

This week's issue:

CLIMATE CHANGE: WHO SHOULD PAY FOR THE CONSEQUENCES?



In October 2012, Hurricane Sandy swept through the Caribbean and North America, killing 286 people and causing over \$68 billion in damages. The storm brought flooding and strong winds. In New York and New Jersey alone, more than 40,000 people were displaced as the storm destroyed homes and businesses.

Although hurricanes are common, Hurricane Sandy was more destructive than most. Experts **attribute** Sandy's unusual strength to the effects of climate change, which include higher average temperatures and rising sea levels. Scientists **project** that storms like Sandy will become more frequent as Earth gets warmer. And powerful storms aren't the only consequence of climate change. **Statistics** about rising sea levels suggest that parts of many coastal U.S. cities will be under water by 2100. The cities of Boston, New York, Baltimore, Philadelphia, and Miami are at high risk.

The Rockaways is an area of New York that was hit particularly hard by Hurricane Sandy. People agreed that rebuilding the Rockaways—a popular recreation area that many people call home—was in everyone's best **interest**. But that cost a lot! New York City spent over \$140 million to clean up Rockaway beaches in the two years after the storm, and that was only a start. The price tag for adding sand to the beaches and rebuilding the boardwalk is even higher. Government programs are also paying for residents to rebuild their homes. What if the next big storm causes as much damage as Sandy?

Other communities have chosen to **relocate** rather than rebuild. Newtok, Alaska is projected to be under water by 2017 because of rising sea levels. Residents of Newtok are relocating to Mertarvik, a town that is 9 miles away. The relocation could cost over \$100 million, but then the Newtok residents will be safe from further disruption.

Scientists agree that climate change is a reality. Large cities like New York and Miami already have so much infrastructure—buildings, roads, power plants—that the cost of relocating would be unrealistic. These cities are building roof gardens to absorb heat and elevating waterfront areas to reduce the impact of storm flooding.

But what about smaller communities? Should the government spend limited dollars on rebuilding these communities to withstand the next big storm? Or should these communities be responsible for rebuilding themselves, since they are deciding to stay in the path of storms?

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attribute | interest | project | relocate | statistics

USE THE FOCUS WORDS *and alternate parts of speech

attribute (*verb*) to attach; to associate

➡ **Sample Sentence:** George **attributes** his basketball skills to the hours he spends playing HORSE with his older brother.

🗣️ **Turn and Talk:** Think of something that you are good at. To what or to whom do you **attribute** your success? For example: I **attribute** my success at playing poker to lessons from my great-uncle Jack.

***attribute** (*noun*) a good or useful quality

➡ **Sample Sentence:** One **attribute** of a successful swimmer is the discipline to practice every day.

🗣️ **Turn and Talk:** What is a typical **attribute** of a good student?

(in someone's) interest (*idiom*) helpful to someone; for the benefit of someone

➡ **Sample Sentence:** Freedom of speech is in the **interest** of all citizens.

🗣️ **Turn and Talk:** If you are having a conflict with someone you care about, what action might be in your best **interest**?

***interest** (*verb*) to make someone curious; to attract

➡ **Sample Sentence:** The stars **interested** Juliet, so it was no surprise that she wished to attend Space Camp.

🗣️ **Turn and Talk:** Why does your dream career **interest** you?

relocate (*verb*) to move to a new place

➡ **Sample Sentence:** After a tornado, sometimes people choose to **relocate** rather than rebuild.

🗣️ **Turn and Talk:** If you were given the opportunity to **relocate** anywhere in the world, where would you move and why?

project (*verb*) to predict; to estimate a future amount or direction

➡ **Sample Sentence:** Scientists **project** that temperatures will keep rising if we continue to ignore the impact of our activities.

🗣️ **Turn and Talk:** Based on your current interests, what do you **project** you will be doing when you're 20 years old?

***project** (*noun*) a task that requires a lot of time and effort

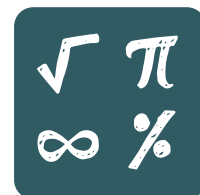
➡ **Sample Sentence:** Last year the sixth grade art class **project** was to paint a new mural on the schoolyard's wall.

🗣️ **Turn and Talk:** What **project** around your school would you like your class to be involved in?

statistics (*noun*) numerical information

➡ **Sample Sentence:** According to popular **statistics**, the average person consumes four sodas a day.

🗣️ **Turn and Talk:** Do you think that **statistics** about obesity make people more likely to watch what they eat?



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DO THE MATH


Many people **attribute** hurricanes and heat waves to climate change. But those are not the only effects. Climate change can cause more precipitation than usual in some places. This extra rain or snow can lead to flooding and the need to strengthen buildings and shorelines. Other areas will receive far less precipitation than normal. Areas experiencing drought, the prolonged absence of water, may have famines (lack of food) that force people to **relocate** to other areas. Experts **project** that severe droughts will get worse in the coming years, making water conservation more than just a national **interest**, but an international priority.

Option 1: About 30% of home water usage can be **attributed** to toilet flushes. Toilets installed before 1992 use about 5 gallons of water per flush. Newer toilets use about 1.5 gallons per flush. If people flush the toilet an average of 5 times a day, about how many gallons of water could one person save in one year by using a newer toilet?

- A. 800
- B. 2,700
- C. 6,400
- D. 9,100

Option 2: Statistics show that it takes 1,000 gallons of water to feed one American for one day, which is much higher than the global average. The high water use can be largely **attributed** to meat production. Consider this fact: Between feeding the growing cow and processing the meat, about 630 gallons of water go into one hamburger.

