



In The News

Current Events in Earth & Space Science

Summaries for the Classroom

Urban Heat Islands and Climate Change

The phenomenon of isolated warm city air has been long acknowledged. Recent studies show that this warm air is not staying in one area, that it may be affecting the climate of other regions.

Articles to Share with Students

National Geographic – Urban Heat May Warm Faraway Places

<http://news.nationalgeographic.com/news/2013/130128-climate-cities-urban-heat-island-atmosphere-science/>

The Guardian – Heat from North American Cities Causing Warmer Winters, Study Finds

<http://www.guardian.co.uk/science/2013/jan/27/scienceofclimatechange-climate-change>

The Environmental Expert – Rivers Can Help Reduce the Urban Heat Island Effect

<http://www.environmental-expert.com/news/rivers-can-help-reduce-the-urban-heat-island-effect-350087>

The Guardian – How Urban Heat Islands are Making India Hotter

<http://www.guardian.co.uk/global-development/poverty-matters/2013/jan/09/delhi-mumbai-urban-heat-islands-india>

General Information

The Encyclopedia of Earth

Heat Island - http://www.eoearth.org/article/Heat_island

Urban Climatology -

http://www.eoearth.org/article/Urban_climatology?topic=49479

Environmental Protection Agency – Heat Island Effects and Overview

<http://www.epa.gov/hiri/>

National Geographic Education – Urban Heat Island (New York City satellite imagery showing trapped heat)

http://education.nationalgeographic.com/education/encyclopedia/urban-heat-island/?ar_a=1

The Weather Channel – Urban Heat Island Video

<http://youtu.be/t-sXHI3l-rM>

Questions for Classroom Discussion

- Which is generally hotter, an urban or rural area? And why?
- Describe an Urban Heat Island (UHI). How much warmer are these areas compared to the surrounding areas?
- Besides New York and San Francisco, name two additional locations in the Northern Hemisphere that have seen warmer temperatures as a result of heat from urban areas.
- How does urban heat impact cities located at a distance?
- Do you think the UHI have or will have a big impact on global climate change? Why/why not?
- What are some consequences that people may face as a result of urban heating, especially in areas like India?
- If you were an urban designer, what are some plans you might put in place to try to reduce the city heat?

Tags

Urban heat island, climate change

Big Ideas

From the Earth Science Literacy Principles

- Big Idea 1. Earth scientists use repeatable observations and testable ideas to understand and explain our planet. (1.5)
- Big Idea 3. Earth is a complex system of interacting rock, water, air, and life. (3.2, 3.3, 3.6, 3.8)
- Big Idea 9. Humans significantly alter the Earth. (9.1, 9.3, 9.8)

From The Big Ideas in Earth and Space Science (ESBD)

- The Earth System (2)
- The Atmosphere (9, 10)
- The Nature of Science (22, 25)

Compiled February 03, 2013, by M. Witter