PHOTOGRAPHS HELP YOUR SCIENCE FAIR PRESENTATION

An experienced science-fair-judge puts it this way: "Most exhibits utilize photography with the main impetus to record data." Many of the exhibits would be much less effective if they didn't have photographic support.

"The pictures represent convincing documentation or key data collection step of the research. In fact, some exhibits wouldn't exist at all if it weren't for photography."

These four pictures were taken in available light by Kevin Urie, Denver, Colorado, for his exhibit, "Incidence of Parasites Found in Canine Feces Sampled from Public Parks and Private Residences in the Denver Area." At an international science fair, Kevin's exhibit won awards from the American Veterinary Medical Association and the U.S. Air Force.

GENERAL PICTURE-TAKING TECHNIQUES

An examination of thousands of photographs used in science fair exhibits indicates that the problems commonly encountered in picture-taking fall into three categories: lighting, exposure, and sharpness.

In addition, when photographing, keep these three related-composition suggestions in mind:

- *If you're not close enough, your pictures aren't good enough.*

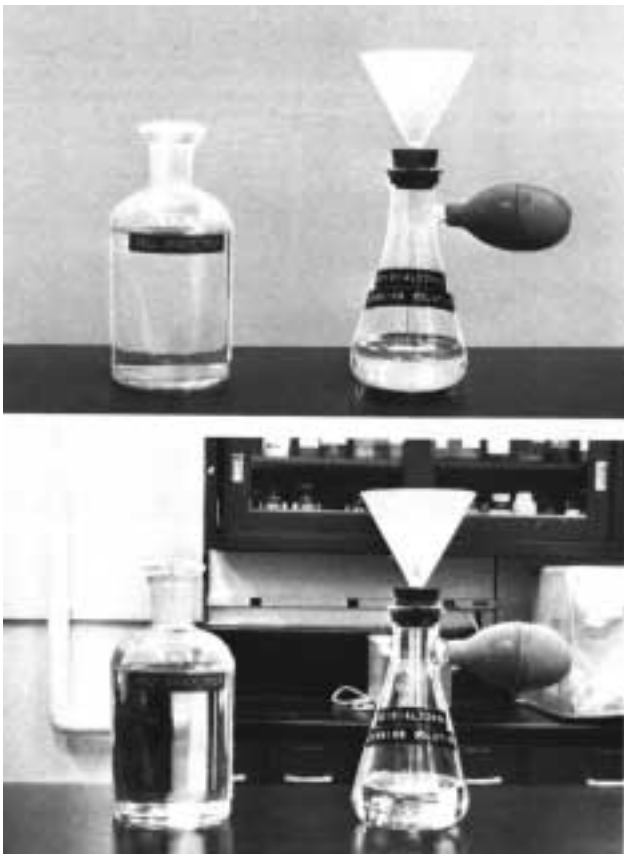
  Don't leave a lot of wasted space around the subject—move the camera closer until the subject really fills the frame.

- *Have all the areas of your picture working for you.*

  Any object included in the picture area should contribute to the message. If it doesn't, remove it before you shoot.

- Keep the backgrounds simple.

  Note that getting close to the subject helps to solve some of the background clutter by simply eliminating it. Furthermore, the closer the camera is to a subject, the more the background is likely to be out of focus. The background problem can be solved simply by using a plain sheet of cardboard placed behind the subject. For best color prints, use a background that is neither light nor dark, and that is not strongly colored, but be sure that it contrasts some with the objects being photographed.



The only difference between these pictures is the use of a light cardboard background to eliminate the clutter. A simple background helps the photograph to communicate more clearly.

Selecting Display Pictures. Select only the best storytelling photographs for your exhibit from those you have taken during the course of your investigation. But beware of the common tendency to include too many small prints. It's far better to have a few 8 x 10-inch enlargements of the most important pictures. You can overwhelm the judges with an exhibit plastered with tiny prints. Some exhibitors used close to 100 pictures, but there are simply too many to be comprehended by the passersby. In addition, keep in mind that a 3 x 5-inch print may be fine to look at when held in the hand, but it's too small to be observed adequately when located on exhibition panels that may tower higher than the viewer.

Be sure to arrange your best enlargements in a left-to-right, top-to-bottom order (because that's how most people scan a printed communication). It would be a good idea either to number the viewing order or to connect the prints with bright-colored arrows to help direct the viewer's gaze.

It's a good idea at this point to make a preliminary layout of your exhibit photographs. Tape them temporarily onto a door, or a wall utilizing the same space as on actual exhibit panels. Step back to 8 or 10 feet and reassess the arrangement and visual impact of each picture. Get an objective opinion from friends and instructors. Are your picture captions easily readable at this viewing distance? Would the judicious use of color pep up your exhibit? Are the lines of your charts and graphs heavy enough to be clearly seen at that distance? Could the individual elements of the exhibit be rearranged to capture more attention or make the project clearer and more concise?

Outdoor Lighting

Direct Sunlight. Best for landscapes, cityscapes, and other wide-angle shots of distant subjects. It's also necessary for pictures of shallow underwater subjects.

Be aware of the difference that the time of day can make in the direction of the sunlight. For example, suppose you want to photograph the face of an eroded cliff that showed geological layering. You should choose a time of day when the sun rays are shining across the face of the cliff, illuminating its texture dramatically.

Sunlight can also be used successfully for small-object photography. Try to position the subject so that the sun is striking it *from the side.* You can use a large white cardboard reflector to reflect some light back into the shadows. This will show details in the shadows and avoid a harsh and contrasty appearance in the picture.

The cardboard reflector should be placed just outside the camera field of view. Perhaps a friend could hold it exactly where you want it, or you could devise a method of standing it upright with pointed stakes.

Hazy, Overcast, and Shade Lighting. Best for close-ups of people and suitable for small nature close-ups (also helpful when photographing objects that have shiny surfaces or cast confusing shadows). It's especially good for in-the-woods pictures where the low-lighting contrast is far preferable to sunny-day lighting with its bright spot highlights. Try to exclude as much of the colorless sky area from your composition as possible on a gray-sky day.

Indoor Lighting

Some modifications to the above method are needed for point-and-shoot cameras and one-time-use cameras. With either type of camera, if it has a flash and the objects being photographed are less than 8 feet from the camera, place two thicknesses of tissue paper or a handkerchief over the flash so it does not overpower the ambient light, but still provides some fill light to the shadowed areas. One-time-use cameras usually are fixed focus (work best at longer distances) and fixed exposure (work better in brighter light). With these cameras, it would be better to arrange your setup so that direct sunlight falls on the objects being photographed, and to be sure that your camera is at least 4 feet from the objects. If you own a point-and-shoot camera, check your owner's manual to see if it is an autofocus model (and if so, note its minimum focusing distance) and whether it has exposure control (if there is only one shutter speed and one aperture listed, then there is no exposure control). Don't photograph objects closer than the minimum focusing distance (or 4 feet if fixed focus) and use direct sunlight if there is no exposure control.

Window light is soft, diffused, and even. Use white cardboards for backgrounds and for reflectors if needed.