



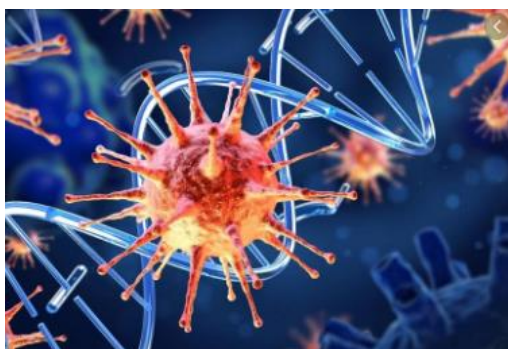
**St. Louis Public Schools**  
**Continuous Learning for Students**  
**Middle School Science**



**Welcome to Virtual Learning for MS Science STUDENTS!**  
**(Hybrid of Online and Offline Materials)**

Students are encouraged to maintain contact with their home school and classroom teacher(s). If you have not already done so, please visit your child's school website to access individual teacher web pages for specific learning/assignment information. If you cannot reach your teacher and have elected to use these resources, please be mindful that some learning activities may require students to reply online, while others may require students to respond using paper and pencil. In the event online access is not available and the teacher cannot be reached, responses should be recorded on paper and completed work should be dropped off at your child's school. Please contact your child's school for the dates and times to drop off your child's work.

*If you need additional resources to support virtual learning, please visit: <https://www.slps.org/extendedresources>*



**Overview of Weeks of May 11 and 18:** This instructional plan offers two culminating tasks for teachers and/or students, which cover topics from current events and phenomena. Each task is broken down into several parts that can be completed on a daily basis. This plan also contains a summative assessment covering topics from module F on Geology and Plate Tectonics. The assessment also includes bonus questions covering topics from tasks in this instructional plan.



To access all fillable pdf files, also available in print, for Weeks of May 11 and 18 go [HERE](#).

Access the summative assessment in [word doc](#) and/or [editable pdf](#).

For additional information on Continuous Learning go to <https://www.slps.org/keeponlearning>

**For questions related to this instructional plan, please contact:**

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**Continuous Learning for Students**  
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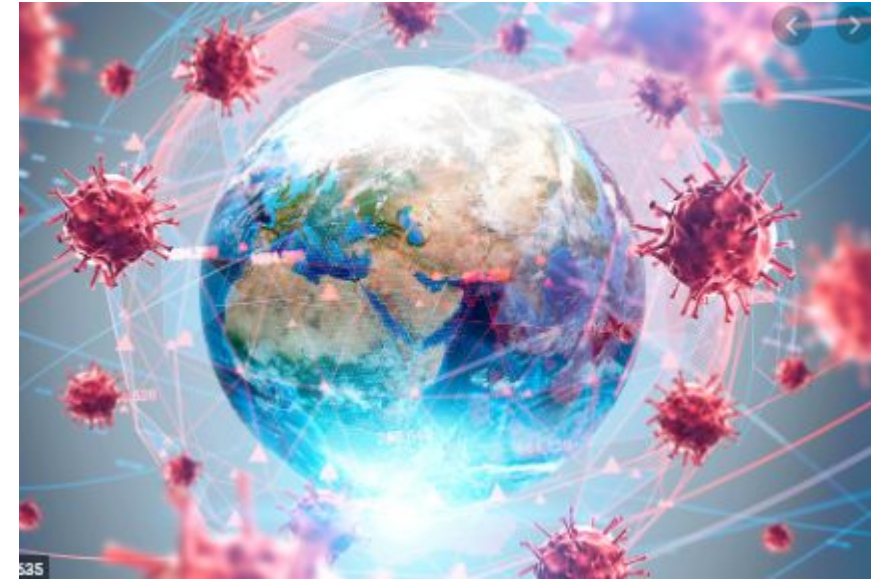
<b>Tasks</b>	<b>Lesson Objective</b> <i>What will you know and be able to do at the conclusion of this lesson?</i>	<b>Instructional Activities</b> <i>What needs to be done in order to learn the material?</i>	<b>Assessment / Assignment*</b> <i>What needs to be turned in to show your teacher that you learned the material?</i>
<b>How does a pandemic cause less CO<sub>2</sub>?</b>	<p>Explain why concentrations of greenhouse gasses are decreasing as the world-wide spread of the coronavirus increases.</p> <p>Apply science ideas to design a system or process to reduce individual or family's carbon footprint</p>	<ol style="list-style-type: none"> <li>1. Access the <i>How does a pandemic cause less CO<sub>2</sub>?</i> PPT Slides for Students in <a href="#">fillable PPT</a> or <a href="#">editable pdf</a>. Click on File then Download. This file is now downloaded on your device and can be accessed in the Downloads folder on your device, saved as/moved/copied &amp; pasted anywhere on your device.</li> <li>2. Open the file from your device.</li> <li>3. You will notice that this task is divided in 4 parts, where each part can be done daily. Part III is optional, based on availability of support.</li> <li>4. Follow the directions in the PPT slides or editable pdf.</li> <li>5. Type/write/draw in the appropriate boxes.</li> <li>6. Ensure that you save your work periodically by clicking Files then Save buttons.</li> </ol>	<p>After all parts are completed, save your work in either PPT slides or pdf, and turn it in.</p>
<b>How do we find patterns in weather?</b>	<p>Make observations and collect data about local weather.</p> <p>Analyze and interpret data around weather patterns.</p>	<ol style="list-style-type: none"> <li>1. Access the <i>How do we find patterns in weather?</i> PPT Slides for Students in <a href="#">fillable PPT</a> or <a href="#">editable pdf</a>. Click on File then Download. This file is now downloaded on your device and can be accessed in the Downloads folder on your device, saved as/moved/copied &amp; pasted anywhere on your device.</li> <li>2. Open the file from your device.</li> <li>3. You will notice that this task is divided in 4 parts, where each part can be done daily.</li> <li>4. Follow the directions in the PPT slides or editable pdf.</li> <li>5. Type/write/draw in the appropriate boxes.</li> <li>6. Ensure that you save your work periodically by clicking Files then Save buttons.</li> </ol>	<p>After all parts are completed, save your work in either PPT slides or pdf, and turn it in.</p>
<b>Final Exam</b>	<p>Demonstrate acquired knowledge on plate tectonics and geologic processes that have changed Earth's surface over time</p>	<p>Complete Final Assessment in <a href="#">editable pdf</a>.</p>	<p>After all parts are completed, save your work in pdf, and turn it in.</p>



TYPE Your Name:

