

**The Helicopter**

**Inventions that Shook the World Series**

**Vocabulary:**

Helicopter, Igor Sikorsky, rotor, rudder, torque

**Pre-Viewing Discussion:**

Why do you think inventors wanted to create the helicopter? How was it different from fixed wing aircraft?

What challenges do you think were presented by helicopters that were not present when inventing fixed wing aircraft?

**Post-Viewing Discussion:**

Why did Igor Sikorsky want to create the helicopter? How did he think it would be different from fixed wing aircraft?

What challenges did Sikorsky have to overcome throughout the 30+ years it took him to create a successful design? What personal characteristics do you think kept him going?

How has the design of the helicopter changed since Sikorsky's first successful model?

**Further Activities:**

Write a biography of Igor Sikorsky. Be sure to include his personal characteristics that ultimately made him successful, his challenges, and his accomplishments.

**The Photocopier**

**Inventions that Shook the World Series**

**Vocabulary:**

Chester Carlson, photocopier, mimeograph, photoconductor, xerography

**Pre-Viewing Discussion:**

How would life be different without the photocopier?

What do you think gave Chester Carlson the idea to create a photocopier?

**Post-Viewing Discussion:**

Why was photography not a good solution to the copying problem?

How did Carlson's photocopier work? How is the underlying technology similar or different in today's copiers?

**Further Activities:**

Write a biography of Chester Carlson. Be sure to include his personal characteristics that ultimately made him successful, his challenges, and his accomplishments.

**The Parking Meter**  
**Inventions that Shook the World Series**

**Vocabulary:**

Parking meter, Carl Magee, Professor Holger Theusen

**Pre-Viewing Discussion:**

What do you think drove the invention of the parking meter? What do you imagine parking in the city would be like without parking meters?

**Post-Viewing Discussion:**

Why did Carl Magee want to create a parking meter? What gave him the idea? Why did he need Professor Holger Thuesen's help?

What did Magee and Thuesen eventually do to expedite the design of the marking meter? How successful were they?

Why was the parking meter an important innovation for cities around the United States?

**Further Activities:**

Write a biography of Carl Magee. Be sure to include his personal characteristics that ultimately made him successful, his challenges, and his accomplishments.

**The Walkie Talkie****Inventions that Shook the World Series****Vocabulary:**

Radio, radio waves, Morse Code, Donald Hings, walkie talkie

**Pre-Viewing Discussion:**

Have you ever used a walkie talkie? What are the benefits of having one? What do you think were the challenges associated with creating it?

**Post-Viewing Discussion:**

What was the challenge Donald Hings faced when it came to using radio technology to create the walkie talkie? How did the demands of the walkie talkie compete with one another?

How successful were Hings' first tests of the walkie talkie? Where was the walkie talkie first used? How was it beneficial in that setting?

Why did Hings receive the Order of Canada? Do you think he should have received the honor?

**Further Activities:**

The walkie talkie was a complex invention that required many different innovations along the way. Research the various components and explain how they contributed to the whole.

Journalists came up with the term "walkie talkie." Evaluate how the media influences consumer habits and the products that ultimately are adopted by the public at large.

**The Electric Guitar**  
**Inventions that Shook the World Series**

**Vocabulary:**

Electric Guitar, George Beauchamp, volume, tricone, frying pan, electromagnetism

**Pre-Viewing Discussion:**

Where do we hear the electric guitar today? How was music different before the invention of the electric guitar?

**Post-Viewing Discussion:**

What did the three aluminum cones that the violin store-owner inserted into the guitar do?

Why did Beauchamp believe the horseshoe-shaped magnet was ideal?

Why wasn't George Beauchamp's name on his electric guitar? Why did they call it "The Rickenbacker"?

**Further Activities:**

Research ways in which the electric guitar changed the face of music. Trace the evolution of American music from the 1920s to the present day.