Integrated Project-based Learning: Combining PTE Standards and Academic Standards

Use this template for planning and sharing ideas for projects. This template is based on the 6 A’s:

Authenticity\* Academic Rigor\* Applied Learning\* Active Exploration\* Adult Connections\* Assessment

| **Project** | |
| --- | --- |
| **Title of Project** | **Custom Body & Paint Essay** |
| **Project Developed by** | Brett T. Peterson / Stephanie Shaw |
| **E-mail Address** | [brettp@sd314.k12.id.us](mailto:brettp@sd314.k12.id.us) / steps@sd314.k12.id.us |
| **School** | **Dietrich High School** |
| **Pathway / Small Learning Community/Academy** | **Auto Body** |
| **Course Title(s)** | **Automotive Frames** |
| **Time Frame** | **3-4 weeks** |

| **Authenticity** | |
| --- | --- |
| *Briefly describe your project. Include the key question and provide an overview of what students do and learn. Tell why the question is meaningful to the students and where one might see a similar question tackled by an adult in the workplace.* | |
| **Key Question** | **How do automotive frames function, their uses, and what can affect them in function?** |
| **Overview** | **Students will research the changes in frame technology and frame advances in the automotive industry. Students will write an essay about these affects, and report to the class their findings in the industry over the last 100 years.** |

| **Vocabulary/Key Terms** | | |
| --- | --- | --- |
| ***List vocabulary words and key terms essential to student understanding.*** | | |
|  | **Frame**  **Sectioning**  **Torsion**  **Twist**  **Distortion**  **Warp age**  **Cross member**  **Diagonal stress**  **Load** | |
| | **Active Exploration \* Applied Learning \* Adult Connections** | | | | --- | --- | --- | | *What classroom-based, community-based, and career-based activities does the project involve? Include a description of the active exploration, applied learning, and adult connections in the project (as needed).* | | | | ***Active Exploration*** *How does the project engage students in real investigations using a variety of methods, media and sources? What field-based work will students perform? How does student learning and service support active career exploration?* Students will examine real models of homes. Math will explain how the length of frames affect vehicles and what changes affect measurements. **Applied Learning** How do students apply what they have learned and researched to a complex problem  (e.g. designing a product, improving a system, creating an exhibit, organizing an event)? Lecture on industry usage of this concept i.e. model designs. Application with their own proportions also will be explored along with industry standards. ***Adult Connections*** *Who from the community, workplace, postsecondary and/or industry partnership works with students on the project?* Lecture from local industry and community in home design. | | | | **Classroom Activities** | **Community** **Activities** | **Career** **Activities** | | **Use vocabulary in context by using review games, and quizzes.**  **Research history of automotive frame construction.**  **Project presentation on types of frame design. Students will be required to use digital media for presentation.** | **Guest speaker on changes that have been seen over the course of frame design. Frame Technician** | **Foundation of safety in design** | | |

| **Academic/PTE Rigor** |
| --- |
| **Standards** *Use the space below to list the state content standards and PTE industry standards addressed by the project. (A list of the content standards is available at* [*http://www.sde.idaho.gov/ContentStandards/default.asp*](http://www.sde.idaho.gov/ContentStandards/default.asp)*. This page, which includes selected high school level standards, is designed to let you easily create a list of standards you are addressing. You may then copy and paste the list into this template.)* |
| **PTE Standards Academic Standards**  **RST 11-12.7, 12.9, 12.10 SL 11.1, 11.4, 11.5,**  **WHST 11-12.1, 12.4, 12.5, 12.7 RI 7, W1, 2, 4, 6, SL 4, 5** |
| **School to Career Competencies** *Please check (x) the competencies addressed by the project* |
| [ X] Communicate and understand ideas and information  [X ] Collect, analyze and organize information [X ] Identify and solve problems [X ] Use technology [X] Initiate and complete entire activities [ ] Act professionally [X ] Interact with others [ X ] Understand all aspects of an industry [ ] Take responsibility for career and life choices |
| **Student Goal(s) Once the project begins, ask students to generate one or two personal goals.** |
|  |
| **Assessment** |
| *How do you and the students know the project is a success? What are your criteria for measuring students' achievement of the disciplinary knowledge and applied learning goals of the project? What evidence do they use to demonstrate their progress? What deliverables do they need to complete prior to the final exhibition? How will students self-assess?* |
| Students will meet the standards according to the rubric or receive a score of at least a 3 if not successful. Students will be able to present the topic and answer the questions that are asked by fellow classmates and the teacher. Students will need to provide multi draft paper, rough draft, peer edit, revision, and final draft. Students will need note cards to present topic to the class. Students will also be required to create a media presentation (PowerPoint, Prezi, or video) to use as a visual aid. Students will be provided with a rubric to self assess their own project. |
|  |

| **Recommended Resources / Sample Products** | |
| --- | --- |
| **Software or Materials Needed** *(Examples*) | **Power Point Templates**  **Internet access**  **Student text book**  **Research materials** |
| **Teacher-Developed Materials** *(Examples of materials that can be shared with other classes. Please attach samples.)* | **Rubric to assess paper**  **Rubric for student self assessment** |
| **Student-Developed Materials** *(Examples of products that can be shared with other classes. Please attach samples.)* |  |
| **Websites Used** *(Examples*) | **Chevy.com**  **Ford.com** |
| **Final Words** (In a sentence or two, highlight your project’s overall value.) | **What positive changes have occurred over the course of the past century that affects vehicles today?** |
| **Teacher Tips/Extensions** (Use the first person to share a useful idea that helps with implementation and ensures success. Make it chatty, informal.) | **This project not only affects the students and learning in automotive frames design, but affects their safety in future years. We need continually advance in frame design, and safety, and seeing the changes that have occurred will show people why we changed the designs over the years.** |
| **Extensions** *(List any ideas for students who may want to go deeper into the learning standards.)* | **Job shadow Frame technician**  **Volunteer work at welding shops, body shops, and fabrication shops.** |

| **Timeline** |
| --- |
| ***What sequence of teaching and learning experiences will equip students to develop and demonstrate the PTE standards and the Academic standards?*** |
| * The students will have to learn how to correctly cite sources, organization by topics, understanding how milestones have changed in frame design have changed over the last century. Students will also have to stand in front of the class to present the topic that was chosen and to be able to answer questions that may be asked from peers, and the teacher. |

**Project Self-Evaluation**

Student name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Research topic: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Describe your project IN DETAIL:
2. What materials did you use?
3. What are three things you learned from working on the project?

a.

b.

c.

1. What are three things you learned from your research paper?

a.

b.

c.

1. How do you feel that your project will compare with others?

1. What problems did you encounter? How did you overcome these problems?
2. Did your project turn out the way you planned? If not, why?
3. What would you do differently if you could start all over (in regards to either the project or the research paper)?
4. What did you learn about yourself?
5. What grade do you think you deserve? Justify this grade in 50 words or more.

My grade: \_\_\_\_\_\_\_\_\_\_\_\_\_

Justification:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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