# How does a Pandemic Cause Less CO<sub>2</sub>?

An SLPS Daily Task in MS Science



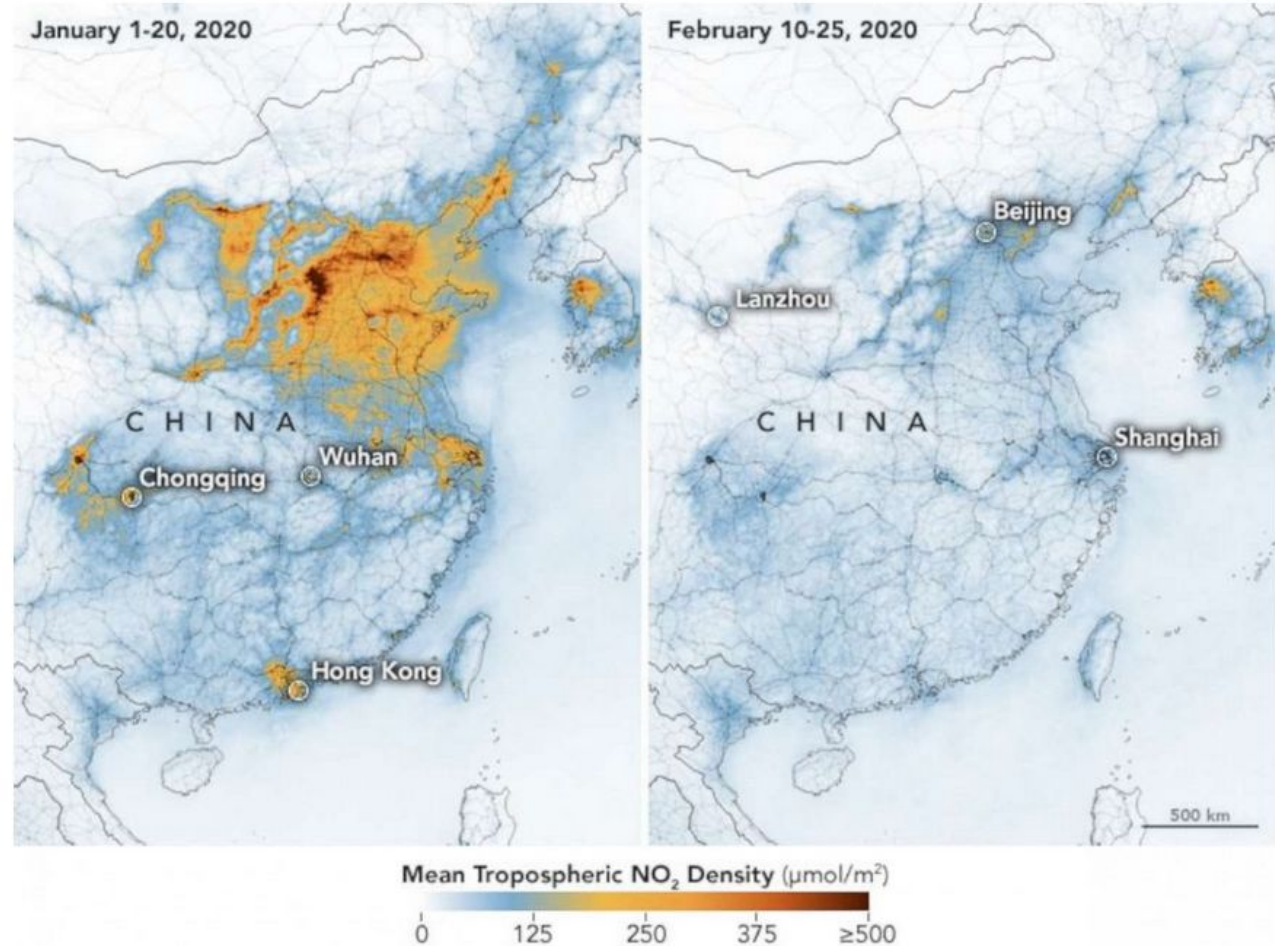
# Introduction

- Closed schools and non-essential businesses and official stay-at-home mandates have kept millions of people at home and across the globe. Will we be able to return to our once-familiar daily routines after the pandemic is over? Will we still want to?
- In this task, you and your families make sense of the phenomenon of HOW concentrations of greenhouse gasses are decreasing as the world-wide spread of the coronavirus increases. You will then apply the science ideas they build to design a system or process to decrease their contribution of carbon dioxide to the atmosphere- in other words, reduce your family's carbon footprint.

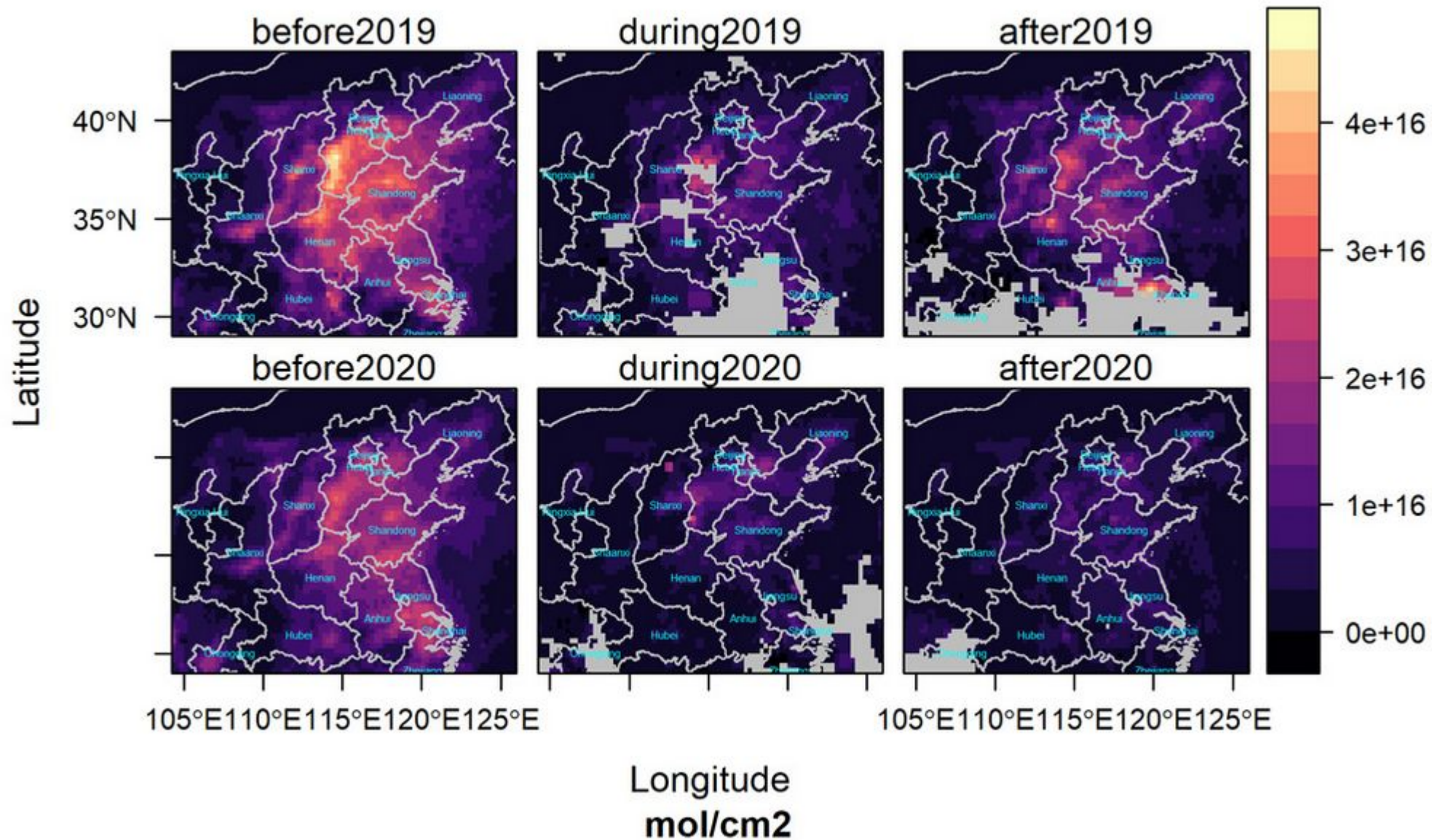
## PART I:

Let's take a look at nitrogen dioxide ( $\text{NO}_2$ ) concentration data for Greater China and Wuhan, China

Please observe the 3 sets of maps very closely and include your observations and wonderings in the following slides.

