

PARTS OF A COMPUTER AND COMPUTER SYSTEM

Course Name: Social Studies

Time Frame (in minutes): 120

Unit/Theme: Interconnectedness

Grade Level: 4

CONTENT AND SKILLS
Learning Objectives: • Students will learn the components of their hardware and software on their Chromebooks. • Students will learn how to secure their Chromebook with a secure password • Students will know how to independently troubleshoot and submit a ticket to Incident IQ that accurately depicts their issue.
Essential Questions: • How can I be independent and safe when using my Chromebook?
Students I can statements . . . • I can differentiate between the hardware and software components on my Chromebook. • I can create complex and secure passwords • I can troubleshoot and submit a ticket to Incident IQ • I can have a conversation as needed with adults to share details about technology issues I may be encountering
How will you meet the needs of SWD and ELL/MLL students? • Modifications and accommodations according to individualized plans and 504s will be met
Content Standards List all standard indicators (do not need standard statement)
• Communication standard in from ELA • 4W2c: Use precise language and content-specific vocabulary • 4SL4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace and volume appropriate for audience.
NYS Computer Science and Digital Fluency Standards List all standards that authentically align

- 4-6.NSD.3 Determine potential solutions to solve hardware and software problems using common troubleshooting strategies.
- 4-6.NSD.5 Describe that data can be stored locally or remotely in a network.
- 4-6.CY.1 Explain why different types of information might need to be protected.
- 4-6.CY.2 Describe common safeguards for protecting personal information.

NYS SEL BENCHMARKS

<https://www.p12.nysed.gov/sss/documents/SELBenchmarks2022.pdf>

- 3A.2a. Demonstrate consideration for the safety and well-being of self and others.
- 3B.2a. Identify and apply decision making steps that consider impact on self and others.

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students including how they will construct and practice content knowledge.

Add Standard Indicators next to activity that aligns and highlight them.

Day 1 - Introduction and Securing your Privacy

Anticipation Set - T/F questions... revisit these at the end of this

Safety First! Have the table groups come up with 3 reasons that it is important to protect privacy - share out

Read the Readworks article Protect your Privacy Online - demonstrate how to have this article read aloud to them if the lexile doesn't feel right to them

Or... Watch the video Why is it important to create a secure password?

Based on what they read or listened to, have table groups come up with 3 examples of information that they should keep private and 3 WAYS to protect privacy - share out **4-6.CY.1**

Then, create a class list of criteria for strong passwords. Give examples of a weak password, a better password and a strong password.

Classroom Password Strength Meter...

Review criteria for a strong password...

- At least 12 characters long
- A combination of uppercase and lowercase letter, numbers, and symbols
- Not a password you use somewhere else
- Easy for you to remember but hard for others to guess
 - Think about using a phrase such as #DonutsaremyFAVORITE!

Password creation - show the meter... weak to strong Make a “meter” on the wall in your classroom using the signs. Give sample passwords for each level... Weak, Better, Strong... Have kids write a password example on a 3x5 notecard anonymously. Collect. Then as a class read them and put them on the meter (include the teacher created ones as well so you are sure you get a variety of weak, better and strong. 4-6.CY.2

Have the kids complete the exit ticket

Day 2 - What kind of Ware is this?

Have the kids watch What are Hardware and Software video. Have the kids use a whiteboard to record their answers when they get to the “game” portion of the video.

For a more in depth look at hardware and software, and a segway into coding watch the second video. Discuss how coding is used in everyday life at Amazon and at Xbox. Have the kids record how coding is used on a class Padlet. Discuss responses as a whole class.

Define it...

Have the kids work in pairs to write a definition of Hardware and Software. Then share out and create a class definition for each. See below for what your class may come up with as definitions.

Hardware definition - IParts of a computer you can see and touch ,The hardware is like the body of a person

Software definition - Parts of a computer that you can't touch but use. It's what the computer can do! Software is like the mind / feelings / emotions of a person

Exit Ticket ... Hardware / Software Sorts handout (see resources section)

Day 3 - What's the Problem? I can fix it! 4-6 NSD.3

Brainstorm with the class all of the problems they have had with chromebooks and problems they have heard their parents and teachers talk about with their computers. Be sure that the following problems are listed on your chart - may include others

- cracked screen
- can't log in

- computer is “glitching” - not running programs as expected

List these on the left side of a 3 column T chart. In the center section, have them “vote” (using either mini white boards or sign language S or H) to indicate if it is a software or hardware problem. Have the kids turn and talk to brainstorm the first step he / she should take to troubleshoot. Record answers.

Assessment - Have the kids choose a situation to create a ticket for our tech department. In this ticket, they will need to indicate if the problem is a hardware or software issue. They will also need to articulate the problem and the steps they took to troubleshoot. *Note - Please communicate with your tech department prior to this activity to get the okay for kids to submit the sample tickets to avoid any confusion.

4-6 NSD.3

Day 5 - Making the Save 4-6.NSD.5

Integrate this lesson into your daily independent writing time. Have the kids think of something they would not want to lose - have each of them share an item. Have them then go around a second time to share a strategy they could use to make sure they didn't lose that item.

Now, have them give an example of a picture or a piece of writing that they would not want to lose. Have the go around a second time to share a strategy they could use to make sure they didn't lose that item. Discuss the idea (most likely this was shared), about making a copy of that picture or piece of writing.

Explain to the kids that today, they are going to practice making sure they don't lose a file. To do this, they will save it in two places... once to their device, and once on the cloud. The device is like saving something in their rooms, and the cloud is like putting it into a cloud... you can get it from anywhere! It is stored on the internet.

Have the kids write a letter to themselves,

FUTURE READY COMPETENCIES

Check off each competency that students will interact with during this lesson.

- ☐ Collaboration
- ☒ Communication
- ☒ Critical Thinking/Problem Solving
- ☐ Creativity & Innovation

MATERIALS / RESOURCES

Add additional resources needed for this lesson such as instructional technology templates, images, videos, etc. **Including Instructional Technology Tools**

- [ReadworksProtect your Privacy Online Article](#)
- Video [Why is it important to create a secure password?](#)
- [Anticipation set](#)
- [Password Meter](#)
- [Exit Ticket for Creating Secure Password](#)
- [WHat are Hardware and Software?](#) video
- You may want to use whiteboards for the “game” portion of the video for kids to record their answers.
- [Hardware and Software Sort](#)
- Bonus video for those kids who want to learn more in depth about hardware and software from Code.org [How Computers Work Hardware and Software](#)
- Teacher Resource.... Before teaching this lesson, it may be helpful to read this article that completely explains the differences between hardware and software <https://intechhouse.com/blog/software-vs-hardware/>