

FLEYDO ENGLISH SCHOOL

A2 Reading Challenge

How the Microwave Was Invented by Accident

The strange true story of a melted chocolate bar that changed the way we cook

Level	A2 (Elementary)
Age Group	Teens (11-16)
Topic	True Stories
Duration	~15 minutes
Vocabulary	12 words
Quiz	5 questions

Article

If you have ever heated up leftover pizza or made a cup of hot chocolate in under two minutes, you have used a microwave oven. Today, microwaves are in almost every kitchen in the world. They are fast, easy to use, and very **convenient**. But most people do not know that this amazing machine was invented completely by accident. It all started in 1945, in a laboratory in Massachusetts, USA, when an **engineer** named Percy Spencer felt something strange in his pocket. His chocolate bar was melting — and he had no idea why.

Who Was Percy Spencer?

Percy Spencer had a difficult childhood. He was born in 1894 in Howland, Maine, a small town in the north-east of the United States. His father died when Percy was only eighteen months old. His mother left the family soon after, and Percy was raised by his uncle and aunt. His uncle died when Percy was seven. Life was not easy. Percy left school at the age of twelve and started working in a factory. He never went to high school or university. But Percy was incredibly curious and loved to learn. He read books, studied on his own, and taught himself mathematics, science, and engineering. When he was eighteen, he joined the United States Navy and learned about radio technology. This was the beginning of a career that would change the world.

Working with Radar

After the Navy, Spencer got a job at a company called Raytheon. Raytheon made equipment for the military, and during the Second World War they became one of the most important companies in America. They made magnetrons — special tubes that produce invisible waves called microwaves. These microwaves were used in **radar** systems. **Radar** helped soldiers find enemy planes and ships by sending out waves and measuring how they bounced back. Spencer became one of the best engineers at Raytheon. He understood magnetrons better than almost anyone in the world. He helped the company produce thousands of them for the war effort. By the end of the war, he was one of Raytheon's most important employees. But his biggest discovery was still ahead of him — and it would happen completely by accident.

The Melting Chocolate Bar

One day in 1945, Spencer was standing near a magnetron that was turned on. He was testing the machine as part of his normal work. After a few minutes, he noticed something strange. The chocolate bar in his trouser pocket had started to **melt**. It was soft and sticky. Spencer was surprised. The room was not hot. There was no fire or heater nearby. So why had his chocolate melted? Most people would have simply cleaned up the mess and moved on. But Spencer was not most people. He was curious. He wanted to understand what had happened. He looked at the magnetron and thought: could the microwaves from this machine have heated the chocolate? It was a simple question, but it was the question that started everything.

Popcorn and an Exploding Egg

Spencer decided to **experiment**. The next day, he brought a bag of popcorn kernels to the laboratory. He put them near the magnetron and turned it on. Within seconds, the kernels started popping. They jumped and burst, flying all over the room. Spencer and his colleagues watched in amazement. It worked! The microwaves had heated the kernels from the inside, just like they had heated the chocolate. Spencer wanted to try something else. He took an egg and placed it near the magnetron. He turned the machine on and waited. The egg started to shake. It got hotter and hotter. Then, suddenly — BANG! The egg exploded. Hot yolk flew everywhere, including onto the face of one of Spencer's colleagues. It was messy, but it proved something important: microwaves could cook food very quickly. Spencer knew he had found something special.

How Do Microwaves Cook Food?

To understand Spencer's invention, you need to know a little about how microwaves work. Microwaves are a type of **radiation** — a form of energy that travels in waves, like light or radio waves. When microwaves hit food, they make the water molecules inside the food vibrate very fast. This vibration creates heat, and the heat cooks the food. This is why microwave ovens cook food so quickly — they heat the water inside the food directly, rather than heating the air around it like a normal oven. It is also why dry foods do not heat up well in a microwave, because they do not contain much water. Spencer understood this science, and he began designing a machine that could use microwaves safely to cook food.

