

## Lesson 7: Design Process

Powerful Ideas of Computer Science	Algorithms, Design Process
Powerful Ideas of Literacy	Writing Process, Sequencing, Phonological Awareness
PTD	Creativity, Content Creation
Palette of Virtues	Curiosity, Perseverance
Children will be able to...	<ul style="list-style-type: none"> <li>● Identify the steps of the design process</li> <li>● Recognize the design process as a cycle without a set beginning or end</li> </ul>
Vocabulary	<ul style="list-style-type: none"> <li>● Design Process: <ul style="list-style-type: none"> <li>○ Ask: to use a question</li> <li>○ Imagine: to make an idea in your mind</li> <li>○ Plan: to decide what to do and how to do it</li> <li>○ Create: to make something</li> <li>○ Test: to see if and how your idea works</li> <li>○ Improve: to make something better</li> <li>○ Share: to show others what you made</li> </ul> </li> <li>● Cycle: something that repeats</li> </ul>
Teacher Preparation	<ul style="list-style-type: none"> <li><input type="checkbox"/> Read lesson plan.</li> <li><input type="checkbox"/> Prepare to display the <a href="#">Design Process Anchor Chart</a></li> <li><input type="checkbox"/> Memorize the lyrics of the <a href="#">Design Process Song</a>. Open the link and be ready to play it at the beginning of class.</li> <li><input type="checkbox"/> Gather materials for the Unplugged Time design challenge. Materials can include recycled materials, craft supplies, building blocks, or other materials of your choosing.</li> </ul>
<p><b>Warm Up</b></p> <ul style="list-style-type: none"> <li>● <b>Design Process Song</b> (<i>Suggested Time: 5 minutes</i>) <ul style="list-style-type: none"> <li>○ Display the <a href="#">Design Process Anchor Chart</a> on the screen.</li> <li>○ Teach and sing the <i>Design Process Song</i>.</li> </ul> </li> </ul> <p style="text-align: center;"> <i>(to the tune of “Twinkle, Twinkle”)</i>  <a href="#"><i>Ask and imagine, plan and create.</i></a> </p>	

Test and improve and share what we make.  
(Repeat)

### Opening Tech Circle

- **Introduce the Design Process** (*Suggested Time: 10 minutes*)
  - Explain the **Design Process** using the [Design Process Anchor Chart](#).
  - Walk through the Design Process to make KIBO Dance
    - **Ask:** How can we program this dance?
    - **Imagine:** Brainstormed movements.
    - **Plan:** Decide on the blocks we want to use.
    - **Create:** Make the program.
    - **Test and Improve:** Were the movements right? Did we like the timing?
    - **Share:** We will share with the class!

### Unplugged Time

- **Your Own Design Process** (*Suggested Time: 25 minutes*)
  - Explain that the Design Process isn't just for KIBO, it's for making anything! Today they are going to 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 of your choosing, 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 at the end of the small group time to share their plans.
    - **Create:** 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.

### Closing Tech Circle

- **It's a Cycle!** (*Suggested Time: 5 minutes*)
  - Ask the children if seeing everyone's projects, and working on their own projects, gave them any ideas of new things they want to make!
  - Remind the children that the Design Process is a **cycle**. Sharing just leads to more asking and more creating and then more sharing!