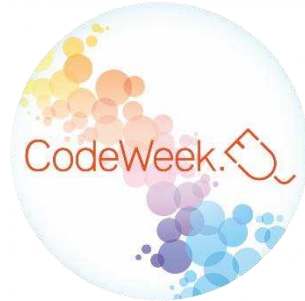


EU Code Week 2023

BINARY CODE

friendship bracelet



MATERIALS NEEDED

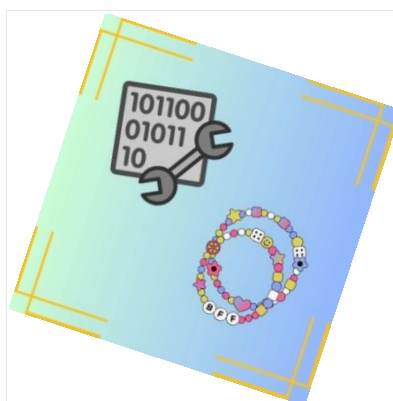
- Assorted beads
- String or thread
- Binary Bracelet Worksheet

OBJECTIVES

- Encode letters into binary
- Relate the idea of storing words on a bracelet or keychain to the idea of storing information in a computer

ADDITIONAL RESOURCES

- <https://code.org>
- <https://youtu.be/BfmJ5pkslj4>



ACTIVITY 1.

Decode the message
Unplugged coding – binary code
Lesson plan / Lesson scenario
Author: Martina Galić

1. Hand out the Binary Bracelet worksheet.
2. Explain that each letter of the alphabet has a different code as seen on the worksheet. There are 8 different squares per letter and each square is black or white.
3. Give the students the task of decoding the message on the worksheet. (The worksheet can be found at the bottom as an attachment.)

ACTIVITY 2.

Code your name
Unplugged coding – binary code
Lesson plan / Lesson scenario
Author: Martina Galić

1. Distribute EUCodeWeek_worksheet2 to students. ((The worksheet can be found at the bottom as an attachment.))
2. Using the Binary Bracelets worksheet, have them code their name.

ACTIVITY 3.

Friendship bracelet
Unplugged coding – binary code
Lesson plan / Lesson scenario
Author: Martina Galić

1. Write on a piece of paper one of the words that best describes your friend. (Unique, Awesome, Kind, Brave, Spirited, Creative, Fierce, Superkid, Bright, Smart, Calm, Friendly, Gentle, Amazing)
2. Using the key, print each letter in the binary code.
3. Turn each letter into a colored bead. Choose one color a bead representing white squares (which stands for "1") and another the color representing the black squares (which stands for "0"). Between each letter you can add additional beads in the color of your choice as a divider. (In computer science, separation markers like this are called "splitters". Many encodings use separators, especially if the size each unit varies. You don't actually need a delimiter to know when a character ends with an i the second starts in binary, however, because each character requires exactly 8 bits.)
4. Cut a piece of rope, about the size of your wrist, with a few extra inches. Make a triple knot to start the bracelet. Then string each of your bits and bounding beads onto the string towards the knotted end.
5. Carefully holding the open end, try wrapping it around your wrist to see how it fits and looks. Make a note of how many extra cords you will need to get the bracelet over your arm. When you're satisfied, carefully tie the open end of the string, then tie the two ends together, leaving enough of that extra string to slip over your arm.
6. Cut any remaining cords, far enough away from the knots that they don't come loose.

Give a bracelet to your classmate.

Put your hands together and take a picture.



Unplugged

Name: _____

Date: _____

Binary Bracelets

Assessment for Binary Bracelets Lesson

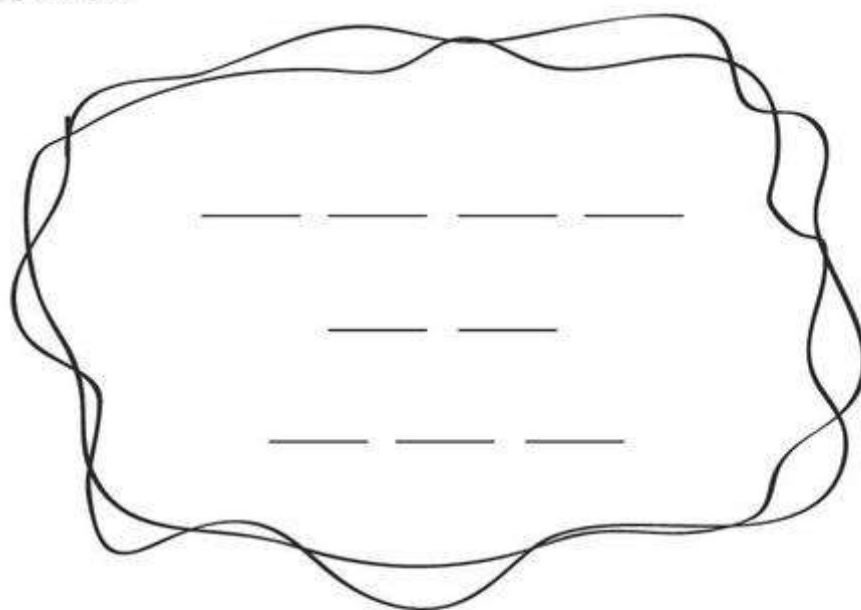


Use the Binary Decoder Key below to decode the message at the bottom of the sheet.

A	■□□■ □□□□	N	■□□■ □□□■
B	■□□■ □□□■	O	■□□■ □□□□
C	■□□■ □□□□	P	■□□□ ■■■■
D	■□□■ ■□□■	Q	■□□□ ■■■■
E	■□□■ ■□□□	R	■□□□ ■□□■
F	■□□■ ■□□■	S	■□□□ ■□□□
G	■□□■ ■□□□	T	■□□□ ■□□■
H	■□□■ □□□■	U	■□□□ ■□□□
I	■□□■ □□□□	V	■□□□ ■□□■
J	■□□■ □□□■	W	■□□□ ■□□□
K	■□□■ □□□□	X	■□□□ □□□■
L	■□□■ □□□■	Y	■□□□ □□□□
M	■□□■ □□□□	Z	■□□□ □□□■

Can you figure out what the message says?

■□□■	■□□□	_____
■□□■	□□□□	_____
■□□■	■□□■	_____
■□□■	■□□□	_____
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