Step 1: Get familiar with what a binary message is. Turn this page over to read a bit about them!

Step 2: Gather your supplies and decide to make a bracelet, keychain, or both! (Beads, string, and keychain rings are provided in this kit. You will also need scissors)

Step 3: Using the chart on the reverse side, pick a short message that has meaning to you. (Think about things that can be represented with a short word, acronym, or initials)

Step 4: Create your message! Remember that each letter is represented by 8 beads, so make sure you have enough of each color before you start. An example of one kind of keychain is provided in this kit, but the possibilities are endless!

Step 5: Post photos of your creation on your favorite social media site with #2020TECHLabTeens and @BillingsLibrary

Bonus: Earn points for Summer Reading when you complete this mission!

Learn more about Summer Reading and sign up now at billingslibrary.readsquared.com

Use this kit again and again to make other codes!
A binary message system (or code) is a way to communicate by using only two symbols.

In this activity you will use two different colored beads to represent your different symbols.

In electronic devices these two symbols are called binary digits (or bits).

Use this chart to create your own binary message!
Here is one example for making a keychain with a binary code! I chose to separate each 4-bead section (or nibble).

When reading the message left-to-right, then top-to-bottom, 2 rows = 1 letter.

**Step 1:** Lay out beads.

**Step 2:** I looped a piece of string around an extra carabiner that I had. (Fold the string in half, so you have equal lengths of string for each “tail”).

**Step 3:** String the first 4 beads on the left “tail” in order of how you read it left-to-right. Then take the right “tail” and go through the beads a second time in reverse order.

**Step 4:** Pull both tails and center the beads.

*Note: Once the beads are in place, you can tie knots at each end, right next to your first and last beads. For time, I only tied knots for 2 of my rows– you can tie more to make your beads more stable.

**Step 5:** Repeat as many times as needed to complete your message!

**Step 6:** Tie knots at each end, making sure the knots are larger than the holes of your beads.

*Note: Once the beads are in place, you can tie knots at each end, right next to your first and last beads. For time, I only tied knots for 2 of my rows– you can tie more to make your beads more stable.