**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



Cleaning the Air

Student Data Collection Sheet

 **Think About It!** Write your answers below:

|  |  |
| --- | --- |
| **Understanding Particle Pollution** | **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** | **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**? |

* In this step, you share your information. Sharing the information you collect is key. Click the links below to share:
* <https://observer.globe.gov/do-globe-observer/mosquito-habitats>
* <http://www.citizenscience.us/imp/collectionform.php>

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

**Observation Card Data Table**

|  |  |  |
| --- | --- | --- |
|  | **Indoor Air Observation Card** | **Outdoor Air Observation Card** |
| **Image** | **Description** | **Image** | **Description** |
| **Day 1** |  | Size, shape color of particles |  | Size, shape color of particles |
| **Day 2** |  |  |  |  |
| **Day 3** |  |  |  |  |
| **Day 4** |  |  |  |  |
| **Day 5** |  |  |  |  |
| **Day 6** |  |  |  |  |
| **Day 7** |  |  |  |  |

**Build the Prototype**

Once you have determined what your frame and **filter** layers will look like, draw a diagram with the **filter** parts labeled in the box below:

**Test the Prototype**

|  |
| --- |
| **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 |



**Reflections**

**Now that you have completed this investigation, think about what you learned from your research and experiment. Answer the questions below.**

1. Which observation card collected the most air particles? What could have caused the amount of air particles you observed?

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1. Why would it be important to test your **air filter** in multiple settings?

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1. How often should air quality information in a community be shared with its residents? Why?

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1. What effect would clearing trees have on the air quality in a neighborhood?

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1. Some plant species reduce air quality by introducing large amounts of pollen into the air. Should residents of a community have to obtain approval from their neighbors before planting these types of species? Why or why not?

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1. Factories and plants are often built with little input from the surrounding communities. Should factories need approval from most residents in a community? Why or why not?

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