

What Can Be Seen in Maps and Images

Students consider what can and cannot be seen because of size in ISS EarthKAM images. They consider what can be seen on a wall map of the world and then compare this to what can be seen in ISS EarthKAM images, and possibly other images of Earth from space.



Materials/Resources:

- Print out several ISS EarthKAM images and their Metadata. Optional: Print out other images of Earth from space.
- Gather the necessary materials: a wall map of Earth, push pins, string or yarn, and atlases.
- Attach the map to the wall in a place where you can use push pins to mount the images and mark locations.

Time: 1-2 (50 minute) periods

Level: Easy

Recommended Procedures:

1. Show your students the wall map and ask them to name and describe the places and features they see. These may include continents, oceans, deserts, rivers, mountains, and rain forests. Also have them identify specific countries and states.

ISS EarthKAM

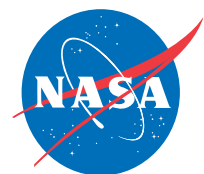
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STANDARDS

Geography

The World in Spatial Terms

- Standard 1: How to use maps and other geographic representations, tools, and techniques to acquire, process, and report information from a spatial perspective.



2. Ask your students to list several features too small to be seen on the map, such as houses, small cities, and ponds. Then ask them what is the smallest feature that they can see on the map. For example, can they see the Hawaiian Islands?
3. With your students, examine one of the images you gathered.
 - a. Have them find the location of the image on the world map, using the atlases and the Metadata.
 - b. Have them compare the size of the features in the image with the size of the features at that location on the wall map. They will see that more details are visible and that everything appears much larger in the image.
 - c. Have them attach the image to a clear space on the wall, and use push pins and string to link the image to its corresponding location on the map.
4. Repeat step 3 with the other images you gathered. Each time, have a discussion identifying what they can see in the image that is too small to see in the map.
5. Ask your students to list:
 - a. Ten things that are too small to be seen in the images, such as a person or house.
 - b. Ten things that can be seen in the images, such as a city or river.
 - c. Ten things that are too large to be seen, such as an entire continent.
6. Now discuss all their lists. What can and cannot be seen in the images?
 - a. What human-made features can be seen? Cannot be seen?
 - b. What natural features can be seen? Cannot be seen?
 - c. Are any features that can be seen in an image of a size that cannot be seen in other images? (The scales of the different ISS EarthKAM images can differ, and if you are using non-ISS EarthKAM images of Earth, then the range of scales may be even broader.)

Encourage your students to ask questions for which they, and even you, may not know the answers. The ISS EarthKAM images are a tremendously rich resource of thought-provoking topics for scientific and geographic investigations.

ISS EarthKAM

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