



Math Operators and Loops

PG-123

Learning Outcomes

- ✓ Math Operators
- ✓ Program to Evaluate $(4+6) \times (5+8)$
- ✓ Program to Print Multiplication Table of 7
- ✓ Program to Evaluate $10+45$
- ✓ Loops

LET'S RECAP ▶



Information Literacy

Match the given blocks with their descriptions:

1.

2.

3.

4.

- a. This input block adds Boolean value to a code. It can declare a variable or statement either true or false.
- b. It converts all the letters in a variable to lower case.
- c. This block also inputs string values in the code. Just enter any statement in the space given in the block.
- d. It converts the input into string datatype.

1.C

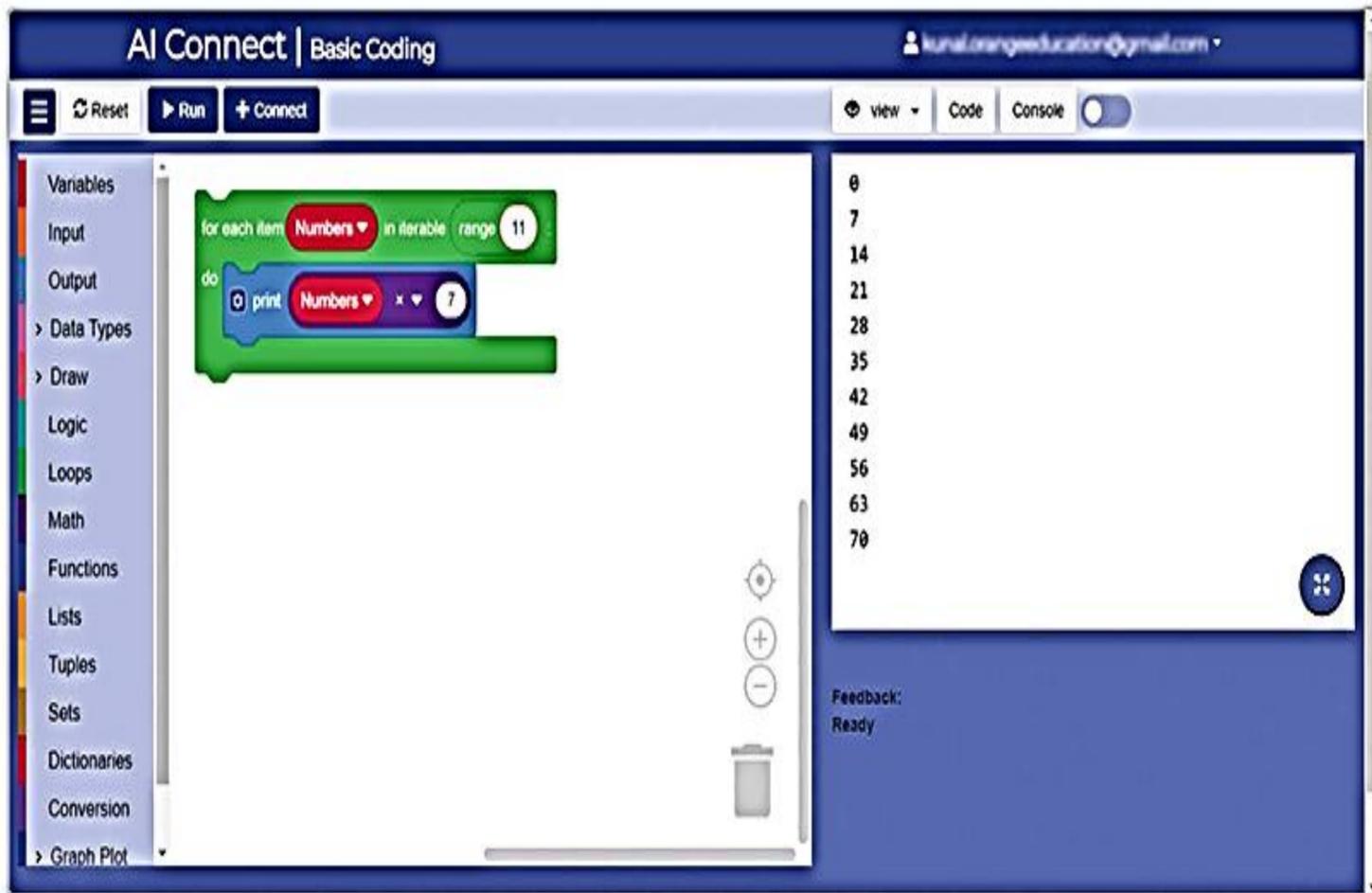
2.A

3.D

4.B

Loops





QUEST

Match the following blocks with their outputs:

1.

