Lesson 9: Think Like a Creator

Powerful Ideas of Computer Science	Design Process
Powerful Ideas of Literacy	Writing Process, Sequencing
PTD	Creativity, Content Creation
Palette of Virtues	Curiosity, Perseverance
Children will be able to…	● Identify steps of the Design Process. ● Apply the steps of the Design Process to an engineering challenge.
Vocabulary	● <u>Design Process:</u> six steps we use to create projects ● <u>Author:</u> a person who writes a book, paper, or another piece of writing ● <u>Programmer:</u> someone that writes instructions for computers to tell them what to do
Teacher Preparation	☐ Read lesson plan ☐ Have a tab open for the <u>Anchor Chart for Design Process</u> slideshow ready to be projected

Warm Up *(Whole Group)*
- **Design Process Song** *(Suggested Time: 5 minutes)*
  - Display the <u>Design Process Anchor Chart</u> on the screen.
  - Teach and sing the *Design Process* song.

(to the tune of "Twinkle, Twinkle")
Ask and imagine, plan and create,
Test and improve and share what we make.
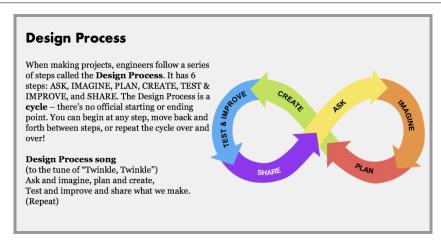*(Repeat)*

Opening Tech Circle *(Whole Group)*
- **Introduce the Design Process** *(Suggested Time: 10 minutes)*
  - Explain the **Design Process** using the <u>Design Process Anchor Chart</u>.

Design Process

When making projects, engineers follow a series of steps called the **Design Process**. It has 6 steps: ASK, IMAGINE, PLAN, CREATE, TEST & IMPROVE, and SHARE. The Design Process is a **cycle** – there's no official starting or ending point. You can begin at any step, move back and forth between steps, or repeat the cycle over and over!

Design Process song
(to the tune of "Twinkle, Twinkle")
Ask and imagine, plan and create,
Test and improve and share what we make.
(Repeat)

- ○ Introduce the vocabulary **author** and **programmer**. Ask students: *What does an author do? What does an author make? What does a programmer do? What does a programmer make?*
- ○ Discuss how both authors and engineers make creations that they share with the world. Programmers write **programs**, which are step-by-step instructions that tell a computer what to do. Authors write the words of a story, thinking carefully about what happens first, next, and so on. Both programmers and authors use the design process to make their creations!

Unplugged Time *(Whole/Small Groups)*

- **Your Own Design Process** (*Suggested Time: 30 minutes*)
  - ○ Explain that the Design Process isn't just for ScratchJr, it's for making anything! Today they are going to get to choose what they design using the Design Process!
  - ○ **Ask:** As a *whole group*, ask the children a question to serve as a prompt for their creation. For example, how strong can we make a tower out of building blocks, or what kind of butterfly house would be good for our playground? These creations can be done with recycled materials, craft supplies, building blocks, or other materials of your choosing, so select a prompt that aligns with the building materials you choose.
  - ○ **Imagine**: As a *whole group*, brainstorm ideas for the project.
  - ○ **Plan**: As a *whole group*, decide what types of materials we would need to create this project?
  - ○ **Create**: Break the children into *small groups*. Give children time to use craft and recycled materials to make their creation!
  - ○ **Test and Improve**: Pause and ask children if their creations are following their plan? Are there any changes they want to make now that they've started actually making their project?
  - ○ **Share**: Go around and share creations as a class.

Opportunities for Differentiation
- **Virtual Learning**
  - Notify parents ahead of time that children will need craft supplies for this lesson.