The First Microwave Oven

Spencer worked with his team at Raytheon to build the first microwave oven. They called it the "Radarange." The company filed a **patent** for the **device** on 8 October 1945. The first **commercial** Radarange was sold in 1947. But it was nothing like the small, light microwave ovens we use today. It was enormous — almost 1.8 metres tall and weighing about 340 kilograms. It cost about \$2,000, which in today's money would be more than \$25,000. Only restaurants, hotels, and large ships could afford to buy one. It was too big and too expensive for normal families. But the technology worked perfectly, and everyone who used it was amazed at how fast it could cook food.

Getting Smaller and Cheaper

Over the next twenty years, engineers at Raytheon and other companies worked hard to make the microwave oven smaller, safer, and more **affordable**. In 1955, a company called Tappan made the first microwave designed for home kitchens. It was smaller than the Radarange but still quite expensive. The real change came in the 1960s and 1970s. Japanese companies, especially Sharp, began making compact and cheap microwave ovens. By the late 1970s, a microwave oven cost less than \$500, and millions of families started buying them. By 1986, about 25 percent of homes in America had a microwave. By the mid-1990s, that number had risen to over 90 percent. The microwave had revolutionised the way people cooked and eaten at home. Heating food that used to take thirty minutes now took three.

Percy Spencer's Legacy

Percy Spencer received 300 patents during his lifetime. He became a senior vice president at Raytheon and received many awards for his work, including the Distinguished Public Service Award from the US Navy. But he never forgot where he came from. He was a man who had left school at twelve, lost his parents as a small child, and taught himself everything he knew. His story shows that **curiosity** and hard work can be more powerful than any university degree. When his chocolate bar melted that day in 1945, he could have ignored it. Instead, he asked a question: why? That one question led to an **experiment** with popcorn, an exploding egg, and eventually a machine that changed kitchens around the world. Spencer died in 1970 at the age of seventy-six. Today, more than a billion microwave ovens are used worldwide. Every single one of them exists because a curious man with a melted chocolate bar decided to find out what was happening.

Vocabulary

Word	Definition
engineer	a person who designs or builds machines, roads, or other structures
radar	a system that uses radio waves to find the position of objects like planes or ships
melt	to change from solid to liquid because of heat
experiment	a test to find out what happens when you do something
patent	an official document that gives an inventor the right to be the only one to make or sell
device	a machine or piece of equipment made for a special purpose
radiation	energy that travels through space in the form of waves you cannot see
commercial	made to be sold to people or businesses for money
curiosity	a strong wish to know or learn about something
affordable	cheap enough for most people to buy
convenient	easy to use or good because it saves you time
revolutionise	to change something completely so it is much better or very different

Comprehension Quiz

1. What was Percy Spencer working with when he made his discovery?

- A) A television
- B) A magnetron
- C) A refrigerator
- D) A radio

2. What was the first sign that something unusual was happening?

- A) His coffee got very hot
- B) The lights in the room started flickering
- C) The chocolate bar in his pocket melted
- D) His watch stopped working

3. What was the second thing Spencer tried to cook with microwaves?

- A) A sandwich
- B) A piece of meat
- C) An egg
- D) Popcorn kernels

4. How much did the first commercial microwave oven cost in 1947?

- A) About \$500
- B) About \$2,000
- C) About \$5,000
- D) About \$10,000

5. Why was Percy Spencer's life story unusual?

- A) He was the youngest engineer in America
- B) He never finished school but became a top engineer and inventor
- C) He was a professional chef before becoming an engineer
- D) He moved to Japan to study microwaves

Answer Key

#	Answer	Question
1	B	1. What was Percy Spencer working with when he made his discovery?
2	C	2. What was the first sign that something unusual was happening?
3	D	3. What was the second thing Spencer tried to cook with microwaves?
4	C	4. How much did the first commercial microwave oven cost in 1947?
5	B	5. Why was Percy Spencer's life story unusual?