Name _____ Date _____ Class _____

Key Concept Builder

LESSON 2

Using Machines

Key Concept What is mechanical advantage?

Directions: *On each line, write the term from the word bank that correctly completes each sentence. Some terms may be used more than once or not at all.*

decrease	**direction**	**efficiency**	**greater**
increase	**less**	**mechanical advantage**	

1. Some machines _____ the size of the input force, whereas others _____ it.

2. The ratio of the output force exerted to the input force applied is a machine's _____.

3. If the mechanical advantage is more than 1, it means that the machine's output force is _____ than the input force.

4. If the number is under 1, it means that the output force is _____ than the input force.

5. If the number is exactly 1, it means that only the _____ of the input force has been changed.

6. When a hockey stick is used to move a puck, the input force is _____ than the output force.

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Key Concept Builder **LESSON 2**

Using Machines

Key Concept What are three ways a machine can make doing work easier?

Directions: *On the line before each example, write* S *if it changes the size of the force,* DS *if it changes the distance the force acts, and* DR *if it changes the direction of a force. Some machines may change the force in more than one way.*

_____ **1.** removing a nail with a hammer head

_____ **2.** collecting leaves with a rake

_____ **3.** using a jack to lift a car

_____ **4.** using a pulley to raise a weight

_____ **5.** sweeping dirt with a broom

_____ **6.** cracking a nut with a nutcracker

_____ **7.** using a screwdriver to open a paint can lid

_____ **8.** gripping an object with a pair of pliers

_____ **9.** using a large pair of scissors to cut through cardboard

_____ **10.** using a crowbar to pry shingles off a roof

_____ **11.** using a baseball bat to hit a ball