

## Extra Review for Quiz #3: Simple Machines and Calculating Work

**Part 1-Matching:** For these questions select the word that matches the definition provided. (1 pt each)

- Choose the word that means: a simple machine consisting of two circular objects of different sizes; the \_\_\_\_\_ is the larger of the two circular objects; bicycle \_\_\_\_\_  
A. wheel and axle  
B. lever  
C. screw and socket  
D. gear and axle
- Choose the word that means: A simple machine that consists of a bar that pivots at a fixed point called a fulcrum.  
A. inclined plane  
B. pulley  
C. lever  
D. fulcrum
- Choose the word that means: Applying a force to an object causing it to move. The unit for \_\_\_\_\_ is the Joule.  
\_\_\_\_\_ (J)= force (N) x distance (m)  
A. power  
B. energy  
C. exert  
D. work
- Choose the word that means: A machine with few or no moving parts.  
A. complex machine  
B. inclined plane  
C. simple machine  
D. lever
- Choose the word that means: A device/ tool that tapers to a thin edge and is used for splitting another object; A piece of wood or metal that is wide at one end and pointed at the other to help cut or SPLIT things.  
A. lever  
B. pulley  
C. inclined plane  
D. wedge

**Part 2-Applying Vocabulary:** (HINT: make sure to include the words FORCE, DISTANCE, and WORK in your response.)

You can refer to the lever lab 1 exit slip! (2 pts)

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**Part 3-Multiple Choice-Simple Machines:** For these questions choose the single *best* answer. Concepts to know for the multiple choice questions.

1. Force
  - A. What is a force?
  - B. What is an example of a force that needs to be overcome by a simple machine?
  
2. The advantage a simple machine provides for its user
  - A. Make sure you know what ADVANTAGE MEANS
  - B. Make sure you understand the relationship between force and distance

Sample Question:

Jack is trying to use a lever system to lift a box. Which of the following should Jack do to make the box easier to lift?

- A. Jack should move the box on top of the fulcrum
- B. Jack should move the fulcrum farther from the box
- C. Jack should move the box closer to the edge of the lever
- D. Jack should move the fulcrum closer to the box



**Part 4-Calculating work:** For these questions use the formula **Force = Work x distance** to solve the problems below. (You will earn 1 point for showing you work, 1 point for using the correct units, and 1 point for showing your work.) (1 pt each)

18. If 3N of force are applied to a box to move it 73 m, how much work is done on the box?

Your answer \_\_\_\_\_

19. If a 775N force is required to move a piano a distance of 25m, how much work is done?

Your answer \_\_\_\_\_

### Extra Review for Quiz #3: ANSWER KEY

**Part 1-Matching:** For these questions select the word that matches the definition provided.

3. Choose the word that means: a simple machine consisting of two circular objects of different sizes; the \_\_\_\_\_ is the larger of the two circular objects; bicycle \_\_\_\_\_
- A. **wheel and axle**  
B. lever  
C. screw and socket  
D. gear and axle
4. Choose the word that means: A simple machine that consists of a bar that pivots at a fixed point called a fulcrum.
- A. inclined plane  
B. pulley  
C. **lever**  
D. fulcrum
5. Choose the word that means: Applying a force to an object causing it to move. The unit for \_\_\_\_\_ is the Joule.  
\_\_\_\_\_ (J)= force (N) x distance (m)
- A. power  
B. energy  
C. exert  
D. **work**
6. Choose the word that means: A machine with few or no moving parts.
- A. complex machine  
B. inclined plane  
C. **simple machine**  
D. lever
7. Choose the word that means: A device/ tool that tapers to a thin edge and is used for splitting another object; A piece of wood or metal that is wide at one end and pointed at the other to help cut or SPLIT things.
- A. lever  
B. pulley  
C. inclined plane  
D. **wedge**

**Part 2-Applying Vocabulary:** (HINT: make sure to include the words FORCE, DISTANCE, and WORK in your response.)

You can refer to the lever lab 1 exit slip! **Answer not provided; students should be able to answer based on feedback from exit slip and the work we did in class.**

**Part 3-Multiple Choice-Simple Machines:** For these questions choose the single *best* answer. Concepts to know for the multiple choice questions. **Students should review class work to make sure they understand the concepts and answer these questions on their own.**

- Force
  - What is a force?
  - What is an example of a force that needs to be overcome by a simple machine?
- The advantage a simple machine provides for its user
  - Make sure you know what ADVANTAGE MEANS
  - Make sure you understand the relationship between force and distance

Sample Question:

Jack is trying to use a lever system to lift a box. Which of the following should Jack do to make the box easier to lift?

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- Jack should move the fulcrum closer to the box**



**Part 4-Calculating work:** For these questions use the formula **Force = Work x distance** to solve the problems below. (You will earn 1 point for showing you work, 1 point for using the correct units, and 1 point for showing your work.) **NOTE: numbers on quiz will be simpler and students will be able to use a calculator.**

18. If 3N of force are applied to a box to move it 73 m, how much work is done on the box?

$$W = F \times d$$
$$3N \times 73m = 219 J$$

**Answer: 219 J**

19. If a 775N force is required to move a piano a distance of 25m, how much work is done?

$$W = F \times d$$
$$775N \times 25m = 19,375 J$$

**Answer: 19,375 J**