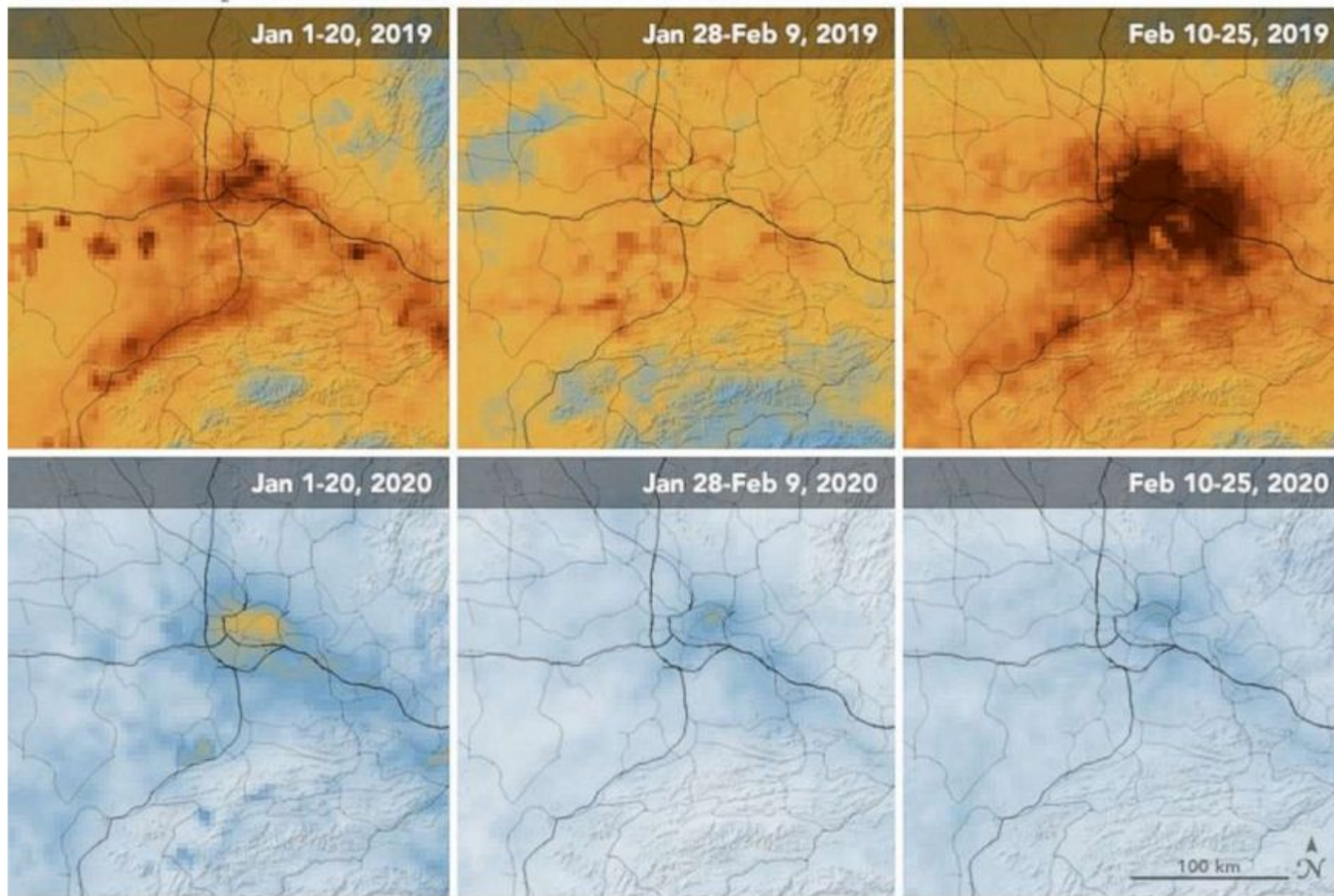


# Satellite-based NO2 levels before,during and after the Chinese New Year holiday



## Pollutant Drops in Wuhan—and Does not Rebound

Unlike 2019, NO<sub>2</sub> levels in 2020 did not rise after the Chinese New Year.



Mean Tropospheric NO<sub>2</sub> Density (μmol/m<sup>2</sup>)

0 125 250 375 ≥500

# Nitrogen dioxide (NO<sub>2</sub>) concentration data for Greater China and Wuhan, China

NO<sub>2</sub> is a harmful gas emitted by motor vehicles, power plants and industrial facilities into the atmosphere. These same sources also emit carbon dioxide (CO<sub>2</sub>).

***What patterns do you observe in the data presented in each set of maps?***

TYPE your answer here

***WHAT QUESTIONS DOES THIS RAISE FOR YOU? LIST AT LEAST 2.***

TYPE your answer here



# PARTII: Why NO<sub>2</sub> is measured and why it's in the news? Let's investigate this next.

- One reason scientists are excited about the current decrease in NO<sub>2</sub> concentrations over China is because it indicates CO<sub>2</sub> has also decreased.
- We're going to shift our focus to CO<sub>2</sub> because it is a greenhouse gas while NO<sub>2</sub> contributes to the formation of a greenhouse gas (ozone) through a series of reactions at an unknown rate.

**What do you already know about greenhouse effect or climate change? Draw an initial model.**

**THINK ABOUT:**

- What absolutely needs to be included in your model? In other words, what are the *components* of the model?
- How could you show how the components on your model are interacting? (i.e. arrows, lines, labels, text)

Create a model to explain how changing the amount of carbon dioxide (CO<sub>2</sub>) in the atmosphere causes Earth's average temperature to change.

SMALL amount CO <sub>2</sub> in atmosphere	LARGE amount CO <sub>2</sub> in atmosphere
Earth's surface	Earth's surface

*NOTE: You can draw your model by copying the attached empty model to google draw or you can draw on a piece of paper, put your name on it, take a picture of it, and attach it on the next slide.*

**Watch the 3 videos and make changes/additions to your previous model based on the new information you learned**

- [NASA's Earth Minute: Gas Problem](https://youtu.be/K9kga9c0u2l)

<https://youtu.be/K9kga9c0u2l>

- [Greenhouse Gas](https://www.britannica.com/video/185587/characteristics-Earth-atmospheric-gas-molecules-properties-greenhouse)

<https://www.britannica.com/video/185587/characteristics-Earth-atmospheric-gas-molecules-properties-greenhouse>

- [How Carbon Dioxide Warms Planet Earth](https://www.pbs.org/wgbh/nova/video/carbon-dioxide-warms-earth/)

<https://www.pbs.org/wgbh/nova/video/carbon-dioxide-warms-earth/>

**Attach your updated model below**

Based on your model, what do you predict caused the CO<sub>2</sub> (and NO<sub>2</sub>) to decrease between winter 2019 and winter 2020?

TYPE your answer here. *NOTE: If you are thinking the answer to be just the coronavirus, please elaborate on the implication of virus on daily activities.*

# PART III (online option only): How can we measure our carbon footprint?

- It seems like we think people sheltering-in-place is causing the decrease in the amount of CO<sub>2</sub> (and NO<sub>2</sub>) being emitted into the atmosphere.
- A carbon footprint is the amount of greenhouse gases - primarily carbon dioxide - released in the atmosphere by all of a person's, family's, community's, or nation's activities.
- Complete the [Calculate Your Carbon Footprint](https://coolclimate.berkeley.edu/calculator) survey  
(<https://coolclimate.berkeley.edu/calculator>)

to determine your family's carbon footprint BEFORE the COVID-19 pandemic and AFTER schools and businesses closed. (You will complete the survey twice.)

- The survey results give you the total number of pounds of CO<sub>2</sub> per year emitted to the atmosphere as a result of your family's typical activities (home, travel, eating, and shopping). Students can see how much CO<sub>2</sub> (pounds) each activity contributes to the total.

*NOTE: In any event you cannot take the survey due to lack of access to technology/internet, skip to PART IV.*

# Reflection questions

1. After you finished taking the survey before and after pandemic, what is the percent change in your carbon footprint from pre-COVID-19 pandemic to post-pandemic? (Subtract the amounts)

TYPE your answer here

2. If every household in your community had the same percent change as your family did, what would be the total reduction in CO<sub>2</sub> emitted to the atmosphere each year as a result of your community's activities? (NOTE: Students will need to look up their community's population)

TYPE your answer here

3. If every household in Wuhan, China had the same percent change as your family did, what would be the total reduction in CO<sub>2</sub> emitted as a result of the Wuhan, China community's activities?

TYPE your answer here

# Reflection Questions, continued

4. Return to the Wuhan, China NO<sub>2</sub> data they observed at the start of the task Part 1, last image. Can changes in daily activities explain why the NO<sub>2</sub> emissions (remember CO<sub>2</sub> is closely linked to NO<sub>2</sub>) have changed? What is your evidence?

TYPE your answer here

5. Return to their initial models. What would you add to/change to explain how changes in CO<sub>2</sub> causes changes in Earth's average temperature.

