GREEN TECH SERIES ENERGY EDITION

# John B. Goodenough

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Name: .....

Date: .....

## The Battery That Changed the World

Have you ever played on a tablet, used a smartphone, or seen an electric car zooming down the street? If so, you have an amazing scientist named **John B. Goodenough** to thank! He was a brilliant physicist who helped invent the **lithium-ion battery**, an invention so important that it earned him a Nobel Prize!

Before his invention, rechargeable batteries were very heavy, weak, and didn't hold their charge for very long. Dr. Goodenough experimented with special materials in the battery (called the *cathode*). His breakthrough made batteries incredibly powerful and lightweight.

You might wonder, "*Why are batteries considered Green Technology?*" Well, without lightweight lithium-ion batteries, **Electric Vehicles (EVs)** would not be possible! Because of his invention, we can drive cars that run on clean electricity instead of burning gasoline, which helps keep our air clean and fights climate change.

These batteries are also the missing puzzle piece for renewable energy like solar panels and wind turbines. The sun doesn't shine at night, and the wind doesn't always blow. But thanks to Goodenough's giant lithium-ion batteries, we can **store** the clean energy when nature makes it, and use it later when we need it!

## Reading Check

1. **What type of battery did John B. Goodenough help invent?**

2. **What major award did he win for his scientific breakthrough?**

   - ◯ An Olympic Gold Medal
   - ◯ An Academy Award (Oscar)
   - ◯ A Nobel Prize

3. **Why are lightweight batteries important for Electric Vehicles (EVs)?**

4. **How do these batteries help solar and wind power work better?**

## Green Energy Logic

A big part of science is understanding **Cause and Effect**. Match the Green Tech "Cause" on the left with the correct "Effect" on the right by drawing a line between them!

**1. The wind stops blowing.**

**2. People drive Electric Vehicles.**

**3. Batteries are made lightweight.**

**4. The sun shines brightly all day.**

A. Less gasoline is burned, keeping the air clean.

B. Giant batteries save the extra energy for later.

C. They can easily fit inside phones, laptops, and cars.

D. We use stored battery power to keep the lights on.

# Design an Eco-Car of the Future!

Because of lithium-ion batteries, the future of transportation is electric! Design your own Electric Vehicle (EV). Does it look like a sports car, a futuristic bus, or a flying hover-car? Don't forget to draw where the battery goes!

*Draw your Electric Vehicle (EV) here*

BATTERY POWERED

**Name of your vehicle:** _____