



1. “Variable & Array Simulator” Gameboard

Activity Type: Hands-on or digital simulation

Objective: Reinforce the concept of variables and arrays, how they store and change data.

How It Works:

- Give students a “data tray” (physical or digital worksheet) with boxes labeled like variables: `cupcake_price`, `age[0]`, etc.
- Start with pre-filled values. Then, walk through mini scenarios like:
 - `cupcake_price = cupcake_price / 2`
 - `ages[0] = 17`
 - `ages = ages + 1` (Add 1 to each age)
- Students update the values and explain the changes.

Tools: Printable worksheet, Jamboard, or Google Sheets with formulas.

2. “Function Builder” Puzzle

Activity Type: Code construction with puzzle pieces (drag-and-drop or cut-out)

Objective: Help students understand function structure and flow.

How It Works:

- Students receive shuffled pieces of a function (e.g., `def`, `return`, parameter name, formula).
- Their goal is to piece them together to form a valid function like:

```
python
CopyEdit
def FahrenheitToCelsius(T):
    return (T - 32) * 5 / 9
```

- Optional challenge: Create their own pseudocode function after.

Tools: Printable puzzle strips or a Google Slides interactive version.



Student Engagement & Mentoring in Technology

3. “Object-Oriented Show & Tell”

Activity Type: Group roleplay or creative drawing

Objective: Introduce the concept of objects, attributes, and methods in a concrete way.

How It Works:

- Students choose or invent a real-world object (e.g., **Smartphone, Shoe, Robot Pet**)
- They then describe:
 - Attributes: brand, size, battery life
 - Methods: call(), takePicture(), turnOff()
- Present their object to the class with a drawing or demo of how methods might work.

Tools: Paper/posters, drawing tools, or a shared slideshow for virtual show-and-tell.