

PE Cryptic Decoding

Lesson Plan for Grade 7/8, PE (Integrated Computer Science)

Prepared by Mr. Spade

OVERVIEW & PURPOSE

To integrate decoding and computer science into a Physical Education setting while successfully hitting standards for both courses.

Main Goal: The main objective of this activity is to have students decode and decipher cryptic codes (using the given Caesar Code model) and participate in physical activities at the same time.

Target Grade Level: 7th/8th Grade

Estimated Duration: 1-2 class periods (50-minute periods)

Prior Knowledge

Before this lesson, students must have prior knowledge of:

1. Microbits and the microbit coding program through Microsoft.
2. The Caesar Code and Caesar Cipher (shifting letter in the alphabet).
3. Coding and decoding using this method.

EDUCATION STANDARDS

1. **PS5.HEPE.78.PE2.04** - Students engage in a variety of physical activities that will enhance health-related fitness.
2. **PS5.HEPE.78.PE3.02** - Students communicate effectively with others to promote respect and conflict resolution in physical activity settings.
3. **Computer Science Domain** - Computing Systems

OBJECTIVES

1. Students will decode and solve cryptic coded messages on microbits (Ceasar Code).
2. Students will work to solve in small groups/teams.
3. Students will participate in physical activity exercises (once the code is found from the microbit).

MATERIALS NEEDED

1. Microbits (provided by teacher)
2. Chromebooks (provided by teacher)
3. Jump ropes
4. Basketball

VERIFICATION

Steps to check for student understanding

1. Once a group of students completes or moves from one microbit to another, there are built-in checks for understanding (as groups).
2. Possibly have different students in each group run the chromebook everytime to see more individual checks.

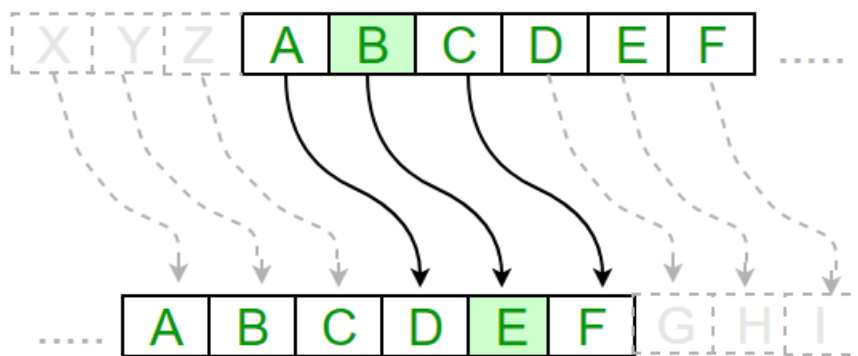
ACTIVITY

Students will be divided into groups/teams of 3-4. Once they are divided up, each group will be sent out to start at a different station in the gym (every station will have one chromebook and one microbit waiting.) The group's job will be to decode the message that plays across the microbit. It should start out as looking like gibberish, but the students should work through and troubleshoot to find out which way, and by how many characters the alphabet is being moved (see Ceasar Code description attached). Once they have figured out the details, they will decode the entire message, and then perform the task that is being asked of them (ex. Each group member does 50 jump ropes, or each group member must make a free throw... etc.). Once they have decoded the message and performed the task, they can move to a different location in the gym that will have a

different microbit, different chromebook, different code to decipher, and a different task to complete. This will continue until all stations are completed.

Additional Information

The Caesar Code that is mentioned in this lesson is an actual code cipher that Julius Ceasar would use when sending messages in his day of reign. He would simply take the letters of the alphabet and shift them right or left until they corresponded to a different letter in a different position (see picture below).



As you can see, in this picture, each letter was shifted 3 times to the right, so A becomes D, B becomes E, C becomes F, and so on...