

Pringles Can Light Show

Description

Shine a light inside a Pringles can with the clear lid on to show how light bursts through a transparent object. Then use a marker to darken the top and repeat the experiment with this opaque object.

Instructions

1. Clean your Pringles can with a dry paper towel, then grab your flashlight, your child, and a permanent marker.
 2. Turn the flashlight on, drop it in the can with the light facing up and put the lid on.
 - Talk about what happens! Can you see the light? Introduce the word **transparent**.
 3. Take the flashlight out of the can, turn it off and set it aside for the next step.
 4. Take the lid and use the permanent marker to color it completely. There should be no gaps at all in the coverage.
 5. Repeat step two, turning the flashlight on, dropping it in the can with the light facing up and putting the lid on.
 - Talk about what happens now! Can you still see the light? Introduce the word **opaque**.
 6. Talk about what changes were made to block the light from view.
-

Materials Needed

- Empty Pringles can, with lid
- Permanent marker
- Small flashlight (it should be able to fit completely inside the can)

Why is this a great thing to do?

This quick experiment will teach your child about physics while they develop their understanding of cause and effect, learn how to conduct an analysis, as well as work on their language and fine motor skills.

Introduces children to physics.

Learning the concept of how light works gives your child an introduction to the domain of physics.

Develops their understanding of cause and effect.

Manipulating something to obtain different results in a way that is immediately noticed is an excellent study in cause and effect.

Practices testing hypotheses.

Even if your child isn't quite ready for all five steps of the scientific method, doing simple experiments can introduce them to the principles of making and testing hypotheses.

Builds language skills.

Learning the definition of new words and describing what they see as they experiment will develop language skills.

Enhances fine motor skills.

Holding and using a marker will build fine motor skills. Tools, such as a flashlight, can begin to be held by older children between their thumb and index finger to develop strength and control in their pincer grasp, the skill needed to wield a pencil.

Pringles Can Light Show

Make STEM Connections

Help your child develop a more in-depth understanding of how light can go through transparent objects, but not opaque objects. We can only see things if a light shines on them, or they emit their own light.

Scavenger hunt.

Search your house for transparent and opaque items! Start the search without a flashlight to test things and put them in two piles. Once you have a few objects in each pile, work together to check them with light to see if they do belong where your child thought they did. Now is a great time to introduce the word translucent and explore the idea of semi-transparency.

Make a Pringle's pinhole camera.

Use another Pringles can to create a simple [pinhole camera](#), which will allow your child to examine the way light bounces off objects to let us see them.

Next Generation Science Standards (NGSS) Correlation

1-PS4-3: Plan and conduct investigations to determine the effect when placing objects made with different materials in the path of a beam of light.

When your child places a flashlight in a Pringles can and covers the can with a clear (transparent) lid to observe the light, then covers the can with a darkened (opaque) lid, they are discovering the difference in the way that light transmits through two variables. This activity can be extended by going on a scavenger hunt through the house and setting a timer for five minutes to see how many transparent, translucent, and opaque items your child can find and list. Examples: wooden box (opaque), shower door (transparent glass), lampshade (translucent), sunglasses (dark lenses-translucent), coffee cup (opaque), sheer curtains (translucent), windowpane (transparent.)

1-PS1-1: Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

By observing different shades of lids for a Pringles can, your child is noting that light can be seen, muted, or absent depending on the lid's transparent, translucent, or opaque properties. This activity can be extended by using different shades of nail polish to show the difference in properties. Transparent (clear nail polish- allows light to pass through), opaque (dark nail polish- blocks light) and translucent (light color with a coat of paint that still allows some light to pass through.) The nail polish can also be applied to cling wrap placed over the top of a flashlight to observe how much light is visible after nail polish is applied.

Talking Tips

"What do you think will happen?"

"Do you think we'll be able to see the light through the can?"

"Do you think you'll still be able to see the light after we color the lid?"

"What new words did we learn today?"

Tips & Extensions

Don't let your child know what the outcome of this experiment will be. Encourage them to predict and describe what will happen themselves!

What are some other transparent things that, at times, we want to be opaque and sometimes want to be translucent? (For example, some windows have curtains.) Talk about it. What objects do we always want to be transparent, or opaque?