

**Title:** Creating an Algorithm to Calculate the Area of a Rectangle Using General Language, Pseudocode, and Flowchart

**Description:** In this scenario, students will create an algorithm to calculate the area of a rectangle based on its two side lengths, applying the concepts of step-by-step instructions, pseudocode, and flowcharts.

**Purpose:** The purpose of this activity is to teach students how to break down a problem into clear steps, then translate those steps into pseudocode and a flowchart. Through this activity, students will:

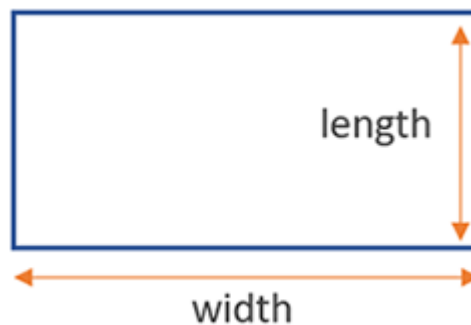
- Learn to structure an algorithm using clear and logical steps.
- Develop an understanding of pseudocode as a bridge between plain language and programming.
- Gain skills in visualizing logical steps through flowcharts, a crucial skill for visualizing program flow.

## Steps:

### 1. Understand the Task:

- The task is to find the area of a rectangle by reading its two side lengths, "Length" and "Width."
- The area of a rectangle is calculated using the formula:

$$\text{Area} = \text{Length} \times \text{Width}$$



## 2. Writing the Algorithm in **General Language** (English):

- You should write the algorithm in simple English sentences. Here's how they can break down the process

**Step 1:** Start

**Step 2:** Read or input the length of the rectangle (Length).

**Step 3:** Read or input the width of the rectangle (Width).

**Step 4:** Calculate the area by multiplying the length by the width. Use the formula:

$$\text{Area} = \text{Length} \times \text{Width}$$

**Step 5:** Display or output the calculated area.

**Step 6:** End.

## 3. Writing the Algorithm in **Pseudocode**:

- Now, You will translate the general language steps into pseudocode, using basic coding structure and indentation to organize the steps:

```
START
    INPUT Length
    INPUT Width
    Area = Length * Width
    DISPLAY Area
END
```

#### 4. Drawing the Flowchart:

You will now create a flowchart to represent the algorithm visually, using the appropriate symbols to show each step.

- **Start:** Begin the flowchart with a "Start" symbol.
- **Input Length:** Use an "Input" symbol to prompt for the rectangle's length.
- **Input Width:** Add another "Input" symbol to prompt for the rectangle's width.
- **Calculate Area:** Use a "Process" symbol to represent the calculation:  $\text{Area} = \text{Length} * \text{Width}$ .
- **Display Area:** Use an "Output" symbol to show the calculated area.
- **End:** Conclude the flowchart with an "End" symbol.

