Group C

Part I: CoRes

Instructions:

1. Identify one main idea you want students to learn about loops (Row A).
    a. Example related to algorithms: *Students need to learn to identify the sequence of actions that lead to the solution of a given problem*
2. For this idea, answer the remaining prompts (B-H).
3. Time permitting, repeat steps 1 and 2 with another main idea about loops (add new column for each idea).

Topic: Loops

A. What do you intend students to learn about loops?	That it means to repeat something until a certain condition is met.
B. Why it is important for students to know this?	A fundamental concept in all computing languages Saves time from repeating same steps; condense complicated series of actions into a more simplified sequence
C. What else do you know about this idea (that you do not intend students to know yet)?	Eventually connects to the creation of procedures Loops can be nested / embedded Lots of different types of loops that students don't need to know at the outset (while, repeat until, forever)
D. What difficulties/limitations are connected with teaching this idea?	Idea of incrementation is new to many students Repeat until is a difficult concept
E. What knowledge about students' thinking influences your teaching of this idea?	Being able to visualize what will come from a loop; anticipating what will happen in a program Connecting to a loop in their lives (activating prior knowledge)
F. What other factors influence your teaching of this idea?	Students' language acquisition; ensuring English language learners are able to understand the process this concept quickly Having a real-life example that is culturally responsive Having more than one example (3) of a loop

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G. What teaching procedures do you use (and particular reasons for using these to engage with this idea)?	Multiple modalities - video, screencasts, multiple examples, translated resources Physical hands-on activities (dance, etc.)
H. What are your specific ways of ascertaining students' understanding or confusion around this idea (include likely range of responses)?	Repeat until is checked by creating a scoreboard that ends a game when a certain score has been reached.

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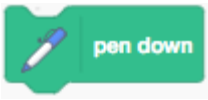
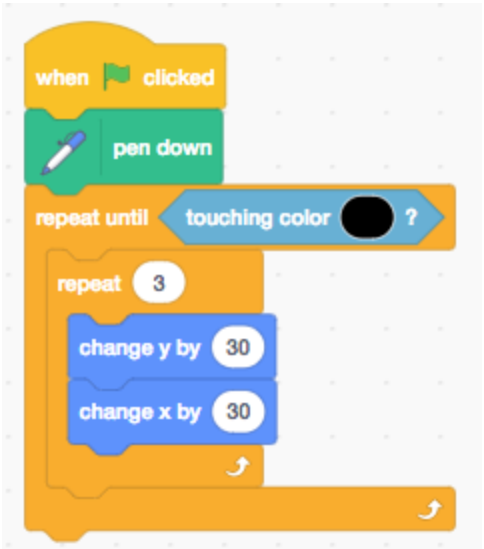
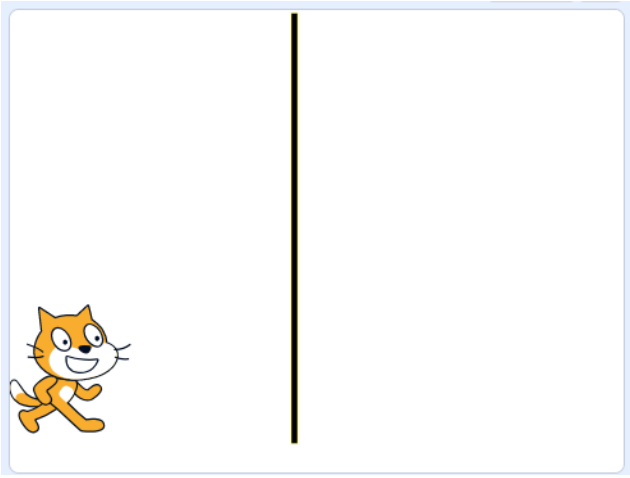
Part II: PCK Case

Students in your class were given the following Check for Understanding:

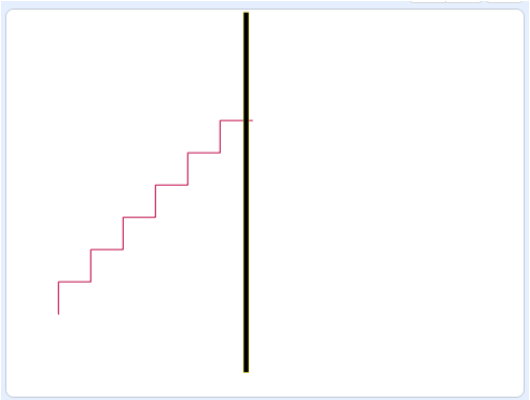
The 

block lets your sprite draw a line wherever it moves. This code makes your sprite draw a staircase until it reaches the black line. What do you think the staircase will look like?

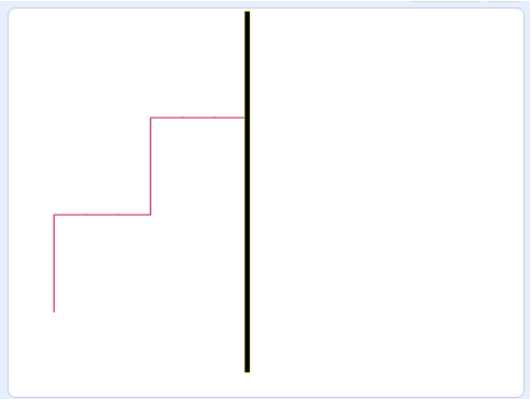




You expected a drawing similar to this:



One student in your class submitted the following drawing:



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1. What does the student understand well about loops?

2. What doesn’t the student understand well about loops?

3. What activities would you do with this student to improve their understanding of loops?

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Part III: About your group

About your group (Do not list your names)

Did you study computer science before starting to teach it?	● No ● Yes ● Yes ● Yes
How well do you understand loops? ● Very well ● Somewhat well ● Not at all	● Somewhat well ● Very well ● Well ● Very Well
How well prepared do you feel to guide student learning of loops? ● Completely prepared ● Somewhat prepared ● Not at all prepared	● Completely prepared ● Completely ● Completely Prepared ● … ● Somewhat Prepared
Provide any feedback you have on this activity.	● The part II PCK case seems to be testing students' understanding of too many concepts; I initially did not even see the "repeat 3" loop inside the repeat until loop. ● I thought the question in Part II was not well constructed. The overall activity required more time than we had. ● Review this with the group (get clarity on questions) ● The results of the PCK may have a third option of a staircase that continues infinitely. I personally do not like questions that combine more than one concept at a time because the PCK has a repeat inside of a repeat until.