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# Accidental Discoveries That Changed the World (B2)

## A. WARM-UP QUESTIONS

1. What accidental discovery do you find most impressive?
2. How do you design a lab to notice useful mistakes?
3. Who deserves credit in a lucky discovery? Explain.
4. Where is serendipity most likely today?
5. When do accidents become dangerous, not helpful?

## B. VOCABULARY PREVIEW

**Match up as many words and meanings as you can. ( Definitions are shuffled.)**

| | | | |
|---|---|---|---|
| ___ | 1. accident | **a.** | noticing and recording something carefully |
| ___ | 2. stumble upon | **b.** | a large molecule made of many repeated parts |
| ___ | 3. mold | **c.** | an event that happens by chance |
| ___ | 4. polymer | **d.** | a type of radiation that can pass through soft tissue |
| ___ | 5. microwave | **e.** | to find something by chance |
| ___ | 6. X-ray | **f.** | short electromagnetic waves used in cooking and tech |
| ___ | 7. observation | **g.** | the first, simple version of a product |
| ___ | 8. experiment | **h.** | a legal right to make or sell an invention |
| ___ | 9. mishap | **i.** | a fungus that can grow on food or in labs |
| ___ | 10. prototype | **j.** | a small mistake or problem |
| ___ | 11. patent | **k.** | an important and sudden advance |
| ___ | 12. breakthrough | **l.** | a scientific test to learn about a question |

## Reading

Mistakes That Mattered

The prepared mind meets luck

1. Penicillin began with nothing more glamorous than a messy plate in a lab. In 1928, Alexander Fleming accidentally left a culture of bacteria uncovered, and mold spores floated in. When he returned, he noticed something strange: the bacteria near the mold had died, while the rest continued to grow. What could have been dismissed as sloppy lab work instead became one of the most important medical breakthroughs in history. This accident led to the development of penicillin, the world's first widely used antibiotic, which has saved millions of lives. It's a reminder that curiosity can turn mistakes into discoveries when we are willing to notice the unexpected.
2. Many other innovations also began as small blunders. During World War II, engineer Percy Spencer was testing radar equipment when he noticed that a candy bar in his pocket had melted. Instead of throwing it away, he investigated, which eventually led to the creation of the microwave oven. In another case, Wilhelm Rontgen was experimenting with vacuum tubes when he observed a strange glow on a nearby screen. That glow turned out to be X-rays, which transformed medicine. In both cases, sharp observation turned surprise into theory, and theory into technology. The difference between failure and success often lies in whether you stop to ask, "Why did that happen?"
3. Serendipity—finding something valuable by accident—rewards the mind that is ready to see patterns and possibilities. You can't schedule a lucky mistake, but you can train yourself to notice one when it happens. Keeping detailed notes, questioning the obvious, and experimenting without fear create the perfect conditions for discovery. History shows that rules and methods are important, but play, imagination, and the willingness to explore the unknown often make space for the biggest breakthroughs.

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## COMPREHENSION

1. What mistake led to the discovery of penicillin, and who made it?
2. How did Percy Spencer first realize the idea that led to the microwave oven?
3. What was Wilhelm Rontgen doing when he discovered X-rays?
4. According to the text, what is serendipity?
5. What habits or actions can help someone notice valuable mistakes?

## VOCABULARY REVIEW

**1.**She ____ a new trail while hiking and found a cave.
**2.**The first ____ looked ugly but worked well.
**3.**The ____ killed the bacteria on the plate.
**4.**We ran another ____ to check the strange data.
**5.**Their careful ____ led to the idea for a sensor.
**6.**Losing power caused a minor ____ in the test.
**7.**He filed a ____ to protect the design.
**8.**The odd signal turned into a major ____.
**9.**A ____ oven uses certain waves to heat food.
**10.**The doctor ordered an ____ to check for a fracture.

## GRAMMAR REVIEW – PAST PERFECT & RESULT

**1.**The bacteria died because the mold ____ (grow) on the plate.
**2.**By the time he checked the pocket, the candy bar ____ (melt).
**3.**They improved the design after they ____ (build) the first prototype.
**4.**We repeated the test because the tube ____ (break).
**5.**She saw the pattern only after she ____ (collect) more data.
**6.**If they ____ (notice) earlier, the breakthrough would have come sooner.
**7.**Once the idea ____ (prove) useful, they applied for a patent.
**8.**After the lab ____ (allow) small risks, creativity increased.
**9.**Had we ____ (stumble upon) the signal, we might have missed it.
**10.**The team celebrated once the paper ____ (be) accepted.

## DISCUSSION

**1.**How can schools train students to notice useful 'mistakes'?
**2.**Who deserves credit in a lucky discovery-why?
**3.**Where is serendipity most likely today?
**4.**When do accidents become dangerous, not helpful?

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## CRITICAL THINKING

Pick one accidental discovery. Describe the mistake, the observation, and the chain of results that followed.