



Science Experiment:

Project: Coding Lesson 6, Binary Bracelets

Supplies:

String

Beads (lots of beads preferable black and white)

Copies of a Binary Decoder Key, found in multiple places on the web.

Purpose: Students will: Encode letters into binary, decode binary back to letters and relate the idea of storing their name on a bracelet or necklace to the idea of storing information in a computer.

Time:

60 minutes

What to Do:

1. Pass out the Binary Decoder Key.
2. Have each youth find the first letter in their name.
3. Their letter is represented by 8 different squares and each square is either “open” or “closed”, “black” or “white”, “filled” or “not filled”. The terminology is not important but the understanding that each letter has a specific unique code or set of blocks that are “black” or “white”.
4. Pass out a thread and have the youth place 8 beads on to the thread to match the binary code that makes up the letter of their first name.
5. Have students complete a bracelet of their first name or a necklace of their first and last name.

Reflect:

What else might you represent binary instead of boxes that are filled or not filled?

Apply:

What might happen if an error is made in the conversion of binary. How does one error change the spelling of your name?

Resources:

<https://code.org/contact>