



Transportation Systems/ Infrastructure Planning Management and Regulations Pathway:

Air/Space

Problem-based Scenario Outline

School Site: Triad High School

Pathway Knowledge and Skill(s):

- P01.1 Manage routes and schedules to move people/goods to meet customer requirements
- P05.1 Plan public transportation infrastructure

Performance Element(s):

- P01.1.1 Develop transportation routes and schedules.
- P05.1.1 Determine the need for new or improved public transportation infrastructure (e.g., highways, airports, train terminals, ports, commercial space launching facilities, intermodal facilities).

Title: NASA

Completion Time:

Problem Statement: You are an aeronautical engineer. You have been hired by NASA to research the need and feasibility of “Space Planes”. Your job is to look at the developments of space planes and decide how these planes will be used. Also what type of people will use the planes (upper class, middle class, etc.) You finally will have to decide what should be included on the planes (sleeping quarters, restrooms, café, etc.).

After you have completed your research you must compile all of your information into a written report. Your report and findings should then be presented to NASA officials.

Occupations and Related Job Titles (*Examples*):

- Pilot
- Transportation engineer
- Space engineer
- Astronaut

Business/Industry/Government Partner(s):

NASA
Glenn Research Center
Cleveland OH 44135

Students: Students will engage in the planning process of space planes. The students will research what is needed on space planes for the future. They must determine the amenities that will be needed to be included in the plane. They must also determine what type of people will use the planes (upper, middle and/or lower economic class citizens).

Process: Students will engage in research via the internet and library to determine the history of space planes. They must determine the uses and feasibility of the planes.

Required Materials and Resources:

- Computers
- Word processing and presentation software
- Internet worksites
- Library
- Teleconferencing
- Internet
- NASA Representative via e-mail
- Library resources

Cluster: The students will be assessed utilizing several different methods. They will be assessed for style, correctness of grammar, and spelling on their written report. They will also be assessed on the use of resource materials. The final assessment will be determined by how well the students compile and present their findings of the project to Lanter Company with the use of the scoring rubric.

Pathways: The students will be assessed via tests and daily assignments. A scoring rubric will be used to fully assess the students overall performance. Since the students are working in team settings, they will evaluate each of the team members and themselves for a final participation grade for the project.

Cluster Foundation Knowledge and Skills:

- F2.2.1 Compose multi-paragraph writing containing technical concepts, knowledge, and vocabulary.
- F2.2.3 Use information technology to design, produce and present written and multi-media materials (See Information Technology Applications).
- F2.4.1 Develop and deliver formal presentations using a broad range of technical concepts, knowledge, and vocabulary.
- F2.4.2 Contribute effectively to group discussions including meetings.
- F3.1.1 Formulate ideas, proposals and solutions to problems.
- F3.2.1 Develop solutions to performance problems using a structured problem-solving process.

- F4.1.1 Create documents using word processing software
- F4.2.1 Use electronic mail.
- F4.2.2 Use Internet services to locate and retrieve information.
- F5.1.3 Explain the impact of economic, social, and technological changes on TDL organizations and the industry
- F5.1.5 Explain the roles and functions of government in regulating and supporting TDL organizations within the industry
- F6.1.1 Describe the major regulatory areas (e.g. personal protective equipment) and government laws and regulations.
- F7.1.1 Collaborate effectively with others.
- F7.2.1 Conduct and participate in meetings
- F9.1.2 Identify and demonstrate positive work behaviors and personal qualities
- F9.2.2 Develop career plans for career opportunities

Module Plan

3. Research Space planes	Students will use the internet to research the development of space planes. They will need to look at the historical and future aspects of the planes.	The students will be required to complete a worksheet and written assignment on the development of space planes.
4. Needed amenities	The students will choose the amenities that the space planes will require.	The students will choose the amenities needed on the space planes and list them as a group. They will work in small groups to determine several lists and then come together as a class to determine one list.