**Lesson created by the GMU-ODU CSforAll Team. For more information about**

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| **Unit 1 Lesson 2: Scratch and CoCo Level 1**  *3rd and 4th Grade* | | |
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| **Concept: Patterns and Sequencing** | | |
| **Vocabulary:**   * sequencing * pattern * algorithm * commands * program * Code * Pair programming (Optional) * Graphic Organizer * CoCo * Costume | | |
| **Summary:**  In this lesson, students will learn about CoCo, a graphic organizer to help plan writing and coding. | | |
| **Lesson Objectives (learning targets): I can…**  • Review Scratch and CS Vocabulary  • Identify the purpose of Coco (planning tool for coding & writing)  • Locate features within Coco Level 1  • Select and drag blocks to unscramble a code in Scratch (plugged)  • Identify and operate change costume block | | |
| **Content Standard(s)** | **Computer Science Standard(s)** | |
| The student will write in a variety of forms:  a) Engage in writing as a process  b) Identify audience and purpose  c) Use a variety of pre-writing strategies  Use effective communication skills in group activities.  a) Listen attentively by making eye contact, facing the speaker, asking questions, and summarizing what is said.  b) Ask and respond to questions from teachers and other group members.  c) Explain what has been learned.  d) Use language appropriate for context.  e) Increase listening and speaking vocabularies. | The student will construct sets of step-by-step instructions (algorithms), both independently and collaboratively  a. using sequencing  b. using events | |

| **Materials** |
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| **Lesson materials:**   * [Teacher slide deck](https://drive.google.com/file/d/1TR7RVM3Xr9Uy5dTsek4aYS5Pe8axIVBy/view?usp=drive_link) * [Student slide deck](https://docs.google.com/presentation/d/1NbsFElxEjbZi1iY5AISDKSgQLOhKzBi3/edit?usp=drive_link&ouid=104701427422211502426&rtpof=true&sd=true) * Scrambled Scratch code link: <https://scratch.mit.edu/projects/833196392/> * Solution video: <https://scratch.mit.edu/projects/833988634>   **Supplemental resources:** |

| **Lesson Structure and Activities** |
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| ***Prior to beginning this lesson, the teacher should have assigned each student a story in Level 1 of CoCo. Please name the assignment “Unit 1, How to Make Hot Chocolate.”***  ***Students should use the same naming strategy for their final Scratch Project:***   * + *“Student Name + Unit # + Descriptor”, for example, “Johnny Unit 1, How to Make Hot Chocolate”*   **(10 min) Warm-up & Introduction:**  **NOTE: All slides for this lesson are scripted so that, if needed, you can see exact definitions and instructions for teaching this lesson in the notes at the bottom of the teacher slide deck.**   1. (Optional) Introduce expectations and necessary resources (slides 1-3). 2. Review Scratch Blocks and CS Vocabulary from last lesson (slides 4-15) 3. Introduce today’s objectives (slide 16) |
| **(15-20 min) Direct Instruction & Guided Practice:**   1. Introduce “[Change Costume” block](https://www.dropbox.com/scl/fi/1idrp8km7xd8n4pvvs758/SwitchCostumeCoCo_Nov16.mp4?rlkey=0shwn17gqhdy441epxfvjws3d&st=ao4lv932&dl=0) and model how to use (slide 17-18). 2. Guide students to open Scratch (slide 19)    1. Instruct students to       1. Add a Sprite       2. Change the Sprite’s costume at least once 3. Explain that when you are planning to code or to write, there are certain patterns of steps that we may follow each time. We can use a graphic organizer to help us. (slides 20-21) 4. Introduce CoCo, the graphic organizer (Slide 22)    1. Model the features of CoCo (Slides 23-29)    2. Read aloud the recipe included in CoCo level 1 (slide 29; teacher can read it, have students take turns, or ask students to put on their headsets and listen to CoCo read the text to them.    3. (Optional) Model how to toggle between Scratch and Coco or use [the video](https://www.dropbox.com/scl/fi/p8njhio4zgvqzp0u6sud9/How-to-Toggle.webm?rlkey=pwb05izqe0ms9r52fb7ugu11m&st=aqmd6740&dl=0) provided on slide # 30.    4. Remind students that what they are coding in Scratch should match the plan in CoCo. \*For this lesson, students should be dragging the blocks into the correct order in Scratch. Their final product should be identical to the modeled animation. |
| **(10-15 min) Independent Practice:**   1. Instruct students to open and log into CoCo (slides 31-34) 2. Share “[Scrambled” Code in Scratch link](https://scratch.mit.edu/projects/833196392/) with students. The project contains all the code students need to run the animation but not in the correct order. 3. Instruct students to put the Scratch project code into the correct sequence using CoCo Level 1 as a guide. **They will not need to add or edit any blocks.**    1. Advise students that what they are coding in Scratch should match the text in CoCo. If they follow what’s in CoCo Level 1, their final product should be identical to the solution video. 4. Compare students’ Scratch projects with [solution video](https://scratch.mit.edu/projects/833988634). Do they match? (slide 34) 5. Optional Extension: Instruct students to open a new Scratch project and try create the animation using the code from CoCo level 1 alone. |
| **(5 min) Wrap up:**  Students should work with a partner to check their code for errors and fix were necessary. **Bonus challenge**: Can students change a costume again? (slide 35)  (Optional) Ask students to [share their Scratch work to your studio](https://www.dropbox.com/scl/fi/k2t7ydsi6sdans7gohpft/Student-How-To-Add-A-Project-To-A-Studio-In-Scratch.mp4?rlkey=6jmehhmfutgb3jiirjxynvf29&st=cifroqna&dl=0). Check to make sure each student successfully logged in, shared their project, and added it to the designated Scratch studio (slides 36-39). |
| **Assessment Strategy:**  Did the student…   * Review scratch and computer science vocabulary * Identify the purpose of Coco (planning tool for coding & writing) * Locate features within Coco Level 1 * Select and drag blocks to unscramble a code in Scratch * Identify and operate change costume block |