

Clean Hands, Big Change

Trace how an observation can lead to a solution that helps people.

3.4.A “explain how scientific discoveries and innovative solutions to problems impact science and society; and”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle the scientific observation or discovery, underline the health solution, and number two ways the work changed science or society.

A Clue About Clean Hands

- ① In 1847, Dr. Ignaz Semmelweis worked at a hospital in Vienna, Austria. He noticed that more mothers died from childbed fever in one clinic than in another. Doctors and students often came to the first clinic after studying bodies of people who had died. Semmelweis wondered whether something on their hands was making mothers sick.
- ② He asked workers to wash their hands with a chlorine solution before helping mothers. After the new rule began, far fewer mothers died in that clinic. Semmelweis did not yet know about germs, but his careful observations showed that clean hands could stop illness from spreading. His work helped other scientists ask more questions about disease.
- ③ Today, handwashing with soap is an important health solution in homes, schools, and hospitals. People wash before eating, after using the toilet, and before preparing food. This habit lowers the chance that germs will move from hands to mouths or food. The discovery changed science by guiding disease research, and it changed society by helping communities prevent illness.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What problem did Semmelweis notice at the hospital?

2 How did Semmelweis use his observation to make a solution?

3 How did Semmelweis's work impact science?

4 How does handwashing impact society today?

3 YOUR TURN _____ Your own words

Think of a problem at school or at home. Write three sentences that name a scientific observation or discovery, describe an innovative solution, and explain how the solution could help people and science.

PART 1 • READ AND MARK

Circle the scientific observation or discovery, underline the health solution, and number two ways the work changed science or society. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What problem did Semmelweis notice at the hospital?	He noticed that more mothers died from childbed fever in one clinic than in another.
2	How did Semmelweis use his observation to make a solution?	He had workers wash their hands with a chlorine solution before helping mothers.
3	How did Semmelweis's work impact science?	It helped other scientists ask more questions about disease and guided disease research.
4	How does handwashing impact society today?	It helps people prevent illness by lowering the chance that germs move from hands to mouths or food.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Scientists learned that fruit peels and leaves can break down into soil that helps plants grow. Our school could collect these scraps in a compost bin instead of throwing them away. The bin could give the garden soil, reduce trash, and help students study what plants need to grow.

Accept answers that correctly connect Semmelweis's observation to handwashing and explain an impact on science or people. For Your Turn, accept reasonable, factually sound ideas that include all three parts.