STREAMING SCIENCE
Podcast Startup Guide

This Streaming Science guide is for educators in school, after school, or extracurricular programs who are interested in starting their own podcast or teaching their students how to produce a podcast as part of a class project or assignment.

Engage Your Students in Podcasting

The popularity of podcasts continues to grow and provides an opportunity as an emerging platform to distribute information. This audio medium lends itself to learning through a focused dissemination of information to audiences. Its simplicity removes many barriers to entry found in other forms of electronic communication. Educators can use podcasts as a medium for students of all ages to learn about topics of science.

Learning more about a topic - Podcasts can be very focused on a particular topic, exploring details that other forms of electronic dissemination may overlook. Assigning podcast listening to students can supplement traditional learning material. Use search engines to find podcasts that explore a topic for your students. Just be sure to listen to the podcast yourself first to make sure it is appropriate. You can assign students to listen to an episode(s) and then write about what they learned as it pertains to classroom instruction and learning materials.

Ideas/tips for students to produce - Learning by teaching others can be an effective educational exercise. By embracing podcasting as an emerging educational platform, your students may benefit by teaching others through this audio medium. Producing a podcast is simple once you become acquainted with the fundamental structure and essential equipment needed.

Plan The Podcast

Like a sports team without a playbook, a podcast without an identity is less likely to communicate effectively. Before hitting the record button, consider identifying the following fundamentals of podcast structure.

Purpose - What is the driving goal(s) of the podcast? Is your topic broad or very specific? Clearly identifying the purpose behind the podcast will help clarify the following organizational structure.

Audience - It is beneficial to identify what demographic(s) are most likely to listen to your podcast . Your tone and language may be very different based on your target audience's age group.

Title - Much like a movie or book, your podcast's title should be unique and represent the identity and content of your podcast to catch the attention of those who may discover your podcast. A good title also helps the "shareability" of a podcast. Something nearly intangible, the shareability factor will help grow your audience.

Duration - How long will your podcast episodes typically be? Bite-sized podcasts of 15 minutes may be useful when working with students. Many other podcasts range between 30 to 45 minutes, while others may adopt a longer format.

Schedule - How often will you release your episodes? A consistent release schedule will help your audience look forward to each upcoming episode and helps keep you accountable with your new investment in equipment.

Hosting style - An educator-hosted podcast is likely to provide the most structure to the podcast, whereas guiding students to host the podcast themselves may create additional learning opportunities and team building if hosting responsibilities rotate.

Segments - While some podcast formats stick to one continuous form of storytelling, others separate content into 10- to 15-minute sections (think different talk show sections) to keep listeners' attention.

Interaction - Allowing listeners to contribute comments and questions via email/social media/call-in can provide additional segments and depth to your podcast's structure.

Get Inspired!
We recommend listening to other podcasts to draw inspiration from and even for producing your own. Be sure to take notes on the structural considerations discussed above. Here are some examples of podcasts in the world of education to get you started:

Streaming Science
But Why: A Podcast for Curious Kids
Wow In The World
Chalkboard Chat

Equipment: Start Simple!

You can start a great sounding podcast on a small budget. You should start small and gradually scale your equipment as needed. You can begin podcast production with as little as $200 to fund what is essential for podcasting. Check the "What is Needed to Start a Podcast" list below. However, if you have a larger budget, take a look at the "What You May Want When Starting a Podcast" list further in this guide to get a jump start on some equipment upgrades.

What Is Needed To Start A Podcast:
Estimated budget of less than $200

USB-connection microphone - This common connection type allows you to plug straight into a computer to record and achieve clear audio, without the need for an audio interface, such as plugging into an audio mixer or recorder. These dedicated microphones will produce a much better sound quality than the one built into your computer or smartphone earbuds. There are hundreds of good USB microphones to choose from. Some of these options are attached to your body as headset microphones or clipped to clothing such as lavalier microphones. Other models are desktop microphones that usually include a small tripod to place on a desk while recording. If your computer does not have an onboard USB-A input, devices called hubs allow this capability and often include other useful input types. Technology is ever evolving, and it is likely that we will see microphones with USB-C connectors in the near future to follow current trends in computers and tablets.

Headphones to monitor sound - Since the podcast is an audio product, monitoring your sound is key to creating a clear recording with audio levels that aren't too quiet or loud. Common smartphone headphones will serve this purpose but dedicated over-the-ear headphones are preferred.

Recording and editing - In order to create podcast episodes from your computer, you will need a recording and editing tool. Once your recording session is complete, you will want to be sure listen to your audio file and identify any changes to be made. No one is perfect, and it is likely you'll want to edit out dead air in the recording or remove mistakes. Online services such as Anchor or Riverside.FM allow you to record and make simple edits within an internet browser. This is a great option when first beginning to produce podcasts.
Here are a few popular options for software to both record and edit your audio recording that provide more features than online services:

- Audacity is packed with features but is a free software option for PC systems.
- Garageband is another free option that comes preinstalled with many Apple computers, laptops, and tablets. Like Audacity, Garageband is full of powerful features to craft your audio. The user interface is refined in a way to appeal to podcasters and musicians for a home recording studio solution.
- Audition is an advanced If your organization already has an Adobe subscription, you may be able to utilize Adobe to edit your podcast.
- Alitu is a simple editing solution specifically catered for podcasts, with a short learning curve.

