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UNIT 01

TOPIC: Life Science ▶ Fungus ▶ Penicillin
READING SKILL: Sequence
TEXT TYPE: Narrative Nonfiction

Mold, the Green Lifesaver!

Think & Talk

- What is mold?
- Who discovered penicillin from mold?

Build Vocabulary

Track 02

fungus
n. a living thing that often looks like plants but has no leaves or flowers, (*plural*) fungi

spoil
v. to damage or ruin the freshness of something

bacteria
n. (*plural*) very small living things

infection
n. a disease in the body caused by germs

discover
v. to find or see something before anyone else

substance
n. a particular kind of solid, liquid, or gas; matter

extract
v. to get something from something else by the use of a machine or chemicals

treat
v. to cure or make someone get better

VISUALIZE | Look and match to complete the sentences.

1. The mushroom is ● ● a **fungus** that can be eaten.
2. People **extract** ● ● make a hole in your teeth.
3. Bad **bacteria** can ● ● oil from olives.

APPLY | Fill in the blanks to complete the sentences.

infection spoil discover treat substance

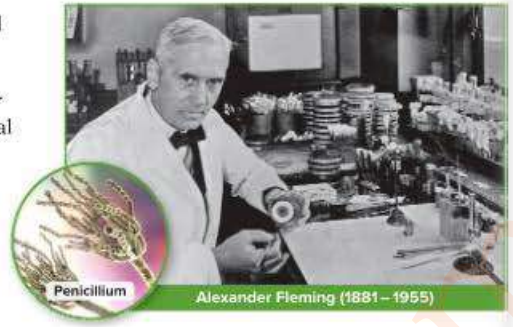
1. Bacteria will _____ milk if you don't put it in the fridge.
2. My brother had an eye _____ caused by germs.
3. The doctors went to Africa to _____ sick people.
4. Scientists _____ new facts through hundreds of tests.
5. Sugar is a sweet _____ that comes from plants.

Track 03

MOLD, the Green Lifesaver!

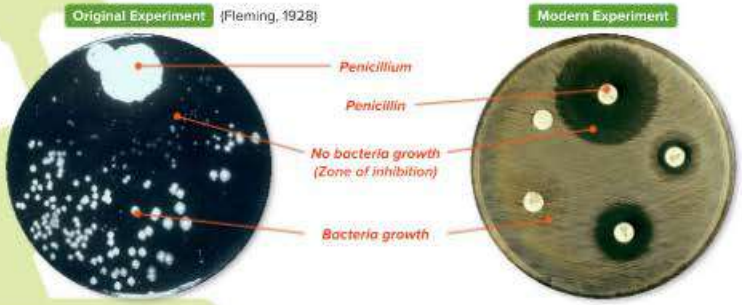
What's that green, fuzzy thing on your bread? Or those black dots on your bathroom wall? It's mold! Mold is a kind of **fungus** that can **spoil** food and cause disease. But not all kinds are bad. In fact, some mold can save human lives.

During the early 1900s, a doctor named Alexander Fleming was busy in his lab. He wanted to find out how to kill **bacteria**. Back then, many people died from bacterial **infection**s. A person could even die from a small **scratch** that bacteria got into. Fleming worked hard, but he couldn't find anything that could fight bacteria.



Alexander Fleming (1881 – 1955)

In the summer of 1928, he came back from a family vacation and entered his lab. The window had been left open. When he went to close it, he saw something very annoying. There was green mold growing on the dishes that he grew bacteria in. When he took a closer look, he was shocked by what he found. There were no bacteria around the mold! He **discover**ed the mold was "penicillium" and that a **substance** from the mold had killed the bacteria. He called it penicillin and tried to **extract** enough penicillin from the fungus to produce medicine. But it wasn't easy to do.



WORD CHECK

What is the closest meaning for the word "scratch"?

○ small wound ○ thin mark


Howard Florey & Ernst Chain

More than ten years later, scientists Howard Florey and Ernst Chain were finally able to get enough penicillin out of the mold. They successfully changed penicillin into medicine! Penicillin **treat**ed millions of wounded soldiers during World War II. Fleming, Florey, and Chain received the Nobel Prize in Medicine in 1945. Even today, penicillin keeps us safe from many painful infections.


Penicillin is used to treat different kinds of infections.

READING CHECK

Which paragraph describes the use of penicillin in real life?

○ 2nd ○ 3rd ○ 4th

Read a Chart — Fungi in Human Life

People often think all fungi are harmful to humans, but some fungi play an important role in human life. Helpful molds are all around us.

Fungi in food:
e.g., blue cheese, soy-based foods, mushrooms

Fungi in medicine:
e.g., penicillin, other antibiotics

Fungi in the environment:
e.g., mushrooms as a decomposer
They break down dead plants and animals and give back nutrients to the soil.

VISUAL CHECK

Which food is made using fungi?

○ blue cheese
○ butter

Comprehend It!

Choose the correct answers.

1. **What is the passage mainly about?**
   a. how many people have died from infections
   b. how long scientists have studied bacteria
   c. how mold saved millions of lives

2. **In the early 1900s, Alexander Fleming studied to find _____.**
   a. the best environment to grow bacteria
   b. a way to kill bacteria
   c. something that could get rid of mold

3. **When was penicillin discovered by Alexander Fleming?**
   a. in 1900 b. in 1928 c. in 1945

4. **What is NOT true about penicillin?**
   a. It is a kind of mold that causes disease.
   b. Alexander Fleming discovered penicillin by accident.
   c. It was changed into medicine by Howard Florey and Ernst Chain.

5. **What can be inferred from the passage?**
   a. Eating moldy bread can treat some wounds.
   b. Penicillin is no longer used to treat disease.
   c. Before the 1920s, there was no medicine for bacterial infections.

Write It!

how to ...

1. **Number the underlined words in the correct order.**

Alexander Fleming wanted to find out kill ( ) to ( ) how ( ) bacteria.

2. **Unscramble and complete the sentence.**

The recipe _____

cook | tells | how | you | chicken soup | to

Summarize It!

Complete the summary.

Beginning Paragraphs 1-2	Not all types of mold are bad, some molds can save human lives. In the early 1900s, there were no antibiotic medicines to cure bacterial diseases. British scientist Alexander Fleming worked hard _____ _____.
Middle Paragraph 3	In 1928, almost by accident, Fleming discovered bacteria _____ _____. He found out that the mold made a substance that could attack certain bacteria. He called this substance penicillin. But he couldn't succeed at extracting enough penicillin though.
End Paragraph 4	Almost ten years later, Howard Florey and Ernst Chain found _____ _____ and finally changed it into medicine. Penicillin was used widely for treating soldiers during World War II. In 1945, Fleming, Florey, and Chain _____ _____ for their great discoveries.

a way to produce enough penicillin | won the Nobel Prize in Medicine
to find a way to kill bacteria | wasn't growing around a certain type of mold

Focus On Skills — Sequence

Read and number the events in the correct order.

The Discovery of Penicillin

- ( ) Around 1940, Howard Florey and Ernst Chain succeeded in turning penicillin into medicine.
- ( ) In 1928, Alexander Fleming discovered that a substance from mold killed bacteria. He called the substance penicillin.
- ( ) In 1945, Fleming, Florey, and Chain received the Nobel Prize in Medicine.
- ( ) In the early 1920s, Alexander Fleming tried to find a way to save people from bacterial infections.
- ( ) Penicillin treated a lot of sick and wounded soldiers in World War II.

Have you ever seen mold? Was it helpful or harmful?