Name: _____          Date: _____
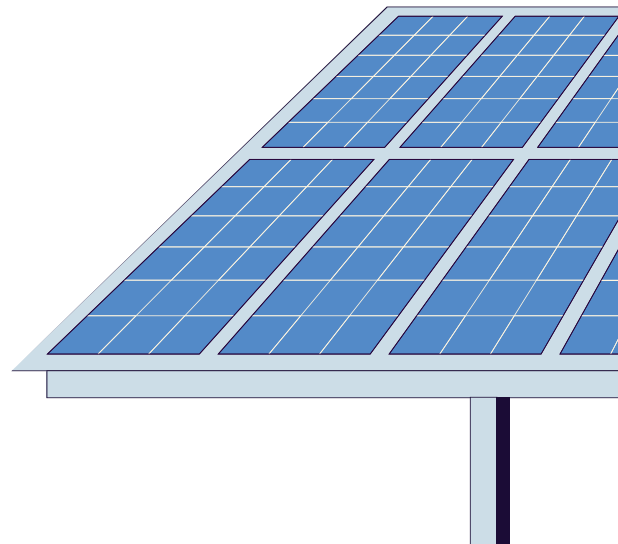
# How can solar energy power the night?
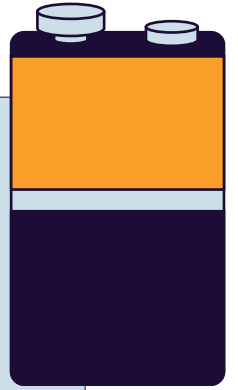
### 1. How much energy does the Earth receive from the Sun every hour?

**A)** Roughly 430 septillion joules; enough to power our energy needs forever.

**B)** Roughly 430 quintillion joules; enough to power our energy needs for a year.

**C)** Roughly 430 billion joules; enough to power our energy needs for a day.

**D)** Roughly 430 joules; enough to power our energy needs for a second.

### 2. What problem do we face by making powerlines longer?

**A)** The longer the powerline, the higher the risk it will explode.

**B)** The longer the powerline, the greater the risk somebody will steal a section of it.

**C)** The longer the powerline, the more energy is wasted on pushing a current to where it's needed.

**D)** The longer the powerline, the greater the risk birds will fly into it.

3. **What is the name of the device invented 200 years ago that creates a current from different metals and a salty solution?**

   **A)** Electricity sandwich

   **B)** Voltaic pile

   **C)** Electrolyte

   **D)** Electron pile

4. **What are the different metals called in an electrochemical cell?**

   **A)** Electrodes

   **B)** Electrolyte

   **C)** Batteries

   **D)** Cells

5. **What metals do many kinds of powerful 'big' batteries rely on to produce electricity?**

   **A)** Tin and lead

   **B)** Lithium and zinc

   **C)** Copper and gold

   **D)** Silver and magnesium

6. **What two gases can water molecules be broken into using electricity?**

   **A)** Hydrogen and oxygen

   **B)** Nitrogen and hydrogen

   **C)** Oxygen and carbon

   **D)** Hydrogen and carbon

7. **How can gravity be used to store electricity?**

   **A)** Excess electricity can be stored up high, and allowed to flow downhill at night

   **B)** Excess electricity can be squeezed together using gravity, and shipped around the planet

   **C)** Excess electricity can be stored underground, where gravity preserves it

   **D)** Excess electricity can be used to pump water uphill then released to drive a turbine