

AERIAL PHOTOGRAPHS Teaching Tips



LEARNING OBJECTIVES

Youth will be able to

- * Observe visual clues on an airphoto, and use them to identify different features.
- * Use scale to measure distances on an airphoto.
- * Explain how airphotos are used as tools for studying an area.



HOW TO USE THE AERIAL PHOTOGRAPHS SCIENCE PAGE

It is important for youth to have clear copies of the airphotos in order to identify features. Use as high a quality printer as possible, and try to print out enough copies directly from the printer for each group of youth. If you cannot print out enough copies from the printer for each group of youth, use a laser color copier to make copies. It should be possible for 2-3 youth to work together on one copy of the Science Page.

Explain to youth that the first time they look at an airphoto, familiar objects, like trees, buildings, and streets may appear unfamiliar because they are being viewed from overhead, as if from an airplane. But as they become familiar with clues, such as tone, texture, shape, and location, they will be able to extract more and more information from an airphoto. Give them time to observe and discuss all the features listed under "How to 'Read' Airphotos."

Ask: How do you think airphotos could be put to practical use? (Answer: Airphotos are used in studies of community land use and history, archaeology, forestry, soil mapping, and military intelligence, among others.)

Make sure youth understand how to use the scale of an

airphoto. Ask: If an airphoto has a scale of 1:24,000, then how far on the ground is one centimeter on the map? (Answer: 24,000 cm, or 240 m) What do 2 inches on the map represent? (Answer: 48,000 inches, or 4,000 feet). Explain that many airphotos have a scale of 1:24,000 because people measure distance on the airphoto in inches rather than centimeters. (24,000 can be evenly divided by 12 inches to find a distance in feet.) Please note: when you print the Science Page, the scale of the maps may be altered slightly.

Students like to identify their home, school, local stores, and other familiar features on airphotos. It is possible to view airphotos on the Internet through the website of the United States Geological Survey (USGS): <http://mapping.usgs.gov>
A more direct link is:

<http://terraserver.microsoft.com>
If you need further assistance, phone 1 (888) ASK-USGS.

You can purchase airphotos from USDA's Aerial Photography Field Office (APFO). Go to this web site for ordering information <http://www.apfo.usda.gov/orderingimagery>

You may wish to order a manual entitled Explorations from an Aerial Perspective, by Eugenia Barnaba et al., which includes many more activities for youth to learn about using airphotos to study their community. The manual is available from Cornell Media Services at <http://www.cce.cornell.edu>
You can order on-line or by phone: (607) 255-2080.



CROSSWORD

Answers

Down: 1. tone; 2. shape;
Across: 2. size; 3. location;
4. texture.



TRY THIS

Once youth have observed the 9 features listed on the front of the Science Page, challenge them to be an airphoto detective, and see how many of the activity questions they can answer correctly.

Answers

1. 5. The coarse texture indicates it is a forested area.
2. Roads; shape, size and location are clues that indicate they are roads.
3. 19 blocks.
4. Regular-shaped white spots at number 7 are buildings.
5. Large buildings in a residential neighborhood could be churches or schools.
6. about $10.5 \text{ cm} \times 240 = 2,520 \text{ m}$



SPOTLIGHT ON RESEARCH

The source of this information is Lougeay, R. 1996. "Land Use, Land Cover, and Local Climate." Vol.4 Applications in Remote Sensing. Remote Sensing Core Curriculum Project, Department of Geography at the State University of New York at Geneseo. <http://www.research.umbc.edu/~tbenja1/lougeay1/>

To help youth understand how transpiration helps cool an area, have them wet a hand and blow on it. The hand will feel cooler because the water takes heat energy from the hand as it evaporates. In the same way, as the water transpired from trees evaporates, it takes heat energy from the trees, so the local air temperature decreases.