



Railroad Technology

Post-Visit Lesson

Grades: 6th - 12th grade

Class Time Needed: 45 minutes

Big Idea Students will understand how advancement in technology has positive and negative effects.

Maryland Curriculum Standards

Social Studies Framework

- Essential Question (8th grade): Did the benefits of post-Civil War industrialization outweigh the costs?

NGSS Science Framework

- Middle School and High School: Developing Possible Solutions

Materials Needed

- Technology Advancements Video <https://youtu.be/bGo6vIWbKl0>
- Shark Tank Video https://youtu.be/k3PY_p_M-8w
- Student devices with internet access
- Basic craft supplies (if students want to make prototypes of their inventions)



Teacher Resources

Tips to help students be creative article

<https://www.edutopia.org/article/4-ways-develop-creativity-students>

Invention Brainstorming Worksheet

<https://studylib.net/doc/7402926/invention-brainstorming-worksheet>

Technology Advancements Video <https://youtu.be/bGo6vIWbKl0>

Shark Tank Video https://youtu.be/k3PY_p_M-8w

Lesson Procedure

Introduction:

Show “Technology Advancement” video to get students brainstorming about how technology have improved over time.

Example of technological advancement: Trains were originally pulled by animals, then powered by steam, and later diesel and electricity.

Direct Instruction (Student Activity):

Show the “Shark Tank” video and discuss with students what inventors do and how they become successful. For example, inventors of railroad technology persevered and created life-changing product in the 19th and 20th centuries.

Either working individually or in groups, students will pick a current piece of railroad technology to improve (or students can create an entirely new railroad invention that does not already exist).

Students will create a presentation for the class who will act as potential investors for the new product (like in the Shark Tank video). Presentations should include: pictures, price, purpose of invention, potential buyers, environmental impact and any other relevant information.

Possible railroad inventions to improve include: steam engine, boiler, automatic air brakes, diesel-electric locomotive, headlights, horns/whistles, streamlined locomotives, tracks, switches

Conclusion:

After student presentations, each student votes for the invention/presentation they thought was best OR the teacher can decide which invention would win on “Shark Tank”.