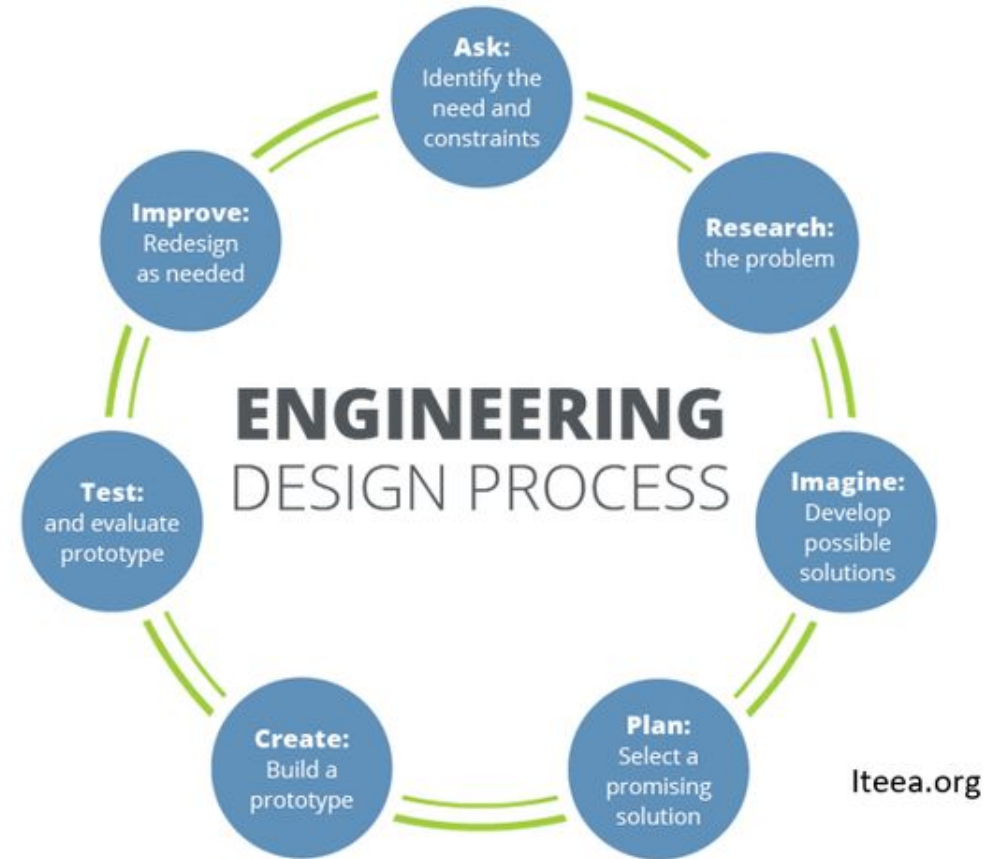
TYPE your answer here

# PART IV: Engineer a solution to reduce your family's carbon footprint!

1. When we go back to our normal daily activities, what might you do to continue to reduce your carbon footprint?

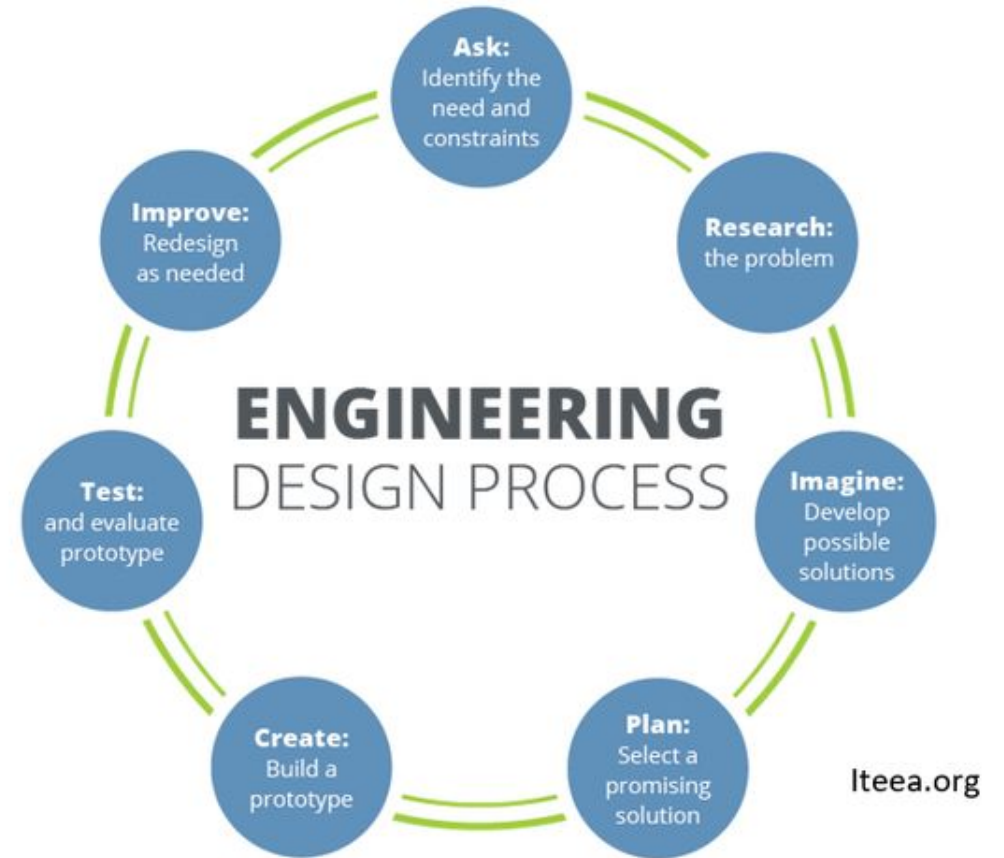
TYPE your answer here

The Engineering Design Process (EDP) comes in many forms. Engineers enter the EDP to create a new technology - or improve an existing one - to meet a need or want. Engineers on the job may start at any step, depending on the needs of a particular project.





Watch the video, *A Strict Carbon Diet* (<https://www.pbs.org/wgbh/nova/video/a-strict-carbon-diet/>) to find out how engineer Saul Griffith is helping his family reduce their carbon footprint. As you watch the video, can you identify the steps of the EDP Griffith uses to design a solution to the problem of lowering his family's carbon footprint? What's your evidence?



TYPE your answer here

Like Griffith, you can use the EDP to reduce your family's or community's carbon footprints and share your plan below. *(Note: address as many steps in the EDP cycle in your response)*

- TYPE your answer here

# Take it Further

- You can really make a difference by getting your friends, teachers, school and district thinking about reducing their carbon footprints! One way is to explore even more changes to make by checking out the Energy Star website.
- You can also track and change their carbon footprint in real-time by trying one of these mobile Apps: *Mobile Carbon Footprinting* or *Carbon Footprint ACP*.

# Extension! Explore STEM Careers: Environmental Engineer

- Now that you are engineering ways to help the environment, meet Marielle Thillet and explore her STEM Career as an Environmental Engineer!
- <https://youtu.be/z6cJ9IULgMk>
- What are some challenges and rewards of job as an Environmental Engineer?

TYPE your answer here



# HOW DO WE FIND PATTERNS IN WEATHER?

Your Name:



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# LESSON PLAN

DAY 1 – INTRODUCTION, EBOOK PAGES 1- 17, SLIDES 3-11

DAY 2 – E-BOOK PAGES 18 – 27, SLIDES 12- 14


DAY 3 –E BOOK PAGES 28 – 5, SLIDE 15

DAY 4 – SLIDES 16 – 22 DESCRIBING WEATHER

SLIDE 14 - WEATHER OBSERVATIONS (CAN BE DONE AS THE LESSON IS GOING ON AFTER DAY 1)

## INTRODUCTION:

"WHAT'S THE WEATHER LIKE TODAY?" MOST OF US THINK ABOUT THE WEATHER EVERY DAY. IT INFORMS THE CHOICES WE MAKE LIKE WHAT TO WEAR AND HOW WE'RE GOING TO GET TO SCHOOL, WORK OR THE STORE (WALK, BIKE, TAKE THE BUS, ETC.). WE MIGHT NOT NOTICE IT, BUT WE THINK ABOUT CLIMATE A LOT, TOO. WE MAY MAKE A PLAN TO VISIT SOMEPLACE NEW AT A PARTICULAR TIME OF YEAR TO HELP ENSURE WE'LL EXPERIENCE THE WEATHER WE WANT OR WE MAY WAIT EXCITEDLY FOR WARM MONTHS TO SWIM AND PLAY OUTSIDE.



In today's task, *How do we find patterns in weather?*, students will read the NSTA eBook, *Thinking Like a Scientist: Investigating Weather and Climate* which engages them in science and engineering practices and the use of patterns as a thinking tool (crosscutting concept) to figure out science ideas about weather and how patterns of weather determine the climate of an area.



# NSTA'S EBOOK - INVESTIGATING WEATHER AND CLIMATE

If you have access to the book there are many interactive features. If you do not there are activities included in this document.

<https://my.nsta.org/ebook/109161/investigating-weather-and-climate/>



# ENGAGE STUDENTS IN THE EBOOK



What do you see on the cover that makes you think about weather and why?



# MAKE AT LEAST 3 OBSERVATIONS ABOUT TODAY'S WEATHER

Remember an observation is what you can feel, smell, see.

# PAGE 3 OF EBOOK

What words do we use to describe the weather? Describe the weather you observe outside the window. Select tabs 1 through 4 to examine different kinds of weather. Decide which words describe what you see for each scene and drag them to the box on the left of the window.

