

**Binary Code Messenger**

**9-12**

# **Duration:** 60 minutes (10-minute review, 25-minute build/design, 25-minute code/decode)

# **Objective**

You will build two individual, simple circuits to communicate binary messages.

# **Engineering Constraints**

* You can only use the materials provided to you
* Everyone on the team needs to contribute and sign off on design

# **Instructions**

1. Each team needs to design two separate circuits using the provided materials (both circuits can be the same design).
2. After each circuit is designed, build the circuits.
3. Test both circuits, and if they are complete, label which is a ‘0’ and which is a ‘1’.
4. Next, everyone in the group needs to write down a word that they want to communicate through binary. Break the word down into each letter, and code each letter based on its binary sequence.
5. Now go through team member and have them use the circuits to “transmit” their binary sequence.
6. All other students write down the sequence and attempt to decode the word.

# **Expansion Activities**

* You can step this up by communicating sentences instead of words in your group.
* Now, find another team to communicate with across the room. Try communicating with the other team using your binary messages.
* After testing this, try a game of telephone through each group to see if a message can make it through all the teams.

**Write Your Name In Binary Below**



