

Activity

Vocabulary Activity

Work and Machines

After you have finished reading the chapter, give this word search a try! After filling in the blanks, find the words in the puzzle on the next page.

1. The unit used to express work is the _____.
2. An inclined plane that is wrapped in a spiral is a(n) _____.
3. The rate at which work is done is _____.
4. When a force causes an object to move in the direction of the force _____ occurs.
5. The work you do on a machine is called the work _____.
6. A simple machine that is a straight, slanted surface is a(n) _____.
7. The mechanical _____ of a machine compares the input force with the output force.
8. All machines are constructed from six _____ machines.
9. When two kinds of pulleys are used together, the system is called a(n) _____.
10. A simple machine consisting of a bar that pivots at a fixed point is a(n) _____.
11. A device that helps make work easier by changing the size or direction of force is a(n) _____.
12. A double inclined plane that moves is a(n) _____.
13. Machines that are made up of two or more simple machines are called _____ machines.
14. A simple machine that consists of two circular objects of different sizes is a(n) _____.
15. A simple machine that has a grooved wheel that holds a rope or a cable is a(n) _____.
16. The work done by a machine is called the work _____.

Vocabulary Activity *continued*

- 17.** The fixed point at which a lever pivots is called a _____.
- 18.** Two kinds of pulleys are _____ pulleys and _____ pulleys.
- 19.** The unit used to express power is the _____.
- 20.** Mechanical _____ is a comparison of a machine's work output with the work input.

F	B	P	B	W	A	T	T	N	C	S	K	R	E	E
F	U	L	U	Y	Q	O	U	C	M	I	E	L	N	R
E	P	L	O	L	U	E	P	C	W	V	P	A	R	W
F	C	S	C	C	L	F	H	D	E	M	L	E	E	W
F	O	A	F	R	K	E	B	L	I	P	F	M	E	E
I	M	X	I	J	U	A	Y	S	D	H	K	W	H	D
C	P	F	X	X	F	M	N	E	J	O	U	L	E	G
I	O	D	E	X	T	A	N	D	O	P	J	H	Q	E
E	U	W	D	W	S	I	E	M	T	Z	O	H	C	D
N	N	V	E	T	L	N	D	U	O	A	L	W	C	U
C	D	R	U	C	I	J	S	P	U	V	C	T	E	F
Y	C	P	N	H	O	U	T	P	U	T	A	K	D	R
S	N	I	C	W	O	R	K	X	Q	K	D	B	L	U
I	Z	A	V	A	D	V	A	N	T	A	G	E	L	E
D	M	W	H	E	E	L	A	N	D	A	X	L	E	E

14. Work occurs when an object moves in the same direction as the force that is applied to it. Holding the rock does not involve any work because the rock is not being moved by force.
15. Sample answer: The backpack is not moving in the same direction as the force being applied to it.
16. Sample answer: Without friction, cars would not be able to travel up ramps or steep, winding roads, which are both inclined planes. These inclined planes rely on friction to operate properly.
17. Sample answer: A teeter-totter has a mechanical advantage of exactly one. The fulcrum is in the middle, between the input force and the output force. The output force is not increased because the input force's distance is not increased. This allows people to lift someone who weighs more than them off the ground.
18. A lever has a higher mechanical efficiency because it has fewer moving parts than a block and tackle pulley system, therefore there is less friction, making it more efficient.
19. Sample answer: A coaster uses inclined planes to allow the cars to reach higher heights with less work input. The motors that keep the cars running are compound machines. The friction of the moving cars helps control speed and keep the cars on the track.
20. Concept mapping: **a.** mechanical advantage; **b.** length; **c.** height; **d.** wheel radius; **e.** number of rope segments; **f.** mechanical efficiency

Chapter Test C

1. C
2. B
3. C
4. D
5. B
6. D
7. D
8. A
9. C
10. B
11. B
12. D

13. A
14. C
15. kinetic
16. distance
17. work
18. machines
19. ideal machine
20. C
21. B
22. A

Standardized Test Prep

READING

Passage 1

1. D
2. F

Passage 2

1. D
2. H

INTERPRETING GRAPHICS

1. D
2. F
3. C
4. I

MATH

1. B
2. H
3. C
4. F

Vocabulary Activity

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|---------------------|--------------------|
| 1. joule | 11. machine |
| 2. screw | 12. wedge |
| 3. power | 13. compound |
| 4. work | 14. wheel and axle |
| 5. input | 15. pulley |
| 6. inclined plane | 16. output |
| 7. advantage | 17. fulcrum |
| 8. simple | 18. fixed, movable |
| 9. block and tackle | 19. watt |
| 10. lever | 20. efficiency |

