



Air Racers



3rd Grade

Explore

Challenge: See who can design and build an air racer that can go the farthest, using only the wind power from a fan.

Materials

- ✓ Pencil
- ✓ Masking Tape
- ✓ Life Savers
- ✓ Straws
- ✓ Paperclips
- ✓ Paper
- ✓ Fan
- ✓ Measuring Tape
- ✓ Journal Sheets

Dear Families,

The Earth has many **resources**, and some of those resources can be used to create **energy**. **Renewable energy** utilizes resources that can be naturally replenished within a short amount of time; such as solar, water, and wind energy.

In this activity, you will explore **wind energy** by making vehicles (air racers) that move using the power of wind.

Directions

- 1 Using the materials provided, work together as a family to build an air racer - a small vehicle that is moved by wind.
- 2 After the air racer has been built, it's time to race! Put the racer on a starting line (you can make this with a piece of tape) and use only the fan provided to get the racer to move. Measure how far the racer went using the measuring tape and record the distance on the **Science Journal Sheet**. Do this three times.
- 3 As a family, discuss changes that you can make to the air racer to make it go farther. Redesign the air racer and repeat step 2 above.

Discuss

Ask: During the activity ask these questions

- Why did you design your racers the way you did?
- Was your first or second design more successful? Why?
- If your air racer had to move on a different surface (water, grass, sand), would you have to change your design? Why?

 Turn Over

On your **Science Journal Sheet**, draw your air racer design. Then, record the distance your air racer traveled when you tested it.

After you have tested your first design, could you make your design even better? Draw a second design with your new ideas; then test it. On your **Science Journal Sheet**, record how far the redesigned air racer traveled so you can compare your first design to the second.

Using the results from your air racer trials, create a graph to represent your data on *page 3* of the **Science Journal Sheet**.

Think

Family Newsletter

Engineering Connection

Wind is a renewable source of clean energy and its use for power has little impact on the environment. Wind can cause things to move, which is a form of energy called kinetic energy.

Wind power can be harnessed through the use of wind turbines, which use blades that turn in the wind to generate power that can then create electricity.



Suggested Books:

The Boy Who Harnessed the Wind

By William Kamkwamba

Water Power

By Julie Richards

Saving Energy

By Neil Morris

The Shocking Truth About Energy

By Loreen Leedy

Look for these books at your local library

Online Sites:

eia.gov/kids/

pbslearningmedia.org

TIP: That's a good question!

Think about the questions that you are asking your child. If the question can be answered with one word, such as *yes* or *no*, try to rephrase it. Starting questions with the words **why** and **how** is a great start! Good questions encourage children to think things through and come up with their own answers.

Take our quick **Family Pack survey** to help us improve your experience!



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