Maker Challenges

The project offers three maker challenges. You are welcome to use these as is.

(Kinder and 1st)

Make your own math memory cards.
See if this time it'll be harder for the adults.
If you want, change the rules a little bit too.

(2nd and 3rd)

Make the coolest math twist on Achi
where the kids, on average, beat the adults.

(4th and 5th)

Make the most addictively tricky
math Cannonball or turtle puzzle experience.

But we also believe that during this pandemic it's important to be as flexible as we can. Since we cannot foresee all options, we would like to share with you how to DIY your own maker challenge should the ones above not fit your specific needs. This can also be a tool for any maker challenge you create in any subject or grade, whether for Mass STEM Week or not.

DIY a Maker Challenge

In its simplest form, a good maker challenge brings out the first two steps in the Creativity Roadmap: Three E's, Maker Cycle. Specifically, it has five core components.

DIY Checklist

Tantalizing, clear goal	▢ Students find the challenge fun and exciting. ▢ The goal is clear enough to gauge progress. ▢ The project is novel and non-routine. ▢ Achieving the goal is challenging and takes several iterations. ▢ (Bonus) students iterate at least 3 times.
Unclear path	▢ Student actions are not spelled out. ▢ Students are given, or find, knowledge "just in time." ▢ The project is effortful. ▢ Students demonstrate a willingness to act before without knowing what works. ▢ Students make mistakes, but learn from them and improve. ▢ The challenge cannot be completed on a students' first attempt. ▢ Students don't freeze or quit when encountering ambiguity. ▢ (Bonus) Students expect and value mistakes.
No one right answer	▢ Students feel free and open, not closed or fearful. ▢ Students are clearly given room to add their own unique contributions. ▢ Students are able to incorporate their own creative expression. ▢ Students don't want to copy the teachers or another student's work. ▢ (Bonus) The project incorporates creative expression in meaningful ways.
Evoke "go for it"	▢ By and large, students have an emotional response that drives them to act creatively. ▢ The frozen or nervous student is encouraged and eventually gets started.
Focus on others	▢ Students find the project purposeful or meaningful because their effort directly impacts other people. ▢ Students feel proud of what they made and of the effort it took to produce it, predominantly because of the impact it has on other people. ▢ Students get to see other people actively use their creation in real-time, right in front of them.