Investigative Lesson

This lesson will build upon the skills learned in the two day 5E lesson plan and broaden the scope of these skills to accomplish more of the overall project.

Engagement: The students will be introduced to the laptops/computers. They will be given a website that has specific heats of some foods, but additional websites will have to be found. The website that will be given is <http://www.engineeringtoolbox.com/specific-heat-capacity-food-d_295.html>.

Exploration: Students will pick the exact recipes for the three course meal (type of chicken, seasoning for meatballs, seasoning for plantains). They will research and identify the specific heat of these foods, which may depend on what recipe they decide to use. About midway through this, the teacher will stop the students and ask them “What are you doing and why?” The students will then respond in a one minute paper and turn it in. A few responses will be read shared with the class.

Explanation: Students will use the specific heats of the foods to calculate the heat needed for the food to be considered edible, keeping in mind the change in temperature that must occur for the food to be considered edible. The temperature that must be reached for the food to be considered edible is 165 °F, which would have to be converted to about 73.9 °C. As the students are working on calculations, the teacher will walk around and make sure that all students are on task and calculating correctly.

Elaboration: Students will be asked to look up the specific heats of shrimp, beef, rice, and some vegetables. They will record this information and make sure to bring it on the fieldtrip the following day.

Evaluation: Students will show sample calculations to teacher in order to show that to make sure that they are calculating the needed heat properly.