

Curriculum and Instruction Makerspaces: Think Labs



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Paper Table Challenge

Your challenge:

- ▶ Design and build a table out of newspaper tubes.
- ▶ Make it at least 8 inches tall and strong enough to hold a heavy book.

Materials:

- ▶ 1 piece of cardboard
- ▶ Heavy book
- ▶ Masking tape
- ▶ 8 sheets of newspaper

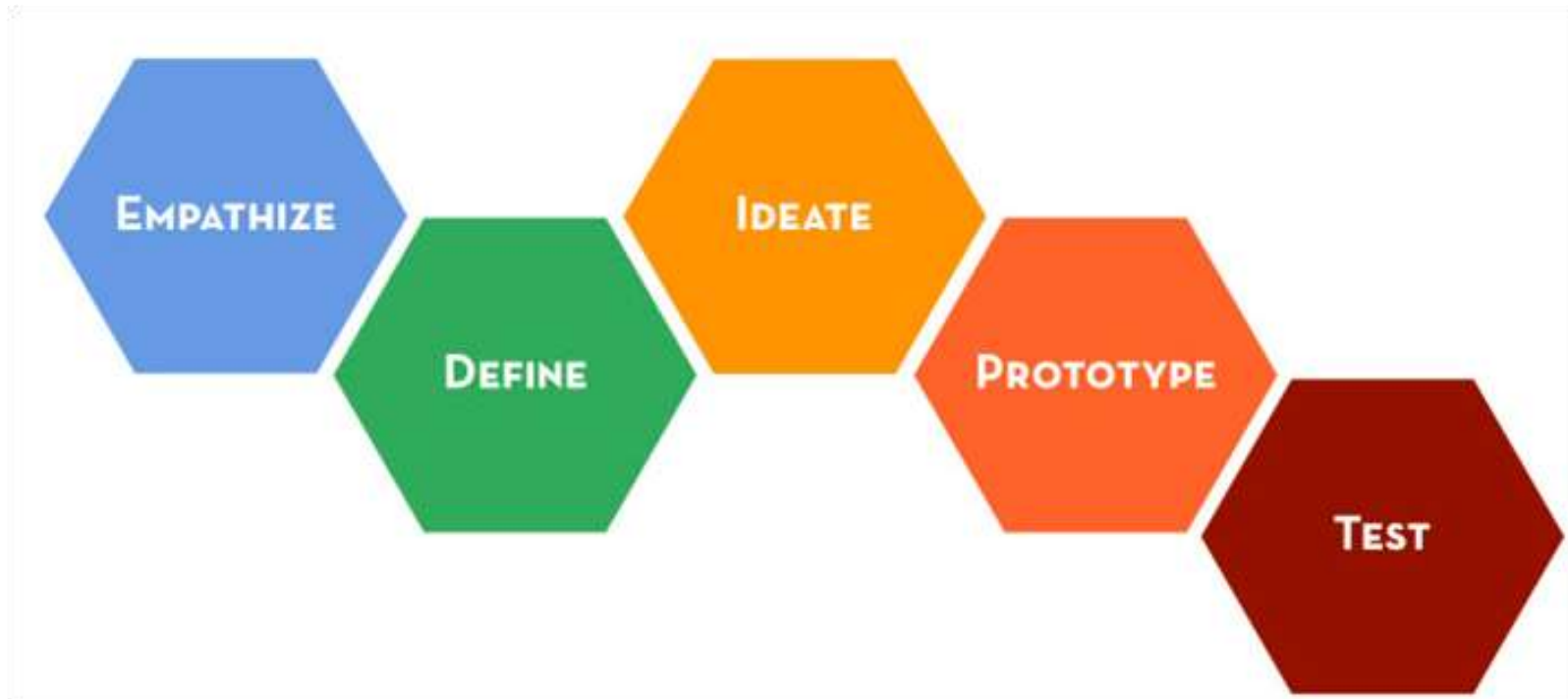
What is a Makerspace?

- ▶ A space dedicated to the integration of STEAM disciplines.
- ▶ Students apply the principles of the *design process*.
- ▶ Students generate and share ideas, solve problems, test solutions, and revise.
- ▶ Students build skills in collaboration, creativity, and problem solving.



Design Process

Stanford d.school



Why are Makerspaces important?

- ▶ Bring to life the district vision for creating active learning environments.
- ▶ Foster problem solving, collaboration, and critical thinking.
- ▶ Engage students in creative and “outside of the box” thinking.



Why are Makerspaces important?

- ▶ Provide opportunities for students to follow a passion with staff and peer support.
- ▶ Allow students space to make mistakes and see them as opportunities to learn.



How are our students and teachers using the Makerspaces?

Maker Challenges:

Short term activities presented as problems to solve, with a defined set of criteria. These usually begin with a low-tech supply list and time limit.



How are our students and teachers using the Makerspaces?

Maker Projects:

Longer-term projects tied directly to the curriculum. Students conduct research, draft, prototype, create, test, revise, and present their projects.



How are our students and teachers using the Makerspaces?

Professional Learning:

- ▶ Integration of projects and challenges as contexts for learning in the core curriculum.
- ▶ Staff meetings, staff development days, Learning Symposium, BOCES, technology meetings, and in-service learning teams.



What's next?

- ▶ Continued Professional Development.
- ▶ CSF Grant to enhance our Makerspaces.
- ▶ Promotion of Maker Projects based on the principles of project-based learning.



What's next?

- ▶ Further integration of coding and computer science concepts into our technology curriculum.
- ▶ Continued support of monthly Maker challenges at home.



Visit the Elementary Makerspace website



Elementary MakerSpace

Chappaqua Central Schools

My Home Page

- Information
- Monthly Maker Challenge
- Maker Sites
- Graffiti Maker Information
- Roaring Brook Maker Information
- Westorchard Maker Information
- Maker Events!
- 'Maker' Books We Love

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[School Home](#)



My Home Page



WHAT'S MAKERSPACE?

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- Simply put, makerspaces are community centers with tools and materials that allow students to solve problems and answer questions through design solutions, prototypes, creating, revising, collaborating, researching and solving their identified problem.
- Makerspaces combine hi-tech and low-tech equipment, with the principles of **Science, Technology, Engineering, Art and Math (STEAM)** for the purposes of enabling community members to share ideas and collaboratively work on projects that wouldn't have been possible to create without the resources available in the Makerspace and if the individuals were only working alone.
- These spaces encourage students to fail, struggle, make mistakes, and persevere. The students are taught the *Design for Learning* principles (shown below) as well as encouraged to look at their "failures" as opportunities for learning and growing.