Overview

What is in the Air?

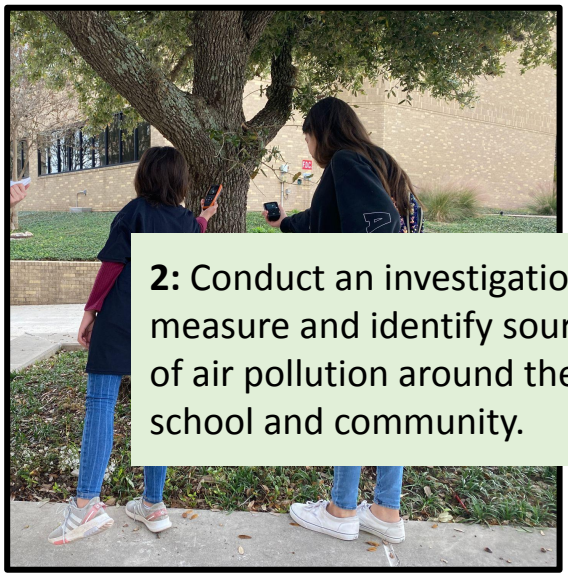
The following lessons follow the 5E model to build a deep and robust understanding of concepts related to air pollution by first allowing students to explore through concrete experiences followed by concept development and a chance to apply the concepts.

1. **Engage** in a class discussion on air pollution and health to uncover prior knowledge (Note, no prior knowledge is necessary, but students will possess some ideas about air pollution)
2. **Explore** levels of particulate matter around the community
3. **Explain** trends in local air quality data by identifying sources of air pollution
4. **Elaborate** through investigating national and global air quality trends
5. **Evaluate learned air pollution concepts** with a *Mystery Town* activity

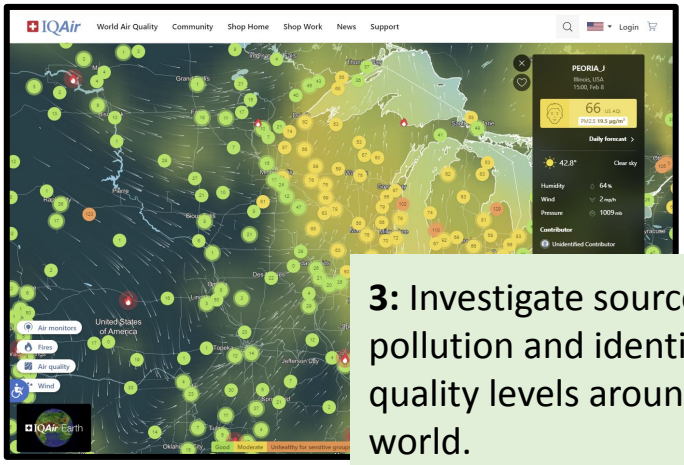
Evaluation should be conducted throughout all stages of the lesson to assess students' thinking during the activities and to uncover any misconceptions of the key concepts.



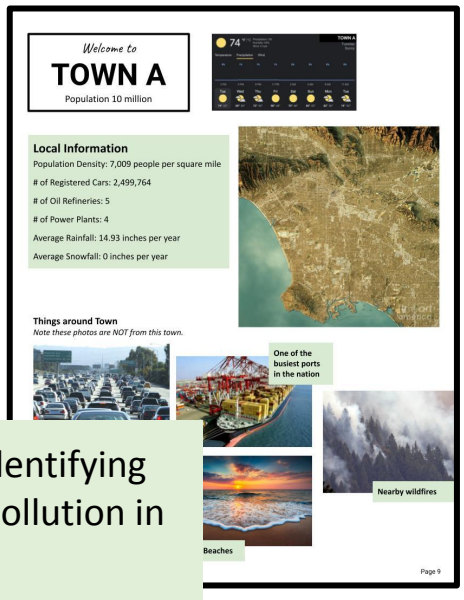
1: Introduce sources of air pollution and gather prior knowledge.



2: Conduct an investigation to measure and identify sources of air pollution around the school and community.



3: Investigate sources of air pollution and identify air quality levels around the world.



4: Apply knowledge by identifying potential sources of air pollution in a *Mystery Town* activity.

Selecting an Air Quality Monitor

Sensors measure particle level (PM 2.5) and can range in price from $80 to over $300. No access to funds for air quality monitors? The investigation can be completed online by accessing live data from local air quality monitors found at IQAir.

Recommendations for Air Quality Monitor Click here for a guide on how to choose a monitor.

Air Quality Monitor Options	
$50 - $100	**AtmoTube PLUS** https://atmotube.com/products/atmotube-plus?view=en **Langkou Air Monitor:** https://www.amazon.com/Detector-Pollution-Temperature-Humidity-Professional/dp/B08Q7YMX9X/ref=pd_ybh_a_3?_encoding=UTF8&psc=1&refRID=5049QRV6BTNP1VJBP4W2 **Temtop M10 Air Quality Monitor:** https://www.amazon.com/dp/B07DHXQXGK/?tag=best-air-quality-monitor-20&asc_source=browser&asc_refurl=https://www.bobvila.com/articles/best-air-quality-monitor
$100 - $200	**EG Air Monitor** https://www.amazon.com/Air-Pollution-Formaldehyde-Detector-Temperature/dp/B078ZS8RVL/ref=pd_ybh_a_1?_encoding=UTF8&psc=1&refRID=5049QRV6BTNP1VJBP4W2
$200 - 300	**AirVisual Pro** https://www.iqair.com/us/air-quality-monitors/airvisual-series **PurpleAir** https://www2.purpleair.com/collections/air-quality-sensors/products/purpleair-pa-ii

Videos on air quality monitors:

- Atmotube PRO: PM sensor: https://www.youtube.com/watch?v=nljyH-YGnPI
- IQ Air: https://www.youtube.com/watch?v=b90gSYGHiKU