Grade 4 Late Assessment - Teacher Resource

Table of Content

Front Matter

This assessment includes 7 items from two CT topics (4 Variables; 3 Repetition items). Five items (#3, #4, #5, #6, and #7) use images of the Scratch interface and/or Scratch blocks.

Each item has an exemplar response(s) and a scoring guide and/or rubric included (and when applicable, other information to help with interpreting student responses). The scoring guidance and rubrics were developed by our project to assist in coding and interpreting student responses, and are explicitly focused on using student responses to make inferences about the relevant knowledge, skills, and abilities that we identified from the learning trajectories and built into our item design process. As such, other end users of these assessment instruments may choose to adapt the scoring guidance and/or rubrics to match their purposes and students.

Items

#01

Meta-data

- Item code: V.09.a
- Trajectory: Variable

Item

1) Which of the following is used to store input from a user?

A. Loop
B. Sprite
C. Variable
D. Block

Exemplar response(s)

C

Scoring Guidance

- Choice "C"=1
- Any other choice= 0

Rubric(s)

None

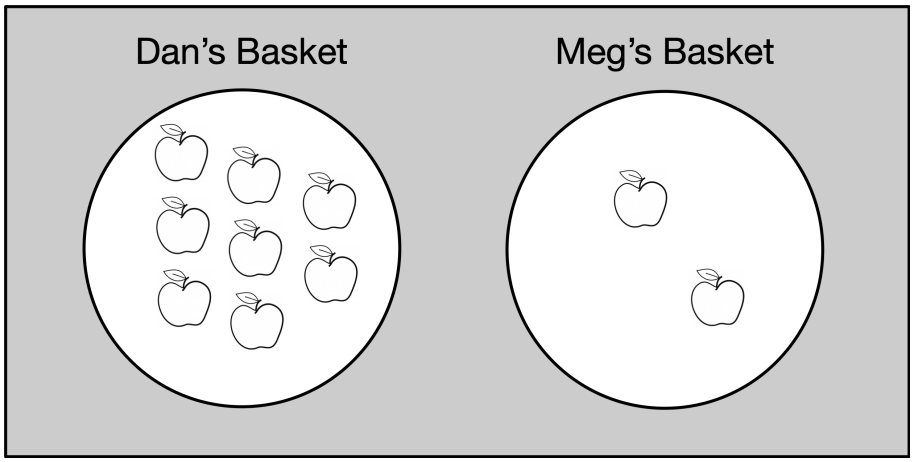
#02

Meta-data

- Item code: R.05.b
- Trajectory: Repetition

Item

2) Dan’s basket has 8 apples and Meg’s basket has 2 apples.



Alt Text Description: [Two circles represent Dan’s basket and Meg’s basket. The left one is Dan’s Basket, which contains eight apples. The right one is Meg’s Basket, which contains two apples.]

Instructions:
Repeat until Dan only has 4 apples:

- Take 1 apple from Dan’s basket and put on table
- Take 1 apple from table and put in Meg’s basket

If the above instructions are followed, how many apples will be in Meg’s basket?

Exemplar response(s)

6

Scoring Guidance

- Answer "6"=1
- Any other answer= 0

Rubric(s)

None

#03

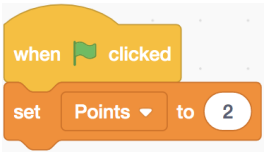
Meta-data

- Item code: V.13.a
- Trajectory: Variable

Item

3)

A. You run this code:

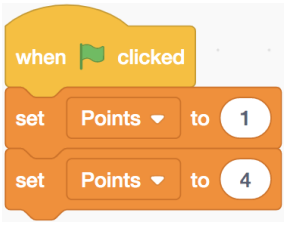


Alt Text Description: [A script displays blocks in the following order:
1. Event block: when the green flag is clicked
2. Variable block: sets a variable named points to 2]

- What is the value in  Alt Text Description: [a variable reporter block named points]?

- What value is  Alt Text Description: [an operator block displaying points + 5]?