2.

3.

4.

a. Answer is: 3

b. Answer is: 5

c. Answer is: 2

d. Answer is: 11

1.D

2.A

3.B

4.C

A. Tick (✓) the correct option.

- What actions do the operators perform in computer system?
 - Dividing one variable by another variable
 - Adding two variables
 - Comparing one variable to another variable
 - All of these
- Which is the loop, that can be used with the 'for each' block to set the maximum number of times it will repeat its actions?

(i) Range block	<input checked="" type="checkbox"/>	(ii) Repeat block	<input type="checkbox"/>
(iii) Repeat while	<input type="checkbox"/>	(iv) None of these	<input type="checkbox"/>
- _____ can repeat a set of blocks for a certain number of times and perform an action on it each time it is repeated.

(i) while loop	<input type="checkbox"/>	(ii) Round up block	<input type="checkbox"/>
(iii) Repeat while	<input type="checkbox"/>	(iv) For loop	<input checked="" type="checkbox"/>
- Which of the following is not a type of loop block in AI Connect?

(i) Range block	<input type="checkbox"/>	(ii) Round down block	<input checked="" type="checkbox"/>
(iii) For loop	<input type="checkbox"/>	(iv) Repeat block	<input type="checkbox"/>
- Blocks for operators are present in _____ category in AI connect.

(i) Loops	<input type="checkbox"/>	(ii) Input	<input type="checkbox"/>
(iii) Math	<input checked="" type="checkbox"/>	(iv) Variables	<input type="checkbox"/>

B. Fill in the blanks using the words given below.

★ Multiplication table ★ Operators ★ Variables ★ Loops

- Variables** are used as empty boxes that we can name and assign a value.
- Operators** are the action elements of a computer program.
- Loops** can put sets of code in repetitive cycles in order to reduce the steps of the program.
- Loop command blocks are used to print out many useful things that need repetition like **Multiplication Table** timers, data filling, etc.



C. Match the following:

Code	Output
1. 	a. -10.0
2. 	b. 14.0
3. 	c. 15.0
4. 	d. 1.0

D. Answer the following questions:

1. Write the difference between Repeat and Repeat while loop.

2. What is round up and round down? Give one example for each.

3. Write any two uses of math blocks.

3. Math blocks are used to:

- **Calculating total sum**
- **Solving math problems**

4. Write code to add two numbers, 14 and 21.

4. Code to add two numbers, 14 and 21:

Step 1: Add print block, inside it add Addition block.

Step 2: Write 14 on the one side in the Addition block and 21 on the other side.

Ans.1. Repeat command block simply repeats the blocks attached to it for a certain number of times.

Repeat while block also repeats a set of commands in a code but only till a specified condition is met.

Ans. 2. Round-up is a math feature majorly used in shopping bills to find the nearest upper value.

Round-down is a math feature mainly used in shopping bills to find the nearest lower value.



FUN ZONE



Computational Thinking

Write the output of the following codes:

1.

```

set loop to Int input "Enter a number"
repeat 50 times
do
  print loop - 1

```

1. It will print the one less number that the user entered 50 times.

2.

```

set loop to 1
for each item Number in iterable range 10
do
  print loop + Number

```

2. It will print 1 to 10 counting.

Math Operators and Loops



Competency-based/Application-based questions



Critical Thinking
Interdisciplinary Learning

PG-130

1. 5832

- John purchased 12 chocolate bars from the grocery store. There are 486 calories in a chocolate bar. If John eats all the chocolates, calculate the total number of calories.
- Sumeet is planning to do a coding, he wants to repeat a set of code, but for each repetition, it can also perform an action on the result before printing it. Which loop should he use for his coding? **2. For loop**
- Snigdha, wants a loop, that can repeat a set of code attached to it for a selected number of times, for her project. Suggest her a loop type that can solve her problem.

3. Repeat block

LAB ACTIVITY



Computational Thinking
Interdisciplinary Learning

- Write programs in AI Connect to produce the following results:
 - Print the multiplication table of 18 up to 20 times.
 - Print the series of even numbers up until 100.
- Write a program in AI Connect to evaluate the following expression:
 - $9+6+8-5$
 - 42×36
 - $24 + 45 + 22 + 21$
 - 123×56
 - 52×100
 - $42 \div 10$