

Jump's STEM Outreach Program Overview

Middle School STEM Program (Grades 5-8)

MISSION: God has called each of us to a particular vocation. By creating an extracurricular program that offers early exposure to the health and engineering fields, Jump hopes to inspire young people to become aware of their unique gifts and talents and prepare for a career in the service of others.

The application of our STEM program inspires middle school students to leverage their gifts of collaboration, creativity, communication and critical thinking in a unique learning environment.

**Jump Trading
Simulation & Education
Center**

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Peoria, IL 61603
309-677-0801





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CURRICULUM: Dependent on the school's interest level, during a 6 - 8 week extracurricular program students can achieve the following:

- Develop an understanding of basic engineering principles and the different fields of engineering study
- Engage in team problem solving using analytic techniques, estimation, and brainstorming
- Construct experiments to explore engineering fundamentals and concepts including physical principles, statics, work, energy, biomechanics, electrical circuits, and engineering economics
- Analyze, plan and design prototypes through hands-on use of CAD (computer-aided design) software
- Develop and build functional models utilizing additive manufacturing (3D printing) technology
- Build on concepts learned throughout the program, complete a group project by solving a real problem requiring research, experimentation and manufacturing of a medical solution to present in front a large group

SCHOOL COMMITMENT: A successful pilot was completed in 2015 with St. Jude Catholic School in Peoria. As a result, the following elements should be considered by schools interested in participating in this program:

- The Jump Simulation and Education Center can dedicate four days per year to an on-site field trip experience. Jump staff may be available for faculty/parent coaching.
- This is an extra-curricular activity. An interest in math and science is strongly preferred, and the school should identify interested and capable students.
- Recommended total group size is 20-24 with five to six students per group.
- Formal meetings should occur once per week, but supplemental group time and individual homework will be required.
- Meetings should include a mix of school projects and activities or tours.
- Investment in a 3D printer and laptop computers for the students is strongly recommended.
- Parent commitment to serve as group mentors and drivers to and from the Jump Simulation and Education Center is critical.