

TRY THIS RETRO-REFLECTORS

Skills

- Performing, Observing, Evaluating

Purpose

- Students will use the laws of reflection to make a diagram of a ray of light in a retro-reflector.

Equipment and Materials (per group): ruler; protractor; piece of paper; pencil; two plane mirrors and a ray box (optional)

Student Safety

- If a ray box is used, remind students not to pull on the cord when they unplug the ray box; have them pull on the plug itself.

Notes

- A retro-reflector is an object that causes light to be directed back to its source. The principles of retro-reflection are applied in reflective clothing,

such as the safety strips on jogging shoes and other clothing designed to make the wearer visible to those driving automobiles at night. Cats' eyes seem to emit light due to retro-reflection that occurs because of the structure of the eye.

- Have students work in pairs for this activity.
- As students are working, walk through the class to make sure that their drawings are correct. If you notice errors in use of the laws of reflection, discuss with students their error and encourage them to erase and redraw.

Suggested Answers

- A. The ray that emerged was parallel to the incident ray but travelled in the opposite direction.
- B. The second trial produced the same result.
- C. A retro-reflector causes an incident ray to return in the direction from which it came.

Sample Diagrams

