

# **Teacher Page: Science Focus- Net Energy Is the Only Energy that Really Counts (p. 299)**

**Unit:** Unit 7

**Grade Level Indicator:**

**Description:**

**Time:** 25 minutes

**Materials:** Book page 299

**Procedure:**

**Warm-up:**

**Instructional Strategies:**

**Assessment:** Grade question, student participation

**Variations:** Do questions orally with teacher led instruction,

**Interdisciplinary Connection:**

**Sample Data/ Answers:** The answer key follows the student page.

**Science Focus- Net Energy Is the Only Energy that Really Counts** (p. 299)

1. What is meant by it takes energy to get energy? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. What does the second law of thermodynamics tell us? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. What is net energy? \_\_\_\_\_  
\_\_\_\_\_
4. If it takes 90 units of energy to produce 100 units of energy, what is the net useful energy yield? \_\_\_\_\_  
\_\_\_\_\_
5. What is true if the net energy ratio is less than one? \_\_\_\_\_  
\_\_\_\_\_
6. What has been happening to the net energy ratio of oil for the past few years? \_\_\_\_\_  
\_\_\_\_\_
7. Is nuclear power a high or low net energy source? \_\_\_\_\_

Critical Thinking: Should governments give a high priority to net energy ratios when deciding what energy resources to support? What are the factors that should be considered? Explain your thinking. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Key

1. Answers will vary
2. Some of the high quality energy used in each step is automatically wasted and degraded to lower quality energy
3. The useable amount of high quality energy available from a given quality of an energy resource
4. 10 units
5. There is a net energy loss
6. It has been dropping
7. Low energy

Critical Thinking: Answers will vary