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EnLIGHTened by SHADOW

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EnLIGHTened by SHADOW

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In the golden age of radio, listeners were told that "only The Shadow knows." Lamont Cranston, better known as The Shadow, was the enlightened character with all of the answers to solve repeated mysteries. The Shadow is no longer with us, but the use of shadow puppetry in the elementary classroom can help solve mysteries and bring "life" to the study of light and shadow.

The use of shadow puppets should allow students to achieve the following objectives:

- to create shadows by putting objects between a light source and a screen or surface.
- to recognize objects by their shape.
- to change the shape and size of shadows by repositioning the objects or the light source.
- to identify transparent, translucent, and opaque objects.

Ideas for Materials Development

Three ingredients are necessary for the preparation of a shadow — a screen, light source and object.

Screen: For a simple screen, cut a piece of white butcher paper, bleached muslin, or translucent acetate to fit the size of the chosen frame. Staple the screen to an unused picture frame or a frame made from do-it-yourself frame parts. Other possible frame options are plywood, Masonite, or chipboard. One-by-four inch pine boards reinforced with quarter inch plywood corners or small diagonal braces can also serve the purpose. Angle irons, wooden blocks, or legs are necessary to hold the frame upright on a table top.

A free-standing floor screen can be constructed using two pieces of one-by-one inch wood as uprights. The screen frame may be attached to the upright legs with bolts and wing nuts. If several holes are drilled through the upper part of the leg, the screen may be raised or lowered to a desired height. To form a pedestal, angle braces may be placed on the lower part of the one-by-one inch legs to attach them to the center of eight-inch squares of inch-thick wood (Figure 1).

Don't let the complications of frame construction deter you from your shadow exploration. You can make a quick screen by stapling or taping tightly stretched cloth or paper to an available doorway. Another idea is to cut the bottom out of a cardboard box leaving a frame around the edges, which allows for the taping or gluing of the screen material across the opening.

Light: Possible light sources are a clamp-on fixture with a 75-150 watt bulb, a goose-neck desk lamp, a tensor lamp, or a filmstrip projector. Unless material is designed to diffuse the light, avoiding a hot spot (a concentrated area of light) that could prove distracting or painful to the eyes of the audience may be difficult. Intense light sources, such as a filmstrip or overhead projector, may cause this problem. Avoid or lessen the hot spot problem by placing the light source on the

floor or above the screen. Experiment with the distance between the light and screen until the entire surface is illuminated.

Objects: Collect opaque, translucent, and transparent materials, such as plastic lids, plastic bottles, cellophane, tissue paper, cardboard, parchment, foil, waxed paper, paper toweling, newspaper and styrofoam. Found objects, such as lace, rick-rack, leaves, grasses, wood, glass, scissors, comb, keys, wire, suncatcher, etc. may also be included. The objects are really limitless — it is up to you!

Getting Started in Your Classroom

Divide the class into groups — the more screens and/or light sources there are to use, the smaller the groups can be. If not enough screens are available, students can project shadows on an area of blank wall, chalkboard, or chart. Each group should have a variety of materials and objects to examine and then predict as to the type of shadow they might cast (dark, light, faint). Have students make predictions as to what the shadows will look like. The final step requires holding each object between the light source and against the screen (or near the wall, if not using a screen) in order to check the prediction. The terms *opaque*, *translucent*, and *transparent* can be introduced and used to describe the objects casting the dark, light and faint shadows.

As students investigate the shadows, they will discover what happens when the object is close to the screen, closer to the light source, rotated, tilted, turned edgewise, overlapped with another object. Abstract puppets may begin to emerge as the objects start to relate to each other. For example: two pieces of packing cardboard taken from a new shirt could become “a bully” and “a shy one.” (Figure 2).

