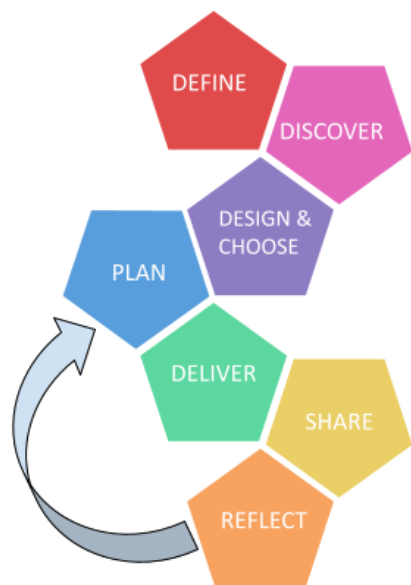# Maker Methodology for Teachers

Design processes are useful in any discipline to tackle challenges and create solutions to problems. While teachers face many challenges in their work, the one we are focussing on here is that of designing engaging classroom experiences that support academic learning as well as a range of other key skills.

It's certainly possible to create a lesson plan without using a design process. Teachers have traditionally created lessons around popular activities, but then they may struggle to incorporate the content and skills they are obliged to teach.

A proven process, such as *Design Thinking* or the *Engineering Design Process*, starts with goals, research, and ideation. Used correctly , these processes will lead you to an effective solution in an efficient way

The Maker Methodology is a design process for Maker educators who want hands-on projects that use creative technologies and promote STEAM concepts.   This methodology is a reliable way to create and recreate projects that meet your learning goals, fit your constraints, ignite student enthusiasm, and help you grow professionally.

First, **DEFINE** the content standard or skill you want your students to demonstrate with this project. Next, you do a little research to **DISCOVER** other projects that can inspire you.

DESIGN some project ideas with creative brainstorming, and **CHOOSE** a promising idea to explore. Push yourself to come up with at least 3 promising ideas before committing to one: if you hit any roadblocks, you'll be able to revisit an alternate design plan and choose a new direction without starting from scratch. Use your favorite lesson planning templates to **PLAN** the details of the students' project work, making sure to schedule work periods, organize materials, and take into account the technology-related parts of the project. Maker projects have creative, open-ended, and iterative components, and are best guided by a full design process. In the same way that the teacher is learning, exploring, and brainstorming before creating a lesson plan, students too will employ these practices as they work through their projects. Cycling through the Create-Observe-Improve phase is essential. Build it in to a project by using more sophisticated materials and/or adding criteria/constraints on successive iterations.

Now the fun part, **DELIVER** your plan to the students and lead them in the design process. The challenge here is to facilitate, not instruct, using practices and strategies that give your students the guidance they need while letting them take charge of their learning. **SHARE** the products of your students' work with an audience beyond the classroom helping them build confidence and make valuable connections between school and the outside world. For you, sharing will inspire other teachers with new practices and promote a culture of Making within your school. Finally, a good design cycle builds in time for the designer to **REFLECT** What went well? What would you, or your students, change?

EDGERTON CENTER

MAKE
k12maker.mit.edu