Recordings from Zoom - Zoom interviews can be recorded for podcasting and will give you files that can be used in editing tools. To record a zoom call, click the record button on the toolbar at the bottom of the Zoom window. Then click 'Record on this Computer' to start recording audio and video of your call. Once you're finished, click the stop button in the same location. At this point you may continue to speak with your guest without the audio being recorded. Once you

choose to end your meeting, Zoom will begin to save files from the call to your computer. The m4a audio file is the one you will use to in your editing tool to create your podcast episode.

A note about tablets: The tablet you may already have on hand can be utilized to record your podcast. Depending on your device's available connections, adapters may allow compatibility with USB-connection microphones. First, identify your tablet's input connections such as Apple's Lightning or USB-C and Micro-USB found on Android devices. The adapter needed will link your input connection to USB-A female input for your microphone.

Examples of free, tablet-friendly recording software:
- Voice Memos: Using your device's built-in recording app can help you get recording immediately with a simple start-stop recording interface.
- TwistedWave: Works with iPhone/iPad as an app or with other devices as a browser-based audio editor.
- Anchor: This application works with iPhone, iPad, and Android devices. This option includes built-in uploading, recording, and editing tools to help you get started quickly.

Hosting and Streaming Services

Where will your audience listen to your podcast from? There are many options to choose from, but we recommend at least covering the most popular listening platforms first (iTunes, Spotify, Google). In order to upload to the most popular platforms, you'll need to select a podcast host. A podcast host functions as the middleman between your listener's respective device and your podcast episodes. When you go to Apple Podcasts and choose to listen to the latest Streaming Science Podcast episode, Apple Podcasts actually pulls the episode data from Streaming Science's podcast host (Soundcloud).

Podcast hosts compete with each other by offering different features beyond just hosting your podcast episodes. Some may include a scheduling system to release your episodes at a certain date and time, analytic tools to understand your audience's listening behaviors or demographics, and more. Here are some examples of podcast hosting that can be found:

Free Podcast Hosting – Anchor, Spreaker (free plan), Podbean, Soundcloud
Paid Services- Buzzsprout, Captivate, Transistor, Simplecast

What You May Want When Starting a Podcast:

Estimated budget of less than $500

Audio interface - Commonly referred to as mixers or field recorders, this piece of equipment allows you to expand your podcast for multiple guests recorded at one time. Audio connections tend to favor XLR connections (see next paragraph) to improve audio quality, rather than immediately accessible digital USB connections. Each audio device's volume can be monitored and adjusted to create an even audio level throughout and depending on the model, may feature other tools to help shape qualities of the incoming audio. Much like the other equipment listed in this guide, audio interfaces come in many makes, models, and variations. Field recorders are smaller-sized versions of mixers that add portability by recording on memory cards and operating on battery power, eliminating the need for a computer to record audio.

XLR-connected microphones - This connection is the gold standard for audio and, because of this, XLR is often the only input available on the audio interfaces listed above. Although not necessary to create a podcast, XLR-connected microphones provide incredible quality for your listeners.

Music - Having music as an intro, outro, and transition between sections in your podcast can increase the perceived quality of your podcast. Following are some suggestions for music sources.

- Paid plans such as [Audio Blocks](#) or [Soundstripe](#) give a wide range of music and sound effect resources for a monthly or annual fee.
- [FMA](#) is a free resource for music with attribution required. This means each song has a specified way it must be used and may require crediting the artist.
- [Pixabay](#) is a free music resource with no attribution necessary.

Connecting With Guests

If you don't have the right equipment to handle multiple guests or they are unable to record with you physically, here are some suggestions for creating the best audio through cellular or internet for your podcast.

- [Zoom](#) provides call-in numbers so both audio and video interviews can be conducted and recorded.
- If your guest is calling in on their phone, consider using [Anchor's call over internet tool](#) for improved audio quality with call-in guests. The recognizable call quality of a cell phone can fatigue podcast listeners. A simple link can be texted to your guest and they do not need to have the app in order to participate. Your high-quality interview is recorded and provided to you after a brief moment for processing. From there, hop in your editing software to drop in your new interview segment.

- Testing your equipment and processes BEFORE a guest comes on is important, especially if you are new to producing podcasts. Even as you progress and get more comfortable, testing new equipment ahead of time is strongly recommended.

Growing Your Podcast Audience

Although you may wish to simply use your podcast as an educational exercise, expanding your audience can encourage consistent recording/publishing and potentially create new opportunities for the scope of your educational efforts.

Use your networks - Tapping into your local community is likely to yield loyal listeners by utilizing existing school mailing lists for parents, donors, and partners to promote your podcast.

Subscriptions - It is always a good idea to remind listeners to subscribe to your podcast on whichever listening platform they may be tuning in from. This helps increase the chances they will continue listening to your future episodes. Subscriptions also help drive your podcast higher on the listener charts on respective listening platforms. This will help you reach new listeners as your podcast rises in popularity.

Listener reviews - By encouraging listeners to write reviews of your podcast on their respective listening platforms, you will receive valuable feedback for future episodes. Like promoting subscriptions, listener reviews can help your podcast rank higher on listening charts.

Podcast logo - A logo helps your podcast's recognition just like the front cover artwork of a book or logo of a company. To start off, a school logo may suffice but eventually you might consider designing a unique logo that better represents your podcast.