

# From Above

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ISS EarthKAM images are photographs of Earth taken from space. Because of how we normally view the landscapes around us, this straight down view is unusual. Students will become familiar with ISS EarthKAM's unique perspective of the world around them by considering what objects look like when viewed from above.

## Materials/Resources:

- Gather small objects such as soda cans, coffee mugs, apples, water bottles, baseball caps, or books, and as necessary, paper and pencils for drawing.
- Make photocopies of Student Handout 1: From Above.
- You may want to bring in some photographs of familiar places in your community. You may also want to have several ISS EarthKAM images to show students.

**Time:** 1-2 (50 minute) periods

**Level:** Easy

## Recommended Procedures:

1. Distribute Student Handout 1: From Above, small objects, and as necessary, drawing paper and pencils.
2. Have your students work their way through the worksheet, drawing pictures and answering questions.
3. If you have them, show your students photographs of familiar places in your community, and have them draw pictures of what those places look like from above.
4. Lead a discussion on the advantages and disadvantages of this “from above” perspective.
5. If you haven't already, introduce your students to ISS EarthKAM images.

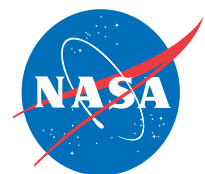
## STANDARDS

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Geography

World in Spatial Terms

- Standard 1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective
- Standard 2: How to use mental maps to organize information about people, places, and environments in a spatial context



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You would probably recognize your school if you were shown photographs of the main doors or your classroom, but would you recognize your school if the photograph was taken from above? This activity will give you some practice recognizing objects from above.

Find some drawing paper and a pencil, and one of the following: a soda can, coffee mug, water bottle, apple, baseball cap, book, or another interesting small object.

1. Place your object on a desk, then bend down next to the object to look at it from the side. Draw what you see.
2. Lean over the top of the object to look directly down on it. Draw what you see.
3. Why do your two drawings of the same object look so different?
4. Imagine you are standing near a road, looking at a pickup truck from the side. Draw the truck.
5. Imagine you are standing on a bridge, looking down at the pickup truck from above. Draw the truck.
6. If you showed someone your drawing from step 5, would they recognize it as a pickup truck? Explain what clues might help them to identify it.
7. Imagine you are in a hot air balloon, rising directly above your school. What would your school look like from above? Make a quick sketch of what you'd see.
8. What would the neighborhood around your school look like? Add this to your sketch.
9. As the balloon rises higher, what new things would you see?
10. How would the apparent size of objects on the ground change as the balloon went higher?
11. How would the amount of land you can see change as the balloon went higher?
12. Commercial jetliners fly much higher than hot air balloons, usually around 10 kilometers (about 6 miles) above the ground. Imagine you are flying over your state in a commercial jetliner. Describe what you might see.
13. The International Space Station (ISS) orbits Earth much higher (35 times higher) than a commercial jetliner flies, about 350 kilometers (220 miles) above the ground. Imagine you are flying over your state in the ISS. Describe what you might see.

