



Name -----

Gr. / **8**

Subject/Science

Worksheet (**1**)**Unit:2, Lesson:1****Work, Energy, and Power****Textbook Pgs. 78 - 87****Vocabulary terms**

work: the use of force to move an object some distance in the direction of force

➤ $\text{work} = \text{force} \times \text{distance}$

energy: the ability to do work

power the rate at which work is done

➤ $\text{power} = \text{energy} / \text{time}$

Q1. Choose the correct answer.

1) A small motor does 4000J of work in 20 seconds. What is the power of the motor in watts?

- a. 0.005 Watts
- b. 80,000 Watts
- c. 200 Watts

2) Power is

- a. the amount of work done
- b. rate at which work is done
- c. the force x distance

3) How long will it take a 300 watt motor to complete a job that requires 1200 Joules of work?

- a. 3600 seconds
- b. 4 seconds
- c. 4 Joules

4) When a pitcher tosses a baseball, which of the following is true?

- a. When the ball leaves his hand, he is no longer doing work on it
- b. He is doing work on the ball until it stops or changes direction
- c. He never does any work on the ball
- d. Work is being done after the ball leaves his hand, but not before.

6) If an engine can produce 900 J of energy in 1 min, how many watts can it output?

- a. 0.25 W
- b. 25 W
- c. 54000 W
- d. 15 W

7) Which of the following conditions must be met for work to be done?

- a. A force must be applied.
- b. There must be movement over a distance.
- c. The direction of force and movement must be the same
- d. All of the above

8) Which one is doing the most work?

- a. pulling a box 10 m with a force of 100 N
- b. pushing a box 100 m with a force of 200N
- c. pulling a sled 1000 m with a force of 10N
- d. pushing a car with a force of 100000 N and it doesn't move

9) If Haley does 450 Joules of work on a shopping cart over a distance of 9 meters, with how much force is she pushing it?

- a. 50 Newtons
- b. 4050 Newtons
- c. 50 Joules
- d. 50 Watts

10) In which of the situations is **NO** work being done?

- a. pushing a box across the floor
- b. carrying a box up a flight of stairs
- c. holding a box overhead

Q2. Fill in the blanks.

1. is done on an object when the object moves in the same direction in which the force is exerted.
2. is done when a force moves an object.
3. is the rate at which work is done.
4. The amount of work done over a certain amount of time is called

Q3. Complete the following table.

	Definition	Unit of measurements
1- Work		
2- Energy		
3- Power		

Q4. Work and energy are related. Explain.

.....
.....
.....
.....