

Count the Dots - Binary Numbers

Overview

This lesson introduces the binary number system and how to count in binary. Students will learn how to convert between binary and decimal numbers in the context of topics that are important to computer science.

Lesson Summary

- Count forward and backward in binary
- Explain why binary numbers are important in computer science
- Use binary digits to encode and decode messages

Lesson Outline

- Explore the importance of binary in CS
- Count forward and backward in binary
- Write DOB in binary
- Students take turns converting each other's binary DOB to a decimal DOB
- Complete journal entry

CS Content

The basis of CS are on and off states represented as zeroes and ones. Students will convert decimal values to binary and back. This leads into a discussion of bits, bytes, and other storage and transmission quantities. It can also lead into discussions of If-Then-Else logic.

Objectives

Students will be able to:

- Convert decimal to binary
- Convert binary to decimal
- Explain the role of binary in CS

Materials and Prep

- Binary card worksheet
- Worksheet Activity: Binary numbers (page 5)
- Scratch paper

Resources

Student Documents

- http://csunplugged.org/wp-content/uploads/2014/12/unplugged-01-binary_numbers.pdf

Code Studio

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Video

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Assessments

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Notes
