Art of the Airwaves

Overview:

Students explore how radios work and why California helped launch broadcasting. After a hands-on wave demo, teams build and tune a working FM radio with a Snap Circuits kit to model the antenna, tuner, and speaker. They connect what they hear on local stations to how radio waves carry information, and to how terrain—coastlines and mountains—affects reception and coverage.

What Students Do:

- Model wave properties using a rope or slinky; describe frequency and amplitude.
- Build an FM radio in groups of three with a Snap Circuits kit
- Handle and observe a historic radio; identify visible parts
- Discuss how California's relevance to radio history and how it's geography influences reception

NGGS	HSS & CSS
4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	HSS 4.4.6 - 6. Describe the development and locations of new industries since the turn of the century, such as the electronics industry, large-scale commercial projects, and important links with the Pacific Basin.
4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.	3-5.NI.4 Model how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the internet, and reassembled at the destination
3–5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	
3–5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	