

Solar Power (B & C)

Impound: No

Room Type: Ideally a science lab but a large classroom with tables can work

Estimated Prep Time (including set-up): 10-12 hours

Helpers: 2-4

Event Conflicts: None

Minimum Suggested Supplies

1 each per setup: Standard Bell-Shaped Reflector Work Light: [Example](#), 150 Watt Bulb (Not CFL or LED): [Example](#), Temperature probe/thermometer, water contained 1+ gallon, water dispensing (Possibly large plastic syringes), towels, stop watches; **at least 2 setups are recommended**

Written Test, Key, & Answer Sheets

Additional Notes

This event should be run similarly to 2018-2019 Thermodynamics B/C. A limiting factor is having enough device-testing setups. It is recommended that the test is started for all teams, and teams are called up during the test to perform the device testing. Teams will likely want to measure the starting temperature immediately before starting the heating process, so it is recommended that teams are given the water when they come up to test their device and not prior to starting the test. Beakers may be reused between teams, but it is recommended to have at least two 250mL beakers per lamp setup and alternate use to reduce effects of previous heating. Water should not be reused between teams.

Device-Testing:

1. Teams are given 5 minutes to setup device
2. Team is given 250mL beaker containing 100mL of water
3. Team places beaker inside collector. They may utilize their own thermometers to measure starting temperature.
4. Team estimates final temperature after warming and provides estimate to supervisor before starting heating.
5. Team brings device to lamp setup. Supervisor measures starting temperature with thermometer/probe.
6. Light source is turned on and stopwatch is started.
7. After 10 minutes, the light is turned off and the thermometer/probe is used to measure final temperature.

Additional guidance and resources for Event Supervisors may be found on the [Trial Event Page](#) at soinc.org. If you have any questions about this event, feel free to contact Kevin Hao at kevin@floridascienceolympiad.org.