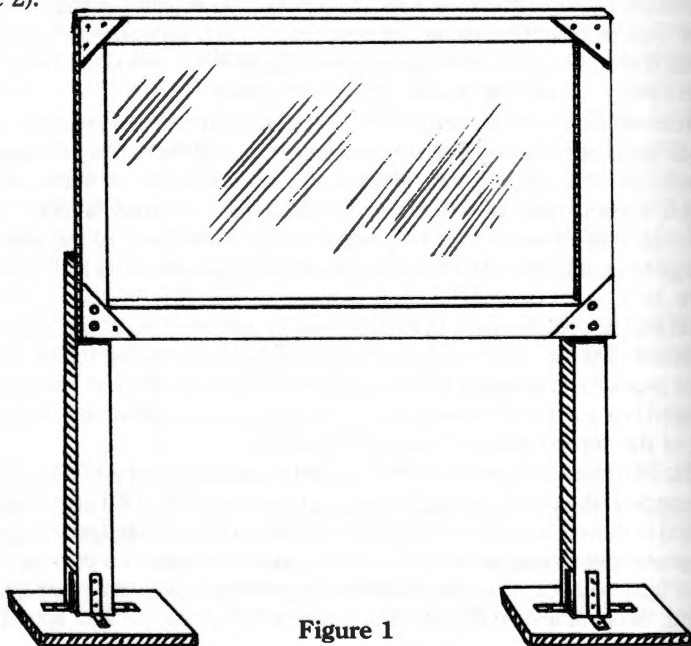


Figure 1

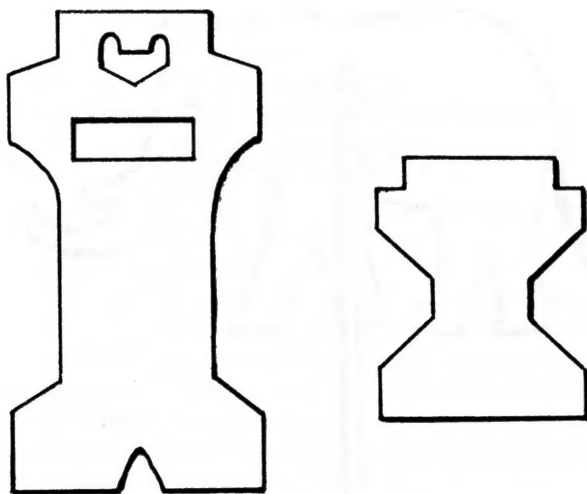


Figure 2

The characters might be enhanced with the addition of paper strips, fur for hair, or a paper hat attached with tape or glue.

Students can create simple specific characters by tearing or cutting them from light weight cardboard or construction paper. When using construction paper, the color will sometimes show through, depending on the intensity of the light source — thus, color can be a factor when choosing material.

If facial features or costume details are to show, students must be reminded that drawing them on the paper is *not* enough. They *must* be cut out to allow the light to shine through in order to achieve the desired effect.

Bits of lace, cloth, feathers, or fur, glued to the edge of a puppet add texture and movement. Colored acetate, theatrical gels, or transparent tape that has been painted with permanent markers will brighten up the stark black and white image.

The control sticks may be made from drinking straws, balloon sticks, umbrella rods, clipped clothes hangers, stove pipe wire, or even pampas grass twigs. Use masking tape to attach the rod to the puppet. (Figure 3). The table-top playing screen must be at the table's edge when using vertical rods such as these.

Scenery can add a great deal to the developed materials. Cardboard scenery pieces can be tacked or taped to the sides of the frame. Natural plants or weeds make interesting shadows, if appropriate for the scene.

The availability of the overhead projector provides a whole new dimension for shadow play environments. Students can draw a whole scene on acetate with transparency pens or permanent markers. One scene can be quickly changed by dimming or covering the light on the screen and replacing the first acetate sheet with a new one. A blue theatrical gel will change day into night. The reddish-brown translucent plastic packing piece from a cookie box may become a brick wall. The puppets are able to move flat against the screen without interfering with the puppets.

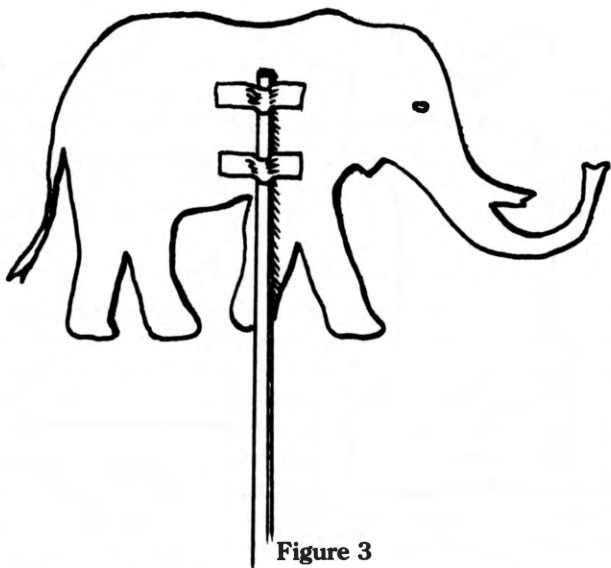


Figure 3

It is also possible to do an entire production using only the overhead projector. The puppets would then be miniatures in proportion to the actual size of the scenery drawn on the transparency and played directly on the projector, not the screen.

If a class decides to go beyond merely exploring shadows and to create a shadow-puppet production, the ideas for such a production can come from many sources. Material that has some action in it must be selected so that the puppets have something to do and all is not dependent on the spoken word. The puppets may interpret a piece of music as they move. A favorite nursery rhyme or poem also has possibilities. Students may work in groups to act out a fairy tale or folk tale. One may also give a book report by performing a scene from a favorite story. Here are some additional ideas for using the puppets.

1. Review number facts
2. Act out story problems in math
3. Demonstrate how to multiply and divide sets
4. Create shadow puppets for punctuation marks to help in reading
5. Use shadow puppets to introduce, review, and/or demonstrate ideas presented in science units (i.e., animal identification, animal habitats, food chains, water cycle, weather, plant and growth, etc.)

Summary

The use of SHADOW puppets in the classroom can enLIGHTen teachers and students in many ways throughout the whole school year. The construction is easily done and the instructional and learning rewards are great. The use of puppets in the classroom is limited only by the teachers' and students' creativity. Educators who try this innovative way to teach some science concepts should experience the joy of exciting teaching and student learning.