

Open Forum 2

Web Site Transcript

Chapter 8

A = Andrea, tutor

B = Jerry, student

A: Good evening, Jerry.

B: Andrea, hello. I'm sorry I'm a bit late.

A: That's not a problem, but I think we ought to get started right away. You have a big exam coming up.

B: You're right . . . and I haven't been able to study for it very much. I've been busy writing a paper for my science class.

A: Oh really? What's the paper on?

B: It's on the discovery of penicillin. Are you familiar with the story of how penicillin was discovered? It's actually very interesting.

A: Hmm . . . no, I don't know very much about penicillin . . . other than the fact that it's a drug that has saved millions of lives in the past 70 years. What's so interesting about its discovery?

B: Well, it was an accident! Alexander Fleming wasn't even looking for an antibiotic when he noticed that this mould—what we now call penicillin—seemed to slow down the growth of bacteria. Imagine, a discovery that important happening by accident! It is still one of the most widely used antibiotics in the world.

A: Hmm.

B: It got me thinking about all sorts of inventions . . . how many of them were the results of accidents? Not only inventions, but discoveries and ideas . . . how often are they the result of some unexpected event or accident? The story of Sir Isaac Newton and the apple come to mind. They say he was just sitting under a tree enjoying a fine day when an apple dropped on his head. And that's when he developed the theory of gravity.

A: Actually, I'm not sure if that's a true story, but I get your point.

B: Well, how about more recently . . . take the example of Charles Goodyear—the automobile tire company is named after him. He was working with rubber in the 1800's—he was trying to find a way to shape dissolved rubber under heat, but it always melted. And then he discovered the process of vulcanization by accident.

A: The process of what?

B: Vulcanization—the process by which rubber is made strong and resilient through the addition of sulfur under heat and pressure. The rubber loses its stickiness, making it the perfect material for automobile tires and many other products.

A: How did he make this discovery?

B: Let me see if I remember exactly . . . He had a mailbag that was lined with the dissolving rubber and some other material—I can't remember exactly what. Somehow, the bag fell onto a hot stove, and this time the rubber didn't melt . . . it charred, which was a great improvement. It turns out that there was sulfur in the other material on the mail bag, and so when the rubber was heated along with the sulfur, it was vulcanized.

A: Did you know that Alexander Graham Bell was looking for a way to help deaf people when he accidentally invented the telephone?

B: Wow! No, I didn't know that. You know, I wonder if that kind of thing still happens . . . I mean major discoveries by chance. So many of the advances in science today happen in major laboratories run by corporations or governments or universities. It's hard to imagine helpful accidents in places like that where everything is so organized and well-planned.

A: It definitely still occurs. Think about the example of monoxidil.

B: The hair loss drug? My father uses that. It was discovered by accident?

A: It sure was. It was originally created as a medicine to treat high blood pressure. One, or maybe more than one of the patients using it, reported that he experienced hair re-growth. Then many other patients reported that they started to grow new hair . . . and soon the manufacturer began to market it as a hair loss drug.

B: That's a great story.

A: Well, we could trade stories like this for hours . . . but I think we need to start preparing for this exam . . .