# *Computer Science Explorations*

*Activity – Practicing the Naming Game Using the Hand Method*

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Instructions:

Read the information below, doing what you are asked. If you are unsure what to do, ask your teacher.

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Learning Target(s):

"I can quickly map items to binary using the Squirrel Girl hand method."

'I understand what a subscript means when communicating a number in writing."

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Use your notes as well as the resources in this module to do the following:

In Google Docs, something similar, or using a pen and paper, read the numbered prompts below and respond as appropriate.

*Numbers seem super-important in computer science—we, with computers, use them to "name" EVERYTHING.*

1. We have studied two different kinds of numbers: binary and decimal. What is the technical name of our "regular" numbers?

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*A **subscript** is often used to make clear what kind of number we are trying to communicate when we write. Review your notes about the Naming Game before you continue!*

2. What is the subscript in this number: $00001_2$? What does that subscript tell us about that number?

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3. The subscript of this number is ten: $1_{10}$. Is this a binary number? Why?

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4. Using the Squirrel Girl hand method—with five fingers—complete the following mapping:

| *Human name:* *(a decimal number)* | | *Computer name:* *(a five-bit binary number)* |
|---|---|---|
| $0_{10}$ | ⇔ | $00000_2$ |
| $1_{10}$ | ⇔ | |
| $2_{10}$ | ⇔ | |
| $3_{10}$ | ⇔ | |
| $4_{10}$ | ⇔ | |
| $5_{10}$ | ⇔ | |
| $6_{10}$ | ⇔ | |
| $7_{10}$ | ⇔ | |
| $8_{10}$ | ⇔ | |
| $9_{10}$ | ⇔ | |
| $10_{10}$ | ⇔ | $01010_2$ |
| $11_{10}$ | ⇔ | |
| $12_{10}$ | ⇔ | |
| $13_{10}$ | ⇔ | |
| $14_{10}$ | ⇔ | |
| $15_{10}$ | ⇔ | $01111_2$ |

- Re-read the learning targets of this activity; did you meet all of them? If not, go back and fix that.
- If you are going to submit a photograph of written work, make sure that the photo is legible and clear!
- Submit your responses to your teacher for grading.