B. You run this code:



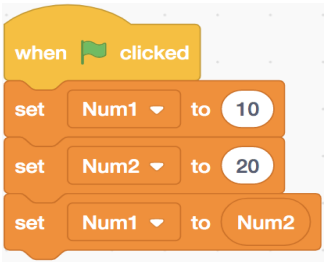
Alt Text Description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Variable block: sets a variable named points to 1
3. Variable block: sets a variable named points to 4]

- What is the value in 

Alt Text Description: [a variable reporter block named points]?

C. You run this code:



Alt Text Description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Variable block: sets a variable named num1 to 10
3. Variable block: sets a variable named num2 to 20
4. Variable block: sets a variable named num1 to num2

- What is the value in 

Alt Text Description: [a variable reporter block named num1]?
- What is the value in 

Alt Text Description: [a variable reporter block named num2]?

Exemplar response(s)

A.

- 2
- 7

B.

- 4

C.

- 20
- 20

Scoring Guidance

Correct answers = 2,7,4,20,20.
While we provide the correct answers, the decision about how to calculate a score(s) for this item is left up to the end user. The entire item could be scored overall (i.e., 1 score on the item),

each part (a, b, c) could be scored separately (i.e., 3 scores on the item), or each response could be scored separately (i.e., 5 scores on the item).

Rubric(s)

None

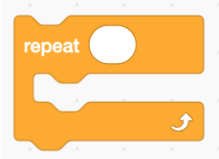
#04

Meta-data

- Item code: R.01.c
- Trajectory: Repetition

Item

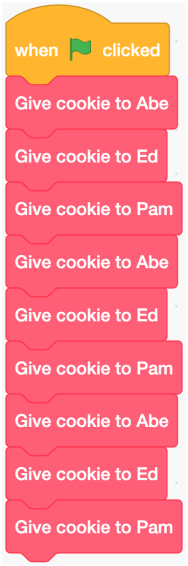
4) Eve has 9 cookies to give away to her friends Abe, Ed, and Pam. She wants to give each friend an equal number of cookies. Eve wrote a script for how to give away the cookies.



Alt text description: [a repeat loop block].

Modify Eve's script. Use a **repeat** block at least once.

Eve's Script:

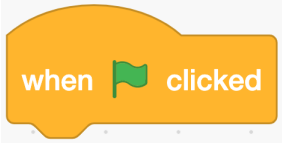


Alt text description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked

2. Give cookie to Abe
3. Give cookie to Ed
4. Give cookie to Pam
5. Give cookie to Abe
6. Give cookie to Ed
7. Give cookie to Pam
8. Give cookie to Abe
9. Give cookie to Ed
10. Give cookie to Pam]

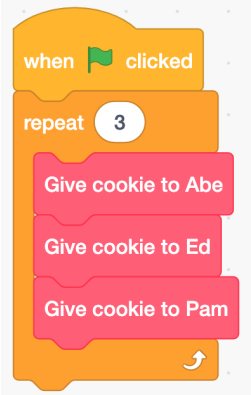
Your Script:



Alt text description: [“when the green flag is clicked” event block]

Exemplar response(s)

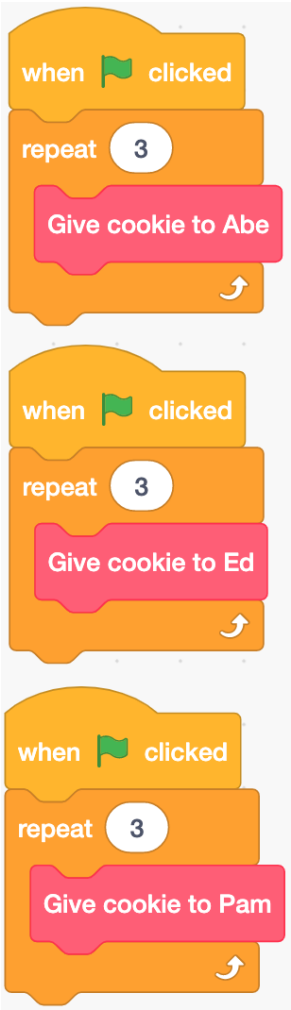
Example 1



Alt text description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Control block:
    a. This repetition loop control block, which repeats 3 times, contains three blocks
        i. Give cookie to Abe
        ii. Give cookie to Ed
        iii. Give cookie to Pam]

