Lesson 9: Think like a Creator

Powerful Ideas of Computer Science	Design Process
Powerful Ideas of Literacy	Writing Process, Sequencing
PTD	Creativity, Content Creation, Collaboration
Palette of Virtues	Curiosity, Perseverance, Open Mindedness
Children will be able to…	● Identify steps of the Design Process. ● Apply the steps of the Design Process to an engineering challenge.
Vocabulary	● Design Process: ○ Ask: to use a question ○ Imagine: to make an idea in your mind ○ Plan: to decide what to do and how to do it ○ Create: to make something ○ Test: to see if and how your idea works ○ Improve: to make something better ○ Share: to show others what you made ● Cycle: something that repeats
Teacher Preparation	● Read lesson plan. ● Have a tab open for the Anchor Chart for Design Process slideshow ready to be projected.

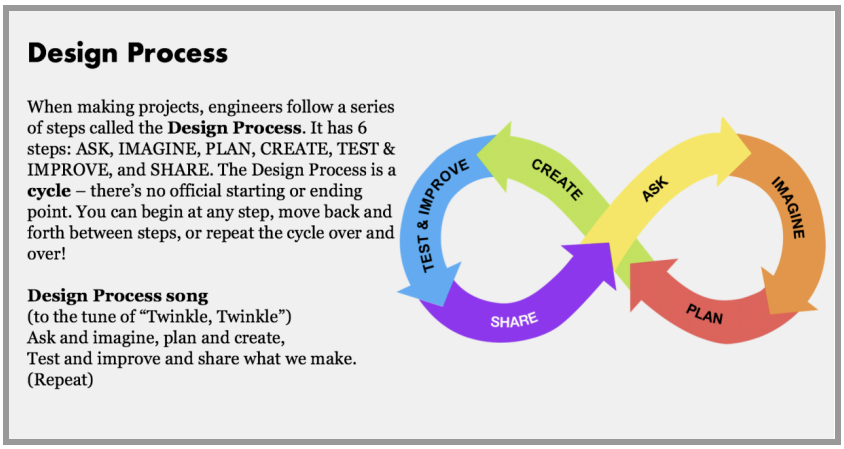
Warm Up

- **Design Process Song** *(Suggested Time: 5 minutes)*
  - Display the Design Process Anchor Chart 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

- **Introduce the Design Process** *(Suggested Time: 15 minutes)*
  - Explain the **Design Process** using the Design Process Anchor Chart.



- Walk through the Design Process from the Teddy Bear project last class.
  - **Ask:** How can we program this dance on ScratchJr?
  - **Imagine:** Brainstormed movements.
  - **Plan:** Decide the parameters we want to use and label our character.
  - **Create:** Make the character and the program.
  - **Test and Improve:** Were the parameters right? Do we need to make our character bigger?
  - **Share:** We shared at the end of class!

Unplugged Time

- **Your Own Design Process** (*Suggested Time: 20 minutes)*
  - Explain that the Design Process isn't just for ScratchJr. It's for making anything! Today they will get to choose what they design using the Design Process!
  - **Ask:** 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, so select a prompt that aligns with the building materials you choose.
  - **Imagine**: Break into small groups to brainstorm ideas for their projects.
  - **Plan**: Ask the children to share their plans at the end of the small group time.
  - **Create**: Give children time to use crafts and recycled materials to make their creations!
  - **Test and Improve**: Pause and ask children if their creations follow their plan. Are there any changes they want to make now that they've started doing their project?
  - **Share**: Go around and share creations as a class.

Closing Tech Circle

- **It's a Cycle!** *(Suggested Time: 5 minutes)*
    - Ask the children if viewing their classmates' projects gave them any new ideas for their own projects! For example: "When I saw that [student name] added a rocket ship to their project, it inspired me to add an astronaut to my project!"
    - Remind the children that the Design Process is a **cycle**. Sharing just leads to more asking and more creating and then more sharing!
    - What could you include in your project from another person's project? Why?

Opportunities for Differentiation

- **Virtual Learning**
    - Notify parents beforehand that children will need craft supplies for this lesson.