**Lesson plan (# )**

| **Adopted from: see CS4NJ****Authors: (Your sub group’s name here)****Sofia, Mary** | **Grade: K-2** | **Lesson duration:2-3 50 minute lessons** |
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| **Topic/Title of lesson: Computing Devices** |

| [**STANDARD(s) ADDRESSED**](https://www.nj.gov/education/cccs/2020/2020%20NJSLS-CSDT.pdf)*(Include the performance expectation number and text of each standard.)* | **8.1.2.Cs.1**8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences. |
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| **CS PRACTICE(s)** *that students will engage in throughout the lesson.* P [13-15](https://www.nj.gov/education/cccs/2020/2020%20NJSLS-CSDT.pdf) of NJSLS | * Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware) and software.
* Describe basic hardware and software problems using accurate terminology.
* Individuals use computing devices to perform a variety of tasks accurately and quickly.
* Individuals use a database to investigate and learn information
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| **CS CORE IDEA(s) or** **SUB-CONCEPT(s)** *related to the performance expectation(s).* P [20-34,](https://www.nj.gov/education/cccs/2020/2020%20NJSLS-CSDT.pdf) includes core idea and performance expectations which are useful for designing general goals, specific objectives, and learning criteria down below | * Understand that we use computing devices to perform a variety of tasks accurately and quickly.
* Computing devices interpret and follow the instructions they are given literally.
* Use appropriate terminology.
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| **CENTRAL FOCUS** *(The central focus is an overarching goal of the lesson or big idea for student learning.)* | 1. What is the difference between hardware and software?
2. Describe the relationship between hardware and software. How does one require the other?
3. Identify the different parts of the computer.
4. Which component is the brain of the computer?
5. Explain how computers and/or software impact your family and community.
6. What are common problems that arise in computer hardware/software?
7. What are some troubleshooting strategies that you can use to repair a computer problem?
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| **EU/EQ** (*The enduring understanding(s) and/or essential question(s) that guide the lesson.)**Here are some useful examples from math:* [*https://jaymctighe.com/downloads/Essential-Questions-in-Mathematics.pdf*](https://jaymctighe.com/downloads/Essential-Questions-in-Mathematics.pdf) | * Individuals use computing devices to perform a variety of tasks accurately and quickly.
* Computing devices interpret and follow the instructions they are given literally.
* A computing system is composed of software and hardware.
* Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
* Computing devices may be connected to other devices to form a system as a way to extend their capabilities.
* Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).
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| **PRIOR KNOWLEDGE AND CONCEPTIONS** *(What prior knowledge, skills and/or academic language do these students need to have that will help them be successful with this lesson? Any misconceptions you may anticipate?)* | * Computing devices may be connected to other devices to form a system as a way to extend their capabilities.
* Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information)
* Students should be able to log on to their computers with minimal support.
* Students should be able to work cooperatively in pairs/small groups and make compromises to achieve a goal.
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**UDL/PLANNED SUPPORT**

*(Discuss the universally designed decisions guided by learner diversity and/or individualized adaptations for the variety of learners in your class/group who may require different strategies/support (e.g., children with IEPs or 504 plans, English language learners, children at different points in the developmental continuum, struggling readers, and/or gifted children).*

| **UDL:***How are you universally designing your lesson with all your learners in mind? What other characteristics of diverse learners should be considered?* | **Multiple means of** [**representation**](https://udlguidelines.cast.org/representation) | **Multiple means of** [**action and expression**](https://udlguidelines.cast.org/action-expression) | **Multiple Means of** [**engagement**](https://udlguidelines.cast.org/engagement/?utm_source=castsite&utm_medium=web&utm_campaign=none&utm_content=aboutudl) |
| --- | --- | --- | --- |
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| **Additional ADAPTATIONS, MODIFICATIONS, and SUPPORTS for individual learners (IEPs, 504s, ELLs)** *If you were not able to meet your focus learners needs through UDL, what individual adaptations will you use to meet your focus learners needs (especially ELLS)* |  |

