



LESSON: Where in the World?

Title: Where in the World?

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Lesson Overview:

This pictorial lesson is designed to encourage inquiry by showcasing some magnificent views of earth that astronauts and NASA cameras have captured from space. Students will be asked to observe photos, ask questions and make predictions regarding each photo with this hands on, collaborative lesson. The beauty of these photos is very inspiring.

Suggested Classroom Time: 60 minutes

Grade Levels: 6-10

KLASS Module: 2-Orientation

Topic/Console: Views from Space

Materials Needed:

Activity	Documents	Other Materials
1	Background information: http://www.nasa.gov/mission_pages/station/expeditions/expedition17/earthday_imgs.html	Demonstration computer with Internet connection
2	PRES_Where-World.ppt ACT_Where-World.doc KEY_Where-World.pdf	Writing tools and 1 printed color copy to be cut in half for distribution to students

National Standards/Objectives:

Discipline	Standard	Objective
Science	A. Science as Inquiry	Students develop abilities necessary to do scientific inquiry.
Science	G. History and Nature of Science	Students explore science as a human endeavor.
Technology	Technology problem-solving and decision-making tools	Students employ technology in the development of strategies for solving problems in the real world.
Math	Reasoning & Proof	Students recognize reasoning and proof as fundamental aspects of mathematics.

Desired Results:

Students will be able to answer these essential questions

- Where in our world were these photos taken?
- What in the world are these photos showing?
- From my observations, what are some questions I can ask and answer?

Students will know

- That NASA's observations teach us a lot about our world and provide a view never before seen by man.

Students will be able to

- Record observations, ask important questions and make predictions.

Learning Plan/Activities:**1. Introducing the Lesson.**

Script: "Today we are going to see what the astronauts see by viewing many photos and reading several narratives that describe photos of our world. As we go through this activity and view all of these cool photos, I'd like you to practice your scientific skills. We are going to review the process for observing, inferring, predicting, and classifying information like NASA scientists. So let's get started!"

There is an audio introduction at this site if you would like to play it for the class to help introduce the photography project. Be careful not to show any information for the photos that are featured on this page. http://www.nasa.gov/mission_pages/station/expeditions/expedition17/earthday_imgs.html

2. Presenting Photos and Discussing Observation and Inference.

The classroom activity should begin with the class viewing the *Where in the World?* presentation (PRES_Where-Word.ppt). The full presentation shows photos that were taken from space, primarily from the International Space Station, where the space shuttle frequently travels. The *Where in the World* answer key (KEY_Where-World.pdf) should be printed in color. Each page should be cut in half. The mission is to match the photo with the description of that photo. To get the class started, you could work through a couple of these photo sets. Show the photo. Ask the students what they can observe from the photo. Let them share their observations. Remind them to focus on what they see, and not what they think they see. Have them list their observations, ask questions and record more observations. Then have them infer what they think is going on in the photo based on their observations and interpretations of the photo. Next, show the description of the photo. Repeat this process until they understand the difference between observation and inference.

3. Reviewing Prediction.

The next step is to add on the concept of prediction. With the same slide, ask them to predict.

Ask,

- "What physical observations do you see?"
- "Where in the world could this be?"
- "Can you narrow your inferences based on the observations you have recorded?"
- "Can you make a prediction? If not, what other information would you need to be sure?"

4. Ending with Collaboration and Classification.

Introduce the *Where in the World?* activity (ACT_Where-World.doc). This is a simple worksheet for the students to use to document their observations, inferences, and predictions. After printing the slides from *Where in the World?* pdf (KEY_Where-World.pdf), pass out the photo slides, keeping the narrative slides back. Ask the students to complete the worksheet either as individuals or as small groups for 1 or many slide photos. When finished, provide the description sheets and allow them to collaborate to find what they believe to be the matching description, based on their observations. Have them tape or staple the matched pieces together and share their findings.

Assessment Evidence:

Performance Tasks

1. Collect and evaluate the *Where in the World?* activity (ACT_Where-World.doc), and provide feedback on the quality and accuracy of students' written observations, inferences, and predictions. Assign grades as appropriate.
2. Some of the photos may be hard to match, so encourage teamwork and group discussions. Also provide feedback on how well they worked together to form their predictions and to match the photos with the accurate descriptions.

Other Evidence

1. Engage the students in discussions regarding the social and emotional aspects of what they saw in the photos. Ask them how these types of factors can be measured in scientific exercises. Challenge them by asking how such "qualitative" data could be collected and measured.
2. Test the students on how well they can write observations, inferences, and predictions by providing a similar activity where their work is collected and evaluated as a formal sample, such as the *NASA People at Work* lesson in module 3.

Extensions and Going Further Resources:

- Highlight the geographic terms that are mentioned in the description of the slides, and assign individuals or small groups the task of further researching that geographic area or phenomenon. Have them report back to the larger group with an audio/visual presentation.
- Have the students perform Internet searches at <http://www.nasa.gov> to see if they can find any more background information on any of the geographic areas highlighted in this photo presentation to further support their predictions.
- Be sure to check for student opportunities, additional educational resources and more at: <http://www.nasa.gov/education>.