



Count the Dots– September 29, 2014

What is Binary?

Binary is a fundamental system that every computer scientist needs to understand or, even if you understand binary already, we want to give you the chance to refresh your memory.

Let's Get Started!

Go to the CS Unplugged website's Binary link, <http://csunplugged.org/binary-numbers/>. This activity is worth 8 points.

1. Ask your students to read the "Count the Dot" paragraph and then watch the first video, *English Unplugged Computer Science Unplugged-Part 1* (scroll down the page to find the video). You can either read and watch the video together or ask the students to complete the task on their own. If students need more information, they can do a Google search.
2. After watching and learning how binary works, please ask the students to complete the "Count the Dots – Binary Numbers" activity. The activity sheet and explanation of how to use the activity sheet can be found at: http://csunplugged.org/wp-content/uploads/2014/12/unplugged-01-binary_numbers.pdf. Or go to the Previous Looney Challenges webpage and click on the activity sheet to print out a pdf.
3. Read the instructions and answer the questions as a class, located on page 4. You may want to print the page. To make your own cards, print page 6, Photocopy Master: *Binary Number*.

Novice:

1. Print out page 5, *Worksheet Activity: Binary Numbers*
2. Students may work in groups or individually. Ask them to answer the questions. For extra points, students can complete the "Extra for Experts."

Intermediate and Advanced:

1. For students that already have an understanding of binary. Ask them to complete the *Working with Binary Activity*, page 7, and answer the questions. For extra points, students can complete the "Extra for Experts."

For students who still want more Challenges, feel free to print and ask students to complete additional worksheets.

How to earn points:

- 1) If you haven't registered your class, please go to cs.montana.edu/looney-challenge and click on the "Register for Looney Challenges" link.
- 2) Discuss with your class the difficulty of the activity. What did they learn? How difficult was the activity? Do they understand the concept?
- 3) Briefly, in a couple of sentences, describe in your email what happened during the activity? Did your students understand the concept(s)? Email your description to looneychallenges@gmail.com

- 4) If you want to attach an example, photographs of students working, or video of student's outcomes, please send them as an attachment.
- 5) We will send you a confirmation and provide you your point total for the activity and your total points for Looney Challenges.

All Looney Challenges can be completed at any time during the 2015-2016 school year. All Challenges are due, June 30, 2015.

Questions? Please send an email to looneychallenges@gmail.com or call Sharlyn Izurieta at (406) 994-4794.

Thank you for participating in Looney Challenges!

References: CS Unplugged: Computer Science without a Computer, <http://csunplugged.org/>