



Space Science Expert - Senior

1. Uncover the stuff you're made of

An infographic shares a lot of information in an easy-to-digest image, as you can see from the graphic below. Make your own infographic sharing the amount of “star stuff” in your body. The chemical makeup of our bodies can be divided into four main elements: Hydrogen, Oxygen, Carbon, and Nitrogen. The atomic percentage of these elements in our bodies are: 62% Hydrogen, 24% Oxygen, 12% Carbon, and 1.1% Nitrogen. Calcium, Phosphorus, Potassium, Sulfur, Sodium, and Chlorine make up about .6% of the atoms in our body. There is an additional .3% of our atomic make-up that includes a variety of trace elements-not one of which accounts for a significant percentage. All of these elements are found in stars, so we are all literally made of star stuff. Draw an outline of yourself or choose a different shape to represent you -something new and interesting that speaks to your audience. Once you've done that, calculate, or estimate, how much space each element should take up and divide your shape accordingly. Are you surprised by any of these proportions?



2. Explore the brilliance of the stars

Stars have life cycles, just like we do. Check out this link to see what stars look like in various stages of their lives through photographs: <https://my.girlscouts.org/content/dam/girlscouts-vtk2019/local/aid/meetings/S19NASA2/Senior%20Mtg%20-%20Lifecycle%20of%20a%20Star.pdf> Then, draw out the lifecycle of a star and the lifecycle of a human at each of the stages used in the website from Step 2. Do you see any similarities between our lifecycle and that of a star?

3. Discover telescopes as light collectors

Telescopes allow for pictures of far-away objects to be captured, but only with so much definition. When we zoom way into these photos, they are made of pixels, or tiny squares of color. This form of imaging is also captured in paintings using the technique of Pointillism, as seen in the photo below. Paint or color an image using only squares or dots of color that, when you look at it from afar, forms a whole image.



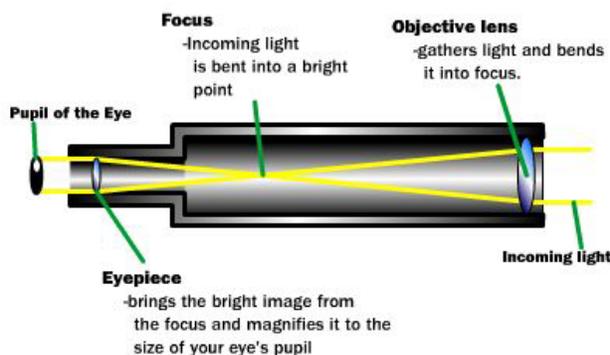
4. Find the light in the darkness

Visit <https://science.nasa.gov/citizenscience> to learn about various collaborations between scientists and citizens to gather research and help solve global issues. Pick a topic that inspires you or piques your interest and learn about what the project is, what issue it addresses, what research is being conducted, and how you, a citizen scientist, can join their cause.

5. Share your knowledge

Create a poster, digital infographic, short video, or presentation illustrating the different parts of a telescope and how each part functions. Use the image below to research each part and learn about how these parts work together. Then, share your creation with your family and friends or on social media to get the public informed about the tools that capture our universe.

Refractor



In order to complete this badge, send a photo of your creations from Step 5 to

ssmith@girlscoutsoaz.org

Make sure to include your name in the email, and whether we can share your photo on social media!

You can purchase Badges at our online store <https://www.girlscoutshop.com/SOUTHERN-ARIZONACOUNCIL>