



### **Design Tool 3.2: Merge Makerspaces with the STEM Challenge**

*Directions for teachers:* You can use a makerspace approach to develop a place for student teams to work with a variety of materials and develop different possible designs for prototypes.

#### **1 Set up makerspaces.**

- Choose a large space where students can make things for possible solutions (prototypes) for the project challenge.
- Set up a table (if available) for each team.
- Provide a basket of materials students will have to work with during the project. Add some extra materials from which they can choose.

Think of this as a learning lab for kids to check out their own ideas for possible solutions.

#### **2 Gather materials.**

- Make a list of possible materials students might use to create prototypes. Plan on materials that allow students to explore several possible solutions, experiment, design, and create.
- Start with items you have on hand. Depending on the problem students will be working on these materials may vary, but you probably have items such as aluminum foil, tape, scissors, paper, paper cups, pencils, and pens, for starters.
- Visit discount stores for inexpensive items like coffee filters, craft sticks, and glue. You may also need materials from a hardware store.
- Send parents a list of needed items. They may donate many of these.

#### **3 Provide minimal guidance.**

- Once the students are armed with the project challenge, step back and give them the freedom to muck around, explore, and come up with possible solutions.
- Monitor and encourage kids to keep them focused. Since they will be working in teams for this activity, use this opportunity to build a case for collaboration and teamwork.
- Encourage them to take pictures of their designs.