Breezy	Cloudy	Cold	Cool	Dry
Hot	Rainy	Snowy	Sunny	Warm

1  
2  
3  
4

Check Definitions

3

On the next four slides compare the weather describing words on the page with the words they used to describe the day's weather.

What words do we use to describe the weather? Describe the weather you observe outside the window. Select tabs 1 through 4 to examine different kinds of weather. Decide which words describe what you see for each scene and drag them to the box on the left of the window.

Breezy

Cloudy

Cold

Cool

Dry

Hot

Rainy

Snowy

Sunny

Warm



The interface features a central window with a view of a tree and a thermometer. The thermometer shows a temperature of 39°F. To the left of the window is a large empty box for writing. Below the window are two buttons: 'Check' and 'Definitions'. To the right of the window are four numbered tabs (1, 2, 3, 4) and a mouse cursor icon with the number 3.

1

2

3

4

3

What words do we use to describe the weather? Describe the weather you observe outside the window. Select tabs 1 through 4 to examine different kinds of weather. Decide which words describe what you see for each scene and drag them to the box on the left of the window.

Breezy	Cloudy	Cold	Cool	Dry
Hot	Rainy	Snowy	Sunny	Warm



The interface features a central window with a view of a sunny, dry landscape. To the left is a large empty box for word placement. Below the window is a 'Check' button. To the right is a thermometer showing 95°F and a 'Definitions' button. On the far right are four numbered tabs (1-4) and a mouse cursor icon with the number 3.

1  
2  
3  
4

Check

95°F

Definitions

3

What words do we use to describe the weather? Describe the weather you observe outside the window. Select tabs 1 through 4 to examine different kinds of weather. Decide which words describe what you see for each scene and drag them to the box on the left of the window.

Breezy

Cloudy

Cold

Cool

Dry

Hot

Rainy

Snowy

Sunny

Warm



The interface features a central window showing a winter scene with snow on the ground and trees. To the right of the window is a thermometer with a red liquid column and a digital display showing 30°F. Below the window are two buttons: 'Check' and 'Definitions'. To the right of the window are four numbered tabs: 1 (green), 2 (light green), 3 (teal), and 4 (black). A hand cursor icon is positioned over the number 3, and a small number 3 is visible in the bottom right corner.

# PAGE 5 OF EBOOK

Meteorologists use many tools to observe and measure the weather. Look below.

What types of weather do you think these tools measure?

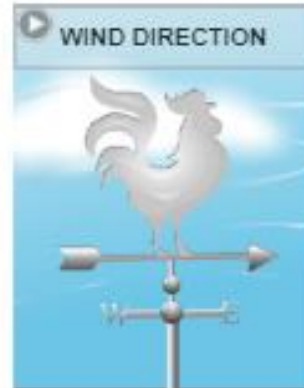
Write the correct instrument name under the instrument.

RAIN GAUGE

ANEMOMETER

THERMOMETER

WIND VANE

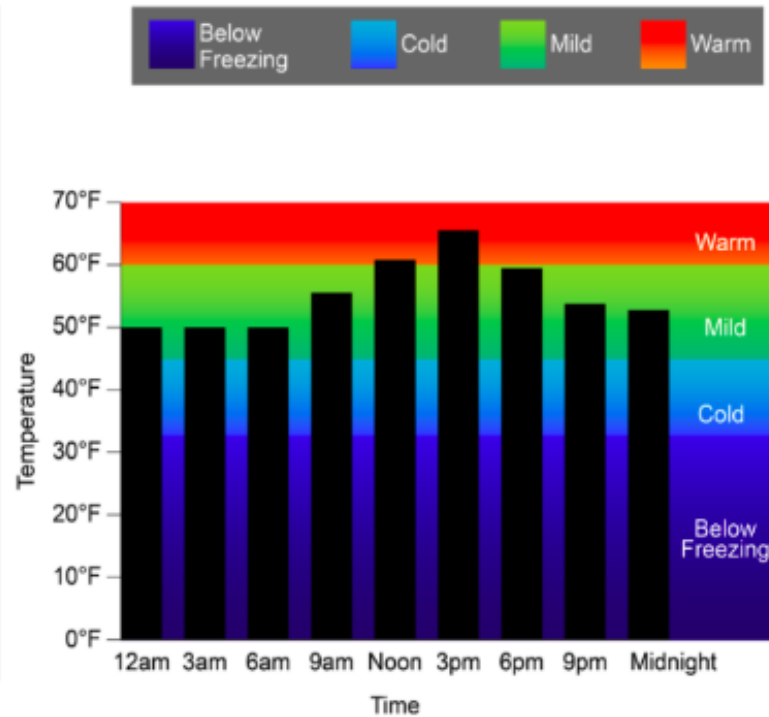


Match each weather instrument with its proper name



# PAGE 7 OF EBOOK

Time (Hour)	Temperature (°F)
12:00am	50
3:00am	50
6:00am	50
9:00am	55
Noon	61
3:00pm	65
6:00pm	59
9:00pm	54
Midnight	52



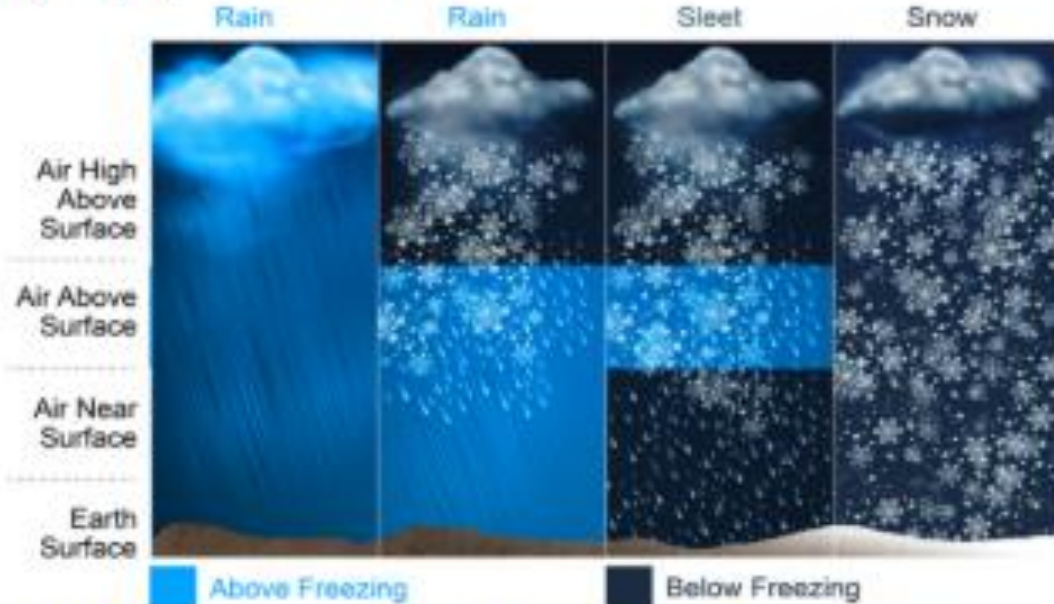
"What patterns do you observe in the data presented in this bar graph?"

Above we see a **data table** and a **graph**. Both show the same information about temperature over a single day. Explore how they each show that information in different ways by tapping a bar in the graph or a row in the data table

# PAGE 17 OF EBOOK

Meteorologists studied their data and saw a pattern in the kind of precipitation that fell and the temperature of the air above and close to Earth's surface. Would you be able to predict the type of precipitation that would fall?

"What patterns do you notice in the data presented in this model?"



Predict what precipitation you would see if the air is below freezing from the ground up to the clouds.

✓ Check Your Thinking


# PAGE 23

Will the weather tomorrow be the same as it was on the same day last year?

Today will be bright and sunny. However, tonight clouds will make their way in from the west with the chance of a passing shower.


<b>Today</b> High 65°F Sunny with winds from the west.	<b>Tonight</b> Low 50°F Cloudy with a chance of rain.
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Forecast for Boston, Massachusetts



Select the four students to see what they think. Which student do you agree with most?

Write a paragraph using evidence to explain your thinking.



23

Choose the student they most agree with and record your thinking (you can use words, picture, symbols, graphs, etc.) Each individual student response is on the next page.

## PAGE 23 OF EBOOK- STUDENT RESPONSES



### Student A

There's no way to predict the weather using this data.



