CHALLENGE YOUR STUDENTS WITH HANDS-ON ACTIVITIES

The Invention Contest idea provided by Invent for Life can be adopted by your school during class or in an after school program. The six to seven week program empowers your students with a tool set that allows them to be creative and inventive for the rest of their lives.

Invention Contest Benefits

• A context for teaching force, mass, friction, kinetic & potential energy, and other physical science concepts in a non-threatening, fun environment
• Allows for teachable moments -- “what went wrong?”
• “Failure” is an option -- allows students to learn from their mistakes
• Allows for unfinished work to be guided by the teacher toward improvement: “how would you change this?”
• Students work in groups, and learn from each other
• A great way to draw out students who may not be engaged in learning
How the Invent for Life Program Works

Instructors from Invent for Life will train the teachers on how to teach their students the principles of problem solving and invention. Teachers will learn multiple ways to teach the program. The program is taught starting in 5th grade with refresher programs taught in 7th/8th grade science, and high school physics. By giving each student three exposures to the Invent for Life program, the students will be armed with the knowledge and tools that will allow them to be creative in any endeavor that they choose.

Once the teacher graduates from the Invent for Life program, they will select a simple, yet challenging contest idea from over a dozen possible choices (or make up their own contest). After determining the contest date (gaining permission from the school principal), the teacher will then teach the 10 step process of invention.

**STEP 1: Introduce the concept of the Invention Contest**
- Describe what an invention is and talk about how they are created

**STEP 2: Read all of the rules**
- The rules need to be understood by everyone, so have them ask questions

**STEP 3: Form teams of students**
- Teams need to be between 3 and 6 persons

**STEP 4: Get ideas on how to solve the problem**
- Demonstrate the brainstorming techniques learned on a sample project
- Encourage the student teams to use the brainstorming technique to get ideas for solving the Invention Contest problem

**STEP 5: Figure out which ideas should be pursued and create the design**
- Have each team member try to design their own invention (draw or sketch the ideas)
- Get together after everyone is done and try to figure out which invention to work on. More than one is OK, but one design is better to work on as a group

**STEP 6: Hold a review to ensure that the design is sound**
- Invite other people to help you (maybe a teacher or parent)

**STEP 7: Build the invention**
- Make sure that students are safe. Let adults work with power tools (for example)

**STEP 8: Test, redesign, and retest the invention**
- It’s amazing how many designs are never tested before the day of the contest. Not a good idea.
- Be sure to try it more than once. This usually takes the longest amount of time, so plan for it!

**STEP 9: Hold the contest**
- Get plenty of volunteers (parents are a good source
- Make sure that it is videotaped and photographed
- Emphasize that everyone is a winner. Award the best performers, most colorful, etc.

**STEP 10: Reflect on the overall activity**
- Have students fill out an questionnaire (on-line or during class)
- Teachers note student behavioral changes (attentiveness, participation, etc.)