Simple Machine Questions for Simply the Best

Introduction to Simple Machines and Work

http://www.sciencetech.technomuses.ca/english/schoolzone/Info_Simple_Machines2.cfm

can be used to answer questions 1 to 5.

1. What is a machine?

2. What are the six simple machines?

3. What simple machines belong to the inclined plane family?

4. What simple machines belong to the lever family?

5. What does "work" mean in science?

6. Before you go on, see if you understand the concept of work by testing yourself at the

http://www.glenbrook.k12.il.us/gbssci/phys/Class/energy/u5l1a.html

Click on "What is a simple machine?" to find some important information about work and simple machines from the http://www.cosi.org/files/Flash/simpMach/sm1.swf

- 7. What is the formula (mathematical equation) for work?
- 8. A simple machine **NEVER** changes the amount of work done. What does a simple machine change?
- 9. What is the advantage in using a simple machine?

Speaking of advantage, find the answers to these questions on mechanical advantage and ideal mechanical advantage at this http://encarta.msn.com/encyclopedia_761562252/Machine.html

(Be sure to scroll all the way to the bottom of the page.)

- 10. What is mechanical advantage?
- 11. How do scientists calculate mechanical advantage?
- 12. What is ideal mechanical advantage?
- 13. What is the major source of imperfection in a machine?
- 14. How does (actual) mechanical advantage compare to ideal mechanical advantage?

Levers

Turn to the http://www.fi.edu/pieces/knox/automaton/lever.htm

to answer the following question:

- 15. What is a lever?

Search the http://www.fi.edu/pieces/knox/automaton/lever.htm

or http://www.enchantedlearning.com/physics/machines/Levers.shtml

to answer the following questions on levers:

- 16. Where is the fulcrum located in a class one lever?
- 17. List some examples of a class one lever.
- 18. Where is the load located in a class two lever?
- 19. List some examples of a class two lever.
- 20. Where is the effort located in a class three lever?
- 21. List some examples of a class three lever.

View animation of all three classes of levers at
http://www.enchantedlearning.com/physics/machines/Levers.shtml

- 22. Now, sketch the three classes of levers. Be sure to label the effort, load and fulcrum.

Use the http://www.walter-fendt.de/ph11e/lever.htm

to solve the following problems:

- 23. Place 4N worth of force 0.2m from the fulcrum. Where would you have to place 2N in order for the lever to balance?
- 24. Place 2N worth of force 0.6m from the fulcrum. Where would you have to place 4N in order for the lever to balance?
- 25. Place 3N worth of force 0.8 m from the fulcrum. Where would you have to place 4N in order for the lever to balance?

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