



# Earth Science at Your Fingertips

## FLIPBOOK SURFACE TEMPERATURE

<https://mynasadata.larc.nasa.gov/>

### NASA thinks you will “flip out” with this hands-on visualization!

NASA visualizers take data – numbers, codes – and turn them into animations people can see and quickly understand. You can become a data visualizer by creating your own flipbook animations using maps of science variables that NASA scientists commonly study to better understand the Earth System. Each frame in this flipbook shows monthly averages collected in 2016 and 2017. There are six flipbooks available for different science variables: aerosols, cloud coverage, vegetation concentrations, precipitation, incoming solar radiation, and surface temperature. Please visit our website for more information.

The processes in the Earth System take place in and between the Atmosphere, Cryosphere, Hydrosphere, Biosphere, and Geosphere, as well as include energy from the Sun. As we can see, Earth System processes are not bound by oceans, mountains, or country delineations—they are truly global in scope!

#### ESSENTIAL QUESTIONS:

- What do the colors in the flipbook represent?
- How does this variable change over time?
- Why do you think these changes occur?
- What is affected by these changes?

#### MATERIALS NEEDED:



Binder clip



Scissors



Copier Paper

### INSTRUCTIONS



**1** **PRINT** flipbook on cardstock.



**2** **CUT** cardstock along the dotted line, making 26 frames.



**3** **STACK** the 26 frames in order. The frames are numbered.



**4** **CLIP** the stack of frames together, with the binder clip.

**5** **FLIP** through the stack quickly. Watch and enjoy the animation.



#### SATELLITE STUDIES: Earth System Science

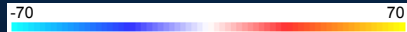
Satellites collect data to help unlock the unexpected wonders of how our Earth works as a system.



1 CLIP HERE



<https://mynasadata.larc.nasa.gov/>

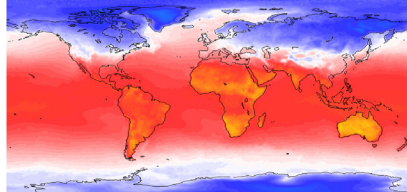


For best results, print on cardstock paper.  
Color and data values may appear distorted.

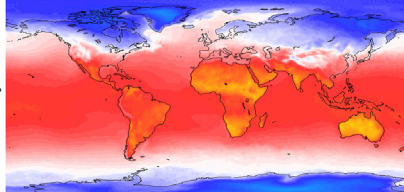
2

The Daytime Surface Skin Temperature is the temperature (in degrees Celsius) right at Earth's surface of the land or ocean in the topmost layer (first few centimeters at the top of the surface), including the plant coverage during the day. (AIRS)