### Student B

I think the weather is always the same from year to year. That's how they know what the weather will be like.



### Student C

I think the weather from year to year is similar but not exactly the same.



### Student D

I think that the weather forecast is probably nothing like what it was last year on this date.

# PAGE 26 OF EBOOK



Scientists sort areas of Earth by their **climate**, the weather patterns generally observed in a place year after year. What do the colors of Earth's surface tell us about weather patterns on Earth?

Go to the next page to see if you are correct.

What do you think the colors tell us about the weather patterns at different places on Earth? For example, what might the weather pattern be for the dark green areas?"

Complete the following prompt for the tan, dark green and light green areas on the map.

I think \_\_\_\_\_

because \_\_\_\_\_

I think \_\_\_\_\_

because \_\_\_\_\_

I think \_\_\_\_\_

because \_\_\_\_\_

## PAGE 50 OF EBOOK



How would you describe the climate in St. Louis?

How would you describe the usual weather during the winter months? The summer months?

Do we have a wet or dry season?"

# DESCRIBING WEATHER

Listen to the weather [BROADCAST](#)

1. Make observations (what you see and hear).
2. Based on the observations you made what can you predict is going to happen in St. Louis later in the evening?





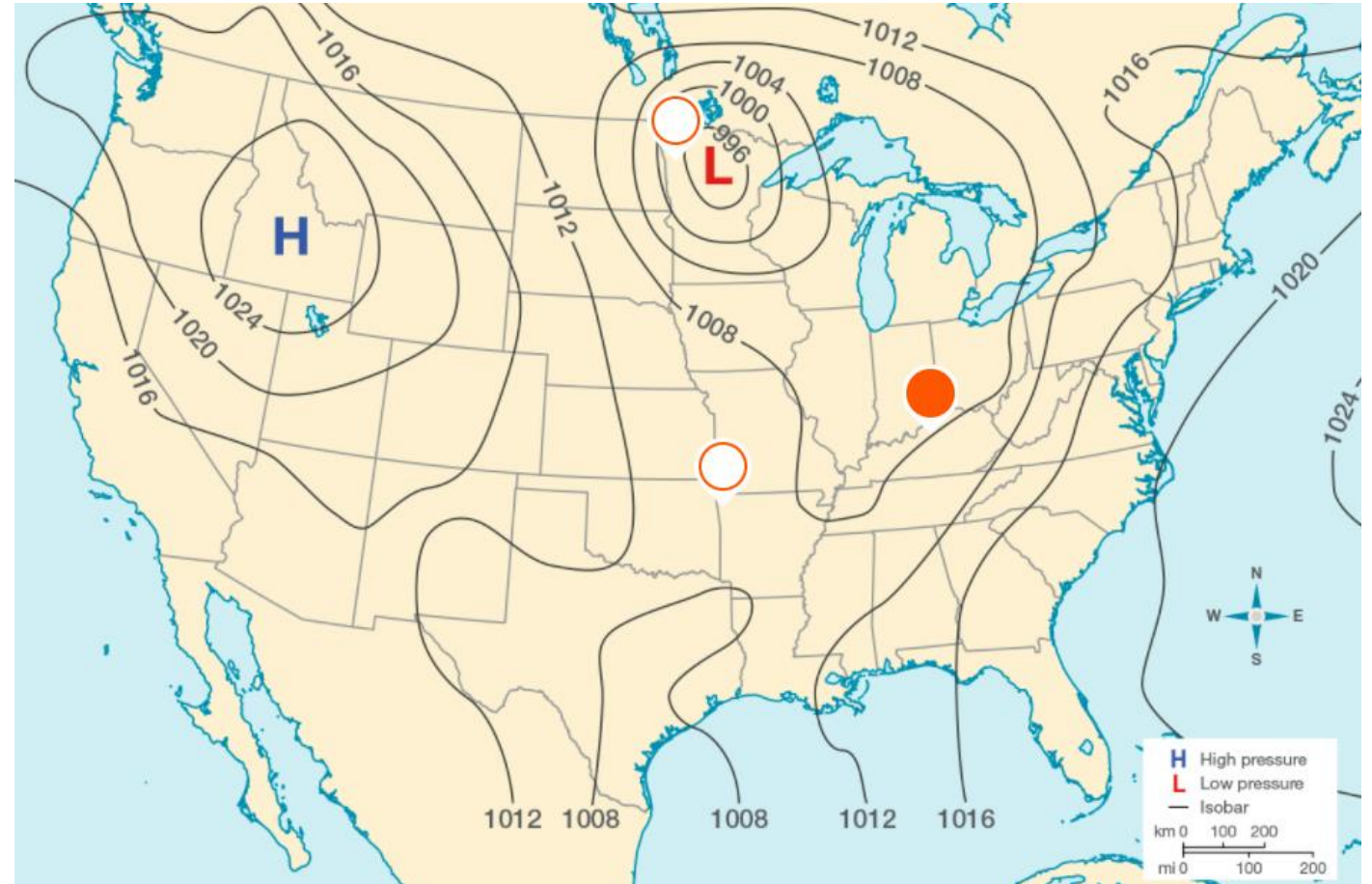
# Air Pressure

Air temperature varies because the sun warms Earth's surface unevenly. Because temperature affects pressure, differences in air temperature result in differences in air pressure. Differences in air pressure cause wind to blow. Wind moves clouds and precipitation from one place to another.



# Weather Maps

- On weather maps, an “H” shows where the air pressure is highest. An “L” shows where it is lowest. An isobar is a line that follows along points of equal air pressure. Observe the patterns in air pressure on the map. The numbers show the measured air pressure in millibars (mb).



