



LIGHT AND SOLAR ENERGY

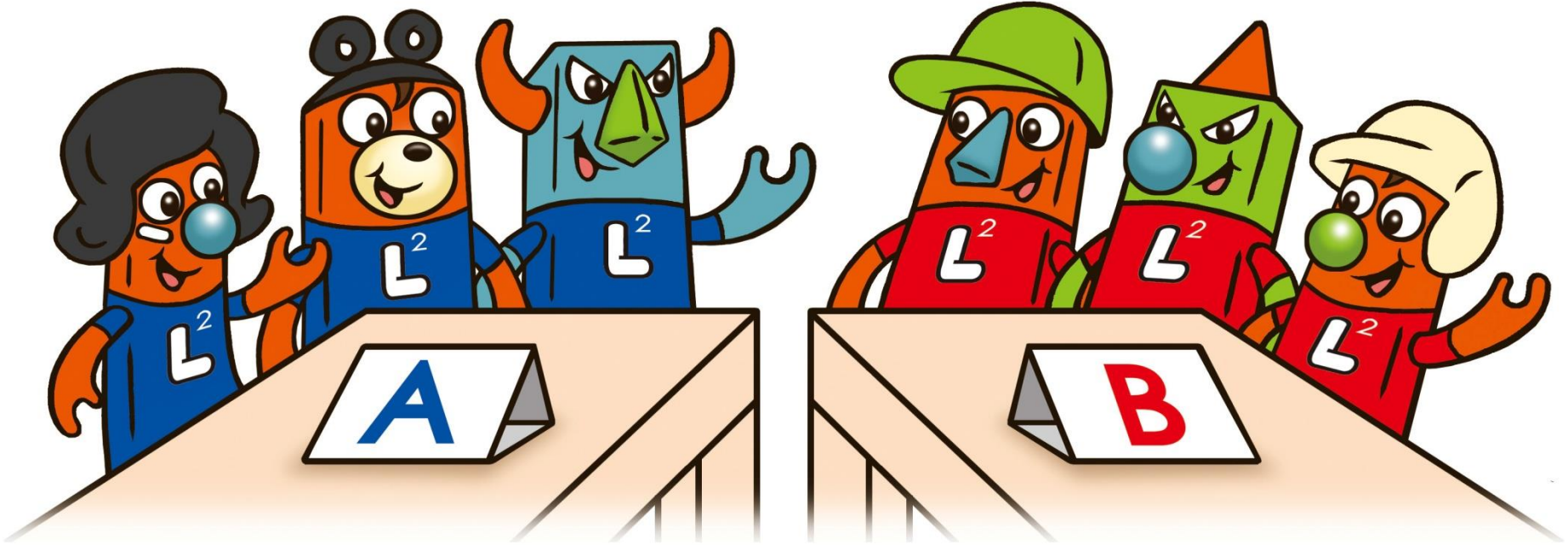
Session 9

SOLAR THERMAL COLLECTOR

LEARNING LAB

Team Up

Please find your partners and accomplish the activities cooperatively.



Story Time

Gigi is a sweet girl. She often sees a little boy in her neighborhood sitting alone on the front porch of his house. Because of his poor eyesight, he always stays at home. Gigi tried to come up with a way to help connect him with the outside world.

One hot afternoon, Gigi noticed that the Sun was shining brightly, and so she came up with a great idea: there was a way to teach the boy something new, even without him having good eyesight! Gigi showed him how solar thermal energy works.

Story Time

In direct sunlight, Gigi told the boy to stick his hand out with his palm face up. Then she took an ice cube out from the basket and placed it in his hand. Even though it was really bright outside, the little boy was unable to see very well. Nonetheless, he could feel the ice quickly melting into a puddle of water in his palm! This sensation allowed the little boy to understand the significance of solar thermal radiation. The boy graciously thanked Gigi for her willingness to teach him. From what you have learned about solar thermal energy, can you think of some other applications it may have?



Daily Application

The Sun provides both light and heat. It is a very convenient source of energy. Wherever there is sunlight, you can tap into solar energy. Solar water heaters are pieces of equipment that channel the heat from the Sun, in order to heat up water. This is one kind of renewable energy. There are two kinds of solar water heating equipment: active and passive. Passive water heaters generally are designed with a water tank and an inclined solar panel. Active water heaters also include a motor that can keep water circulating, as well as a temperature-control function.



