

Land Yacht

Name(s): _____

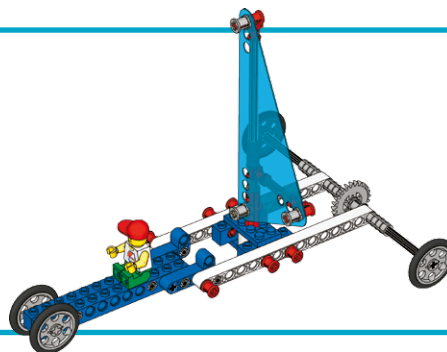
How can you make a safe cart that is powered by the wind and carries at least one person? Let's find out!



Build the Land Yacht

(all of book 9A and book 9B to page 5, step 12)

- Use the small sail



What difference does the size of the sail make?

- Turn on the fan. Predict and test how FAR each model will roll with the same wind speed
- Test at least three times with each sail to achieve a scientifically valid answer

NOTE: FANS and FINGERS! TAKE CARE!

Tip:

Choose ONE speed setting to do all the tests. Any speed will do. We used high speed.

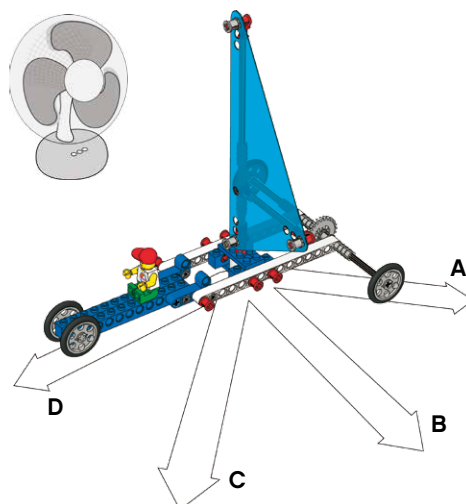
	My Prediction	Actual Distance
Small 40 cm ² (≈ 15 in ²) sail page 5, step 12		
Medium 80 cm ² (≈ 31.5 in ²) sail page 9, step 21		
Large 160 cm ² (≈ 63 in ²) sail page 14, step 30		

What difference does wind angle make?

- Launch your yacht at different angles across the wind stream
- How fast does it travel each time?
- Write the words next to the arrows to match what you saw happening

Stopped Medium speed

Fast Slow



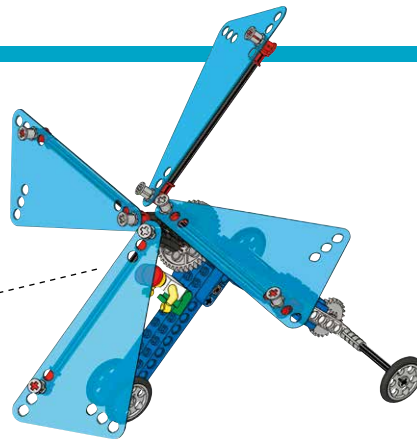
The Wind Sucker

(Build book 9B to page 24, step 15).

- Hold it 2 m (≈ 2 yds) away facing the fan
- Predict what will happen and then let go



About 2 m
(≈ 2 yds)
from the fan



My Prediction	Actual Distance



Also try:

- Fat back wheels
- A weight brick
- Two or three sails
- Facing backward

Did you know?

The LEGO® figure weighs 3 g (≈ 0.1 oz). The yacht weighs about 55 g (≈ 1.94 oz). The weight brick is 53 g (≈ 1.9 oz). Predict and test how the yacht would perform with a weight brick load.

My Land Sailor

Draw and label your design for a wind-powered vehicle. Explain how the three best parts work.