

PROJECT BASED LEARNING IN CAREER PATHWAY COURSES

Project Title: EACC Food Truck		
Teacher(s): Pete Lestinsky	Email: plestinsky@elkhart.k12.in.us	Date: 07/25/16
Course(s): Diesel Service Technology	Level(s): I & II	
Project Days: Thursday	Instructional Time: Class Period	
PROJECT DESCRIPTION		
Challenging Problem or Driving Question: Fabricating a food truck from a generic panel truck donated to school.		
<p>You are a Shop Owner</p> <p>You are faced with a customer request to provide them with a food truck.</p> <p>You must research guidelines and regulations for food trucks. Research vendors for materials for food truck. Inquire with school administration on licensing and insurance for the project truck. Research driver qualifications for finished truck. Work with customer to design truck. Fabricate and assemble truck to customer's specifications. Completely service and DOT inspect truck and make needed repairs.</p> <ul style="list-style-type: none"> ● CTE Technical Prompt: Preventative maintenance inspections practicum, DOT inspection practicum, fabrication and welding practicum. ● Literacy Prompt: Students will research and report findings on regulations applicable to food trucks. Students will research using both written and verbal communication and report findings on available materials for construction of food truck. ● Math Prompt: Students will use math skills in the design and fabrication processes. ● Science Prompt: (List students' required actions) ● 21st Century Prompt: Students will develop collaboration skills throughout the project, research skills, literacy skills 		
ESSENTIAL STANDARDS		
<p>CTE Technical Standards:</p> <p>DSTI-1.1 Allocate the appropriate resources for task completion</p> <p>DSTI-4.6 Perform preventative maintenance to the fuel system and lubricating system</p> <p>DSTI-5.1 Identify the type of fuel and lubricating oil required for a diesel engine</p> <p>DSTI-1.15 Practice safe working procedures during each stage of diagnosis and repair</p> <p>DSTI-1.16 Organize, research, and implement a complete preventive maintenance and inspection (P.M.I.)</p> <p>DSTII-3.9 Diagnose common electrical problems in a modern vehicle</p> <p>DSTII-3.1 Demonstrate an understanding of personal and shop safety practices</p> <p>ASTI-4.6 Service brake systems</p> <p>ASTI-4.11 Remove, inspect and service or replace front or rear wheel bearings</p> <p>ASTI-4.12 Demonstrate proper shop safety practices while using brake tools and equipment.</p>		

ASTI-4.13 Use and identify tools and equipment used to repair brake systems
ASTI-3.18 Troubleshoot, clean, and replace components of transmission system.

Literacy Standards:

DSTI-1.9 Read and interpret written materials
DSTI-1.10 Apply written communication skills
DSTI-1.11 Demonstrate effective listening and speaking skills

Math Standards:

DSTI-1.12 Perform appropriate mathematical calculations correctly

Science Standards:

DSTI-1.7 Select and use appropriate tools and technology

21st Century Standards:

DSTI-1.2 Demonstrate effective interpersonal skills
DSTI-1.3 Develop leadership skills
DSTI-1.4 Establish positive relationships with people from diverse backgrounds
DSTI-1.1 Allocate the appropriate resources for task completion
DSTI-1.2 Demonstrate effective interpersonal skills
DSTI-1.3 Develop leadership skills
DSTI-1.4 Establish positive relationships with people from diverse backgrounds
DSTI-1.5 Research, analyze, and use data for work assignments
DSTI-1.6 Apply effective critical thinking, decision making, and problem-solving techniques
DSTI-1.7 Select and use appropriate tools and technology
DSTI-1.8 Implement quality assurance measures and safeguards
DSTI-1.9 Read and interpret written materials
DSTI-1.10 Apply written communication skills
DSTI-1.11 Demonstrate effective listening and speaking skills
DSTI-2.5 Develop skills needed to enter the workforce
DSTI-2.7 Demonstrate skills and attitudes needed for lifelong learning
DSTI-2.8 Apply effective money management strategies

DESIGN PROCESS

Step 1: Ask/Inquire

Entry Event and Project Launch

For an entry event, students will watch an episode from a show applicable to the project. Food Truck Wars, Diesel Brothers, and Flea Market Finds will be the learning resources. Four groups will be formed:

- Truck Regulations, licensing and insurance requirements, CDL requirements, DOT inspection requirements, preventative maintenance.
- Material Acquisition, vendors applicable to culinary supplies and parcel van supplies.
- Design and fabrication
- Health Regulations, and continual operation.

The instructor will use the Compass Points protocol to group students. Students will be broken up so varying philosophies will be included in each group.

Each group will compose an exploratory paper based on their research. Each group will present an oral presentation to the rest of the class summarizing their exploratory paper. Each group will be evaluated as a

group based on their written assignment and oral presentation assignment. Each student will be evaluated by their group peers based on their group participation. The three grades will be combined for a score for this stage of the PBL. A formative assessment will be given at this benchmark, based on key aspects of research.

Step 2: Imagine

Students will brainstorm ideas on how they will develop the project. Students will obtain input with students from the Culinary and Graphic design classes. All of the groups will discuss the research and brainstorm ideas for the design of the truck. Each group will be instructed to consider how their aspect of the plan can affect the other groups. A Charrette protocol will be introduced. Each group will present in the Charrette and record the input from the rest of the class. Every group member will present an aspect of their findings during the Charrette. Students will be evaluated by according to their participation in the Charrette.

Step 3: Plan

Students will work in their groups. Students will research in their respective content area. Each group will present their findings to rest of class with oral presentation. A written report will also be turned in and made available to other groups. Students will grade each other in their group, based on their participation.

Step 4: Create

Each group will start on their tasks. The base truck group will inspect truck, service truck and make needed repairs. The material acquisition team will work with design team to obtain needed materials. The design team will collaborate with the other teams to ensure their design does not conflict with regulations, available materials and the continual operation of the project. Students will evaluate each other at this benchmark.

Step 5: Experiment/Evaluate

Students will shift groups. Each group will evaluate what the other has completed and make a list of recommendations. This shift will take place three times so that all aspects of the project has been experienced by each group. Each group will grade the other group.

Step 6: Improve

Each group will disseminate the recommendations from their peer groups. The group members will decide what changes need to be made and what recommendations would be disregarded. The group will compose an argumentative presentation explaining what changes they will make or disregard. The group presentation will be assessed by the instructor at this benchmark.

Step 7: Communicate

As the project develops each group will make a weekly presentation to the class on their progress. This progress report will also be submitted in a written report so that a log can be maintained of the project.

STUDENT EVALUATION

Rubric(s) [Ask/Inquire Peer Rubric](#)
[Ask/Inquire Presentation Report Rubric](#)
[Ask/Inquire Oral Presentation Rubric](#)
[Imagine Charrette Rubric](#)
[Plan Stage Rubric](#)

Assessment(s) Ask/Inquire 10 point quiz over key aspects
Imagine 10 point quiz over keys aspects of Charrette input

INSTRUCTOR REFLECTION

What went well?
What could be improved? **Improve organization, set deadlines**
How will you modify this project for next time?

SUPPORTING MATERIALS

Equipment/Technology **Project Truck, welder, Torch, fabricating tools, preventative maintenance materials/tools, DOT inspection forms**
Materials **Resources from health department, resources from ind.gov BMV, Resources from FMCSA**
Human Resources **Guest speaker from Elkhart County Health Department, Indiana State Police**
Other

ADDITIONAL COMMENTS

(Optional)

Thinking like a Professional: The Professional Notebook (optional)

What are the essential components of the Professional Notebook students will keep for this project?

How will you use the Professional Notebook to assess the work on this project?