

8.1 Solar cell

<p>Basic information and collecting ideas</p> 	<p>The students will:</p> <ul style="list-style-type: none"> ▪ learn about solar cells. ▪ learn that sunlight is an important form of energy that can be converted to electrical energy by solar cells. ▪ learn about the relationship between conditions of light and voltage or current. ▪ learn to systematically conduct experiments. ▪ learn to document measurements in a table. <p>Depending on the teacher-led analysis, the students will also learn to analyse measurements and make inferences.</p> <p>Additional information</p> <p>Solar cells convert radiant energy of the sun to electrical energy, as can be seen by the solar cell's generation of voltage and current. Note that solar cells differ slightly; most cells generate a maximum no-load voltage of 0.55 V. Regarding current, a short-circuited solar cell generates a maximum current of approximately 0.11 A. In contrast, an alkaline manganese AA battery has a short-circuit current of up to 80 A.</p> <p>If the experiments are conducted with lamps, take note that the measurements will differ based on the distance between the lamp and the solar cell.</p>
<p>Analysing and reflecting</p> 	<p>When lighting conditions are less bright, the current drops off significantly.</p> <p>The current responds much more sensitively to changes in lighting conditions compared to the voltage. The voltage remains more constant in different lighting conditions and does not exceed a certain value for a single cell, e.g. 0.55 V.</p>

Space for notes