Example 2



Alt text description: [three separate scripts that display as in the following order:

Script 1:

1. Event block: when the green flag is clicked
2. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Abe

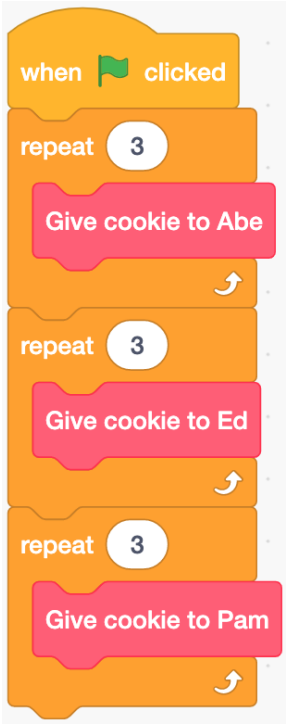
Script 2:

1. Event block: when the green flag is clicked
2. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Ed

Script 3:

3. Event block: when the green flag is clicked
4. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Pam]

Example 3



Alt text description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Abe
3. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Ed
4. Control block:
    a. This repetition loop control block, which repeats 3 times, contains one block
        i. Give cookie to Pam]

Scoring Guidance

- Similar to exemplar =1
- Incorrect way = 0
- Must use "repeat 3 times" instruction

Rubric(s)

None

#05

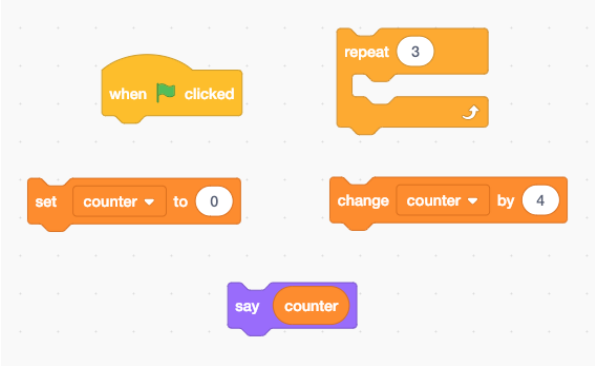
Meta-data

- Item code: R.04.b
- Trajectory: Repetition

Item

5) Use the blocks below. Draw a script that will make the computer say the numbers 4, 8, and 12.

Blocks



Alt text description: [a “when green flag is clicked” event block, a repetition loop control block which repeats 3 times, a variable block that sets a variable named counter to 0, a variable block that changes a variable named counter by 4, a looks block that says an input named counter.]

Your script:

Exemplar response(s)

Alt text description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Variable block: sets a variable named counter to 0
3. Control block:
    a. This repetition loop control block, which repeats 3 times, contains two blocks

i. Variable block: changes a variable named counter by 4
ii. Looks block: says an input named counter]

Scoring Guidance

- Similar to exemplar =1
- Anything else = 0
- Must use all blocks in correct order.

Rubric(s)

