

One more way the world wasn't prepared for coronavirus: Air pollution

By [Kate Yoder](#) on Mar 19, 2020

The coronavirus pandemic is changing everything — including the quality of the air we breathe.

In three coronavirus hotspots, [satellite imagery](#) revealed a dramatic decline in air pollution in recent weeks as China, Italy, and Iran were brought to a standstill. One Stanford scientist [estimated](#) that China's coronavirus lockdown could have saved 77,000 lives by curbing emissions from factories and vehicles — nearly [10 times](#) the number of deaths worldwide from the virus so far.

But the blue skies are unlikely to last. Just as [the temporary dip](#) in global carbon dioxide emissions could be reversed when companies eventually increase production to make up for lost time, air pollution could [rebound](#) with a vengeance when factories and traffic spring back to life. On Tuesday, the Chinese government said it plans to [relax environmental standards](#) so factories can speed up production.

Air pollution and the virus have a close relationship. Breathing unclean air is linked to high blood pressure, diabetes, and respiratory disease, conditions that doctors are starting to [associate with higher death rates](#) for COVID-19, the disease caused by the novel coronavirus. Physicians say that people with these chronic conditions may be less able to fight off infections and more likely to die of the disease.

“The air may be clearing in Italy, but the damage has already been done to human health and people's ability to fight off infection,” said Sascha Marschang, acting secretary general of the European Public Health Alliance, in [a statement](#).

Evidence suggests that bad air quality may have increased the death toll of a previous coronavirus outbreak, the SARS pandemic of 2003. [One study](#) of SARS patients found that people living in regions with a moderate amount of air pollution were 84 percent more likely to die than those in regions with cleaner air.

And now, health officials are [warning](#) that people who live in polluted places anywhere may be at greater risk again. “I can't help but think of the many communities where residents breathe polluted air that can lead to chronic respiratory problems, cancer, and disease, which could make them more vulnerable to the worst impacts of COVID-19,” wrote Gina McCarthy, the president and CEO of the Natural Resources Defense Council, in [a post](#) this week about how the organization is responding to the coronavirus.

Clearing the air could help vulnerable people fight off the threat of deadly disease — during this pandemic as well as any future ones — and [save millions of lives](#) in the meantime. Governments already have a pretty good idea of how to [clean up air pollution](#), and it doesn't involve a global pandemic.

1. Close Read - Read with a pencil/highlighter in hand, and annotate the text.

- *Underline key words and phrases*—anything that strikes you as surprising or important, or that raises questions or confusions. Random underlining or highlighting by itself is coloring, not close reading.
- *Write your thoughts and reactions in the margins next to what you have highlighted or underlined.*

2. Summary Statement –Write a summary statement for the article on a separate piece of paper (approximately 50 words or less) in which you include:

- The title
- A summary verb (see your verbs list) - underlined.
- The sentence completed with the main idea/main point of the article.

Sample: *The article, “Coming Soon To A Classroom Near You . . . RoboRoaches,” explores a new technology that controls a cockroach with a smart phone and the various uses for this discovery.*

Note: If you are unable to print this article to highlight, please skip the first bullet point but still write your reactions on a separate sheet of paper.

Generic Article-of-the-Week Reflection Questions

1. Choose 3 interesting quotes or passages from this week's article and write a 2-3 sentence reflection for *each* in which you explain their meaning and/or importance.
2. Write down 5 things you learned by reading this week's article. Which of these 5 do you think is the *most important* to know? Explain in 3-5 sentences.
3. After reading an interesting article, create a T-chart. On the left side, bullet the key points of the article. On the right side, list what the article doesn't say. What has been left out? You should include at least 3 bullet points. Write a small 4-6 sentence paragraph summarizing your list and explaining why you think it was left out.
4. If an article contains bias (an opinion; prejudice), identify the bias and explain the "other side" in 4-6 sentences.
5. Choose **3** of the following sentence starters and write a brief 2-3 sentence reflection for each:

I noticed. . .	If I were. . .
I wonder why . . .	The central issue(s) is (are) . .
I was reminded of . . .	Although it seems . . .
I am surprised that. . .	I still don't understand. . .
I'd like to know. . .	What interested me most was...
I realized. . .	The author wants the reader to think. . .
I can relate to this because. . .	This idea/article is similar to...
6. In 3-5 sentences, explain *in your own words* the author's point of view.
7. Free response. Respond to the article any way you see fit in 4-6 sentences.
8. Pro/Cons to an issue. (1) Take a position and then (2) support it with 3 reasons from the text. (paragraph should be 4-6 sentences).
9. (1) Three important points/ideas are. . . (2) because. . . (in 4-6 sentences)
10. In 3-5 sentences explain the author's purpose and intended audience.

Cycles Worksheet

Water Cycle

1. How does water return to the atmosphere from the leaves of plants during the water cycle?
2. Water moves into the atmosphere through _____ and _____ and returns to the Earth through _____.
3. Where do groundwater and runoff usually end up?
4. What are 2 ways global warming might affect the water cycle?

Carbon Cycle

1. Why is Carbon important?
2. What are 4 places that carbon exists?
3. How does carbon enter the biotic part of the ecosystem, namely plants from the atmosphere?
4. How does it enter the soil?
6. How do animals get carbon?