# Pressure Systems

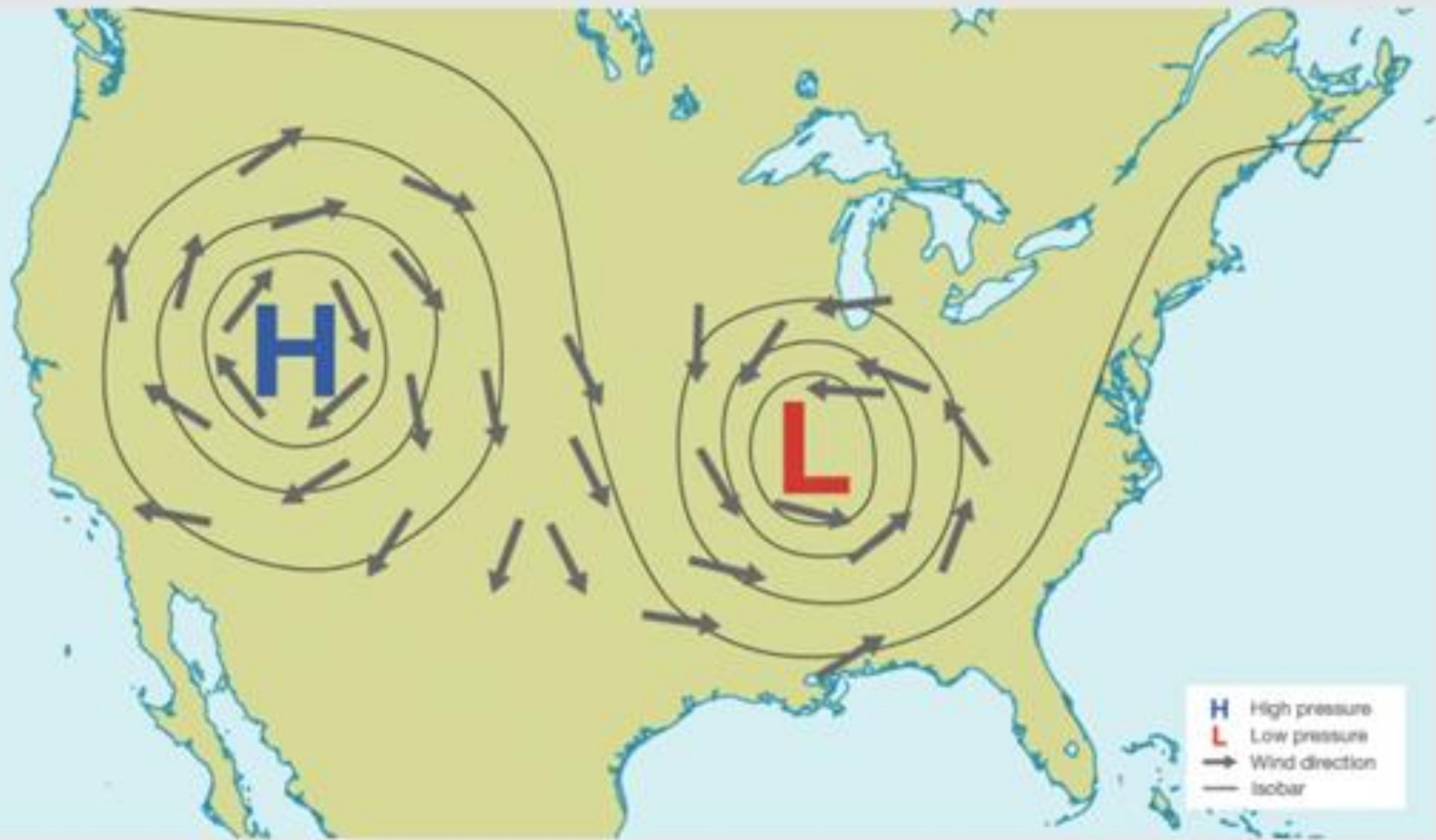
## High Pressure

- A high-pressure system forms where air sinks toward the surface.
- As air in a high-pressure system sinks, it gets warmer.
- Relative humidity decreases, and if there were any clouds, they evaporate.
- These conditions usually bring clear skies and calm or gentle winds.

## Low Pressure

- Where warm, less dense air rises from Earth's surface, a *low-pressure system* forms.
- The air in a low-pressure system rises and cools.
- Clouds and rain form if the air rises and cools enough.

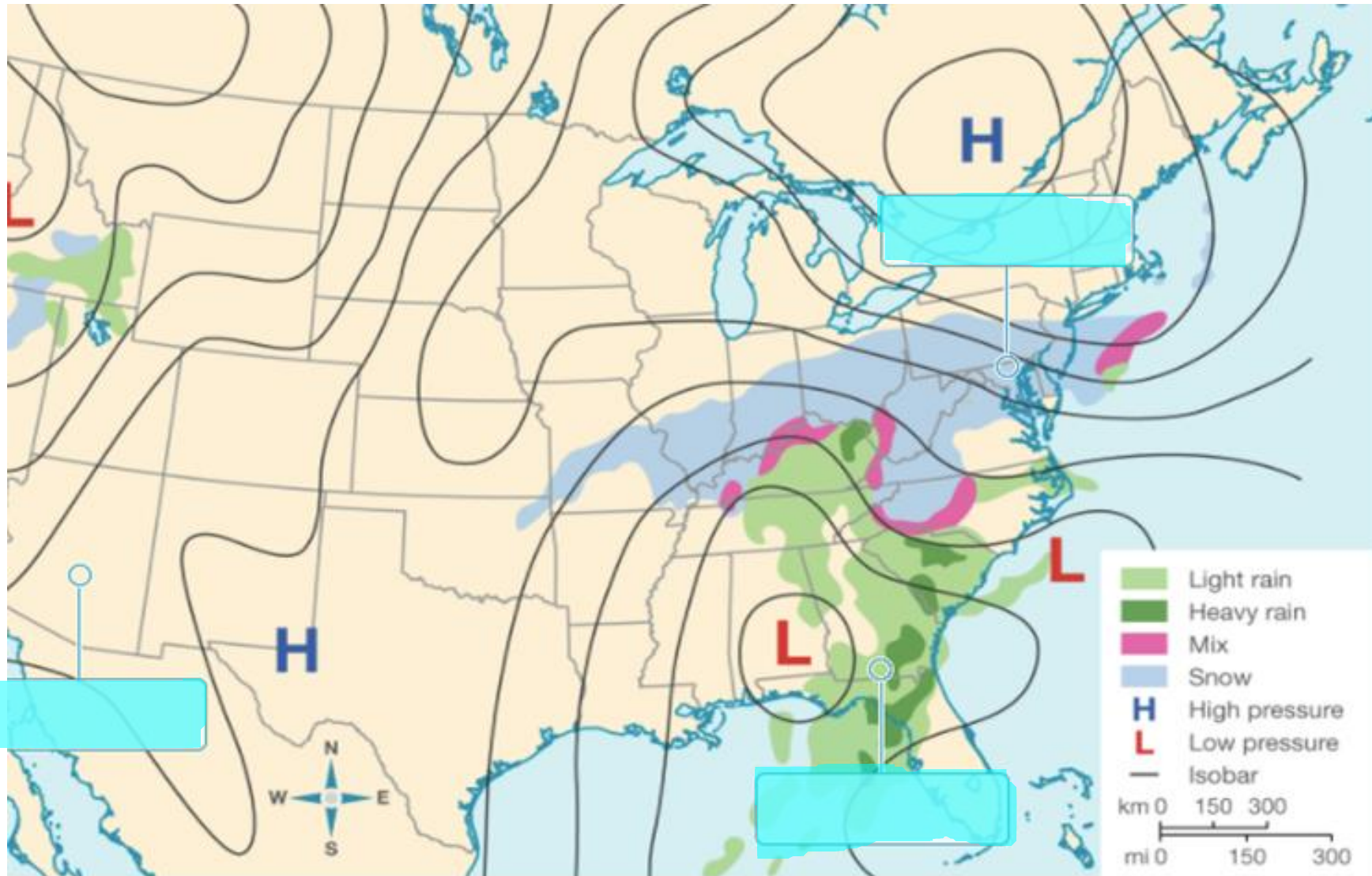
Earth rotates, so wind does not blow in a straight line. In the Northern Hemisphere, air spirals counterclockwise around a low-pressure system and clockwise around a high-pressure system.



## Question 3

Complete the table to show whether each statement is associated with a **high-pressure system** or a **low-pressure system** in the Northern Hemisphere. The first one is done for you.

Sinking air becomes warmer	High-pressure system
Rising air becomes cooler	
Clear, sunny weather	
Cloudy, rainy weather	
Clockwise winds spread out	
Counterclockwise winds move in	



The map (to the left) shows precipitation and air pressure. Which label best describes the pressure system in Arizona, Georgia, Maryland?

- Sunny and calm;
- Rainy;
- Snowstorms / Windy

# WEATHER LOG

Record the weather for the next three days and make predictions.

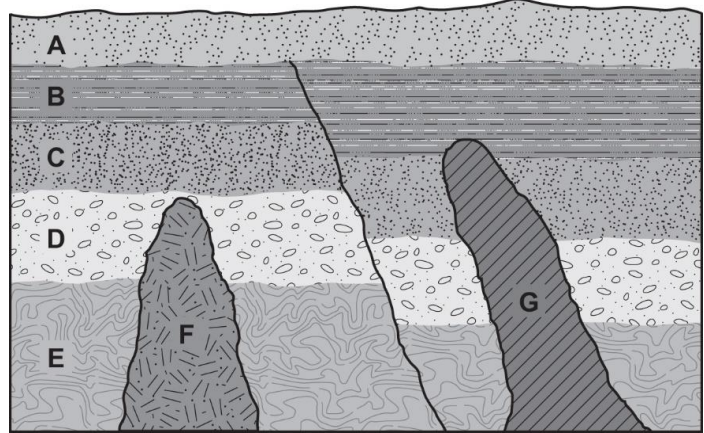
Date and Time	Temperature	Wind Speed	Wind Direction	Precipitation Type	Sky Conditions (sunny, cloudy, partially cloudy)
May ____					
Tomorrow's prediction					
May ____					
Tomorrow's prediction					
May ____					

**Directions:** Read the passage, then answer the questions that follow.

### Layers of Rock, Layers of Fossils

A geologist is studying the history of an area in the southeastern United States. He looks at rock strata to learn about the geologic history of the area.

The geologist wants to determine the relative and absolute ages of the different layers of rock that he sees. He examines the five different fossils that are located throughout the rock layers at different locations.

