

# Thank you!

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## BUILD A FOOD WEB LAB ACTIVITY



Clip art courtesy of freestockphotos.net

## TAKE ME TO YOUR LEADER:



## A PERIODIC TABLE ADVENTURE

Art by Wren (2010)



## Schoolyard Habitat



Art by Wren (2010)

Just a few  
examples!

IS WORK BEING DONE?  
YES NO

NAME: \_\_\_\_\_



GRRR...A PERFECT TIE!  
I WISH SOMEBODY WOULD MOVE!

WHY?

IS WORK BEING DONE?  
YES NO

I WISH I COULD MOVE THIS ROCK!



WHY?

LOOK AT EACH PICTURE. IS WORK BEING DONE? ANSWER "YES" OR "NO". MAKE SURE TO EXPLAIN YOUR ANSWER!!

WHY?



IS WORK BEING DONE?  
YES NO

YEA! WE LOVE CLIMBING OUT OF THE CAR!

WHY?

I HATE PUSHING THIS MOWER!



IS WORK BEING DONE?  
YES NO

## Work or no work graphic organizer teacher key

1. Tug-of-war picture. **NO WORK.** No work is being done because there is no motion. I always remind my students that the formula for work is  $\text{Work} = \text{Force} \times \text{Distance}$ . If distance is zero work will always be zero. When reviewing this sheet with my class I always ask them what 10 times 0 is, usually you get a few or most students responding, then I ask what 100 times 0 is, then I ask what a strange number like 2,378 times 0 is. By this point all students seem to get the idea that no motion equals no work, every time, no matter how hard you “tried”. Since work is a social idea also, I make sure to explain we’re talking about work in terms of physics. No matter how sweaty, how long you tried, or how many people are involved if there is no distance there is no work.
2. Big boulder picture. **NO WORK.** Again, distance is zero so work is zero.
3. Dogs on ramp picture. **WORK IS BEING DONE.** The dogs are walking down the ramp so we could calculate work if we had the figures for force and distance. You can explain that they are using a simple machine called an inclined plane (ramp). I find students get the idea better if you explain the idea of using a ramp in terms of getting in the car. The dogs are doing the same amount of work getting in the SUV as they would if they stood on the ground and leaped into the SUV. The difference is the amount of force and the distance. More force required over a shorter distance to leap in the SUV, less force over a longer distance to use the ramp to walk into the SUV.
4. Man pushing lawnmower. **WORK IS BEING DONE.** The man is able to push the mower, since there is a force and a distance, you can calculate force.

## ADDITIONAL TEACHING IDEAS

Google for “study Jams”. Study Jams is a free resource offered by scholastic. The slide show “simple machines” will reinforce inclined planes along with other simple machines.

[www.brainpop.com](http://www.brainpop.com)

brainpop does require a subscription, but is a fantastic resource if your district is willing to pay for it. Even if you don’t have a subscription, it’s worth checking out, some movies are always offered for free and the selection changes frequently.

Short movies: “work” “Inclined Plane”

Games: “Simple Machines” and “Coaster Creator”

[www.youtube.com](http://www.youtube.com)

Search “force work energy for kids”

[www.makemegenius.com](http://www.makemegenius.com)

LOTS of science videos on numerous topics