

On the Move

Essential Question Can you come up with an alternative way to make a vehicle move besides using a motor?

Grade 4th

Time 50 minutes

Art Concepts Lithography, transfer

Materials Tape, 3 plastic straws, 2 wooden chopsticks, wooden skewers or thin, straight sticks, 4 plastic sports drink/water bottles caps or milk caps, cardboard from a cereal, cookie, or oatmeal box, 1 small balloon, colored construction paper, markers, scissors

Artwork in Focus [*A Wagoner Tightening a Load of Wood on a Horse-Drawn Cart, 1820, by Aleksandr Orlovsky*](#)

Talking about Art Aleksandr Orlovski was born 1777 in Warsaw, Poland. The Princess of Poland, Izabela Czartoryska, recognized his talent at a young age and financed his first painting classes. While living in Russia, Orlovski became a pioneer of **lithography**, which is a way of creating works of art by drawing on a large stone and then pressing paper to **transfer** the image to the paper. That's how he created the lithograph *A Wagoner Tightening a Load of Wood on a Horse-drawn Cart*. Just like a photograph, the image takes center stage as a moment caught in time. Can you see the

wagoner in the image? What do you think he is doing? What do you see that makes you say that?

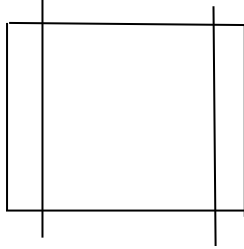
In this artwork, a man is struggling to tighten a pile of wood on the wagon, while the horse anticipates the struggle to haul the wagon with a pile of wood and the worker. Consider the wagoner's problem—he has to move heavy material a long way. How would we do that today? Look closely at the wagon and how it is built to do its job.

Think about a modern vehicle like a truck and how it does its job. If you could design your own wood-hauling vehicle, what would it look like? What other things do you see?

Making Art

Inspired by Orlovsky's lithograph, you will make your own air-powered vehicle using recycled materials.

1. Begin by having an adult punch a hole through the center of the plastic caps. They can use the point of the scissors.
2. Measure and cut a piece of cardboard to be about four inches long by about three inches wide.
3. Cut two straws to be three and a half inches long. Tape the straws across the width of the cardboard, so that a little bit sticks out each side. They should be placed about one-half inch from each end of the cardboard. This will be the bottom of your vehicle.



4. Ask an adult to help you cut two chopsticks about four and a half inches long and insert them into the straws.
5. Attach the caps to each chopstick by inserting the caps into the hole in the chopstick; secure the tips with tape.
6. Cut another straw about one inch in length and insert it inside a balloon and secure the edge with tape. Make sure it's airtight!
7. Tape the straw/balloon to the center of the top of the vehicle so that the air from the balloon (when you let go of the end) will blow the opposite direction from the way you want your car to go.
8. Blow up the balloon, pinch it until you're ready to watch your car go.
9. Personalize your vehicle using colored construction paper and/or markers, but keep it aerodynamic, or lightweight, to improve its speed.
10. Place your air-powered vehicle on the ground and release the air out of the balloon from the straw.

Reflection

Now that you have created your own vehicle, let's reflect on the art-making process.

What was the most difficult part about building the vehicle? What did you learn about engineering that you didn't know before? What would you change to improve your vehicle's speed?

Curriculum Connections California Arts Standards for Public Schools—Visual Arts

4.VA:Cr2.2: When making works of art, utilize and care for materials, tools, and equipment in a manner that prevents danger to oneself and others.

Common Core State Standards Math

4.G.A.3: Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

NGSS for California Public Schools, Kindergarten through Grade Twelve

Apply scientific ideas to design, test and refine a device that converts energy from one form to another (4-PS3-4 Energy).

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