STATEWIDE STAR PARTY

UV Bead Bracelet

FACILITATOR GUIDE

ncscifest.org/starparty

OBJECTIVE

Make a bracelet while learning about ultraviolet light

SUGGESTED AGE RANGE

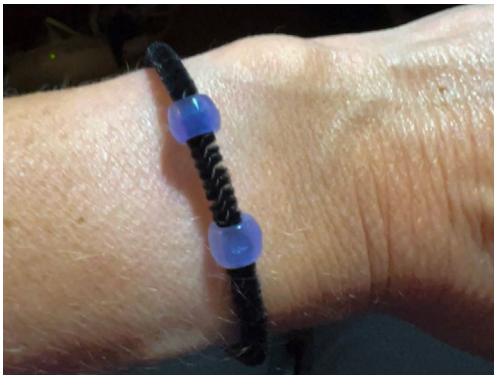
Ages 5 and up

ACTIVITY DURATION

5-10 minutes

MATERIALS

- Pipe cleaners or chenille stems
- UV-sensitive beads
- UV flashlight
- UV Bead Bracelet instruction sheet
- Optional: Provide materials such as water, sunscreen, sunglasses, fabric, etc., for your participants to experiment with.



SETTING

An outdoor setting with both sun and shade available is ideal. The UV flashlight can be used to activate the beads if no sunlight is available.

PREPARATION

Arrange the materials and instruction sheet on a table in an area not exposed to direct sunlight, so that the beads will be white or very pale when you start the activity. You may wish to store the beads in an opaque container that will block any exposure to sunlight. Make a sample UV bead bracelet to show to participants. Consider limiting the number of beads that you'll allow each person to use.

PROCEDURE

1. Ask your participants if they'd like to make a bracelet. Explain that the beads they'll use have a special chemical that changes color when exposed to ultraviolet (UV) light.
2. Invite your participants to string a few UV beads onto a pipe cleaner, and wrap the stem into a ring to make a bracelet. Assist participants as needed.
3. Depending on the age, interest, and prior knowledge of your participants, you might engage them with questions about the electromagnetic spectrum, such as "Do you know there are more forms of light than what we can see with our eyes?"

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SAFETY WARNINGS

- Supervise young children. Beads pose a choking hazard, and the ends of pipe cleaners can be sharp.
- Avoid looking directly at the UV bulbs.

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FACILITATOR GUIDE, CONT'D

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MORE RESOURCES

For an introduction to the electromagnetic spectrum, see https://science.nasa.gov/ems/

4. Have participants expose their bead bracelet to a source of UV light, such as the Sun or the UV flashlight. What do they observe? (The beads should change color.)
5. Encourage participants to experiment with trying to block UV light. Have them predict what will happen to the beads if they put them in a shady spot or under a hat, clothing, sunglasses, or regular eyeglasses. What do they think will happen to the beads if the only source of lighting is fluorescent or incandescent lighting? You might provide them with some materials to do their testing with, such as fabric or a clear plastic cup of water. What do they observe?

BACKGROUND

Sunlight and UV: The Sun produces light that's visible to us, and light that's invisible to us, including ultraviolet (UV) light. UV light can be dangerous—it can burn our skin, damage our eyes, and destroy our cells. Although Earth's atmosphere blocks most UV radiation, some still gets through. There are ways we can detect UV and that we can protect ourselves from it.

UV-sensitive beads: The beads contain a special chemical (a photochromic dye) that makes them turn colors when exposed to UV light from the Sun or another source such as a UV ("black") light. The darker the color of the beads, the more UV light they are detecting. When no longer exposed to UV, the beads slowly return to white. This process can be repeated many times.

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