

Energy Challenge Game: Heat & Light*

Objective: assess student understanding of heat and light as a result of Utah House Grade 3 activities/field trip.

Time: 30 minutes

Getting Ready:

1. Copy the game board (included) onto a transparent overhead.
2. Trim sticky notes to cover the answer but not the point value in each square. Place covers onto game board.
3. Make a copy of the Teacher Answer sheet.

Doing the Activity:

1. Split the class into 4 teams. Give each team a minute to choose its team name; write each team name on the board.
2. The game is played like Jeopardy: teams take turns choosing a category and point value (they must go down each category from least point value to greatest, not skipping directly to the highest value).
3. Once a team has selected a category and point value, lift the cover and read the clue on that square. Give the team 1 minute to discuss and choose an answer, they may want to answer in the form of a question like on the TV show. At the end of the time they report their answer. A correct answer earns them the point value listed. You may choose whether teams will lose points for incorrect answers or not.
4. If the team's answer is incorrect, other teams get a chance to answer. Once you say "Incorrect" the team with its hand up first may answer first. Keep going until a team guesses the correct answer.
5. Once all the squares have been used, tally up the score to determine the winner.
6. Discuss which questions were the hardest and why.

* (Modified from Project Learning Tree's *Energy Challenge Game*)

Light	Heat	Energy Saver or Waster	True or False
<p>100</p> <p>This is the main source of light and energy for the earth.</p>	<p>100</p> <p>The transfer of heat in the form of waves</p>	<p>100</p> <p>Replacing regular light bulbs with compact fluorescent ones.</p>	<p>100</p> <p>Using less energy at home helps reduce air pollution.</p>
<p>200</p> <p>You can use this kind of light in your house for free.</p>	<p>200</p> <p>A material that transfers heat well</p>	<p>200</p> <p>Adding insulation in the attic.</p>	<p>200</p> <p>Most of our electricity in Utah is produced from water (hydroelectric).</p>
<p>300</p> <p>This kind of light bulb uses 75% less electricity and last 10 times as long.</p>	<p>300</p> <p>Material that blocks the conduction of heat.</p>	<p>300</p> <p>Building a house's walls out of straw bales.</p>	<p>300</p> <p>Electronics like VCRs and TVs use electricity even when they are turned off.</p>
<p>400</p> <p>The angle at which light bounces off a surface.</p>	<p>400</p> <p>This object uses nuclear fusion to reach temperatures of 15 million degrees centigrade.</p>	<p>400</p> <p>Building a house with a lot of windows.</p>	<p>400</p> <p>Some refrigerators use less energy than one 100 watt light bulb.</p>
<p>500</p> <p>Designing a house so that the sun can provide most of the heat and light it needs.</p>	<p>500</p> <p>This is the most efficient way to heat a home.</p>	<p>500</p> <p>Turning off a fluorescent light if you plan to turn it on again within 15 minutes.</p>	<p>500</p> <p>Saving water saves energy.</p>

**** ANSWER SHEET ****

Light	Heat	Energy Saver or Waster	True or False
100 The sun	100 Radiation	100 saver	100 true
200 Sunlight	200 Conductor	200 saver	200 False, most is from coal
300 Compact fluorescent	300 Insulation	300 saver	300 True, these are called ghost loads
400 Angle of reflection	400 The sun	400 Saver or waster depending on window placement	400 True, the Utah House has an example
500 Passive solar design or daylighting	500 Many possible answers, ask for detailed explanation.	500 Waster: If you have going to be back in less than 15 minutes, leave it on.	500 True and false, it depends if the water saved is heated.