

2019 Nobel Prize in Chemistry

Who: John B. Goodenough, The University of Texas at Austin, USA
M. Stanley Whittingham, Binghamton University, State University of New York,
USA
Akira Yoshino, Asahi Kasei Corporation, Tokyo, Japan Meijo University,
Nagoya, Japan

Why: “The Nobel Prize in Chemistry 2019 is awarded to John B. Goodenough, M. Stanley Whittingham and Akira Yoshino for their contributions to the development of the lithium-ion battery. This rechargeable battery laid the foundation of wireless electronics such as mobile phones and laptops. It also makes a fossil fuel-free world possible, as it is used for everything from powering electric cars to storing energy from renewable sources.”

What:

What are some of the benefits of lithium ion batteries that you take advantage of in your everyday life?

What are some of the drawbacks of lithium ion batteries?

Is this invention worthy of the Nobel Prize in Chemistry?

2019 Nobel Prize in Physics

Who: ½ jointly to Michael Mayor and Didier Queloz, University of Geneva, Switzerland and ½ to James Peebles, Princeton University, USA

Why: *"for contributions to our understanding of the evolution of the universe and Earth's place in the cosmos"*

Mayor and Queloz – First discovery of a planet orbiting a sun-like star outside of our solar system.

"for the discovery of an exoplanet orbiting a solar-type star"

Peebles – Theoretical insights into dark matter and cosmic background radiation.

"for theoretical discoveries in physical cosmology"

What:

Why are we interested in stars, planets and other bodies so far away that no one living today will ever visit them?

What is the Doppler Effect? How does it affect sound from an ambulance? How does it affect light waves from stars?

How did Mayor and Queloz use the Doppler Effect to identify an exoplanet?

Do you understand Peebles' theories? Does that affect how you think about his deserving of the Nobel Prize? If so, how?