# Finding Saliens on Sonoplanet: Learning Sonification as Technology for Inclusion and Access to Information

Phia Damsma, Sonokids Australia

What is sonification?

Sonification is the use of non-speech audio to represent information or data.   
  
We all know examples of sonification. The Geiger counter (invented in 1908!) that indicates the level of radiation with a speed rate of clicks. The notifications you hear when you send an email or receive a text message. A truck’s beep beeping when reversing. Your washing machine playing a happy tune which notifies you of the end of its cycle - even when you’re in another room, that’s a type of sonification too.

But these past years have also seen an explosive growth in the number of sonification projects around the world in scientific fields such as astronomy, biology and medical science. Sonification is applied in navigation apps, and in Arts and Music. Sonification is a way to ‘map’ information or data to sounds, using characteristics and qualities of sound, such as pitch, volume, instruments, scale, tempo etc.   
  
Data sonification provides a non-visual way to analyse and interpret information. Importantly, sonification can provide alternative access to information for people with print disabilities.

## New app to explore sonification

You don’t have to be a scientist to have an interest in learning sonification. Attentive listening, analytical thinking and other sonification skills can benefit a lot of other areas of learning as well.  
  
In April 2022, Sonokids released ‘CosmoBally on Sonoplanet’: a new educational game app for mobile touch devices. This app makes it a fun experience to dive into the world of sonification, against the setting of Sonoplanet where everything is sonified. It includes four audio games, with each another sonification concept (read below).

This app is available for free from Apple’s AppStore and Google Play. It is recommended for use on iPad and Android mobile tablets, simply because of their larger screen size to work with. But it also works on iPhone and Android smart phones.

Information about CosmoBally on Sonoplanet can be found on <https://www.sonoplanet.com>   
  
Download CosmoBally on Sonoplanet for iOS mobile devices from the AppStore:

<https://apps.apple.com/app/id1585559523>  
  
Download CosmoBally on Sonoplanet for Android tablets from Google Play:

<https://play.google.com/store/apps/details?id=com.sonoplanet.games>

Please give your feedback

Sonification can provide alternative access to science, technology, engineering and mathematics (STEM), generally areas in education and employment where students who are blind or vision impaired may experience barriers of access because of the images, graphs, and stats.

The Sonoplanet app project is supported by a grant from South Pacific Educators in Vision Impairment (SPEVI Inc.).   
It aims to:

* Raise awareness about (accessible) sonification
* Build capacity in young students to develop a fundamental understanding of sonification through the development of ‘emergent sonification literacy’ (term coined by Sonokids)
* Provide insights into the prerequisites and capabilities of young students in using this technology
* Provide a proof of concept for accessible, innovative, gamified applications of sonification for students who are blind or vision impaired
* Contribute to students’ (future) use of sonification and their access to STEM.

The app does not track or collect any user data. Please help this project by completing a short, anonymous survey on www.sonoplanet.com after working with the app. Please note that you don’t have to be a student, or work with a student, to explore sonification with this app and provide your feedback in the survey.

Sonokids sincerely thanks SPEVI for their support, as well as all the students, parents, teachers, and other professionals who were involved with the app’s development.

## Background Ballyland

CosmoBally on Sonoplanet is the latest app in Sonokids’ award-winning ‘Ballyland™’ suite of educational software and game apps supporting the development of technology skills by students who are blind or vision impaired. More information can be found on www.sonokids.org.

CosmoBally is the astronaut from Ballyland. Sonokids previously released ‘Ballyland CosmoBally in Space’, an app introducing the planets in the solar system (also free from the AppStore and Google Play).

## Information about the sonification in the app

During Phia’s presentation for the 2021 SPEVI and 2021 Round Table Conferences, attending delegates took part in a short, online test. After just 1 minute of introduction, the wide majority could perfectly identify a shape through sonification. Sonokids has used the same sonification algorithm, the way the data is mapped to sound, in this app.

Like all Ballyland apps, CosmoBally on Sonoplanet uses self-voicing in the games. You can turn on self-voicing menus as well. Then you can navigate the menus the same way as when using your device’s built-in screen reader. The app doesn’t offer many visuals and challenges the users’ listening skills with the audio games.

Please turn on your volume to play this app.

## The games in the app

Gamification is a great way to learn new concepts. When opening the CosmoBally on Sonoplanet app, you board a Spaceflight to Sonoplanet. CosmoBally recently discovered this planet where everything is sonified.

From the Main Menu you have access to four audio games. Each of these games offers a different concept of sonification to explore. Listen to the ‘Setting of the Scene’ and the Briefing, and read the Instructions for each game.

### Game 1: Hearing Shapes.

This game is designed as a Quiz in two parts.   
In Part 1 you are asked to compare two sonified shapes. Did they sound the same or were they different?  
Part 2 plays one sonified shape at a time. Is the suggested answer right or wrong?

### Game 2: Explore with the Scooper

In Game 2 there are sounds of objects to analyse as well as the shape. You will control the Scooper, a special vehicle to explore Sonoplanet. The Scooper is parked at Base Station and from there it follows a fixed route in the shape of a rectangle. Dragging your finger over the touch screen, using the sonification as a guide, you need to keep the Scooper on track and scoop up anything that you come across. Back at Base Station, CosmoBally will inspect what you’ve found. And who knows what clues you will discover about this special planet!

### Game 3. Sonified drawing.

Game 3 is designed as a Sonification MakerSpace. You can draw a figure, or dots and lines, and trace shapes to play the sonification. What does your sonified letter sound like?

### Game 4. Find the Saliens.

Now you know where this presentation’s title originates.

This game uses a grid. The aim is to locate ‘Saliens’ (resident aliens on Sonoplanet) through listening only, by analysing and combining the information from sets of two sonifications. Can you find the Saliens?!

## Contact

For questions about this app and the sonification concepts, please contact Sonokids via email: [support@sonokids.org](mailto:support@sonokids.org)

Please complete the user survey on sonoplanet.com.

Your feedback will help us the best ways to provide access to information through sonification. Thank you!