Develop a quantitative question that **interests** you about your classmates' meat consumption. For example, your question could be, "How many hamburgers do you eat per week?" Record your classmates' responses on a line plot and describe the range, median, and mean of your data set.

 **Discussion Question:** Many **attribute** the severity of California's long-term drought to climate change. Californians have taken steps to reduce their water waste, like fixing leaks at home and using brooms instead of water hoses to clean sidewalks. Californians may be decreasing water consumption, but **statistics** show that the average American uses about 100 gallons of water per day. This is twice the amount an average European uses, and more than 50 times the amount residents of sub-Saharan Africa use. Since scientists **project** more frequent and severe droughts, what are some strategies that communities and governments could adopt to reduce water consumption in the United States?

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THINK SCIENTIFICALLY

“The United States needs to do more about reducing carbon dioxide emissions,” says Kyra. “I read we’re responsible for more carbon dioxide emissions than any other country on Earth except China. I think we should be a leader in the fight against climate change.”

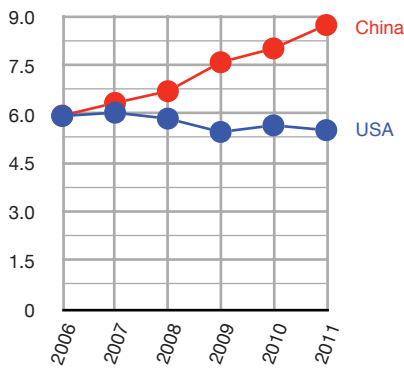
“Well,” says Anthony, “if China is polluting more, maybe they should change first. I heard that their greenhouse gas emissions are **projected** to rise much faster than ours.”

“Everybody needs to do better,” says Aliyah. “There’s no use in everyone sitting around **attributing** responsibility to someone else. The whole world needs to help.”

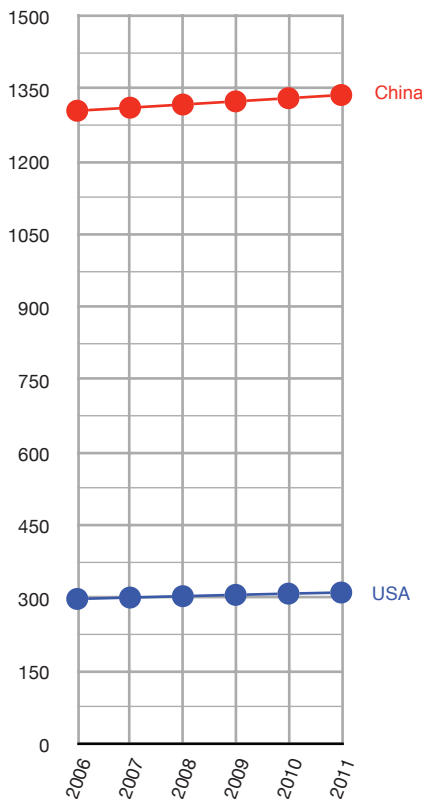
“Figuring out who produces how much carbon dioxide can be tricky,” says Mr. Seemy. “Maybe some of you could find some **statistics** that would help us compare the roles of the United States and China.”

Kyra, Anthony, and Aliyah found some data on the website of the U.S. Energy Information Administration. They focused on “carbon dioxide emissions from the consumption of energy” for China and the United States. They looked at the total emissions for each country, and also at the “per capita” (per person) emissions for each country, and made the following graphs.

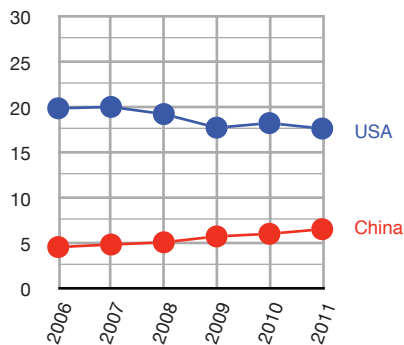
Total emissions (billions of metric tons)



Population (millions)



Per capita emissions (metric tons)



Data Source: U.S. Energy Information Administration, <http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm>



Assuming the trends in these graphs continue into the future, what would be your hypothesis about the future impact of China and the United States on global carbon dioxide emissions?



What is the clearest way to explain the relationship between the three graphs? Practice explaining the graphs to a partner as if you’re a teacher and he or she is a student.

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DEBATE THE ISSUE

In the last ten years, the community of Seaside has been hit by two hurricanes that caused millions of dollars in damage. Both times, the government paid to help rebuild Seaside. Scientists **project** a high likelihood of future hurricanes as the effects of climate change take their toll. Other residents in the state protest the repeated use of public funds to rebuild Seaside. They argue that Seaside residents have made a free choice to stay in the path of destruction, so they should pay for future damages. But Seaside residents point out that their beaches are a source of recreation for people from all over the state, so it is in everyone's **interest** to use public funds to rebuild after the next storm. *Who should pay for the consequences of climate change?*

Pick one of these positions (or create your own).

A

- Seaside should be responsible for rebuilding itself, since residents choose to live in the path of destruction.

OR

B

- State public funds should be used to rebuild Seaside after the next hurricane.

OR

CREATE YOUR OWN

- _____
- _____
- _____
- _____

Jot down a few notes on how to support your position during a discussion or debate.

Be a strong participant by using phrases like these:

““ Can you show me evidence in the text that...””

““ You make a good point, but have you considered...””

““ I believe that...””


““ I agree with you, but...””

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TAKE A STAND

 Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

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