/HAVE STUDENTS ENGAGE IN A SKILL THAT THEY HAD PREVIOUSLY LEARNED

DIALOGUE PROMPT: We have computer systems all around us in our lives! What different types of computer systems do you have in your house and in your school?

VIDEO INSTRUCTION

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APPLICATION ACTIVITY

WHAT STUDENTS WILL BE DOING TO ENACT THE INFORMATION GAINED IN THE VIDEO INTO CREATING THEIR OWN UNDERSTANDING OF THE CONCEPT/CREATING SOMETHING WITH THE KNOWLEDGE GAINED/SOLVING A PROBLEM

For this application activity, students will be engaging in a naming game for categorical computer parts where teams are awarded a point for correct responses. The team with the most points at the end of the game wins.

How to Play:

- The teacher prefaces the game by drawing a three column T chart with the headings of input, output, and processing. The third column for the chart is taken out of the game by the teacher creating an entry for “brains of the computer” in the last column entitled “processing.”
- The class is then split into two teams with one student from each team being elected to be the team representative. The team representative is responsible for conversing with their teammates and then conveying the team’s response to the teacher and to the other team.
- How many points each question is worth and how the teacher keeps track of the score is at the discretion of the teacher. Points could be one apiece or other increments like 100 points.
- The teams compete by taking turns in naming parts of a computer and whether they fall into the input or output categories. It is at teacher discretion which team starts first.
- In order to receive points for a correct answer, a team must provide not only a valid computer part but also which column the part belongs in.
- The game ends when both teams are unable to provide a response in consecutive turns.

Exemplar Responses:

Input	Output	Processing
Keyboard mouse/trackpad Touchscreen Microphone Gamepad/joystick Webcam Scanner Barcode scanner Card swipe device (MICR)	Monitor/screen Speakers Printer Headphones Projector Braille Printer	The brains of the computer

To independently review, students will engage in a Computer Labeling activity. Click on the following link to make a copy of a practice:
Students can engage in this activity by sharing the Labeling Activity Slides (forced copy) through your class' LMS. The activity is a simple drag and drop exercise where students drag a sticky note from the slide to the corresponding part location on the laptop and desktop computers.

CLOSURE

DESCRIPTION OF CLOSURE EXERCISE: Students will close out the lesson with a higher order thinking question that is open ended in nature. This question will be conducted in a turn and talk/wait time extended format.

Wait time extended protocol steps:

- Teacher provides the prompt to all students.
- Teacher assigns students a partner to turn and talk to.
- The teacher checks for understanding of the directions.
- Students are put on the clock for 3 minutes to discuss the question.
- The teacher circulates to interview students. Interviewing students helps to guide students who are off track as well as garner correct answers to be highlighted in a bit.
- At the close of time the teacher calls on a group where she feels that the response brings value to the group. In this instance, it may not be particularly beneficial to arrive at the correct answer immediately.
- The teacher calls on a random group that they did not talk to in order to create accountability.
- Finally, the teacher allows for other groups to volunteer their responses.

Tun and talk question:
"Which computer part do you think is the most important? Why?"

Exemplar response: One would like for their class to engage in the productive struggle of trying to identify one single part to be the most important. When they present this single part to be the most important, the teacher would then ask if the computer would work if it did not have a different part. Ultimately, we would like to have students arrive at a conclusion that all of the parts are all interdependent and necessary for a computer to run and no one part is the most important.

EXTENSION AND SPACED PRACTICE IDEAS

How can the teacher keep this concept recurring in their classroom to make sure that students remember and internalize the concepts presented in this progression?

The extension activity for this standard is fairly straightforward in nature and low in required technology materials, but success in this extension activity is predicated upon students' familiarity of how to record video of themselves.

Prior to engaging in this extension activity, the instructor must first evaluate what type of recording methods work best for their students. While it is possible for students to record locally to their own devices, this type of recording lacks the "authentic" audience that an unboxing video seeks to emulate. Suggestions for recording include through use of an LMS like Seesaw or through a third party application like Screencastify, Padlet, or Flipgrid. This activity is much more effective if students come to the activity with a background knowledge of how to record videos in their classroom.

Materials Needed:
Student chromebooks and a device for the student to be a part of their "unboxing" video.

Sequence:
Students will first need to be introduced to the genre of YouTube videos known as *unboxings*. Students may already have a cursory knowledge of the genre of unboxings due to viewing toy unboxing videos. To best assure a baseline of background knowledge of not only what an unboxing video is but what a technology unboxing video entails, students will view the following exemplar: Samsung Galaxy Unboxing Video or Amazon Fire HD Kids Pro v. Kids Tablet

The extension activity seeks to put the students into the shoes of a YouTube star, something which many students aspire to. Tell the students that they will get to be the star of their own show as they review a device from your classroom. Students will take their device and a second device to record in the above noted manner.

Students will then receive their final prepping to go make their unboxing video. Students will be instructed that they will need to review the provided classroom device and are required to give reviews about the following five parts: the monitor, the keyboard, the mouse/trackpad, the speakers, and the brains of the computer. It would be helpful to post these items on the whiteboard or smart panel.

Once your student videos have been completed, you may wish to have a student film festival where each student's video is played for the whole class.

For teachers who would like a more detailed explanation of how to do unboxing videos, including a planning sheet for use by groups, please see The Unboxing Video: A fun classroom video activity