

Light & Shadows – Transparent, Translucent & Opaque?

Transparent, translucent and opaque are terms used to describe how well an object allows light to pass through it. Opaque blocks light from passing through an object, translucent allows some light to pass through but it is hard or impossible to tell what you are looking at and transparent means light passes through it.



Materials:

- Coloured clear plastic items
- Pen & paper
- Construction Paper
- Window
- Flashlight
- Tissue
- Wax Paper
- Aluminum Foil

Procedure: (Remember to have your parent's permission and have them watch and help you.)

- Place materials on a window one a time.
- Observe the amount of light that passes through each item.
- Create a table listing your objects on the left column and across the top Transparent, Translucent and Opaque.
- Go through each object again and place or write them on your chart.
- Darken the room you are in and using your flashlight find as many things in the room that you can that would fit under each of the 3 categories.

What's Happening:

The more light that passes through an object, the more transparent it is. Conversely, no light passing through is opaque. Transparent material allows light to pass completely through it. This includes air, tap water, glass, and plastic wrap. If you look through something and you can see all of the light and colors on the other side, it is transparent. The molecules in a transparent material are less dense (not packed as closely together) than the molecules in translucent or opaque materials. Translucent materials allow a little light to pass through, but the color and shape is distorted. Translucent materials include tissue paper, wax paper, and most plastic lids on drinking cups. The molecules are not as dense as those in opaque materials but are less dense than the molecules in transparent materials. Opaque materials include construction paper, cardboard, and aluminum foil. Opaque materials do not allow any of the light pass through because the molecules are packed close together. The light is either reflected by the material or absorbed by it. If absorbed, the energy is converted into heat. See http://www.ehow.com/info_8467363_determines-whether-material-transparent-opaque.html for more information.

Extension:

What material made up most of the transparent items, translucent items and opaque items?

This activity is based on our Light & Shadows kit. The source for this lab was located by EDEL330 students Ms. S. Beattie and Ms. K. Biech in [Light and Shadows Grade 4 Edmonton Public Schools](#). Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom guest speaker or offer your business as a field trip location.

Lorne Cooper, Regional Executive Director

PRAXIS, "Making Science Fun". Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.