





STEAM Lesson

Solar Panel Efficiency



Electric circuit simulator

- 1. Login into TinkerCAD online (https://www.tinkercad.com)
- 2. Click Sign in icon (top left side of the screen)



- 3. Select Personal Accounts (If you don't have an account, you can sign in with your Gmail, Microsoft or Facebook account).
- 4. Select Circuits > Select Create New Circuit
- 5. Select Components All
- 6. Add the electrical components by drag and drop

Components needed:



- Note: The potentiometer should have a 100 Ω resistance. You need 2 multimeters. Select one to work as a voltmeter and the other as an ammeter.
- 7. Start simulation when you circuit is completed

Measurements

- 1. Rotate the potentiometer (small changes each time).
- 2. Measure the voltage and the current and write down the values in the table (first and second columns).
- 3. Calculate da electric power (third column)

Note: The electric power (P) output of the solar panel is equal to the voltage (U) times the current (I).

P = U x I

Voltage (V)	Current (mA)	Power (mW)

4. Draw the power-voltage graphic