None

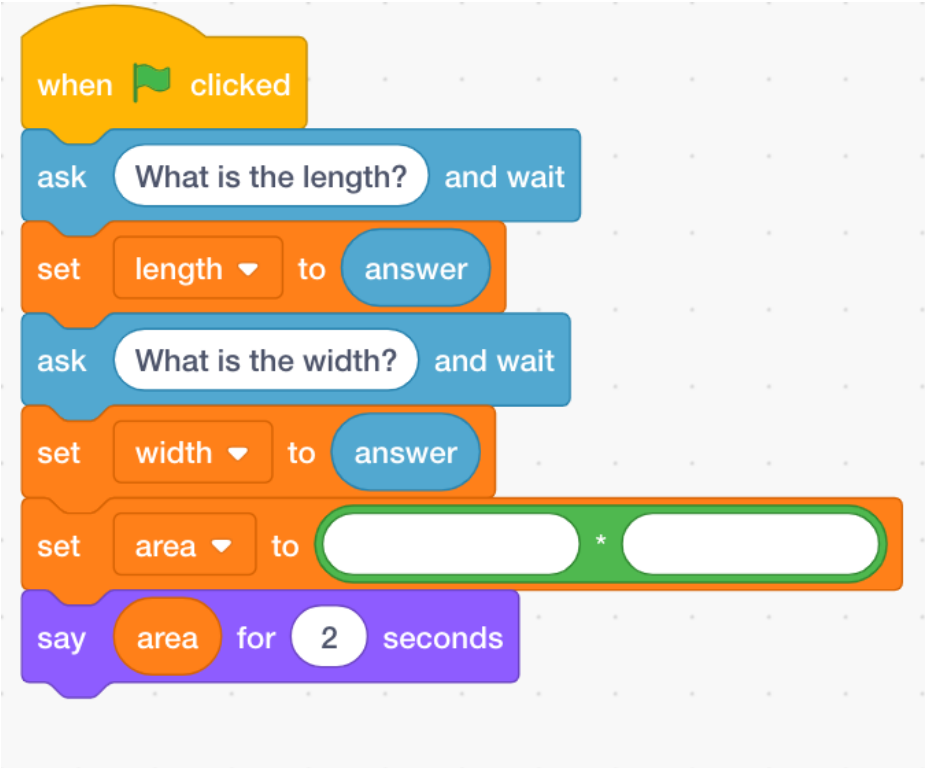
#06

Meta-data

- Item code: V.07.d
- Trajectory: Variable

Item

6) Liz wrote the code below to say the area of a rectangle when the user enters the length and width. Fill in the arguments (white ovals) with the correct variables.



Alt text description: [A script displays blocks in the following order:

1. Event block: when the green flag is clicked
2. Sensing block: asks user to input a value (asks “What is the length”?)
3. Variable block: sets a variable named length to the user input value
4. Sensing block: asks user to input a value (asks “What is the width”?)
5. Variable block: sets a variable named width to the user input value
6. Variable block: sets a variable named area equal to the product of two variables
7. Looks block: say the value of the area variable for 2 seconds]

Exemplar response(s)

Set [area] to (length) * (width)

Scoring Guidance

- Indicates both variables (length and width) should be used = 2
- indicates one variable (length, width, or answer) should be used = 1
- anything else = 0

Rubric(s)

None

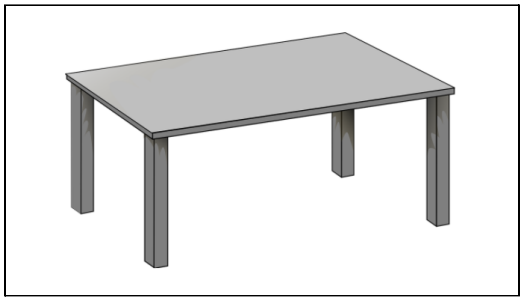
#07

Meta-data

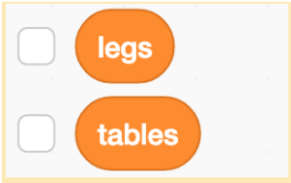
- Item code: V.14.a
- Trajectory: Variables

Item

7) A factory makes tables. Each table has 4 legs. Write instructions to program a computer to ask for the number of tables and then say the number of legs needed. Pretend that the computer has variables named “tables” and “legs.”



[Alt Text: A table with 4 legs]



[Alt Text: one reporter block of a variable named legs and one reporter block of a variable named tables, both with a preceding blank box.]

Your instructions:

Exemplar response(s)

1. Ask for number of tables
2. Set “tables” variable to the answer/ number
3. Set “legs” variable equal to 4 x “tables”
4. Say “legs”

Scoring Guidance

- Code “features” of the student response individually:
    - Feature 1: Student’s instructions asks the user to input a value (e.g., tables) = 1
    - Feature 2: Student’s instructions store a value in a variable (i.e., assignment) = 1
    - Feature 3: Student’s instructions perform a calculation using a variable (e.g., tables x 4) = 1
    - Feature 4: Student’s instructions outputs the value in a variable (e.g., say legs) = 1

Rubric(s)

None