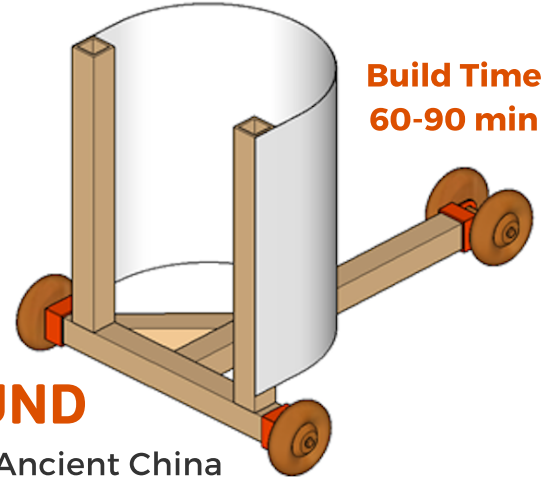


CORI SAIL CAR

The classic engineering design project is a quick yet fun engaging CORI project designed for all ages. Harness the power of wind by designing a custom CORI Sail Car using our prototyping materials and tools.



Build Time
60-90 min

KEY VOCABULARY

Mast

Kinetic Energy

Tensile Structure

Wind Farm

Mechanical Power

Renewable Energy

Solar Energy

Point of Sail

Distance

Trial

SAIL CAR BACKGROUND

The sail carriage traces back to Ancient China during the reign of Emperor Yuang of Liang (around 550 BC). These carriages had a standard mast with sail that used the power of wind to transport even up to 30 people. In Europe, sail cars were called Land Yachts and in America during the 19th century, they called them windwagons. In modern times, the sail carriage has turned into sport competition by using the wind to power sail cars on sand called sandyachting. You can learn more about sandyachting competitions on the International Land and Sandyachting Federation website: <https://www.fisly.org/>

GUIDING RESEARCH QUESTIONS

- What is kinetic energy and how is it applied to sail cars?
- How did the various sail cars change throughout history?
- What were the most effective sail car designs in your research?
- What made those designs so effective?
- What was the fastest speed recorded using a sail car? What was the name of the wind-powered vehicle?



CORI SAIL CAR DESIGN CHALLENGES

- **Challenge #1:** Design a CORI Sail Car to launch the farthest in your group/class using the same wind-powered source.
- **Challenge #2:** Create a target and design a CORI Sail Car to accurately hit the target first in your group/class.
- **Challenge #3:** Design three different sail materials to try with your sail car, which materials worked the best?



SAIL CAR DESIGN SKETCHES

Sketch your catapult design below.





DESIGN AND TEST OBSERVATIONS

Experiment with your designs and begin testing your prototypes. Record your observations and what modifications you will make to either a) launch farther b) accurately hit targets c) change the sail material

FINAL RESULTS AND FOLLOW UP QUESTIONS

1. Describe your final results of your Sail Car? Did it work? Why or why not?
2. What changes would you make the next time and why?
3. What other designs do you like from other group projects? Why?
4. What did other groups design that was different than your project?
5. Did it meet the challenge better than yours? Why or why not?
6. Would you include any other material(s) to enhance your design?
7. What other applications can be used based on the sail car engineering design?

#CORICREATE COMMUNITY

Take a picture/selfie or video with your CORI Sail Car design and share it on #CoriCreate hashtag.