6. What are two ways carbon returns from animals into the atmosphere?

7. How does the burning of fossil fuels affect the carbon cycle?

8. How does deforestation affect the carbon cycle?

Nitrogen cycle

1. Why is nitrogen important?

2. How is nitrogen from the atmosphere, the abiotic part of the ecosystem, converted in to the biotic part of the ecosystem in organisms?

3. How do consumers get nitrogen?

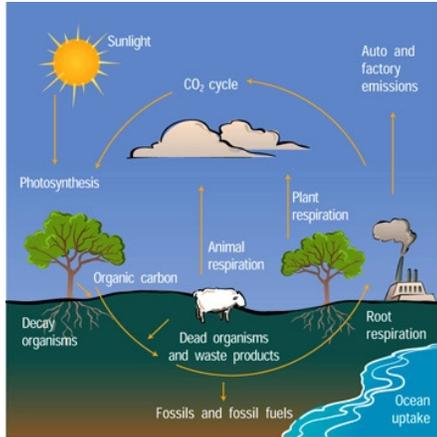
4. How does nitrogen return to the atmosphere?

Phosphorus Cycle

1. Why is phosphorus important to living organisms?

2. How is the phosphorus cycle different from the nitrogen or carbon cycles?

1. carbon cycle



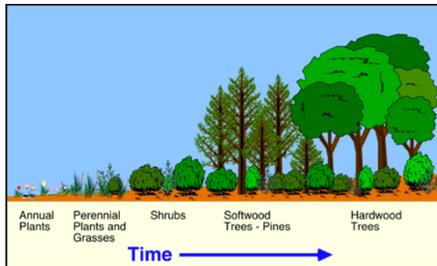
The organic circulation of carbon from the atmosphere into organisms and back again

4. fossil fuels



Coal, oil, natural gas, and other fuels that are ancient remains of plants and animals.

2. climax community



A stable, mature community that undergoes little or no change in species over time

5. Legumes



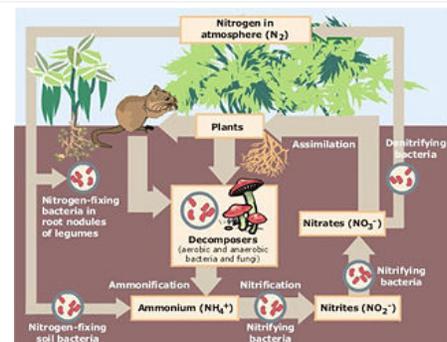
Beans, peas, and lentils, valued as inexpensive sources of protein, vitamins, minerals, and fiber that contribute little fat to the diet

3. Environmental Science



The study of the natural processes that occur in the environment and how humans can affect them.

6. nitrogen cycle



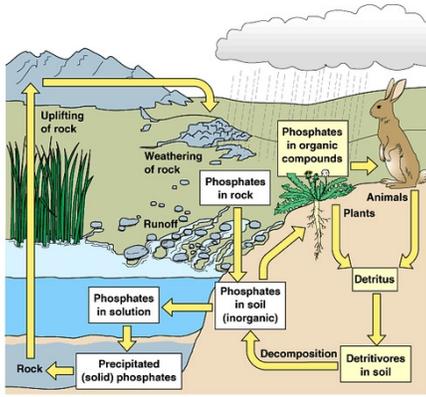
The transfer of nitrogen from the atmosphere to the soil, to living organisms, and back to the atmosphere

7. **nitrogen-fixing bacteria**



bacteria that convert nitrogen in the air into forms that can be used by plants and animals

8. **phosphorus cycle**



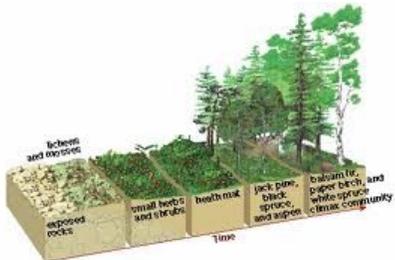
the cyclic movement of phosphorus in different chemical forms from the environment to organisms and then back to the environment

9. **pioneer species**



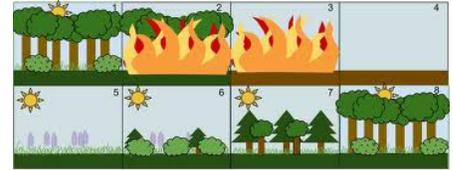
First species to populate an area during primary succession

10. **primary succession**



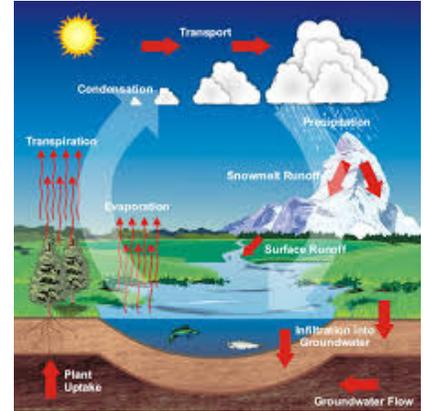
An ecological succession that begins in an area where no biotic community previously existed

11. **secondary succession**



reestablishment of a damaged ecosystem in an area where the soil was left intact

12. **Water cycle**



The continuous process by which water moves from Earth's surface to the atmosphere and back