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WEB & WIRELESS TECH

Hedy Lamarr

The Hollywood Star Who Helped Invent WiFi

The Actress Who Was Also an Inventor

Hedy Lamarr was born in Austria in 1914 and became a famous Hollywood movie star. Most people knew her face from the big screen. But Hedy had a secret hobby: she loved to invent things in her free time. She taught herself how machines and signals worked.

During World War II, Hedy worked with a music composer named George Antheil. Together they invented a clever idea. Radio signals used to guide torpedoes could be jammed by the enemy. Hedy's idea was to make the signal quickly hop between many different radio frequencies so it could not be jammed or blocked.

This idea is called frequency hopping. Many years later, engineers used the same idea to build WiFi, Bluetooth, and GPS. Because of this, some people call Hedy Lamarr 'the mother of WiFi.' In 2014 she was added to the National Inventors Hall of Fame.

WORDS TO KNOW

- **invent:** To create something brand new that did not exist before.
- **radio frequency:** A channel or number a radio signal travels on through the air.
- **jamming:** Blocking or scrambling a radio signal so a message cannot get through.

Part 1 • Reading Comprehension

1. What two jobs did Hedy Lamarr have?

2. Who did Hedy work with to create her invention?

3. What did frequency hopping stop the enemy from doing?

4. Name one modern technology that uses Hedy's idea.

Follow the Hop

A radio using frequency hopping jumps between channels in a repeating pattern. The pattern is: 2, 4, 1, 3, then it repeats. Use the pattern to answer each step.

- 1** The pattern just reached the last number, 3. Write the next two channels the signal will hop to.

- 2** The pattern uses 4 different channels. If someone guesses one channel to spy on, how many channels could they choose from?

- 3** One full pattern is 4 hops. How many hops happen in 3 full patterns?

Part 3 • Think About It

Why do you think a jumping signal is harder for an enemy to block than a signal that stays on one channel?