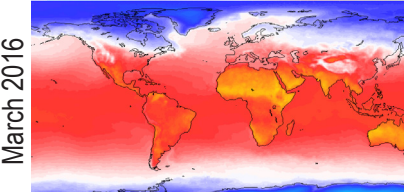
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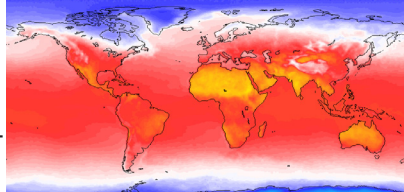
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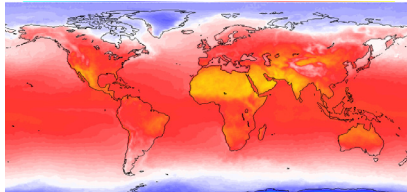
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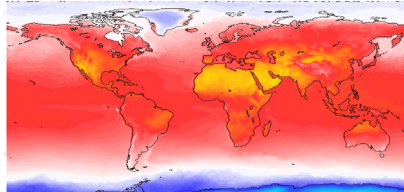
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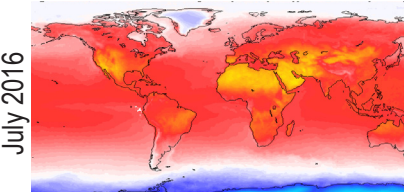
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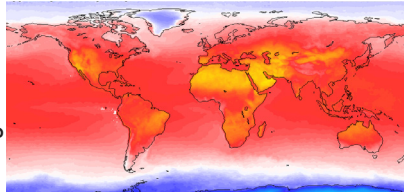
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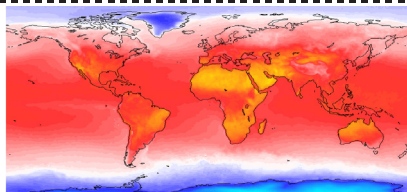
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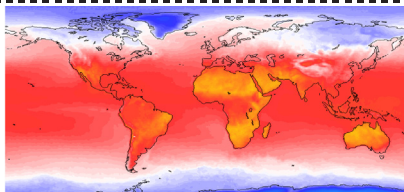
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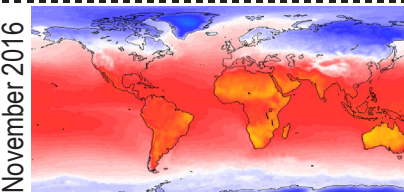
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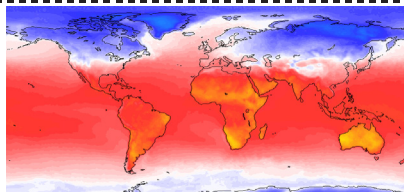
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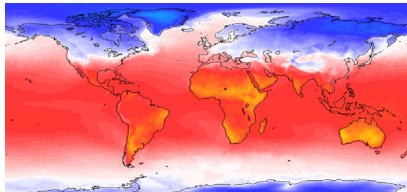
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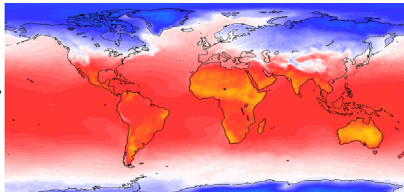
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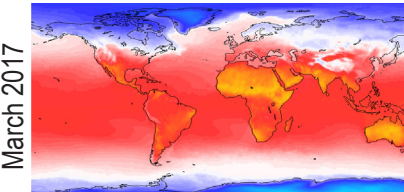
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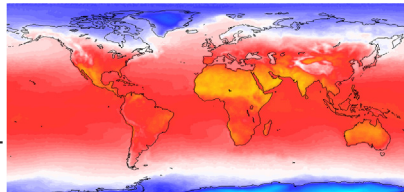
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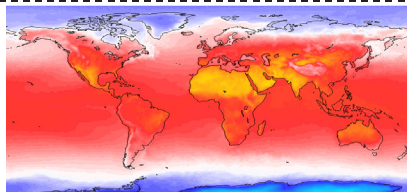
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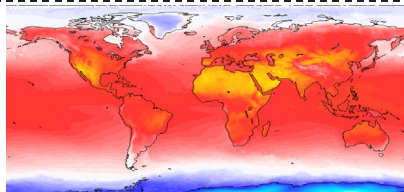
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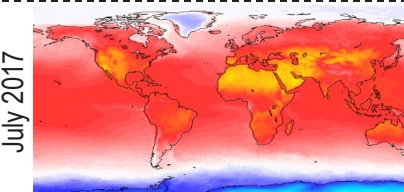
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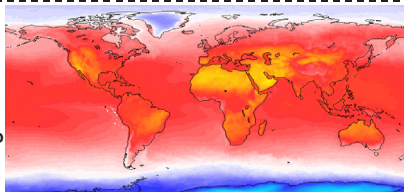
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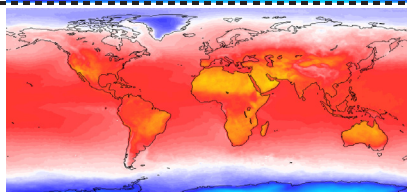
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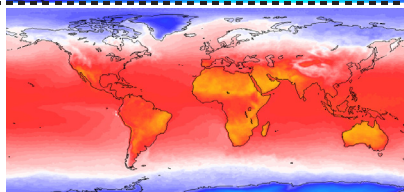
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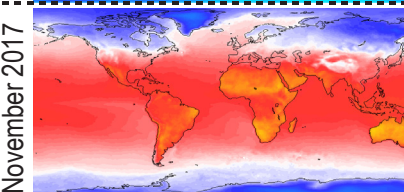
23 September 2017



24 October 2017



25 November 2017



26 December 2017

