

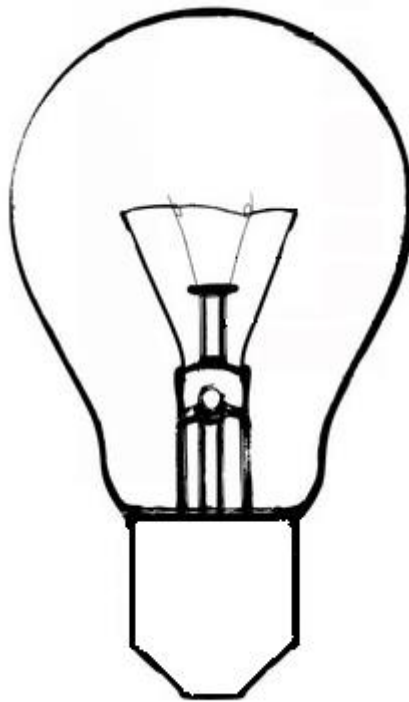
Grade 7 Natural Science Worksheet

Assessment Task: Electrical light bulbs

Electric light bulbs

What you will need for this activity:

- an electric light bulb
 - a lamp with a socket that will accommodate the light bulb
 - an electrical outlet
1. Carefully observe the light bulb and all the different parts that make it up.
 2. In the space below, complete the diagram and label all the parts of the light bulb.

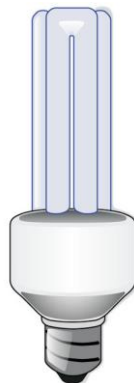


[20 marks]

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- Connect the light bulb to the lamp.
- Switch on the power.
- Observe the bulb and continue answering the questions.

3. What do you observe when the power is switched on?
[2 marks]
4. Which part of the bulb is producing the light?
[2 marks]
5. Put your hand close to the light bulb, but do not touch it. What do you feel?
[2 marks]
6. What kinds of energy is the bulb giving off?
[2 marks]
- Switch the light off
7. What happens?
[4 marks]
8. Why do you think this happens?
[2 marks]
9. What is this kind of light bulb called and why is it more responsible to use this light bulb rather than the one you have been studying?
[4 marks]



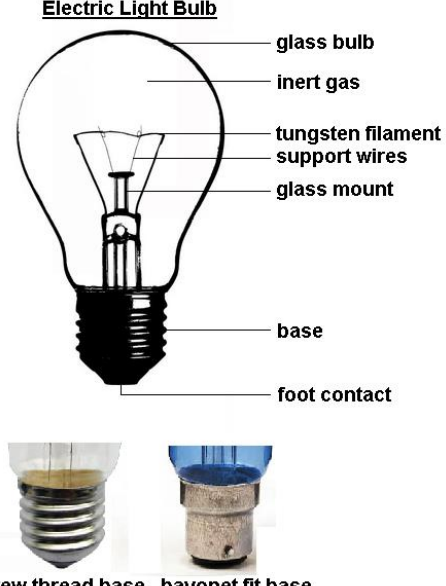
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Level indicator for this task

Level 4	Level 3	Level 2	Level 1
<p>Learner competently draws and labels the internal parts of the light bulb after careful observation.</p> <p>Learner is able to answer questions accurately based on careful observation and demonstrates excellent understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner draws and labels the internal parts of the light bulb after observation.</p> <p>Learner is able to answer questions based on observation and demonstrates good understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner adequately draws and labels most of the internal parts of the light bulb after observation.</p> <p>Learner is able to answer some questions based on observation and demonstrates fair understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner is unable to adequately draw and label the internal parts of the light bulb after observation.</p> <p>Learner is unable to answer questions based on observation and demonstrates little understanding of the energy transfers involved in using a light bulb.</p>

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Suggested Solutions

Question number	Possible marks	Solution
1	0	Observation will be assessed by how well the learner can complete the drawing and label it in Question 2.
2	16: 2 marks per label plus heading. 4 marks for accurate drawing of the internal structure, based on observation.	<p style="text-align: center;">Electric Light Bulb</p>  <p style="text-align: center;">screw thread base bayonet fit base</p>
3	2	Light goes on.
4	2	Filament is glowing.
5	2	Heat is being produced as well as light.
6	2	Light energy (radiant energy) and heat energy.
7	4	Light goes off; bulb cools.
8	2	Electrical energy is no longer being supplied to the bulb.
9	4	Energy saver light bulb; uses less electricity and longer lasting.

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Appendix of Assessment Tools

Level indicator for this task

Level 4	Level 3	Level 2	Level 1
<p>Learner competently draws and labels the internal parts of the light bulb after careful observation.</p> <p>Learner is able to answer questions accurately based on careful observation and demonstrates excellent understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner draws and labels the internal parts of the light bulb after observation.</p> <p>Learner is able to answer questions based on observation and demonstrates good understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner adequately draws and labels most of the internal parts of the light bulb after observation.</p> <p>Learner is able to answer some questions based on observation and demonstrates fair understanding of the energy transfers involved in using a light bulb.</p>	<p>Learner is unable to adequately draw and label the internal parts of the light bulb after observation.</p> <p>Learner is unable to answer questions based on observation and demonstrates little understanding of the energy transfers involved in using a light bulb.</p>