



Environmental
Defense
Fund

Air Aware Lab

Teacher Edition: Texas 5th Grade Science TEKS Summary

Air Aware Lab

Materials in Your Toolkit

4 MERV-13 Air Filters (20x20")
1 Box Fan (20")
Duct Tape
Cardboard
Scissors or Box Cutter
Markers or Stickers for Decorating

Get Started

Let's explore air quality by designing and building our own air filters. As we test our filters, we'll learn how different materials can help remove particles from the air and why clean air is important for our health and environment.



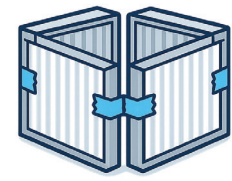
Step 1

Carry out the worksheet and watch video



1A. Watch video on how to build an air filter by scanning QR code.

1B. Fill out the worksheet.



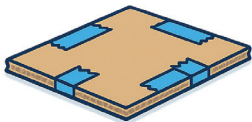
Step 2

Make the filter cube

2A. Open all boxes to get started.

Stand the 4 filters upright in a square shape.

2B. Tape the filters together along every edge so there are no gaps.



Step 3

Add the bottom

3A. Cut square piece of cardboard to fit the bottom.

3B. Tape it securely underneath the filters. Now your cube has a floor and won't collapse dramatically.



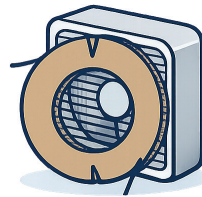
Step 4

Add the fan

4A. Place the box fan on top of the cube. Make sure the fan blows air UP and OUT of the box.

4B. Tape the fan tightly onto the filters.

4C. Test it. Turn the fan on for a second. You should feel clean air blowing upward like a tiny wind machine.



Step 5

Add the turbo ring

5A. Cut a large circle in another piece of cardboard

5B. Tape it to the front of the fan. This is called a shroud and it helps:

- Improve airflow
- Reduce noise
- Make your project look more professional



Step 6

Decorate your filter and see classmate's designs

6A. Use markers and stickers to make your own design.

6B. Tell your teacher when you are done with your project.

6C. Go around and look at the other team's air filters.