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Week 4: Health, Protection, and Early Detection

Module 4: History of Medicine and Pathology

Lesson: Why Does Medicine Get Better Over Time?

Lesson Overview

Students investigate how medical knowledge improves over time through studying disease, documenting findings, and sharing information. They use evidence from the module to explain how knowledge leads to improved tools, treatments, and health outcomes.

Learning Targets

Explain how studying disease contributes to medical knowledge.

Describe how recording and sharing knowledge improves medicine.

Use evidence to explain how medical progress leads to better health outcomes.

Vocabulary

Pathology
the study of disease

Pathologist
a scientist who studies disease

Disease
a condition that harms the body

Medical tools
instruments used to diagnose or treat patients

Materials

Module
Student response sheets
Whiteboard or chart paper

Instructional Notes

This lesson connects to previous learning about preventing and treating disease. Students shift from understanding how health is protected at the individual level to understanding how medical knowledge improves outcomes across generations. The lesson introduces medicine as a system that grows through investigation, documentation, and communication. The conceptual focus is that medical progress depends on knowledge. Students often notice improved tools and treatments but may overlook the role of studying disease and sharing discoveries. Students may initially believe that better tools alone improve medicine. This lesson provides opportunities for students to evaluate that idea and determine how tools, knowledge, and disease study are connected. Students are expected to discover



that medical advancements build on information gathered, recorded, and shared over time.

Learning Experience

8 min	Opening	Present the scenario: "People thousands of years ago wanted to survive disease just as much as we do today. Even after better medical tools were invented, many people still died from infections." Ask students to choose the explanation they think best explains the situation: A. Doctors were not skilled. B. Knowledge was not shared or improved. C. People were unlucky. Have students justify their choice independently. After students explain their reasoning, ask: "If tools improved, why didn't survival improve right away?" Invite students to reconsider and revise their thinking. Students select an explanation, write a brief justification, discuss their reasoning with a partner, and revise their explanation if their thinking changes. Sentence Frame: I first thought _____, but now I think _____ because _____ matters more.
15 min	Module	Focus: Gather evidence about how studying disease, documenting information, and sharing knowledge contribute to medical progress. Guiding Questions: • What does pathology study and explain? • How was medical knowledge shared in the past? • How did medical tools improve over time? Quick Checks: • Can medical knowledge improve if discoveries are never recorded? • How are knowledge and medical tools connected? Sentence Frame: One piece of evidence from the module is _____. This suggests that _____.
15 min	Application	Tell students they are serving on a Medical Innovation Team. Present the challenge: "A disease is spreading through a community. Community leaders want to understand how medicine became effective enough to help people today. Your team has been asked to explain what had to happen for modern medicine to reach its current level." Remind students that all evidence and examples must come from the module. Provide sorting mats labeled: • Builds Medical Knowledge • Builds From Medical Knowledge



Direct students to use evidence from the module to build and defend a model explaining how medicine improves over time.

Students:

Step 1: Build the Timeline of Medical Progress

Review notes and evidence collected from the module. Identify examples related to pathology, documentation, sharing knowledge, and medical tools. Arrange examples in an order that makes sense based on the module evidence.

Step 2: Create the Medical Progress Map

Sort examples into Builds Medical Knowledge or Builds From Medical Knowledge. Discuss relationships between the examples. Determine which ideas belong at the beginning, middle, and end of the system.

Step 3: Solve the Challenge

Construct a cause-and-effect chain that explains how medicine became more effective over time. Use evidence from the module to support each part of the chain. Determine which factor played the greatest role in medical progress.

Step 4: Defend Your Team's Explanation

Present your medical progress map to another group. Compare explanations and evidence. Determine which explanation is most strongly supported by module evidence. Revise your explanation if needed.

Sentence Frames:

_____ helped build medical knowledge because _____.

_____ improved because people knew more about _____.

Because people _____, knowledge _____, which allowed _____, leading to _____ outcomes.

The most important factor was _____ because _____.

Answer Key:

Acceptable Examples for Builds Medical Knowledge

- Pathologists study disease.
- Pathologists examine organs, tissues, cells, and microscopic images.
- Ancient Egyptians recorded medical treatments and remedies.
- Medical discoveries were documented and shared across generations.

Acceptable Examples for Builds From Medical Knowledge

- Medical tools improved over time.
- Surgical instruments became more advanced.
- Sterilization practices improved medical procedures.
- Medical treatments became safer and more effective.

Acceptable Cause-and-Effect Chains

- Because people studied disease, knowledge increased, which allowed better tools and treatments to be created, leading to better health outcomes.
- Because medical knowledge was recorded and shared, later generations could improve on earlier discoveries, which led to improved medical tools and safer procedures.

Acceptable Conclusions

- Recording and sharing knowledge is the most important factor because discoveries cannot improve medicine if others cannot learn from them.
- Studying disease is the most important factor because medical knowledge begins with understanding disease.
- Improved tools are important, but they depend on knowledge gained through studying, recording, and sharing information.

2 min	Reflection	Why does recording and sharing medical knowledge improve survival and health outcomes?
2 min	Career Connections	Pathologists study disease by examining organs, tissues, and cells to build medical knowledge. Doctors, researchers, and healthcare professionals rely on information collected and shared over many generations to diagnose illnesses and improve treatments. Modern medical tools and procedures exist because people documented discoveries, tested ideas, and built on previous knowledge. The system students analyzed in this lesson reflects how medicine continues to advance today.