Name _____ Date _____ Class _____

What Is Work?

This section explains the scientific meaning of work and describes how to calculate the work done on an object. The section also explains how power is calculated.

Use Target Reading Skills

Before you read the section, preview the red headings. In the graphic organizer, ask a *what* or *how* question for each heading. As you read the text under the heading, find the answer to your question, and record it in the graphic organizer.

Question	Answer

The Meaning of Work

1. In scientific terms, when do you do work?

_____

_____

_____

_____

What is Work? *(continued)*

2. Complete the following table by classifying each example as either work or no work.

Work?	
Example	**Work or No Work?**
You pull your books out of your book bag.	
You lift a bin of newspapers.	
You push on a car stuck in the snow.	
You hold a heavy piece of wood in place.	
You pull a sled through the snow.	
You hold a bag of groceries.	

3. In order for you to do work on an object, the object must move some _____ as a result of your force.

4. Explain why you don't do any work when you carry an object at a constant velocity.

_____

_____

_____

_____

_____

_____

5. When you pull a suitcase with wheels, why does only part of your force do work?

_____

_____

_____

_____

_____

_____

Calculating Work

6. The amount of work you do depends on both the amount of _____ you exert and the _____ the object moves.
7. Is the following sentence true or false? Lifting a heavier object demands greater force than lifting a lighter object. _____
8. What formula do you use to determine the amount of work done on an object?

   _____
9. What is the SI unit of work? _____
10. What is the amount of work you do when you exert a force of 1 newton to move an object a distance of 1 meter? _____

Power

11. What is power?

    _____

    _____

    _____
12. Is the following sentence true or false? You exert more power when you run up a flight of stairs than when you walk up the stairs.

    _____
13. What is the formula you use to calculate power?

    _____
14. Rewrite the equation for power in a way that shows what work equals.

    _____