A **Capacitance Meter** measures the value of a capacitor in **farads** using an **Arduino**. Here's a brief overview of how to build it in Tinkercad:

Components Needed:

- **Arduino Uno**

- **LCD display** (16x2)

- **Capacitor** (the one you want to measure)

- **Resistor** (typically 1kΩ)

- **Pushbutton** (optional, for triggering measurement)

- **Breadboard** and **jumper wires**

Circuit Setup:

1. **Arduino Pin Connections:**

   - Connect a **resistor** and the **capacitor** in series between a digital pin (e.g., **D2**) and **ground (GND)**.

   - Use a **digital pin** (e.g., **D3**) to measure the capacitor's charging time using Arduino's **pulseIn()** function.

   - Connect the **LCD display** (pins for **VCC, GND, SDA, SCL**) to the Arduino to show the measured capacitance.

2. **Code:**

   - Write the code to measure the **charging time** of the capacitor.

where **t** is the charging time and **R** is the known resistor value.

3. **Display Output:**

   - The Arduino will display the capacitance value on the **LCD** screen in **farads**.