Cleaning the Air

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CDC MUSEUM
PUBLIC HEALTH ACADEMY

Word Bank

exposure

lead

emissions

citizen scientists

public health

air filter

particle pollution

	people who help collect data for research projects conducted by professional scientists
	a metal that is poisonous to humans that is used in a variety of products
	a filter that removes particles and impurities from the air
	to leave without protection, shelter, or care; subject to a harmful condition
	something that has been released into the world, particularly the air
	the science of protecting and improving the health of people and their communities
	pollution caused by small bits of matter in the air

Understanding Particle Pollution

- **Particle pollution**:
  - also called particulate matter (PM)
- Particles include:
  - dust, dirt, soot, metals, smoke, drops of liquid
- Some visible, others too small to see

Think About It

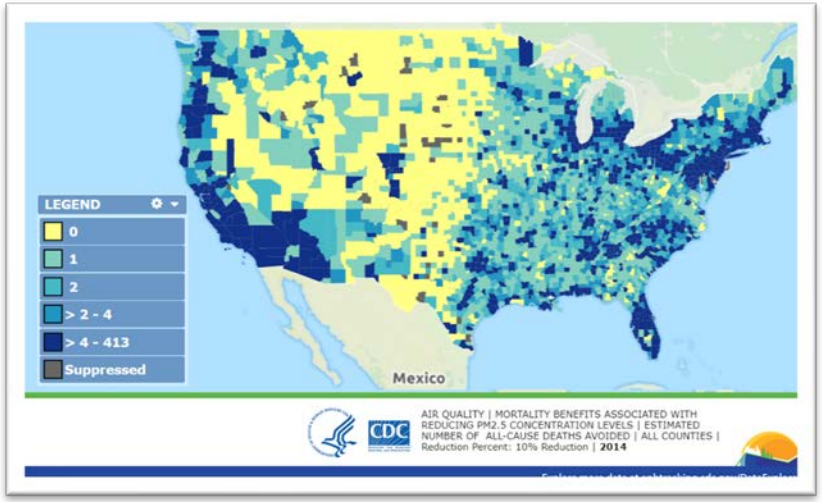
1. What types of particles are found in **particle pollution**?
2. What causes **particle pollution**?
3. Why is **particle pollution** dangerous?

Particle Pollution and CDC

- Scientific innovations in 1800s:
  - less farming, more cities
  - factories, larger populations
  - chemicals and fossil fuels (**particle pollution**)
- Mid-20th century:
  - air pollution = severe heart and lung problems
- Scientists begin studying air pollution and health
  - **emission** of lead and steel in air
  - call for government intervention

Particle Pollution and CDC

- 1970: US Environmental Protection Agency (EPA) created
  - 1: monitor effects humans have on environment
  - 2: help develop policies to protect citizens and environment
- EPA teams up with CDC to protect against dangerous pollutants
- CDC creates tracking programs
  - educate public: **particle pollution** and **public health**



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Think About It

1. How long have humans contributed to **particle pollution**?
2. What effect did the Industrial Revolution have on **particle pollution?**
3. How does CDC support efforts to reduce **particle pollution**?

From the Expert

https://youtu.be/9BVydjpKRH8

Think About It

1. What role did the community members of Norwood, Massachusetts play in tracking the air quality of their community?
2. What was CDC's response to air quality concerns in Norwood?
3. What role do **citizen scientists** play in monitoring air quality?

Call to Action!

- 1. Conduct an Air Particle Observation
- 2. Build a Filter
- 3. Share Your Findings

Why do you think participation is important?

