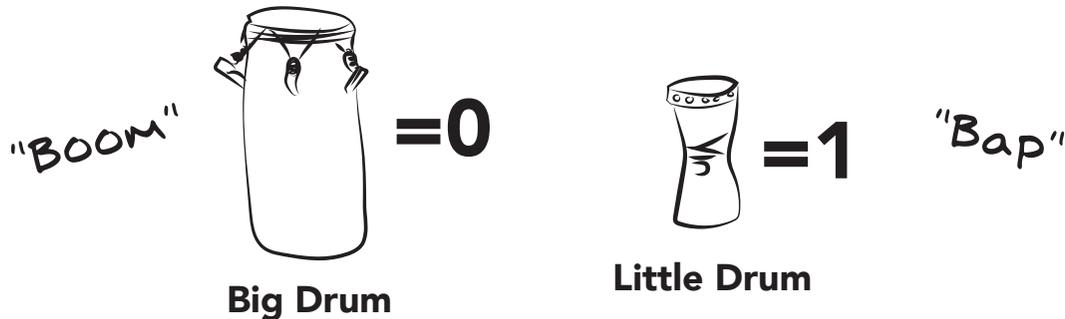


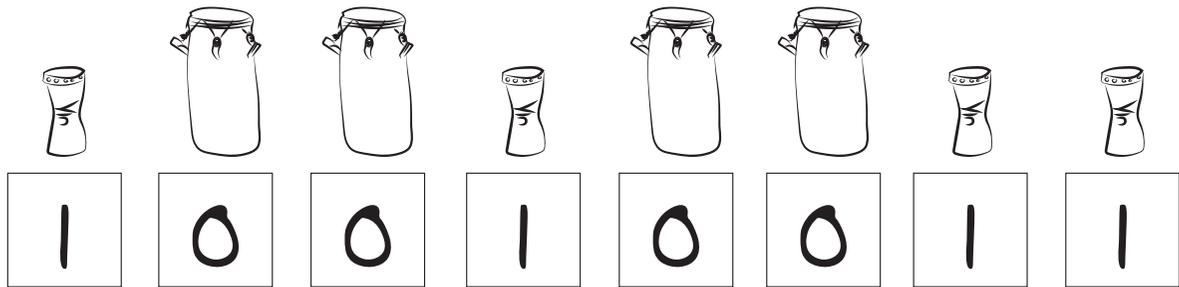
## A binary pattern can be sent using drums

How could a binary pattern be sent using drum beats? First, let's decide what the drum beats mean. Let's say that a tap from the big drum represent a "0" and a tap from the small drum represent a "1".



### Send the letter "S"

Let's send the message "S" as "10010011" with drum beats. This is the binary pattern that represents the letter S in computer language. Beat on the drums in the right order to communicate the signal "10010011."



Hooray, you did it! You just sent a binary code using drum beats.

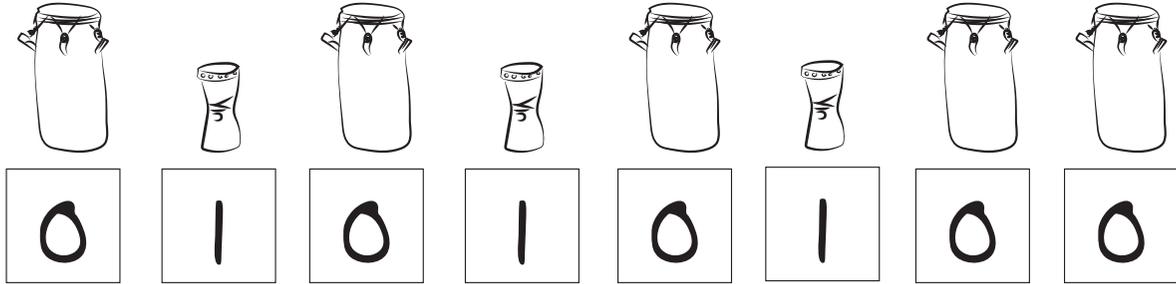
Try tapping the coded message at a constant rate. The beat sounds similar to the rhythm of a song. This song communicates the letter "S" in binary code.

### Rhythm of the letter "S"

Bap - **Boom** - **Boom** - Bap - **Boom** - **Boom** - Bap - Bap

## Send the letter "T"

Now try tapping another letter in the code. Let's send the message "T" as "01010100" with drum beats.



## Rhythm of the letter "T"

**Boom** - Bap - **Boom** - Bap - **Boom** - Bap - **Boom** - **Boom**



Choose two objects to tap that make different sounds (your drums). Find a way to send these binary patterns using sound.

1. Send one of these patterns to a partner.

S	T	E	M
01010011	01010100	01000101	01001101

2. Receive a pattern from a partner. Which letter did they send you?



## How good is a drum for sending signals?

Using a drum to send and interpret messages has both advantages and limitations.

How far do you think you could send a message using drum beats? Why?

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Were you able to send and receive your messages accurately? What difficulties did you have?

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What limitations does using drums to send a message have?

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