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

**this lesson and our CSforAll initiative, contact Dr. Amy Hutchison at achutchison1@ua.edu**

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| **Unit 4 Lesson 3: Decomposition**  *3rd & 4th* | | |
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| **Concept: Decomposition** | | |
| **Vocabulary:**   * Decomposition * Summary | | |
| **Narrative/Summary:**  In this lesson, students will use Coco and Scratch to write and animate a summary of a story. | | |
| **Lesson Objectives (learning targets): I can…**   * Review new blocks * Code and run your animation in Scratch; Debug, as needed * With a partner, check that your writing and animation match * Self-evaluate in Coco | | |
| **VDOE ELA Standard(s)** | **VDOE Computer Science Standard(s)** | |
| The student will write in a variety of forms to include narrative, descriptive, opinion, and expository.  a) Engage in writing as a process.  b) Identify audience and purpose.  c) Use a variety of prewriting strategies.  d) Use organizational strategies to structure  writing according to type.  g) Use transition words to vary sentence  structure. | The student will break down (decompose) a larger problem into smaller sub-problems, independently or collaboratively.  The student will construct programs to accomplish tasks as a means of creative expression using a block or text-based programming language, both independently and collaboratively  a. using sequencing;  b. using loops (a wide variety of patterns such as repeating patterns or growing patterns); and  c. identifying events. | |

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| **Materials** |
| **Lesson materials:**   * Chromebook/Laptop * Internet Access * [Coco Link](https://wego.gmu.edu/scratchgo/login.php) * [Scratch link](https://scratch.mit.edu/) * Teacher slide deck   **Supplemental resources:** |

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| **Lesson Structure and Activities** |
| **Note for Teachers:**   * **Prior to beginning this Unit,** be sure to assign your students a story in CoCo, using **Level 5.** * **Please use the following naming strategy for assigning the story in CoCo:**   + “Unit # + Descriptor”, for example, “Unit 4 Summary” * **Students should use the same naming strategy for their final Scratch Project:**    + “Student Name + Unit # + Descriptor”, for example, “John’s Unit 4 Summary” |
| **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.**   * (Optional) Read aloud the summary and standards as well as the materials and resources needed for this lesson (slides 1-5). |
| **Direct Instruction & Guided Instruction:**   * Review new Event and Loop Blocks (slide 6)   + Event blocks (when sprite clicked, when key pressed)   + Loop Blocks (Forever) * Review CoCo Level 5 with students (slide 7)   + Have students open and log into CoCo and complete any columns they have not finished in CoCo for their summary project.   + (Reminder, please require your students to use CoCo.) * Remind students that their animation in Scratch should: (slides 8-18)   + Match their plan in CoCo   + Enhance their writing   + Not distract the viewer and be clear |
| **Independent Practice**   * Remind students how to name their Scratch Project: (Slide 20)   + When you create your animation in Scratch, please name it using the following formula:     - Your Name + Unit # + Topic     - For example: “Johnny Unit 4 Summary” * Instruct students to also log into Scratch. Students should work on animating their summaries in Scratch, toggling back and forth between CoCo and Scratch. (slide 21)   + Remind students to self-monitor as they work (Column 4 in CoCo) * When students complete their animation, instruct them to work with a partner and check that their writing and animation match, that they did not add items that would distract their viewer, and make suggestions for how to enhance or improve their animation, while still keeping the message clear (slide 22) |
| **Wrap up:**   * Wrap up the lesson with a Scratch publishing party. Assign students into pairs and instruct them to review each other’s projects (slide 23-24) * Have your students share their Scratch Project to your Scratch CoCo studio (Slide 25-26) * Remind students that anyone can be a computer scientist! (slide 27) * Play [“Careers in Computing” Video](https://www.youtube.com/watch?v=t0-Z_LfGwUM&t=13s&ab_channel=Code.org) (Slide 28) |
| **Assessment Strategy:** Evaluate students’ written summaries and Scratch projects with a teacher-made rubric or focusing on a target skill based on the student’s area of need. |