Give it a Try

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Design an Air Particle Observation and Air Filter

Define	Define the problem
Research	Do background research
Specify	Specify requirements
Brainstorm	Choose and develop solutions
Build	Build a prototype
Test	Test and redesign
Share	Communicate results

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1. Conduct an Air Particle Observation

- Prepare the observation cards
- Place the observation cards
- Collect observation data

Give it a Try

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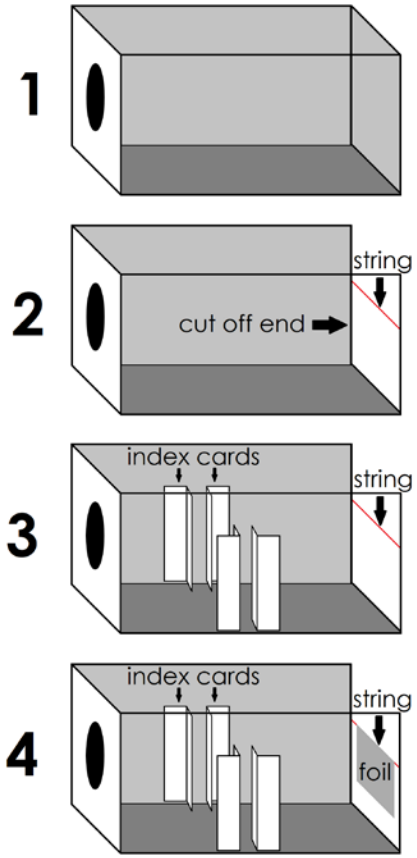
2. Build a Filter

- Prepare the house
- Build the filter prototype
- Test the filter prototype



Give it a Try

Prototype 1: Data Table			
	Trial 1	**Trial 2**	**Trial 3**
Air Flow	Original Angle_____° Angle w/ Filter_____°	Original Angle_____° Angle w/ Filter_____°	Original Angle_____° Angle w/ Filter_____°
Filtration	Amount of pepper caught by filter _____teaspoons	Amount of pepper caught by filter _____teaspoons	Amount of pepper caught by filter _____teaspoons

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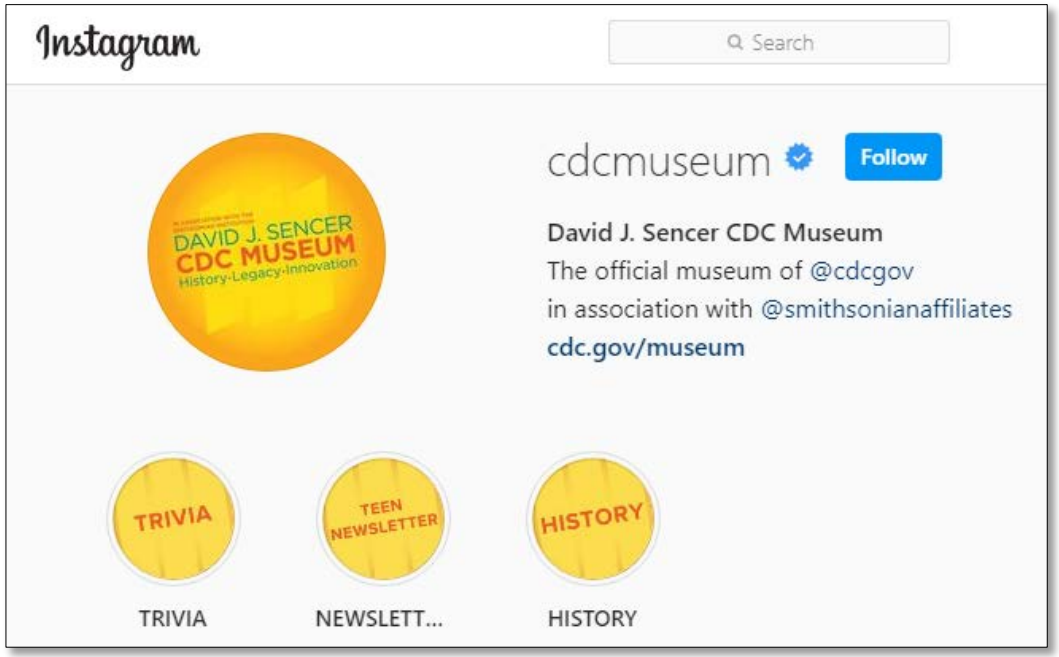
3. Share Your Findings

- Instagram @cdcmuseum



Give it a Try

Questions?