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| **Challenge/Lesson Name: Model Food Truck** |
| **Background Information**  |
| Plan how you will use the space with your plan of the food truck equipment inside your mobile kitchen. Ergonomics is the number one consideration in the design of kitchen space. Your kitchen should be designed for maximum labor efficiency, safety and functionality. Make sure that there is plenty of room to move about freely when carrying hot pots and bulky supplies. If employees do not have to waste time and extra movement completing a task, efficiency is increased and fatigue and workplace injuries are reduced.You will determine the type of food truck you want, along with the equipment needed to serve the food. After all, if you decide you want to start a coffee truck you will have very different space and equipment requirements than a burger bus. Get a piece of paper or open a Word document and begin to write down each piece of equipment you need to include on your future truck. This could include a refrigerator, deep fryer, freezer, heat lamp, and storage space to list a few of the basics. Remember to think where you will take the orders as well. After you get the list of equipment created, the next part will be to determine how much space you need. Make sure to get the specifics of each piece of equipment you want to put into the truck and design a layout of where you want each piece of equipment to be placed. (Like the floor plans from the PowerPoint.)Take your time when determining the layout of your truck. You want to develop a truck layout that allows you to conduct food prep in an efficient way.An average food truck is around 16 feet long but could be up to 30 feet long. It all depends on what size truck. Width of the truck is 8 feet.INSIDE OF THE FOOD TRUCK:You will have students draw a mock inside of a food truck after manipulating a 3D model in the hallway.1. Have them use an entire 8x11 sheet of paper. Give them three minutes to do their best to think of everything they would need instead.
2. Things to consider:
	* Where a window would be for them to serve their food?
	* What type of food would they be serving?
	* Do you need an oven? A fryer? A fridge?
	* What about preparing food?
	* Also, think about walkway for home to move.
3. Next, have students pull out a piece of paper and explain to them they will be watching a short YouTube video on an inside of a truck and they need to write down everything they see.
4. Show the video, **Inside a Food Truck**. After the film, have a discussion on what they saw and write down on a white board. <https://www.cteonline.org/curriculum/lessonplan/designing-the-inside-of-a-food-truck/qdtLxA>

Examples:* Back up camera
* Grills
* Windows
* Assembly area

When you have a list, ask students what type of foods would be used for this food truck?* Ex: hamburgers
* Grill cheese
* Sandwiches
* You most likely wouldn't use it for an ice cream truck or coffee shop.
* What were they missing in their original food truck?

Students should draw their models to scale using 1/2 inch grid paper. Each 1/2 inch will be equivalent to 12 inches. OUTSIDE OF THE TRUCK:Great Food Truck Race **Lecture** Below is a ten minute clip from **Food Network-The Great Food Truck Race**. It's a preview of the third season.1. Have the students observe the outside of the trucks and design. Think about where the trucks are parked and how they took it to their advantage to sell their food.
2. Suggestion for discussion:
	* Where was the show taken place?
	* Discuss where each truck was parked, and how it helped or didn't help them.
	* How were the menus displayed?
	* Was there a truck you remember from the clip and why do you remember it? (Design of truck, menu items, the people working it?)
	* Was there any advertisement?
3. GOAL of lecture: Students to understand what sells in their city. How the outside of your truck and menu display attracts customers.
4. Have the students brainstorm on how they would design their own food truck.

<http://www.foodnetwork.com/shows/the-great-food-truck-race/videos/season-3-highlights#item-0193983> |
| **Design Challenge** |
|  Designing Your Own Food Truck- Using a Book as InspirationProvide students with the **Design Your Own Food Truck Instructions**.* Option 1: Students will design a Food Truck using the **Food Truck Paper Template** below.
* Option 2: Students will draw their own template of a Food Truck.
* All Students: Students will have an opportunity to use any materials they would like to design their unique food truck. (Example: cereal boxes, Styrofoam cups...)
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| **Criteria** |
| 1. Be Creative & Unique-Base your theme off of a Book Title
2. Must place window/where the food will be served out of
3. Display menu (be creative)
4. 3 Simple Machines
5. 3 Investigations of Light
6. Plan that is to scale for building model.
7. Food Truck must incorporate a sound to communicate.

Other considerations:* What city will they be located in? Why did you choose that city?
* What is their logo?
* What is their slogan?
* What is their hashtag?

Possible Extensions:1. Design how food will be carried out
2. Create a t-shirt design
3. Attached is an in-depth "Food Truck Wars" project. Example: The students are asked to do research about the city their regulations and policy for food truck. Use the **Food Truck Wars Instruction** handout.
4. If you are teaching a culinary arts class, ask the students to make one of their menu items.

<https://www.cteonline.org/resources/image/72034/1497565788/file.jpg> |
| **Materials/Tools** |
| * Cereal boxes
* Shoe boxes
* Soda cans
* Styrofoam cups
* Construction paper
* Craft supplies
* Sequence
 | * Pipe cleaner
* String
* Led lights or flashlights
* Singing greeting cards
* Aluminum foil
* Transparency film
* Saran wrap
* Parchment paper
* Grid paper
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| **Standards** |
| **S4P3. Obtain, evaluate & communicate information about the relationship between balanced and unbalanced forces.**1. Plan & carry out an investigation on the effects of balanced & unbalanced forces on an object & communicate the results.
2. Construct an argument to support the claim that gravitational force affects the motion of an object.
3. Ask questions to identify & explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel & axle, and screw) & how forces are changed when simple machines are used to complete tasks. (*Clarification statement:* The use of mathematical formulas is not expected.)

**S4P1. Obtain, evaluate, and communicate information about the nature of light & how light interacts with objects.**1. Plan & carry out investigations to observe & record how light interacts with various materials to classify them as opaque, transparent, or translucent.
2. Plan & carry out investigations on the path light travels from a light source to a mirror using different angles.
3. Plan & carry out an investigation utilizing everyday materials to explore examples of when light is refracted.  (*Clarification statement:* Everyday materials could include prisms, eyeglasses, & a glass of water.)

**S4P2. Obtain, evaluate & communicate information about how sound is produced & changed & how sound &/or light can be used to communicate.**1. Plan & carry out an investigation utilizing everyday objects to produce sound & predict the effects of changing the strength or speed of vibrations.
2. Design & construct a device to communicate across a distance using light &/or sound.

***Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.*****MGSE4.MD.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.a. Understand the relationship between gallons, cups, quarts, and pints.b. Express larger units in terms of smaller units within the same measurement system.c. Record measurement equivalents in a two column table.  |
| **Supplemental Resources** |
|  <https://www.cteonline.org/curriculum/lessonplan/designing-the-inside-of-a-food-truck/qdtLxA>Exploration Extensions: After presentation, students can display their Food Truck Model and have a blank piece of paper next to it, known as a "graffiti wall." Students can then be given time to walk around and write positive feed back of each students "graffiti wall."<https://www.wikihow.com/Draw-a-Floor-Plan-to-Scale> |