

Burial Changes Matter

Trace how buried materials become rocks and fuels.

5.10.B “model and describe the processes that led to the formation of sedimentary rocks and fossil fuels; and”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each word or phrase that tells what changes a material. Circle each force or condition that causes the change.

From Sediment to Fuel

- ① A river carries tiny pieces of rock, sand, and mud downstream. When the water slows in a lake or sea, these sediments settle in layers. New layers pile on top. Over thousands or millions of years, the weight presses the lower layers together. Minerals dissolved in groundwater can fill spaces and glue grains together. This process, called cementation, helps form sedimentary rock.
- ② Sediments begin when weathering breaks exposed rock into smaller pieces. Wind, moving water, ice, and gravity erode, or carry away, those pieces. The pieces may travel far before they are deposited. In a sandstone, sand-sized grains were compacted and cemented. In shale, thin layers of mud were pressed into rock. Shells or plant parts can be buried in sediment and later become fossils.
- ③ Fossil fuels form from the buried remains of living things, but their paths differ. In swampy places, dead plants can build up where little oxygen slows decay. Burial by sediment, heat, and pressure change this plant material into coal over millions of years. Tiny ocean organisms can settle into mud on the seafloor. Deep burial, heat, and pressure can change their remains into oil and natural gas, which may move into porous rock.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What happens to sediments after water slows, and what happens as more layers pile on top?

2 How does cementation help form sedimentary rock?

3 Compare the starting remains and locations for coal versus oil and natural gas.

4 Name two conditions that help dead plants change into coal, and state how long the change takes.

3 YOUR TURN _____ Your own words

Make a three-panel process model: panel 1 shows sediment becoming sedimentary rock, panel 2 shows plant remains becoming coal, and panel 3 shows tiny ocean organisms becoming oil and natural gas. Add at least two labels in each panel and write a caption under each panel that names the changes.

PART 1 • READ AND MARK

Underline each word or phrase that tells what changes a material. Circle each force or condition that causes the change. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What happens to sediments after water slows, and what happens as more layers pile on top?	The sediments settle in layers. As more layers pile on top, their weight presses the lower layers together.
2	How does cementation help form sedimentary rock?	Minerals dissolved in groundwater fill spaces and glue sediment grains together.
3	Compare the starting remains and locations for coal versus oil and natural gas.	Coal forms from dead plants that build up in swampy places. Oil and natural gas form from tiny ocean organisms buried in mud on the seafloor.
4	Name two conditions that help dead plants change into coal, and state how long the change takes.	Little oxygen slows decay, and burial, heat, and pressure change the plant material. Coal forms over millions of years.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Panel 1 labels: sediments, layers, weight, minerals. Caption: Sediments settle in layers, then compaction and cementation form sedimentary rock. Panel 2 labels: dead plants, little oxygen, burial, heat and pressure. Caption: Buried plant remains change into coal over millions of years. Panel 3 labels: tiny ocean organisms, mud, deep burial, heat and pressure. Caption: Their remains change into oil and natural gas, which can move into porous rock.

Accept equivalent descriptions of deposition, compaction, and cementation for sedimentary rock. For fossil fuels, accept accurate models that show buried organic remains changing through heat and pressure over millions of years, with plants for coal and tiny ocean organisms for oil and natural gas.