Ear Trumpets

Sections

Joey Scouts | Cub Scouts | Scouts | Venturer Scouts | Rover Scouts

Scouts VICTORIA

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Challenge Areas

COMMUNITY | CREATIVE | OUTDOOR | PERSONAL GROWTH

Scout Method Elements

COMMUNITY INVOLVEMENT | LEARNING BY DOING | NATURE AND THE OUTDOORS | PROMISE AND LAW | PERSONAL PROGRESSION | PATROL SYSTEM

SYMBOLIC FRAMEWORK | YOUTH LEADING, ADULTS SUPPORTING

SPICES Growth Areas

CHARACTER | EMOTIONAL | INTELLECTUAL | PHYSICAL | SOCIAL | SPIRITUAL

The Adventure

Learn about the hearing aids of the past and test your engineering skills to design the best hearing trumpet as a patrol.

Plan

1. Learn about sound and how it travels. Sound travels in waves, you could use a slinky to help visualise how sound waves move.
2. Investigate the structure of the human ear. What parts can you see? What parts can't you see? What does each part of the ear do? Try labelling a picture of an ear, or for a challenge, see if your patrol can come up with a creative model of the ear using items in your scout hall.
3. Investigate ears in nature. Are all ears the same? Why are human ears different from dog ears? Why does the human ear look the way it does?
4. Investigate ear trumpets. What do they look like? What do they do? Why did people use them?
5. Collect the materials required for the activity. Communicate with your Patrol and leaders if you need to bring items from home. To make a basic ear trumpet you will need some construction paper and sticky tape.
6. Read the safety requirements and discuss with you leaders/adults supervisors what supervision and safety requirements might be needed.

Do

1. Build a basic ear trumpet by making a cone with construction paper. Roll the paper into a cone and use sticky tape to hold it in place. Your cone should have a large hole at one end, and a small hole at the other.
2. Test your basic ear trumpet using some very quiet music. Your music should be faint when listening without your ear trumpet. Hold your ear trumpet up to your ear and observe how it affects the sound. Does it make the music louder or quieter? Should you point the large hole or the small hole towards the sound source? What size holes work best?
3. As a Patrol, engineer the best ear trumpet you can. Work through the engineering process: ask, research, imagine, plan, create, test and improve. Remember: the goal is to build an ear trumpet that helps make sounds louder. Think about what resources you could use, and what materials will work best. How can you make your ear trumpet both functional and usable?
4. Remember, in STEM we have to be creative! Think outside the box when designing your ear trumpet to come up with the best solution. Younger sections may think about decorating their ear trumpets. For older sections, when decorating your ear trumpets remember that their purpose is to function as a hearing aid. Consider if the appearance of your ear trumpet reflects its purpose.
5. Come up with a method for testing your ear trumpets. Do you think you should test the same sounds or different sounds as you build your trumpet?
6. Share your ear trumpet designs as a Unit. Consider the differences between your ear trumpets. Think about what worked well and what still needs to be improved.

Review

1. What have you learnt about sound during this activity? How do our ears work to hear sound?
2. Hearing aids are the modern day version of an ear trumpet. What type of things would engineers need to think about when they design hearing aids?
3. What are ways your Unit could learn more about deafness and the deaf community in Australia? Plan an activity that will allow your unit to learn more about deafness or being hard of hearing. Perhaps you could take an Auslan course, explore what accessibility means and how your community can improve, or invite a special guest to share with you their experiences.
4. If you were to do this activity again, what would you do the same? What would you do differently? What did you enjoy most about this activity?

Safety

- The safety hazards and protection needed will be highly dependent on the resources you choose to use during this challenge card to build your ear trumpet. For example, using scissors will introduce a sharps hazard. Talk to your leaders and patrol about what safety issues might arise during this activity and systems or supervision you need to set up in order to keep safe.
- Never put any objects into your ears, as you may cause damage. Remember the rule, never put anything smaller than your elbow in your ear!

Variations

- A larger program can be built using other 'How Do We Hear' or sound wave Challenge Cards.
- For younger sections you could expand this challenge card by exploring the shapes of animal ears further. Build different animal ears and explore how they help you hear. Ask questions about why animal ears are shaped the way they are, and

why animal ears are different from each other. Consider other benefits to ear shape outside hearing e.g. why are elephant ears big, floppy and thin?

- For older sections you could try to modernise your ear trumpet design. Modern hearing aids use microphones and other technologies to amplify sounds. Could you redesign your ear trumpet to include a basic microphone?