Web Development

Day 5: Programming

Scratch & Pair Programming

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Icebreaker!

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Today's Schedule

Morning:

- Project: Build an Animated Solar System
- Introduction to Programming
- Block coding & Scratch
- Pair Programming

Afternoon:

- Pair programming with Scratch projects
- Rockwell Mentors classroom visit

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Project: Animated Solar System

Add the missing CSS to animate the Solar System

- The animation is given to you (@keyframes rotate)
- You will need to add the animation to only one CSS selector that has been given to you
  - Hint: it will apply to all of the planets and the moon
  - Another hint: the planets are all s with different IDs but the moon is referenced by "li#earth span"
- All of the planets will have a different rotation speed so each of the s will have a different animation-duration.

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What is Programming?

Programming is the writing of instructions for a computer to complete. The instructions, or **code**, are written in one of many programming languages.

What is Programming?

Popular programming languages include:

- C++
- Java
- Python
- JavaScript
- Block

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What is Programming?

HTML & CSS are not considered programming languages.

Why do you think that is?

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What is Block Coding?

- A visual way to learn coding
- Use predefined chunks of code, called “blocks”
- Learn the logic of coding
  - No learning the “grammar” of a coding language
  - No memorizing commands or names
- Scratch is a very popular Block Coding platform

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What Is Pair Programming?

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Why Pair Programming?

What are some of the benefits of having two programmers working together on the same problem?

- Brainstorming with another programmer leads to better, more efficient code
- Find solutions to problems faster
- Talking about code leads to greater understanding
- Catch and fix bugs in the code sooner

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The Role of the Driver

The Driver:

- Is the one writing the code
- Is concerned with the small details
- Should explain what they are doing
- Should ask for help if they get lost
- Will switch roles with The Navigator after each level

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The Role of the Navigator

The Navigator:

- Is concerned with the big picture
- Should offer suggestions on what to do next
- Should watch for bugs in the code
- Should ask if they aren't sure where the Driver is going

Dos and Don'ts

- ✗ **Don't** be rude or insulting when talking to your partner.
- ✓ **Do** be respectful!
- ✗ **Don't** grab the keyboard when you are the Navigator.
- ✓ **Do** switch roles regularly.
- ✗ **Don't** just sit there!
- ✓ **Do** engage with your partner about what you're trying to accomplish.

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Pair Programming Guidelines

- Ask before taking the keyboard.
- Be respectful when communicating with your partner.
- Talk to each other about the problem you're solving.
- Explain what you're trying to do if you're the Driver.
- Think ahead and offer suggestions if you're the Navigator.
- Switch roles whenever instructed to do so.

Reflection

Write in your journal about how you feel or what you learned today.

Prompts:

- Was today your first time using block coding? What do you think of it?
- How did you like Scratch? What game would you program on your own?
- What did you think of Pair Programming? Did you find it helpful? Why/why not?

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