



STRUCTURAL DESIGN CAMP

Grades: 6-8



Students: 30

Contact Hours: 12+ hours

The camp includes 12 days of activities, each designed to last about one hour. Use one lesson a day, clump them together into larger blocks or break them apart to be worked in one at a time throughout the course of a school year.

Recommended Settings:

- Summer camps
- Classrooms looking for hands-on engineering lessons
- After-school programs

Pricing Options:

- Full kit: \$2495
- Print curriculum only: \$295 *
- Digital curriculum download only: \$129 **

Highlights:

- Hands-on projects to gain confidence and skill in construction engineering.
- Durable fischertechnik® parts can be used again and again.
- Curriculum includes step-by-step builds as well as open-ended building challenges and design projects.

Materials:

The camp comes with all the supplies needed for 12 days of activities:

- Bound Instructor Guide: 1
- Bound Student Guide: 15
- Digital curriculum download: 1
- Universal II fischertechnik kits: 15
- Storage containers: 15

* Print curriculum includes 1 Instructor Guide and 15 Student Guides.

** Digital curriculum download includes both Instructor and Student Guides.

Logistics & Storage:

Sets of fischertechnik parts are shipped in sturdy tubs for easy storage and organization.

Curriculum Topics:

- Post and Lintel
- Wind and Earthquake Vibration Design
- Tower Design - Modular Tower
- Antenna Tower
- Tall Tower Wind Design
- Tall Earthquake Design
- Elevator
- Crane
- Anti-Gravity Challenge
- Body Builder Challenge
- Crane Challenge
- Elevator Challenge

Training Available:

Professional development webinar training is available. Talk a PCS STEAM Program Specialist for more information.

Shipping Availability:

Contact a PCS STEAM Program Specialist for shipping options.



Alignments & Standards

Habits of Mind:

16 “thinking habits” developed by Art Costa and Bena Kallick to empower students to succeed in a 21st century learning environment.

- Persisting
- Managing Impulsivity
- Thinking Flexibly
- Striving for Accuracy
- Questioning and Posing Problems
- Applying Past Knowledge to New Situations
- Creating, Imagining, Innovating
- Taking Responsible Risks
- Remaining Open to Continuous Learning

21st Century Skills:

A set of widely-applicable abilities essential for success in the information age.

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration
- Flexibility and Adaptability
- Initiative and Self-Direction
- Productivity and Accountability

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Next Generation Science Standards*

- MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
- MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

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International Society for Technology in Education

- Creativity and Innovation
- Critical Thinking, Problem Solving and Decision Making
- Communication and Collaboration with a Digital Portfolio
- Research and Information Fluency

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Common Core State Standards for English Language Arts and Math

- ELA-LITERACY.RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing a technical task.
- CCSS.MATH.CONTENT.4.NF.A.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$.

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