

# 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*)

<b>Light</b>	<b>Heat</b>	<b>Energy Saver or Waster</b>	<b>Mechanical or Electrical</b>
<p><b>100</b></p> <p>This is the main source of light and energy for the earth.</p>	<p><b>100</b></p> <p>This is the unit of measurement we use to measure heat.</p>	<p><b>100</b></p> <p>Replacing regular light bulbs with compact fluorescent ones.</p>	<p><b>100</b></p> <p>Rubbing your hands together.</p>
<p><b>200</b></p> <p>You can use this kind of light in your house for free.</p>	<p><b>200</b></p> <p>This kind of light bulb uses 90 % of its energy producing heat NOT light.</p>	<p><b>200</b></p> <p>Adding insulation in the attic.</p>	<p><b>200</b></p> <p>Table lamp</p>
<p><b>300</b></p> <p>This kind of light bulb uses 75% less electricity and last 10 times as long.</p>	<p><b>300</b></p> <p>This can be used to keep heat in or out of a space.</p>	<p><b>300</b></p> <p>Building a house's walls out of straw bales.</p>	<p><b>300</b></p> <p>Hair dryer</p>
<p><b>400</b></p> <p>These living things make food from sunlight.</p>	<p><b>400</b></p> <p>This object uses nuclear fusion to reach temperatures of 15 million degrees centigrade.</p>	<p><b>400</b></p> <p>Building a house with a lot of windows.</p>	<p><b>400</b></p> <p>Gas stove</p>
<p><b>500</b></p> <p>Designing a house so that the sun can provide most of the heat and light it needs.</p>	<p><b>500</b></p> <p>This is the most efficient way to heat a home.</p>	<p><b>500</b></p> <p>Turning off a fluorescent light if you plan to turn it on again within 15 minutes.</p>	<p><b>500</b></p> <p>Ceiling fan</p>

\*\*\*\* ANSWER SHEET \*\*\*\*

<b>Light</b>	<b>Heat</b>	<b>Energy Saver or Waster</b>	<b>Mechanical or Electrical</b>
<b>100</b> The sun	<b>100</b> degree	<b>100</b> saver	<b>100</b> mechanical
<b>200</b> Sunlight	<b>200</b> Incandescent light bulb	<b>200</b> saver	<b>200</b> electrical
<b>300</b> Compact fluorescent	<b>300</b> Insulation	<b>300</b> saver	<b>300</b> electrical
<b>400</b> Producers or plants	<b>400</b> The sun	<b>400</b> Saver or waster depending on window placement	<b>400</b> mechanical
<b>500</b> Passive solar design or daylighting	<b>500</b> Many possible answers, ask for detailed explanation.	<b>500</b> Waster: If you have going to be back in less that 15 minutes, leave it on.	<b>500</b> electrical