



another source of supplies from home with boxes, paper towel rolls, material, thread, and other supplies. These supplies can be switched and changed over time according to what is available. Of course, if a student needs something specific and it is not available at that time, they are welcome to bring things from home.

Start small when adding robotics and other technology. These additions can be costly but when chosen wisely with a budget and purpose in mind then they are an invaluable tool for teaching any subject.

### 5. We Don't Have All the Robotics and Gadgets

One of my favourite areas of the makerspace is the “Low Tech” area. These challenges give students an opportunity to build with recycled material. A great resource for these challenges is the non-profit group, Destination Imagination.

#### Remove These Objects

Given specific items students are asked to create a device that will remove each ball without any body part crossing the line. The balls must not touch the ground or the toilet paper rolls – on which the balls are sitting – must not be knocked over.

#### “Build a House for the Three Little Pigs”

Using recycled material, build the three little pigs a house. The students are given a piece of paper to draw a plan of their house and then may begin to build. To increase the difficulty, add a price to the building material and give a total budget allowance such as \$1.50. Then each individual item also has a

cost, e.g., paper cup 15¢, paper plate 15¢, popsicle stick 10¢. Not only do they now have to plan a design, but they also have to follow a budget and plan accordingly.

Remember, these challenges are done in groups, so as the students plan and build, they must communicate and collaborate politely with others as they practice their teamwork skills.

“As schools continue to foster 21<sup>st</sup> century skills in students in order to prepare them for the demands of a global workforce, K-12 will see the adoption of more makerspaces and research efforts to surface best benefits and practices.” (Gerstein 1) |

### Resources

Baker, Patricia. “Creating a learning commons for the 21<sup>st</sup> century: with design thinking”. Patricia Baker Publications. 2018. Print.

Gerstein, Jackie Ed. D. “The classroom or library as a makerspace.” <https://medium.com/@jackiegerstein/the-classroom-or-library-as-a-makerspace-13ced283076a>. Accessed July 2018.

Provenzano, Nicholas. *Your Starter Guide To Makerspaces*. Blend Education, 2016. Print.

Spencer, John et al. *Launch: Using Design Thinking To Boost Creativity And Bring Out The Maker In Every Student*. San Diego, CA: Dave Burgess Consulting Inc, 2016. Print.