Brainstorming














During the Siege of Syracuse, the famous Greek inventor Archimedes set enemy ships on fire using a series of reflecting mirrors to channel the Sun's solar energy. What others applications can solar energy be used for?



Part List

Please find the parts according to the photo below.
Check again that you acquire the same number of parts.

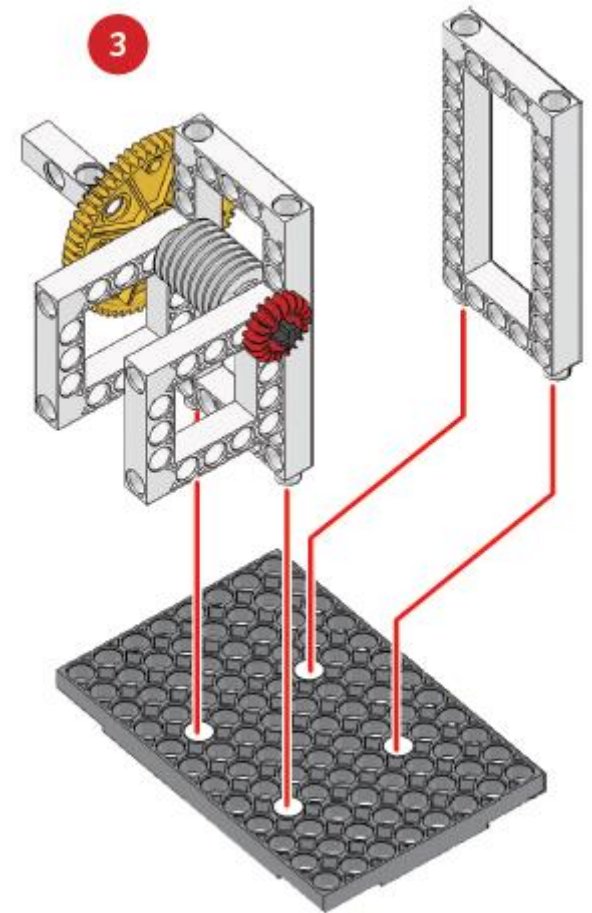
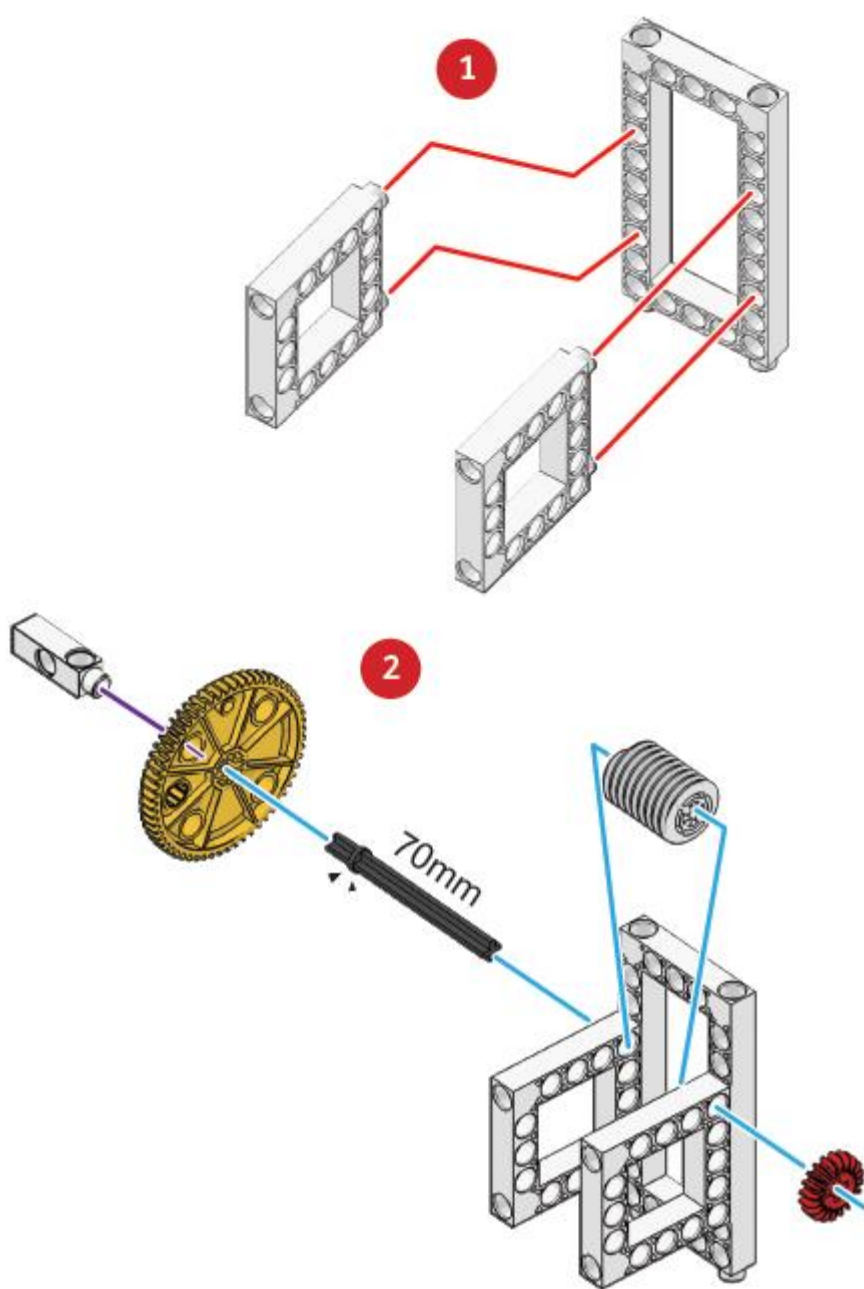
Parts List

