



## Recommended for Grades 2-5

Wisconsin Academic  
Standards for Science:  
C.4.6, D.4.1, D.4.3, D.4.8,  
G.4.1, G.4.5

Wisconsin Academic  
Standards for  
Social Studies:  
B.4.8

Program length:  
Approximately 40 minutes

Maximum of 30 students

Please be aware, the exhibit  
gallery is dark and contains  
flashing lights. We will try to  
accommodate any students who  
may not be able to enter the  
gallery because of sensitivity  
to flashing lights with other  
activities.

Contact  
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## It's a Gas! The Science of Neon

### Overview

The exhibit, Neon: Darkness Electrified, features about 30 vintage advertising signs from the collection of local neon artisan Jed Schleisner. These handcrafted signs present an opportunity to learn about everything from design to advertising to science.

In this program, students will have a chance to discover the science behind neon advertising signs, and why these signs were used so much in the mid-20th century. Students will spend about 20 minutes in an activity room learning what neon gas is and how electricity makes it glow. Students will be guided through basic, fun experiments, including using a plasma globe. Then in a 20 minute guided tour of the exhibit, students will observe the signs and discuss them using what they learned in the activity room.

### Student Learning Objectives

1. Students will learn about neon gas as an element, and gas as a state of matter.
2. Students will learn why neon gas glows when electricity is sent through it.
3. Students will learn how neon and other gases create the colors used in neon signs.
4. Students will watch a video about how neon signs are created by artisans.
5. Students will gather observable data about the exhibit's signs and, with docent help, present it in a chart format.

### Program Vocabulary

**Neon:** A colorless and odorless noble gas found in nature. When electrified in a tube, it gives off a red-orange light. Neon gas is used to create the light in neon signs.

**Noble Gas:** Noble (or rare) gases are inert. This means they do not react, or combine, with other chemical elements. The noble gases include helium, neon, argon, krypton, xenon, and radon.

**Phosphor:** A metallic powder that glows when ultraviolet light is shined on it. Some glass tubes used in neon signs are coated with phosphor on the inside to give off different colors.

**Ultraviolet (UV) light:** UV light is an invisible part of the spectrum of light. This light is what causes sunburn, but it also makes certain substances, such as phosphor, glow.

**Plasma:** Plasma is called the "fourth state of matter." Plasma forms when a gas, like neon, becomes electrically charged (or ionized).

**Electrical conductor:** A substance or material that allows electricity to flow through it, such as wire or neon gas.