

Chernobyl Cause Chains

Trace how decisions at one reactor led to immediate and lasting effects.

SS6G8.c "Explain the causes and effects of the nuclear disaster in Chernobyl, Ukraine."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each cause of the disaster and circle each effect, then write the same number beside a cause and an effect that are linked.

A Disaster With Lasting Effects

- ① On April 26, 1986, workers at Reactor 4 of the Chernobyl nuclear power plant in Ukraine were running a safety test. The reactor had design weaknesses, and the crew made unsafe choices during the test, including turning off important safety systems. Power rose suddenly to a dangerous level. Two explosions tore open the reactor building, and a fire sent radioactive materials high into the air. The disaster resulted from both human decisions and problems in the reactor's design.
- ② Radioactive particles traveled on the wind across Ukraine, Belarus, Russia, and other parts of Europe. People near the plant faced the greatest danger. Officials evacuated the nearby city of Pripyat about 36 hours after the explosion and later moved many more people from contaminated areas. Radioactive iodine could enter milk and food, especially harming children's thyroid glands. Radiation also contaminated soil, forests, and water, limiting where people could safely live and farm in those regions for many years afterward.
- ③ The effects did not end after the fire was put out. Firefighters and other cleanup workers, often called liquidators, faced high radiation while controlling the damaged site. A concrete shelter was built over the reactor, and a larger steel cover was placed over it in 2016. Many people lost homes and jobs, and some children exposed to radioactive iodine later developed thyroid cancer. An exclusion zone remains around the plant because some radioactive materials stay dangerous for a long time.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What two factors caused the Chernobyl disaster?

2 What happened when power rose to a dangerous level at Reactor 4?

3 How could radioactive iodine reach people, and what health effect could it cause?

4 Why does an exclusion zone still remain around the Chernobyl plant?

3 YOUR TURN _____ Your own words

Write a three-sentence cause-and-effect explanation for a museum label about Chernobyl. Include two causes, one immediate effect, and one lasting effect or response.

PART 1 • READ AND MARK

Underline each cause of the disaster and circle each effect, then write the same number beside a cause and an effect that are linked. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What two factors caused the Chernobyl disaster?	The reactor had design weaknesses, and the crew made unsafe choices during the safety test.
2	What happened when power rose to a dangerous level at Reactor 4?	Two explosions tore open the reactor building, and a fire released radioactive materials into the air.
3	How could radioactive iodine reach people, and what health effect could it cause?	It could enter milk and food. It could harm children's thyroid glands, and some exposed children later developed thyroid cancer.
4	Why does an exclusion zone still remain around the Chernobyl plant?	Some radioactive materials remain dangerous for a long time, so the area is not safe for people to live in.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Because Reactor 4 had design weaknesses and the crew turned off safety systems, power surged during a test. The explosions and fire released radioactive materials, so people had to leave contaminated areas. As a result, cleanup workers faced radiation, and an exclusion zone still limits where people can live and farm.

Accept equivalent cause-and-effect explanations that accurately connect reactor design weaknesses and unsafe actions to the explosion, radiation release, and lasting effects. For the open response, require all requested parts and logical links between them.