

Simple Machines

Name _____

The sites for this assignment are listed on the Simple Machines page of the Kid Zone at <http://sciencespot.net/>.

Site: EdHeads Simple Machines

Click the “Start” button to start. Select an activity (room) and follow the directions for each area to find the simple machines and answer the related questions. When you are finished with each section, write your score in the chart below. Put on some headphones before you begin!

<i>Garage</i>	<i>Bedroom</i>	<i>Kitchen</i>	<i>Bathroom</i>	<i>Tool Shed</i>
_____ out of _____	_____ out of _____	_____ out of _____	_____ out of _____	_____ out of _____

Site: Rube Goldberg

(1) Explore the “About Rube” area to find the answers to these questions.

Who was Rube Goldberg? _____

While most machines work to make difficult tasks simple, his inventions made _____ tasks amazingly _____.

(2) Explore the “Artwork Gallery” to answer these questions.

How many steps are involved in his “simplified pencil sharpener”? _____

What type of simple machine is the rake in “How to Keep Shop Windows Clean”? _____

In the “Keep You from Forgetting to Mail Wife’s Letter” cartoon,

What type of simple machine is found in steps I & J to open the cage? _____

What type of simple machine is found at step O, the window shade? _____

(3) What is the Rube Goldberg Machine Contest also called? _____

(4) What is the minimum number of steps required for a contraption in the contest? _____

Site: NetLinks – Power Play

Click “Start” to begin the activity. Drag the parts from the bottom to complete the machine. Answer the questions below as you work your way through the activity.

(1) What provides the power for the dog walking machine? _____

(2) What type of simple machine do you add after the popcorn pot? _____

(3) What type of simple machine cuts the log? _____

(4) What two simple machines are found in the first part you add for inflating a balloon?
_____ and _____

Site: EdHeads – Compound Machines

Listen to the introduction and then click the yellow and blue lever to get started. Answer the questions as you work your way through the activity. When you are finished, record your score below and answer the question below.

Final Score: _____ Where was the plunger? _____

Site: Interactive Simple Machines

(1) Explore the “Wedge & Lever” activity to answer these questions.

What is the task? _____

Which length of wedge performs the task with the least amount of force (weight)? _____

Complete this statement: The _____ the wedge, the _____ it is to do work.

Click “Next” to proceed to the level experiment. Experiment with the lever by moving the fulcrum to different locations.

Which fulcrum location required the least amount of effort force to lift the load? _____

Which fulcrum location required the most amount of effort force to lift the load? _____

Which fulcrum location required us to push down the lever the least to lift the load? _____

Complete these statements:

The closer the fulcrum is to the load, the amount of effort force is required to lift the load is _____.

The closer the fulcrum is to the load, the effort force must be applied over a _____ distance.

(2) Explore the “Ramp & Pulley” activity to answer these questions.

What is the task? _____

Which length of ramp allows us to perform the task with the least amount of effort force? _____

Complete this statement:

The longer the ramp, the _____ it is to do work, but we must apply the force over a _____ distance.

(3) Return to the “Lab Menu” and explore the “Wheel & Axle” activity to answer these questions.

What is the task? _____

A screw can be described as an _____ wrapped around an _____.

Experiment with the diameter of the wheel and the number of threads per meter on the screw to help you answer these questions.

If the wheel diameter stays the same, how does the effort force change as the number of threads per meter increases? _____

If the number of threads per meter stays the same, how does the increase in the wheel diameter affect the distance the gate is lifted? _____

If the wheel diameter is 50 cm, how many threads per meter do you need to get an effort force closest to 400 N? _____

If the threads per meter are set to 5, what wheel diameter do you need to raise the gate a distance closest to 22 meters? _____