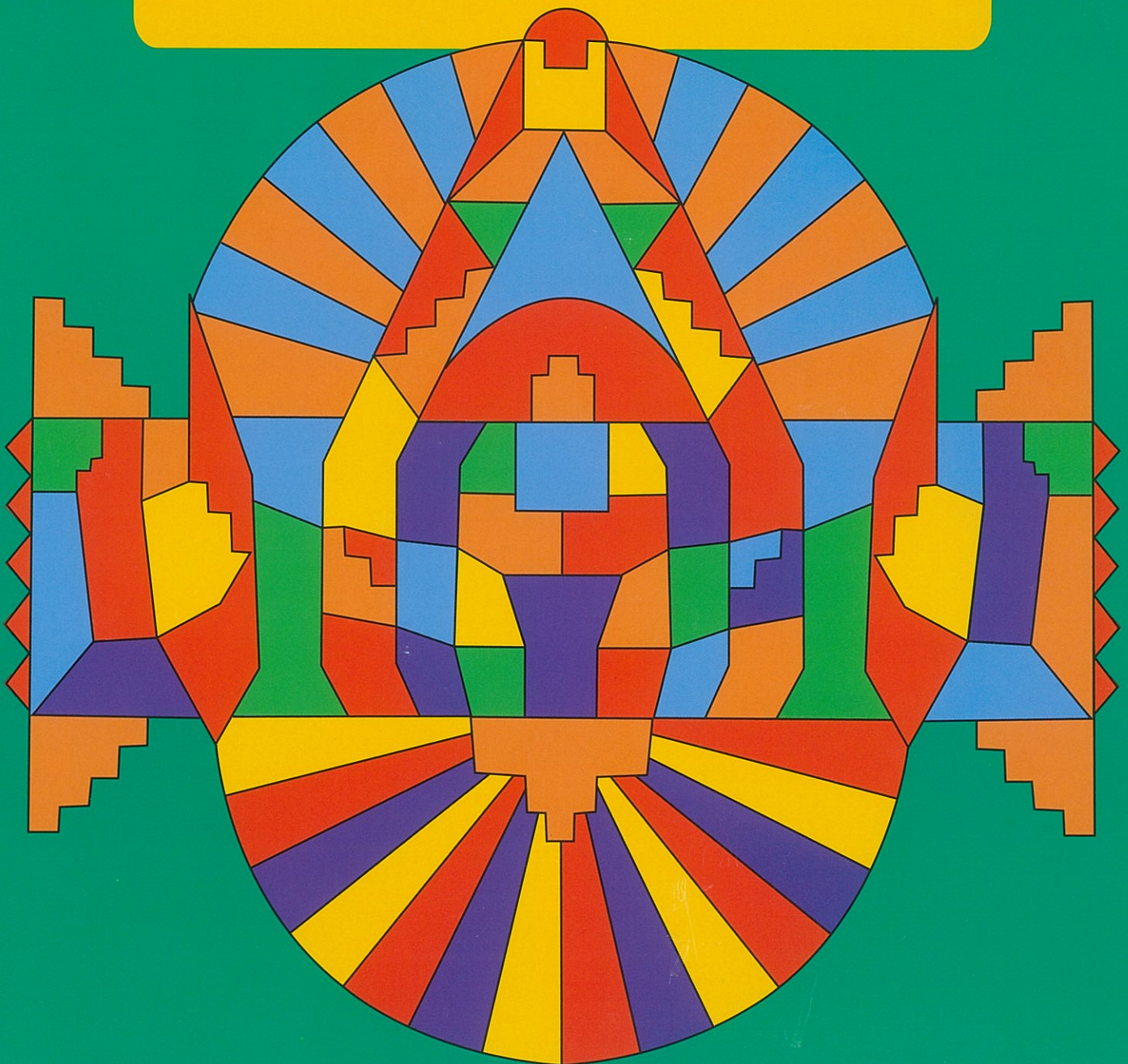




Color Analyzers

Investigating Light and Color

GEMS® Teacher's Guide for Grades 5-8



WHAT YOU NEED FOR THE WHOLE UNIT

The quantities below are based on a class size of 32 students. You may, of course, require different amounts for smaller or larger classes. This list gives you a concise “shopping list” for the entire unit. Please refer to the “What You Need” and “Getting Ready” sections for each individual activity, which contain more specific information about the materials needed for the class and for each team of students.

Options for gathering your classroom materials for this unit:

- Some teachers prefer to gather materials needed to teach a GEMS unit themselves at local stores.
- Others prefer to purchase a ready-made GEMS Kit®.

For more information on GEMS Kits, visit the web at lhsgems.org/gemskits.html or contact GEMS.

Nonconsumables

- a class set of color analyzers, made from the following items (see “Getting Ready” #1 on page 8):
 - about 35 3" x 5" index cards
 - 1 6" x 6" sheet of red filter gel
 - 1 6" x 6" sheet of green filter gel
 - 1 6" x 6" sheet of diffraction grating material
 - (optional) 1 sheet (about 8 1/2" x 11") of clear acetate to cover the diffraction grating
- 1 additional 6" x 6" sheet of diffraction grating material—this sheet is left whole to cover the lens at the top of the overhead projector (see “Getting Ready” #2 on page 38)
- 1 lightbulb (60–100 watts)
- 1 lamp (without a shade)
- an extension cord, if necessary
- 2 or more other light sources such as fluorescent, neon bulbs, or sunlight (see “Getting Ready” #6 on page 10)
- the front cover of this guide
- the students’ writing assignment from Activity 1 (explaining their initial ideas about light and color)
- (optional) 1 pair of thin rubber or cotton gloves (for handling diffraction grating)

Consumables

- 32 copies of the **Color Analyzers: Light Through a Diffraction Grating** student sheet (page 18)
- 8 copies each of the five secret message student sheets (pages 31–35)

General Supplies

- 1 pair of scissors
- 1 roll of clear tape
- masking tape
- 6 large pieces of paper (for signs)
- 1 box of colored chalk or a large piece of paper and colored markers
- paper to help darken the classroom
- 8–16 sets of crayons, colored pencils, or felt-tipped markers with the following colors: red, orange, yellow, green, blue, purple
- many pieces of white unlined paper (scratch paper is fine)—on which students will write and on which both you* and the students will draw secret messages
- an overhead projector
- 2 file folders
- 1 piece each of red and green construction paper, each at least 3" square
- colored markers and a white board or crayons and a large piece of white paper
- (optional) 1 paper cutter
- (optional) 1 single-hole paper punch

*If you prefer to create your demonstration messages for Activity 2 on the overhead projector or on a whiteboard instead of paper, you'll need the appropriate colored markers.