



4-H Club Sample Agenda - Rainbows!

Agenda Outline

WELCOME

As people arrive, have them create their own way of remembering the order of colors in a rainbow.



MEETING PURPOSE

Brainstorm educational activity ideas and learn about rainbows!

BUSINESS (5-10 MINUTES)

Remember if too much business is planned, members might not come back! Below is just a sample. See other [optional business items](#) on our Leading a 4-H Club web page.

- [4-H Pledge](#)
- Roll Call: From the list we made as we were walking in, what do you use most often?
- Recap what we did last time
- Brainstorm ideas for future educational activities
- Celebrate any member accomplishments!

EDUCATIONAL ACTIVITY - [Rainbows!](#) (30 MINUTES)

[RECREATIONAL ACTIVITY](#) (10-15 MINUTES)

[REFLECTION](#) (5 minutes)

- How did we do?
- How did we live out the 4-H Pledge today?



Educational Activity - Rainbows!

4-H project area

Environment and Earth Science

What it is

Learn how rainbows form by creating some of your own!

Why it matters

Rainbows help us see the beautiful complexity of light, which is an important part of everyday life. Understanding light influences how we take care of plants, how to take better photographs, how to make eye corrections, and much more!



Getting started

Time: 30 minutes

Materials:

- Means of showing this video (3 minutes) from SciShow Kids: <https://www.youtube.com/watch?v=CmgZkYTnCNE>
- Clear glass cups - 1 for every 2 to 3 youth
- Blank paper - 1 for every 2 to 3 youth
- Small, shallow dishes such as mini pie plates - 1 per person
- Small pieces of black construction paper (cut to fit the shallow dishes) - 1 per person
- A couple bottles of water (enough for each pie plate)
- Clear nail polish - each person will use only 1 drop, so more than one bottle isn't needed, but it will speed up the process of delivering the drops
- Optional: Safety pins (1 per person), scissors, tape

Prep for meeting in person:

- Meet with youth leaders ahead of time to prepare them to assist you in guiding their peers through the activities

Prep for meeting virtually:

- Set up the Zoom meeting ahead of time and email the link to the members.
- Email reminders about the virtual meeting. Include the Zoom link and materials list.



Background

Light is a form of energy. We see things when light is reflected off a surface and into our eyes. White light contains all the colors of the spectrum that we can see—red, orange, yellow, green, blue, indigo, and violet. But visible light is only part of all the light that is out there. The complete electromagnetic spectrum contains many different types of energy, each with its own wavelength. When light energy hits an object, it is either absorbed, reflected, refracted, or a combination. When it's reflected, it bounces off the surface at the same angle it came in. Light can also be refracted, meaning it hits the surface and bends, leaving the surface at a different angle. This happens when light is traveling from one medium to another, such as from air into water, because the light moves at different speeds through different materials. The light that comes from the sun looks white to our eyes, but it's actually made up of many different light waves mixed together that each show us a different color. Rainbows are formed when light hits the tiny droplets of water in the air and gets refracted, or split, into the colors of the rainbow.

How to do it

1. Have youth share what they came up with in the welcome activity for how to remember the order of colors in a rainbow. What are rainbows? How do they form? See what they know and then share this video (3 min) from SciShow Kids: <https://www.youtube.com/watch?v=CmgZkYTnCNE>
2. Have youth get into groups of 2-3. Pass out glasses and paper to try the cup activity explained in the video.
3. Talk about it!
 - What angle did you have to hold your cup to see a rainbow? How many colors did you see?
 - Where else do you see rainbows? (bubbles, oil on the road, etc)
4. The rainbows you see on bubbles are like the little droplets of water in the air that produce a big rainbow in the sky. As the light hits the surface it gets refracted, or split, into the colors of the rainbow. We're going to capture an example of this using nail polish!
5. Pass out the pieces of construction paper, scissors, and pie plates and have youth label their paper. They may also cut them to a different shape if they want. Then have them pass around the bottles of water to fill up their pie plates.
6. Explain the next few steps before doing.
 - Youth will place your piece of construction paper into the water.
 - Place one drop of nail polish onto the surface of each person's plate of water.
 - Once they have their drop, have them take note of what they see and then quickly pull up their piece of construction paper to the surface of the water so that it soaks up the nail polish.
7. Talk about it!
 - What did you notice about the nail polish once it hit the water?



- How is this like a rainbow that you see in the sky?
8. After the recreation time, they can tape on a safety pin if they wish.

Recreation Ideas

Bubble pop: Have jars of bubble juice available and have youth blow bubbles and race to pop them!

Rainbow tag: Everyone stands on one side of the playing area and takes note of the colors they have on.. "It" calls out a color or two. Anyone wearing those colors run to the other side of the playing area without getting tagged. If "it" says "rainbow," everyone runs. First player tagged is the new "it."

Additional Resources

Learn more about light: <https://www.explainthatstuff.com/light.html>

Light waves, visible and invisible by TED Ed:

<https://www.youtube.com/watch?v=OoPawPSdk28>

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