

INPUT/OUTPUT

Course Name: Math/Technology
Unit/Theme: Input/Output

Time Frame: 20 minutes
Grade Level: 3rd-small group

CONTENT AND SKILLS
Learning Objectives: Students will be able to describe how they can input information into a computer program and the program will produce an output.
Essential Questions (optional):
Students I can statements . . . I can input information into a computer program and it will give me an output.
How will you meet the needs of SWD and ENL students? - Students will be supported through 504 programs - Students will have directions repeated/rephrased and extended time to complete task
Content Standards List all standards and how learners will meet the standard
<u>Mathematics</u> 3. NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
NYS Computer Science and Digital Fluency Standards List all standards and how learners will meet the standard
<u>Networks and System Design</u> 2-3. NSD. 1 - Describe and demonstrate several ways a computer program can receive data and instructions (input) and can present results (output).
CASEL COMPETENCIES and/or NYS SEL BENCHMARKS
<u>Goal 3: Demonstrate intentional decision-making skills and behaviors that consider social, emotional, and physical safety and well-being in personal, family, school, and community contexts.</u> 3B: Apply decision making skills to influence outcomes and strengthen agency in social and academic life.

3B.2a. Identify and apply decision making steps that consider impact on self and others.

INSTRUCTIONAL PLAN

List the steps of the lesson, including instructions for the students.

How will you make sure this lesson is culturally responsive?

- Students will be working in a small group with a teacher.
- Students will be introduced to input and output boxes in relation to addition and subtraction.
- The teacher will demonstrate the following problem on a whiteboard to the small group:
 - If the input is add 4 to each number, what would be the output for 8, 12, 20, and 100.
 - The teacher then draws an input/output table like below to describe the task

Input	Output

- The teacher will then give the students whiteboards and markers to make the same table on their boards.
- The teacher will then prompt if the input is add 6 to each number, what would be the output for 12, 24, 50, and 81.
- The teacher would then continue the activity with the following:
 - If the input is subtract 2, what would be the output for 10, 15, 26, and 73.
 - If the input is subtract 5, what would be the output for 25, 40, 55, and 80.
- When the practice problems for addition and subtraction are complete, the teacher will talk about how you can use the same input and output process with different forms of technology.
- The teacher will then have students break into partners and discuss how the process of input and output can be found in different forms of technology. The students will then write on their white boards, what the piece of technology is and how it would show input and output. (2-3. NSD. 1)
 - Example: Ipad
 - input: press home button
 - output: ipad wakes up and opens to the home screen

BACKGROUND OR PRIOR KNOWLEDGE

- Students need basic knowledge on adding and subtracting
- Students need basic knowledge of how different forms of technology works

INSTRUCTIONAL TECHNOLOGY INTEGRATION

- Discussion on how input and output is used in different forms of technology.

MATERIALS / RESOURCES

Add additional resources needed for this lesson such as templates, images, videos, etc.

- Whiteboard or Easel for teacher use to draw input/output table
- Whiteboards and Markers for each student