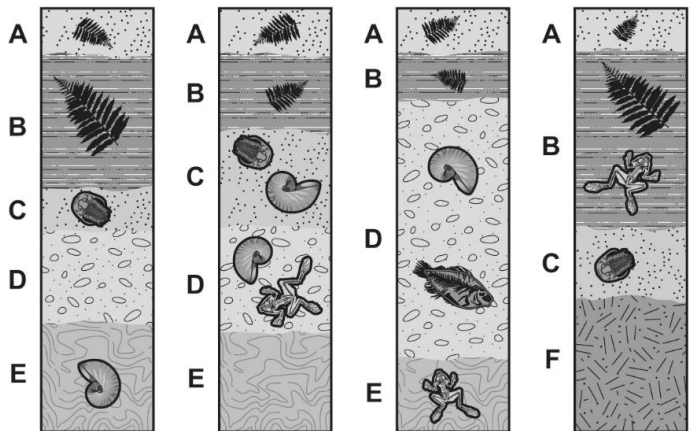


Location 1      Location 2      Location 3      Location 4

1. Which conclusion could be made about the layers of rock in the sample based on the information in the passage?

Circle the letter of the correct answer.

- A. The absolute age of the rock is 100 million years.
- B. A volcanic eruption disrupted the rock layers sometime in history.
- C. The environment has remained an ocean throughout the time being studied.
- D. The layers at the base of the sample are older than the layers at the top of the sample.



2. Type the letters of the layers in the rock strata that are likely a result of an intrusion of magma from the very top model?
3. The geologist uses other dating techniques to determine that layer E is 90 million years old and the fault occurred 65 million years ago. Based on this information, during what time span was layer D deposited?

Write your answers on the lines.

Between \_\_\_\_\_ million years ago and \_\_\_\_\_ million years ago.

4. Fossils are shown in various layers for four locations in the area of the given rock strata.

Write one letter in each blank to explain what information can be learned from these fossils and their locations.

The 1. \_\_\_\_\_ can be used as an index fossil because it is found 2. \_\_\_\_\_. The index fossil can

be used to determine the 3. \_\_\_\_\_ age of the rock strata. Based on the fossils located in this strata, the environment was likely 4. \_\_\_\_\_ historically.

<p>1. A. fish B. fern C. trilobite</p>	<p>2. D. consistently in one layer E. in different layers in each location</p>	<p>3. F. relative G. absolute</p>	<p>4. H. desert I. ocean</p>
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**Directions:** Read the passage, then answer the questions that follow.

### New York, New York

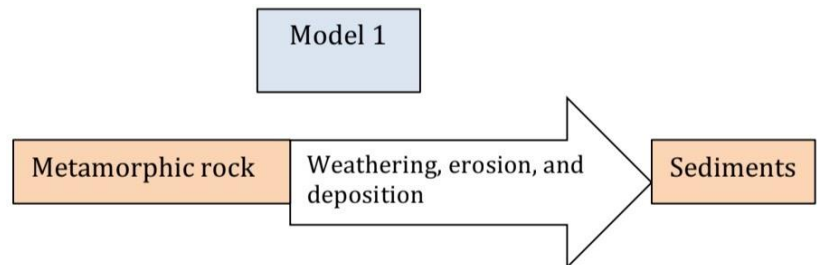
A group of students in New York City are learning about earth science. They believe that processes they are learning about can only be seen in wild and far-away places. But, in fact, evidence of ways that matter is cycled through the earth can be seen in even the biggest cities and busiest neighborhoods.

The picture shown here is New York City’s Coney Island. The sand came from a 1.1 billion year old metamorphic rock. A glacier broke the rock into pieces (sediments or sand) and moved it to this beach.



Begin with the sand on Coney Island. To help the students understand how this sand is an example of the cycling matter, you show them Model 1 below.

1. Describe to the students what Model 1 shows about how matter was changed to form sand on Coney Island.



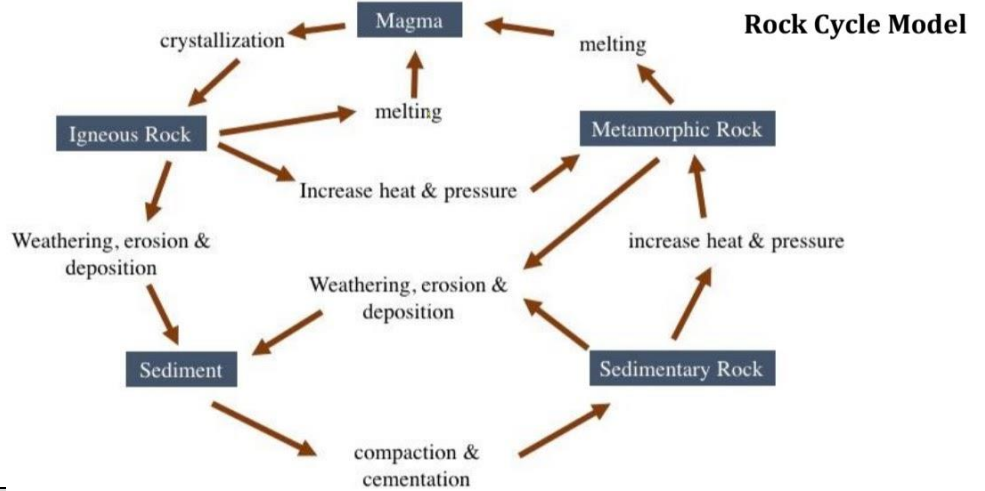
2. Glaciers changed some of the bedrock into sand in New York, but some bedrock is still there. In fact, most of the all buildings in the city sit on part of the 450 million year old bedrock shown here call Manhattan Schist.

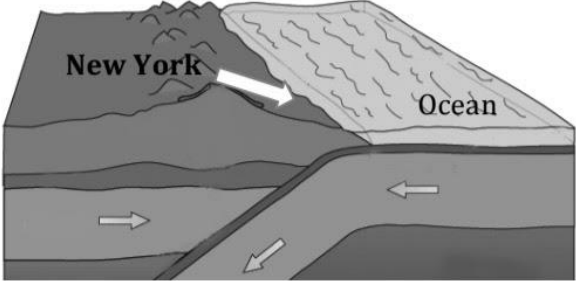
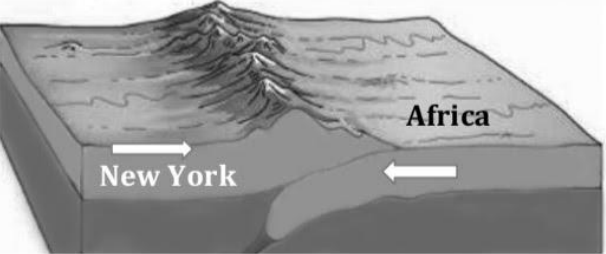


This rock did not always look the way it does today. Two processes that formed it are described in the table below. Answer the questions in the table to describe some of the ways matter was changed over time to form the Manhattan Schist.



You can use the rock cycle model **above** to help you answer the questions in the second column of the table.



How the Manhattan Schist formed	Analysis of changes
 <p data-bbox="773 989 1122 1241">Sediments were broken from the land by wind and water and were moved into the ocean at the edge of New York. The sediments were buried deeper under more and more sediments.</p>	<p data-bbox="1154 989 1443 1058">What type of new rock formed?</p> <p data-bbox="1154 1136 1443 1205">What process caused the new rock to form?</p>
 <p data-bbox="180 1570 1105 1633">Later, the African Plate began moving toward the North American Plate until the two continents collided. This collision compressed all of the rock at the edges of the continents, including the new rock that had formed under the ocean next to New York.</p>	<p data-bbox="1154 1310 1443 1379">What type of new rock formed?</p> <p data-bbox="1154 1493 1443 1562">What process caused the new rock to form?</p>

**BONUS Question 1** (on *How does a pandemic cause less CO2?* task): In this task you learned that during the COVID19 pandemic levels of NO2 and, hence, CO2 (greenhouse gas) dropped significantly compared to last year and previous months. What action steps (at least 2) will you continue to take to reduce your and or your family’s carbon footprint?

**BONUS Question 2** (on *How do we find patterns in weather?* Task): Use evidence from the map to answer the questions below about Niseko's weather over the course of the 2-day period. Type/Write the correct set of characteristics of **Air Mass 1** (path travelled identified by the arrow) that is moving toward Niseko on **9AM Friday, December 21st**.



i. <b>Moisture</b>	humid	dry
ii. <b>Temperature</b>	warm	cold
iii. <b>Pressure</b>	low	high

**ACADEMIC INTEGRITY STATEMENT**

By signing or typing my name below, I certify that this assessment was completed independently, without the use of outside help (including, but not limited to: web searches, peer assistance, adult help, and copying).

\_\_\_\_\_  
 Student Name (Type or Sign)

\_\_\_\_\_  
 Today's Date (Type or Print)