 x1	 x4	 x1	 x1	 x1	 x2	 x2	 x1	 x1	 x2
 x2	 x1	 x1							

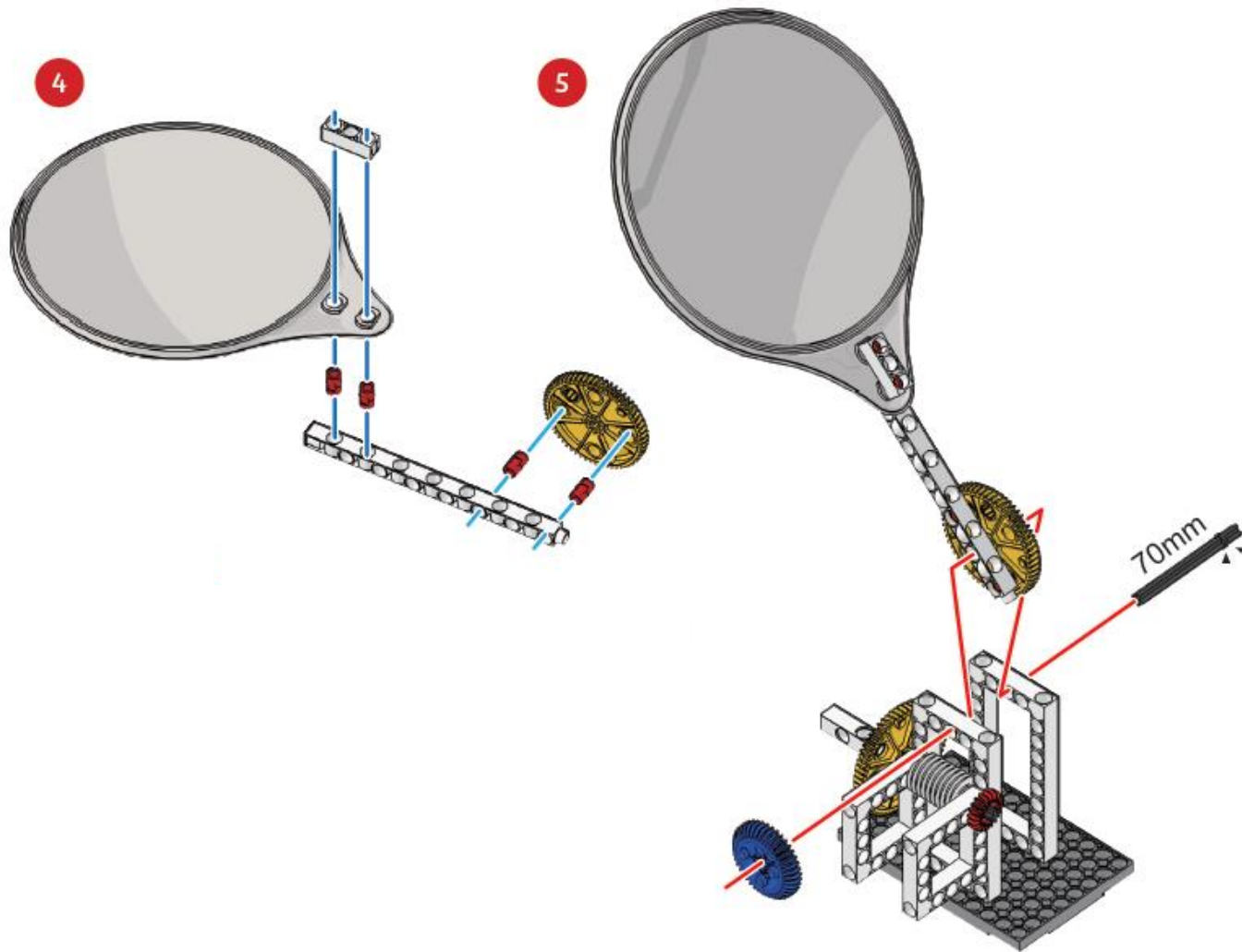
Solar Thermal Collector



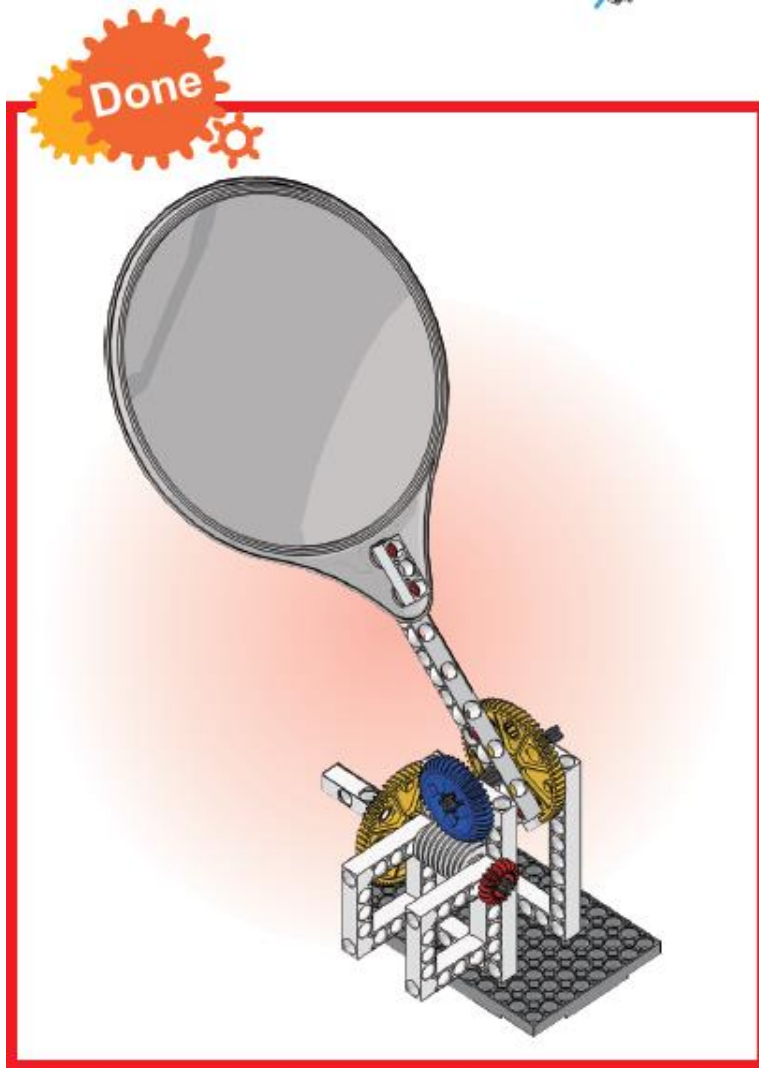
Assembly Steps



Assembly Steps



Assembly Steps



Model Operation
Video

Hands-on Experiment

Observe from different angles, to see if the Light Collection Plate's sunlight aggregation position is different.



Hands-on Creativity

What else can we do to make the Light Collection Plate change angle?



Evaluation

Let's score yourself. How many stars do you get today?



Model Assembled

Good job! You can get the 1st star when you complete the assembly.



Experiment Complete

Accomplish the experiment and get the 2nd star.



Model Creation

Excellent! You make your own creation and get the 3rd star.



智高實業股份有限公司
GENIUS TOY TAIWAN CO., LTD.