

Strand 8.2	Standard 8.2.6	Episode 1	Big Idea: Digital signals are a more reliable way to store or transmit information than analog signals.
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Title: What's a signal?	Time: 15-20 mins	CCCs <u>Structure and Function</u>	Practices Obtain, evaluate and communicate Ask questions or define problems
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Narrative of episode: Students experience a phenomenon in which digital and analog versions of music are played to them. They compare the two and ask questions about the differences they are hearing. Students then **obtain information** about signals using online resources. They **evaluate** the information in order to identify the structure and function of signals. Then they **communicate** their understanding of signals in writing.

Gather

Phenomenon: Obtain a record player or a cassette tape player along with some records and cassette tapes. Try to obtain the same songs as digital files, or find other digital music files you can listen to in class, through a computer, mp3 player, cd player, etc.

Note: If using records, make certain you have an analog recording. Many modern records are digital files recorded on vinyl.

Play both the analog and digital forms of the music for the students. On their [phenomenon sheet](#), they will make observations about what they are hearing. With their group they will discuss and record questions they have about what they are hearing.

Next, students will use online resources to obtain information about signals. Use the [student sheet](#) as a guide when instructing the students what to do. If students need guidance when researching the structure of a signal, guide them to the idea that most electronic signals are transmitted as waves of energy. Function is to communicate or transmit information.

Reason

Students will then evaluate the information and identify the structure (parts) and function of signals.

Communicate

Lastly, students will communicate their understanding by writing a few sentences about signals.

Assessment:

Student participation in discussion can be used as formative assessment. Also, students can be assessed on the sentences they use to describe signals on their What's a signal? student sheet.

Materials, resources, handouts, etc.:

- Record player or cassette tape player
- Vinyl records or cassette tapes
- Digital music files and a way to play them
- Electronic devices with internet connection
- [Phenomenon Student Sheet](#)
- [What's a Signal? STUDENT Sheet](#)