

SECTION

POWER IS THE RATE AT WHICH WORK IS DONE.

4.3 Reading Study Guide A**BIG IDEA** Energy is transferred when a force moves an object.**KEY CONCEPT** Power is the rate at which work is done.**Vocabulary****power** the rate at which work is done**watt** the unit of measurement for power**horsepower** a unit of power based on the amount of work an average horse can do in a minute**Review**

- How can you calculate an object's mechanical energy?
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Take Notes**I. Power can be calculated from work and time. (p. 130)**

- Finish the chart showing how work, power, and time are related.

Work	Time	Power
increases	stays the same	
decreases	stays the same	
stays the same	increases	
stays the same	decreases	

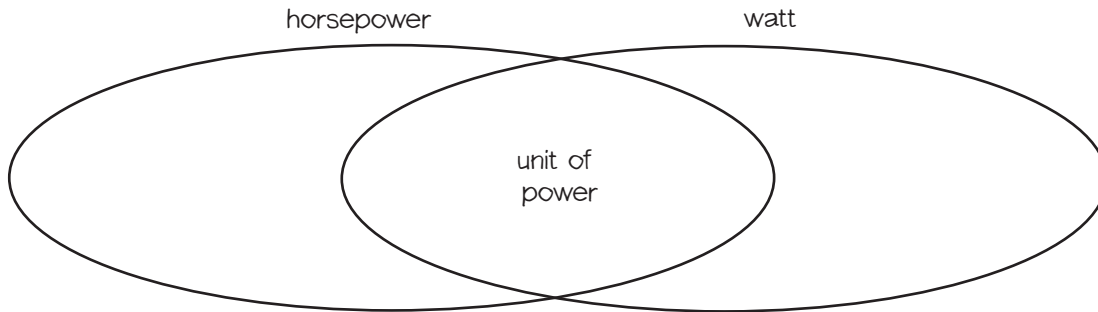
A. Calculating Power from Work (p. 131)

- What is the formula used to calculate power? What do the variables (letters) stand for?
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- What unit is used to measure power? How is this unit related to joules?
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B. Horsepower (p. 132)

5. Compare *horsepower* with *watts* by completing the Venn diagram.

**II. Power can be calculated from energy and time. (p. 133)****A. Calculating Power from Energy (p. 133)**

6. What is the formula used to calculate power from energy? What do the variables stand for?

7. A light bulb uses 300 J of energy in 4 seconds. How much power does the light bulb require?

B. Everyday Power (p. 135)

8. Draw a picture that shows a power-using appliance that you have used to do work.

