

Find the Phantom Load

Energy Revealed
Grab & Go Activity
Grade Level 4-12



Main Objective

Learners will understand what a phantom load is and which device has the largest phantom load.

Learning Outcomes

By the end of this activity, learners will:

- Understand what a phantom load is.
- Use energy metering technology to identify what the phantom load of different devices is.

Length of Activity: 2 - 2.5 hours

Step 1+2+3: Intro to phantom load and where its found (*1 hour*)

Step 4: Compare the predicted phantom load and actual phantom load (*15 minutes*)

Step 5+6: Calculate how much money is lost from phantom loads and discuss (*30 minutes*)

Materials Required

- Plug in energy meters
- Different electrical devices decided by the class
- Copies of the Find the Phantom Load worksheet

Activity

Step 1: Introduction to Phantom Loads (10 minutes)

- Referring to the glossary below, explain to the learners that there are energy phantoms sucking energy out without us knowing. These are called phantom loads.

 [Energy Revealed Glossary](#)

Step 2: Find Devices to Test for Phantom Loads (1 hour)

- Have the learners predict which device will have phantom loads. Rank the devices from largest predicted phantom load to smallest.
 - **Hint:** According to [NEED](#) – phantom loads exist in many electronic or electrical devices found in schools. Equipment with electronic clocks or timers, with remote controls, portable equipment, and office equipment with wall cubes (small box-shaped plugs that plug into AC outlets to power appliances) all have phantom loads.
- Have the learners plug in the energy meter and see if they can identify what the phantom load of each device is. This is done by having the devices plugged into the plug-in energy meter, while the device is turned off.

Step 3: Record the Phantom Loads (10 mins)

- Record each of the phantom loads.

Step 4: Compare Predicted Phantom Load with Actual (15 mins)

- Compare the recorded phantom loads to the predicted phantom loads and discuss why they may or may not be different. Did anything surprise the learners?

Step 5: Calculate the Electrical Energy Cost (15 mins)

- Use GreenLearning's Electrical Energy Calculator for your province to determine the cost of each of the appliances with phantom loads.

 [GreenLearning's Electrical Energy Calculator](#)

Step 6: Think About Ways to Save Money (10 mins)

- Have the learners come up with ideas of what the school or their family could do with the money they could save.

Extension Activities

1. Senior students can focus this activity on devices in the school and come up with an action plan they can present it to the principal. For example, if the students find a certain amount of money can be saved by unplugging certain devices during a reasonable period, that saved money can then go to something that the school needs (E.g., more school supplies, or toward something like a water refilling station).
2. Have junior learners draw what they think an energy sucking phantom would look like.
3. Create posters informing learners of phantom loads, encouraging them to unplug devices not in use.