

Grade Level: 6 - 7

Curriculum: Explorations, ADST, Social Studies

Title of Lesson: How Technology Changed the World - Transportation

Learning Goals/Objectives:

- Characterize different time periods in history, including periods of progress and decline, and identify key turning points that marked periods of change
- Design can be responsive to identified needs.
- Complex tasks may require multiple tools and technologies.

Materials Needed:

- Found or recycled materials
 - Milk Cartons or jugs (rinsed out!)
 - Pipecleaners
 - Assorted cardboard
 - Recycled plastic containers or tin cans, etc.
 - Pencil
 - Paper

Activity Instructions: (Step by Step)

- Humans have always sought out ways to make our world more efficient. Unlike many animals, humans are not able to move through our environment with great speed, and so humans did what they seem to do best- they adapted!
 - Early forms of transportation were fairly simple- they relied on either animals, or mechanical advantage to make moving around faster and easier. As the way humans moved around between settlements changed, so did the different modes of transportation.
 - Watch this short, animated history of transportation. As you watch, pause and record any of the forms of transportation that you haven't seen before, along with your favourites.
 - <https://www.youtube.com/watch?v=FaLCQo8NJFA>.
 - Do you notice any patterns in the way transportation has evolved? In the first half of the video, did you notice mostly vehicles that travel on land, on the water, or in the air? How about in the second half of the video?
 - How are the majority of these vehicles powered? If you aren't sure how something is powered, try searching the internet! Do you notice a trend in how these vehicles are powered?

- Keep a tally of how many of the vehicles are for: long distance travel, short distance travel (within the same city), recreation, or exploration. Which category has the most vehicles? Why do you think this is?
- Do you notice a pattern in how many people each vehicle can carry? One, a small group (up to 4), or a larger group?
- Your task is to design the next evolution of human transportation!
 - Start by deciding which type of transportation you want to create, long distance, short distance, exploration or leisure.
 - Will your vehicle be made for a single occupant, a small group, or a large group?
 - Will your vehicle be powered by human power, some type of combustion engine, or another force (like wind, solar energy, electricity, etc)?
 - Once you have these questions answered, complete the design sheet on the next page.
 - After completing the design page, use your found and recycled materials to create a small model of your vehicle (a good size to aim for would be a model that could fit inside a shoebox). If you don't have enough (or any) building materials, or you aren't able to build for another reason, draw your invention in orthographic projection: including a front, side and top view of the vehicle.

**What is the task or
problem to be solved?**

1

**What are the criteria for
my solutions? (What
rules do I need to follow)**

2

5

**Here is a picture
of my design!**

**I think these
are the ideas I will
keep and use!**

4

**Here are some
of my ideas!**

3