

JUST FOR U.S.*

GRADES 4 - 5

Understanding Science

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Awesome View!



Photo courtesy of NASA

In 1968, three astronauts orbited the Moon. One took this picture of the Earth. He felt awe to see his home so far away. The Earth was a glowing blue and white ball. Below, the Moon was gray and lifeless.

This view reminds us that the Earth is a very special place. Seeing the Earth from above has taught us a lot about our home.

Long, long ago...

Photo: Maria Reiche



Thousands of years ago, Native Americans drew this spider on the ground. You can only tell it is a spider from the air. The artists must have dreamed about flying!

In 1903, the Wright brothers flew the first airplane. The world's first passenger flight happened in Florida only six years later. Soon many people saw Earth from the air.

100 years ago...



Photo courtesy of Smithsonian Institution



Today...



Today, over a million Americans are in the air each day.

Here is Atlanta's Hartsfield International Airport. It is one of the world's busiest airports.

On a plane trip across the U.S., there is much to see.

Views from an airplane trip across the U.S.

This is downtown Atlanta. Can you find the tall buildings, the freeways, and the Georgia Dome?



Photo: Georgia Aerial Surveys, Inc.



Photo: www.greenwillbridge.com

A new bridge and an old bridge cross the Mississippi River. A tugboat pushes a barge upstream.

Cumulus clouds are clouds that look like balls of cotton. On hot days, you can watch them grow higher and higher.



Photo: Bill Witherspoon

Views from an airplane trip across the U.S.



Photo: Dr. Mark W. Williams

The Rocky Mountains are a magnificent sight. Many peaks are more than 13,000 feet high. The peaks have snow even in summer.

In the Arizona desert, a canal brings water to farms. Without irrigation, not much can grow here. The farms are the dark squares at the top.



Photo: Bill Witherspoon



Photo: Bill Witherspoon

San Diego, California is a big Navy port. Here you reach the Pacific Ocean. The beach is at the bottom of the picture.

Views from Satellites in Space



Photo courtesy of NASA

In the 1960's, the first satellites sent pictures to Earth.

Today, satellite images are used to check the weather. This is a modern GOES satellite. Each GOES stays over one spot on the earth. It sends the cloud pictures that you see on TV weather forecasts.

Here is a GOES picture of a great hurricane off the coast of Florida. Atlanta is near the upper left corner of the picture. Looks like the storm is headed this way. (Just kidding!)

Photo courtesy of NASA



Photos courtesy of NASA



1984



1998

Satellite images tell about changes in our world. These pictures show a place in South America. Over time, the rain forest here was cut down. This is happening in many parts of the world. An area bigger than Georgia is cut each year.

A Picture Puzzle

This picture shows part of the world at night. How can you get a picture without any clouds? A computer had to put together bits of many pictures.



The brightest areas, such as Europe (1) and the eastern U.S. (2), have lots of people. Dark areas are numbered 3, 4 and 5 on the picture. Can you identify them? (Write the correct number by each area's name.)

- ___ Sahara desert (hint: it's in Africa)
- ___ Amazon rain forest (South America)
- ___ northern Canada (North America)

Here is one more puzzle. The areas marked (2), in the U.S., and (6), in Brazil, are the same size. They also have about the same number of people. Why is Brazil so much darker at night?

Answers:
5 Sahara desert; 3 Amazon rain forest; 4 northern Canada.
Why is Brazil darker at night? U.S. cities spread out more and use many more lights than cities in Brazil.