**Lesson plan (# )**

| **Adopted from:**  [**https://www.kodable.com/learn/unplugged-coding-activities**](https://www.kodable.com/learn/unplugged-coding-activities) | **Grade: K-6** | **Lesson duration:** |
| --- | --- | --- |
| **Topic/Title of lesson: Treasure Obstacle Course** | | |

| **STANDARD(s) ADDRESSED** | *(Student Learning Standards. Include the progress indicator number and text of each standard.)*  8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data.  8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.  8.1.5.AP.3: Create programs that include sequences, events, loops, and conditionals. | | | |
| --- | --- | --- | --- | --- |
| **CENTRAL FOCUS** | *(The central focus is an overarching goal of the learning segment or big idea for student learning. The central focus is a description of the important understandings and core concepts that you want students to develop within the learning segment. The central focus should go beyond a list of facts and skills, align with content standards and learning objectives, and address the subject-specific components in the learning segment.)*  Conceptualize how to code an algorithm to find a hidden treasure. | | | |
| **EU/EQ** | (*What are Enduring Understanding(s) and/or Essential Question(s) that guide the lesson?)*  How do I create an algorithm? | | | |
| **LEARNING OBJECTIVES** | *(Include specific, focused outcomes for students) Phrase this as “students will be able to X (objective) as demonstrated by Y (evidence)”*  Apply algorithm and computational thinking  Resilience, creative problem solving, critical thinking, and logical reasoning  Collaborate and develop interpersonal skills | | | |
| **ASSESSMENT STRATEGY** | *What assessment(s) will you use to know that the students are meeting the learning objectives?* *State type(s) of assessment and what is being assessed [Pre-assessment, Formative, And Summative].* | | | |
| *[Pre-assessment]*  Ask students about their process to find something they lost. What is the process? | | | |
| Learning Objective | Assessment | Learning Criteria (How will you know that students have met and/or are moving toward meeting that LO?) | | Implementation (whole class, grouped, individual, & adaptations) |
| Apply algorithm and computational thinking | Performance assessment, locate the treasure | Students communicate the steps to peers on steps to find the treasure. | | * worksheet to record steps * observation (performance assessment) |
| Resilience, creative problem solving, critical thinking, and logical reasoning | Students work together to solve the problem and create an algorithm to find a treasure. | Students working together to problem-solve | | observation |
| Collaborate and develop interpersonal skills | Observe student participation by raising hands, volunteering, asking questions. | Student engagement in the form of volunteering to participate or answer a question, ask questions, positive interaction with peers, self-aware. | | observation |
| **ACADEMIC VOCABULARY/**  **LANGUAGE** | *Vocabulary:* algorithms, program, programmer | | *Describe the supports for each language demand in this lesson. Address whole class and individual needs.*  Vocabulary will be printed in the classroom, and provided in their worksheet. Terms will be spoken as they are applied in the lesson. | |
| **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?)*  Logic and reasoning, problem-solving | | | |

**UDL/PLANNED SUPPORT**

*(Discuss the universally designed decision 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 your focus learner in mind? What other characteristic of diverse learners are considering through UDL?*** | Multiple means of representation | Multiple means of expression | Multiple Means of engagement |
| --- | --- | --- | --- |
| Vocabulary will be printed in the classroom, and provided in their worksheet. Terms will be spoken as they are applied in the lesson. | Students can communicate what they know verbally and exit slip. | Students can participate by participating in the activity, discussion, and individual work. |
| **ADAPTATIONS with focus learner noted: *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)*** |  | | |

**MATERIALS, RESOURCES, and INSTRUCTIONAL TECHNOLOGY**

| **What resources and technology do you need to teach the lesson:** | **What materials, technology will students need?** |
| --- | --- |
| **Weblink:** [**https://www.csunplugged.org/en/topics/binary-numbers/how-binary-digits-work-junior/#key-question**](https://www.csunplugged.org/en/topics/binary-numbers/how-binary-digits-work-junior/#key-question)  **Video of lesson:**  [**https://vimeo.com/437725275**](https://vimeo.com/437725275) | **Treasure, paper and pencil** |

**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 adaptions)** |
| --- | --- | --- |
| **LAUNCH/**  **Beginning ( mins)**  *How will you engage students and capture their interest? 3-7 minutes* | **Explain the game.**  **Identify a “hider” to hide the treasure, “finder” to follow the directions.** | **Hider - hides the treasure**  **Finder - follows the directions** |
| **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?* | **Teachers provides directions on how to complete the activity.** | [**https://www.kodable.com/learn/unplugged-coding-activities**](https://www.kodable.com/learn/unplugged-coding-activities)  **Pairs or Group | Materials: Treasure, paper and pencil**   1. **One person hides a piece of “treasure” (this could be anything!) in an indoor or outdoor space.** 2. **Next, the treasure hider writes out instructions explaining how to find the hidden object. The instructions need to be *very* clear so the finder knows exactly what to do - otherwise, they won’t get to the treasure! Example:** 3. **Take 10 steps STRAIGHT** 4. **Turn RIGHT and take 5 big hops** 5. **Turn LEFT and crawl 8 times** 6. **Dig 2 inches down to find the treasure!** 7. **Once the instructions are written, the finder follows them exactly.** 8. **If instructions aren’t clear enough, the hider may need to find the bug and fix it so the finder can successfully reach the treasure.** 9. **Switch places when finished.** |
| **CLOSURE/**  **End ( mins)**  *How will students summarize and state the significance of what they learned? 3-7 minutes* | **Teacher conducts whole group debrief to recall takeaways and distributes exist slip.** | **Students complete an exit slip** |
| **Extension/Reinforcement/Homework: TBD** | | |
| **Family/Community Engagement—TBD** | | |

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