Events, Procedures, and Concepts in Nonfiction

Name: _____	Date: _____	Score: _____ / 10

Quick Review

Good readers explain WHAT happens in a procedure, WHY each step matters, and HOW the steps connect. Look for words like first, next, because, and so to follow the order and reasons.

PART 1 — READ

Read the passage. Then answer the questions.

How Solar Panels Turn Sunlight Into Electricity

A solar panel looks like a flat blue rectangle, but inside it is doing something remarkable. It is taking light from a star ninety-three million miles away and turning it into electricity you can use to charge a phone, run a refrigerator, or light a classroom. The whole process happens silently, without any moving parts.

First, sunlight reaches the surface of the panel. The panel is made of many small squares called solar cells. Each cell contains a thin layer of a material called silicon. When sunlight hits the silicon, the tiny particles of light, called photons, give energy to electrons inside the silicon. Because the electrons gain energy, they begin to move. This movement is the start of an electric current.

Next, the moving electrons need a path to follow. Thin metal lines on top of each solar cell collect the electrons and guide them into wires. The wires connect all of the cells together so that their tiny currents add up into one stronger current. At this point the electricity is called "direct current," or DC.

However, most homes use a different kind of electricity, called "alternating current," or AC. So a special box called an inverter changes the DC into AC. Finally, the AC electricity flows from the inverter into the home's wiring. If the panels make more energy than the home needs, the extra electricity can be sent back to the power grid, where it is shared with other neighbors. In this way, a quiet panel on a roof becomes part of a much larger system.

PART 2 — PRACTICE

Use the article to answer each question. Pay attention to the order of the steps.

1. What is the FIRST step in the process the article describes?

A. The inverter changes DC into AC.

B. Wires combine many small currents into one stronger current.

C. Sunlight hits the silicon inside the panel.

D. Extra electricity is sent back to the power grid.

2. What causes the electrons inside the silicon to start moving?
   - **A.** Heat from the warm panel surface
   - **B.** Photons from sunlight giving energy to the electrons
   - **C.** Electricity flowing into the panel from the home
   - **D.** The metal lines pulling the electrons through the wires
3. Why are thin metal lines placed on top of each solar cell?
   - **A.** To reflect extra sunlight away from the panel
   - **B.** To hold the silicon and the glass tightly together
   - **C.** To turn DC into AC inside the panel
   - **D.** To collect the moving electrons and guide them into wires
4. What does the inverter do in the process?
   - **A.** It changes direct current (DC) into alternating current (AC).
   - **B.** It stores extra electricity until the next sunny day.
   - **C.** It moves the panels so they point at the sun.
   - **D.** It cleans dust off the panel surface.
5. Why must the DC be changed into AC?
   - **A.** Because AC carries more energy than DC
   - **B.** Because AC can travel through wires but DC cannot
   - **C.** Because DC is dangerous to touch
   - **D.** Because most homes are wired to use AC electricity
6. What happens when the panels produce MORE electricity than the home needs?
   - **A.** The inverter shuts off until later.
   - **B.** The panels store the extra electricity inside themselves.
   - **C.** The extra electricity is sent back to the power grid to share with neighbors.
   - **D.** The extra electricity is lost as heat.
7. Which list shows the steps in the CORRECT order?
   - **A.** Inverter changes current → sunlight hits panel → wires combine currents → home uses electricity
   - **B.** Sunlight hits panel → wires collect electrons → inverter changes current → home uses electricity
   - **C.** Wires collect electrons → sunlight hits panel → inverter changes current → home uses electricity
   - **D.** Sunlight hits panel → inverter changes current → wires collect electrons → home uses electricity
8. What is the job of the signal word "However" in paragraph 4?
   - **A.** It introduces another reason for the same idea.
   - **B.** It signals the beginning of a list.
   - **C.** It signals a contrast between the DC the panels make and the AC homes need.
   - **D.** It marks the end of the whole process.

9. Explain WHY the order of the steps matters. What would happen if the inverter step came BEFORE the wires collected the electrons?

_____

_____

10. Which sentence from the article BEST explains the central concept of how a solar panel works?

A. "A solar panel looks like a flat blue rectangle."

B. "The whole process happens silently, without any moving parts."

C. "When sunlight hits the silicon, the tiny particles of light, called photons, give energy to electrons inside the silicon."

D. "If the panels make more energy than the home needs, the extra electricity can be sent back to the power grid."

Answer Keys

1	A	B	**C**	D	6	A	B	**C**	D
2	A	**B**	C	D	7	A	**B**	C	D
3	A	B	C	**D**	8	A	B	**C**	D
4	**A**	B	C	D	9	See below			
5	A	B	C	**D**	10	A	B	**C**	D

Explanations

1. C	The text says "First, sunlight reaches the surface of the panel." A is the LAST conversion step. B is the middle step (collecting currents). D is what happens AFTER the home is powered.
2. B	Paragraph 2 names photons as the cause. A is a real-world plausible idea (panels DO get warm) but the text says LIGHT, not heat. C reverses the direction of energy flow. D confuses CAUSE with PATH — the metal lines guide electrons after they are already moving.
3. D	Paragraph 3 states this directly. A is real-world plausible but wrong — the panel wants to ABSORB light. B confuses the metal lines with glue. C confuses the metal lines with the inverter's job.
4. A	Paragraph 4 states this directly. B is real-world plausible (batteries do this, not inverters). C confuses the inverter with a sun-tracking motor. D is plausible but never mentioned.
5. D	The text gives this exact reason. A and B are real-world plausible-sounding facts about electricity but are not in the text and are also not true. C is a common myth — both DC and AC can be dangerous; the text never says DC is more dangerous.
6. C	Paragraph 4 says this directly. A confuses extra power with no power. B is wrong — panels make electricity, they do not store it. D is real-world plausible (some energy IS lost as heat) but the text describes sharing, not loss.
7. B	The signal words first, next, however, finally give exactly this order. A puts the last step first. C swaps the first two steps. D swaps the middle two — collection MUST happen before conversion.
8. C	"However" signals contrast — DC vs AC. A would fit a word like "also." B fits "first." D fits "finally."
9.	**Answer:** Sample answers: (1) The inverter can only change current that already exists. If the wires have not collected the electrons yet, there is no current for the inverter to change. (2) Each step depends on the one before it: sunlight must hit silicon first to free electrons, then wires must collect them, and only THEN does an inverter have something to convert. NOT acceptable: answers that say the order does not matter, or that the inverter creates the current. Strong answers explain that the inverter needs an existing current to change. Reject answers that say order doesn't matter or that misidentify the inverter as the energy source.
10. C	The core idea is light energy becoming electron motion. A only describes appearance. B describes a feature (silent, no moving parts). D is about extra electricity, which comes AFTER the main process.

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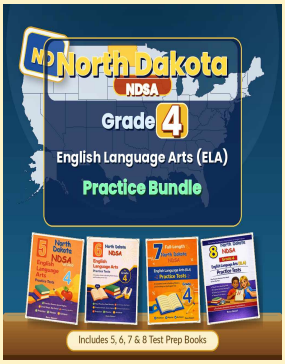

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