| **ACADEMIC VOCABULARY/****LANGUAGE (including different coding languages)/****SYNTAX (rules of how to combine symbols to make “correct” statements)**  | *Vocabulary:**Language:**Syntax:* | *Describe the additional supports for each language demand in this lesson. Address both the whole class and individual needs.* |
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| **LEARNING OBJECTIVES** | **LEARNING CRITERIA** *(How will you know that students have met and/or are moving toward meeting that LO?)*Understand that we use computing devices to perform a variety of tasks accurately and quickly. * Computing devices interpret and follow the instructions they are given literally.
* Use appropriate terminology.
 | **FORMATIVE ASSESSMENTS*** Teacher/student conferences and discussions
* Performance task (students create illustrations in response to videos)
* Exit tickets
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| **Should include both core ideas and concepts, and practices**  |  | **SUMMATIVE ASSESSMENTS*** Artifact (Form/Spreadsheet/Slide/Etc.)
* Inquiry based learning projects
* Checklist/rubrics
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**MATERIALS, RESOURCES, and INSTRUCTIONAL TECHNOLOGY**

| **What resources and technology do you need to teach the lesson:** | **What materials, technology will students need?** |
| --- | --- |
| * **Promethean Board**
* **Laptop**
* **Curriculum**
* **How to Code a Sandcastle (by Josh Funk); Hello Ruby books (by Linda Liukas)**
* **Video**
 | * **tablets**
* **paper**
* **pencils**
* **rosie runs game**
* **scratch jr. application**
* **chromebooks**
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**INSTRUCTIONAL STRATEGIES AND LEARNING ACTIVITIES**

*(Describe explicitly what the teacher and the students will do to meet learning outcomes. Use bulleted or numbered list)*

|  | **What is the teacher doing?** | **What are students doing? (including adaptations)** |
| --- | --- | --- |
| **LAUNCH/****Beginning ( mins)***How will you engage students and capture their interest? 3-7 minutes* | **Showing intro video** |  |
|  |  |  |
| **LEARNING ACTIVITIES/****Middle ( mins)***“I do” “We do” “You do” How will you explain/ demonstrate knowledge /skills required of each objective? How will you ensure that students have multiple opportunities to practice? How will you address the academic language demands?* | **Demonstrate** [**https://www.youtube-nocookie.com/embed/RmbFJq2jADY?playlist=RmbFJq2jADY&autoplay=1&iv\_load\_policy=3&loop=1&modestbranding=1&start=**](https://www.youtube-nocookie.com/embed/RmbFJq2jADY?playlist=RmbFJq2jADY&autoplay=1&iv_load_policy=3&loop=1&modestbranding=1&start=)**Use proper Terminology****Students will learn proper terminology to use when talking about their computers.****The teacher will play the video for students:****View link from cs4nj, includes video links** [**What are Computers for Kids | Intro to Computers | Programming for Kids**](https://www.youtube-nocookie.com/embed/RmbFJq2jADY?playlist=RmbFJq2jADY&autoplay=1&iv_load_policy=3&loop=1&modestbranding=1&start=)**As a class, discuss what hardware is and software and show some examples. Hardware is the physical components like a monitor, a mouse, a keyboard and software is the program that runs to tell the computer or device what to do.****[Our tech department is promising to save old/broken/non-functioning tablets and chromebooks for CS department use to show parts to students]** |  |
| **CLOSURE/****End ( mins)***How will students summarize and state the significance of what they learned? 3-7 minutes* | **Closure: Talk to others near you about the differences between hardware and software****Evaluation: Teacher observation & anecdotal information from discussions**  |  |
| **Extension/Reinforcement/Homework:**  |
| **Family/Community Engagement—** |

**\* Please attach copies of assessments and/or handouts to be used**