

Heat Energy Transfer - Final Written Assessment - Blue Level

Have a Heart - Help a Criminal Be Comfortable in Jail !!!

A rich man has been convicted of a crime. His punishment is to spend his jail sentence in a one room "cabin" in the middle of the desert. In the interests of science, government officials will allow him to spend his money on the construction of his one room jail cell so that scientists can learn more about how to help people stay comfortable without electricity. He's called you to design the one room cabin for him.

The desert has a dry climate. Days are HOT! Nights are COLD! You have an unlimited budget.

Your Goals:

1. Complete the task described above.
2. Fully demonstrate your understanding of conduction, convection, radiation, and insulation in both a drawing and explanation. Be sure to use the vocabulary we've learned during the unit.

When you finish your writing, highlight all vocabulary words that you've used.

Good luck!

Heat Energy Transfer - Final Written Assessment - Green Level

Let's Do Lunch !!!

Chicken Shawarma is served at Sari Kebab, the food stall on the 2nd Floor of Pangansari. To cook it, the chicken is placed through a metal pole (rod). The chicken is then placed approximately 30 centimeters in front of a gas flame. The cooking area is surrounded by three *shiny* aluminum panels and covered with an aluminum top. Students who order this meal for lunch take the chicken shawarma away wrapped in a piece of corrugated cardboard.

Using your knowledge of heat energy and the way that it is transferred:

1. Create an illustration of the energy flow involved when cooking the chicken.
2. Draw and label arrows to show the processes of radiation, convection, conduction.

In writing, explain how the chicken at Sari Kebab is cooked and served for students to take away. Use the processes of conduction, convection, radiation, and insulation in your explanation. Your explanation should include what is happening at the molecular level. Write about the movement of molecules, spaces between molecules, and transfer of heat energy. Be sure to show the extent of your understanding by making use of the vocabulary words we've worked with during the unit.

When you finish your writing, highlight all vocabulary words that you've used.

