Solar Cooker - Device Rubric

	Design of Device	Construction of Device	Durability of Device	Condition of Egg	Participation
Descriptors	The extent to which the device adheres to physics principles and matches the design sketch.	The extent to which care is taken in construction of the device using only the allowed materials.	The extent to which care is taken in construction of the device using only the allowed materials.	The extent to which the device efficiently warms the hot dog to the desired temperature.	The extent to which the student is engaged in the project and makes efficient use of allotted time.
Weight (%)	20	20	20	25	15
6	**Very Effective** Device is designed using principles of thermal energy transfer and exactly matches the design sketch.	**Very Effective** Device is well constructed with great care. Device is made of only provided materials; no additional materials were used.	**Very Effective** Device functions extremely well, reaching a temperature that is >140°F greater than the surrounding temperature**.**	**Very Effective** Hot dog reaches an internal temperature of 165°F in 20–25 minutes.	**Very Effective** Student is engaged in the project and is very self-directed. Uses time efficiently throughout the project.
5	**Good** Device is designed using principles of thermal energy transfer, but deviates slightly from the design sketch.	**Good** Device is constructed, but not with great care. Device is made of only provided materials; no additional materials were used.	**Good** Device functions very well, reaching a temperature that is 106–140°F greater than the surrounding temperature.	**Good** Hot dog reaches an internal temperature of 165°F in 26–30 minutes.	**Good** Student is engaged in the project, but does not always use time well and may have procrastinated on one thing. Project is completed on time.
4	**Adequate** Device is designed with little consideration of thermal energy transfer principles, although it exactly matches the design sketch.	**Adequate** Device is well constructed with great care; however, the student uses 1–2 additional materials that are not part of the project.	**Adequate** Device functions well, reaching a temperature that is 71–105°F greater than the surrounding temperature.	**Adequate** Hot dog reaches an internal temperature of 165°F in 31–35 minutes.	**Adequate** Student is engaged in the project, but does not make efficient use of time. Project is not completed on time.
3	**Limited** Device is designed with little consideration of thermal energy transfer principles and deviates from the design sketch.	**Limited** Device is constructed, but not with great care. The student uses 1–2 additional materials that are not part of the project.	**Limited** Device functions fairly well, reaching a temperature that is 36–70°F greater than the surrounding temperature.	**Limited** Hot dog reaches an internal temperature of 165°F in 36–40 minutes.	**Limited** Student is occasionally distracted, but still completes the project on time.

Rubric (continued)

2	**Minimal** Device is designed with no consideration of thermal energy transfer principles and may or may not match the design sketch.	**Minimal** Device is poorly constructed and uses 3 or more additional materials that are not part of the project.	**Minimal** Device functions poorly, reaching a temperature that is 1–35°F greater than the surrounding temperature.	**Minimal** Hot dog reaches an internal temperature of 165°F in 41–45 minutes.	**Minimal** Student is often distracted and does not complete the project on time.
1	**Inadequate** No device is designed.	**Inadequate** No device is constructed.	**Inadequate** Device does not reach a temperature higher than the temperature of the surroundings.	**Inadequate** Hot dog did not reach an internal temperature of 165°F.	**Inadequate** Student is not engaged and does not complete the project at all.