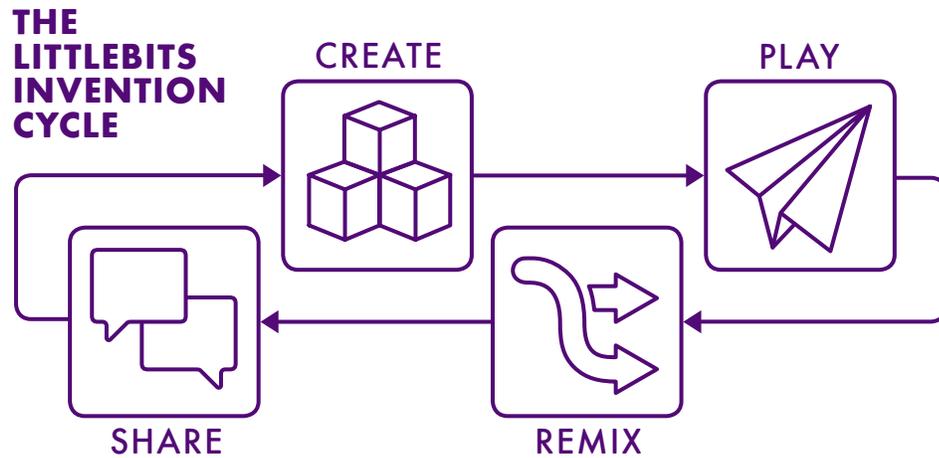


THE LITTLEBITS INVENTION CYCLE

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The Invention Cycle is a framework for approaching an engineering or design process. Each of the four phases is full of activities and questions that help students explore ideas and develop their inventions.

The phases work well in order, but the design process is always a little messy. A student’s path through the Invention Cycle can be flexible. Each phase represents a different way of thinking and making and sometimes it’s good to mix these things up. For example, students may want to Share their work and gather feedback before they begin Remixing. It can also be helpful for students to Play with and evaluate a previously made invention before creating their own.



CREATE

DEFINITION: Explore new ideas and bring them to life. You can start by brainstorming, tinkering with Bits, and building from your imagination, or you can jump-start your challenge by building something from instructions. Don’t worry if it doesn’t work or if it isn’t perfect. The important thing is to Create your first model so you have something to experiment with.

IN THE CLASSROOM: The Create phase is the launch pad for an invention journey. It’s where students explore problems and opportunities, Create lists of ideas, evaluate available resources, and Create their first prototype to test.



PLAY

DEFINITION: Use it! Playing with what you’ve Created is fun, but also an important part of inventing. Playing is like a test run. It’s a chance to see how well your invention works and look for ways you can make it better.

IN THE CLASSROOM: Play is a natural way for students to explore and evaluate their creations without worrying too much about perfection. In this phase, students are reflective about their play, and gather information about their prototype’s first test run and the circuits they’ve Created.



REMIX

DEFINITION: Improve your invention. Keep experimenting! Add new Bits, swap parts with other inventions, or take all the pieces apart and put them together in a different way.

IN THE CLASSROOM: Remix is where students kick their experimentation into high gear. They are encouraged to test as many variations and improvements as they can, based on their reflections during Play. This phase is often when kids become more comfortable with the uncertainty of exploration and experimentation. When an idea doesn't work, it hasn't really failed. It's succeeded in showing them something new about how things work. Encourage students to try at least a few weird or wacky things. Sometimes really wonderful ideas are hidden in unexpected places.



SHARE

DEFINITION: Inspire others. Show the world what you've Created. Get inspired by exploring what others have Shared. Create, Play with, and Remix other inventions. This is how awesome new inventions are born.

IN THE CLASSROOM: The Share phase is when students reflect on their whole invention process, figure out how to best tell their story, and Share it with others. This reflection on the process helps them develop their skills as an inventor, like critical thinking and creativity. Figuring out how to tell their story to others hones communication skills, and sharing that story provides a valuable opportunity for feedback. Learning from other students' stories and interacting with their inventions will also help to deepen this active learning process.

The four phases form a cycle because the process doesn't need to end with sharing. What they learn through sharing can be great fuel for another run through Creating, Playing, Remixing, and Sharing. It also serves as a reminder that an invention is never perfect or complete. There is always room for more exploration and improvement.