



CAD CAMP

Grades: 4-8



Students: Up to 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
- After-school programs
- Tech Ed or computer classes

Pricing Options:

- Full CAD Camp with printed materials: \$395
- Digital curriculum download only: \$295

Materials:

- 30 sets of *CAD Camp* Student Pages, printed on heavy-duty, no-tear paper (9 pages per set).
- 1 set of *CAD Camp* Instructor Pages, printed on heavy-duty no-tear paper (12 pages per set).
- 2 expanding files for easy access and storage of curriculum cards.
- 1 digital curriculum download

Curriculum Topics:

- Day 1 - SketchUp and 2D Shapes
- Day 2 - 3D Models
- Day 3 - Orbit, Move and Paint Bucket Tools
- Day 4 - The Warehouse and Complex 3D Objects
- Day 5 - Model a Dream House
- Day 6 - Translucent Faces and Styles
- Day 7 - A Dream House for Fish
- Day 8 - Arrays and Offsets
- Day 9 - Arches and Arcs
- Day 10 - Model the Solar System
- Day 11 - Components and Groups
- Day 12 - Treefort Fever

Highlights:

- Project-based, student-driven curriculum
- Simple, durable curriculum format: each day comes with one card for the instructor and one card for the student

Great introduction to SketchUp, which gives students applicable skills in architecture, 3D printing, mechanical engineering, woodworking, video game design and modern art.

Technical Requirements:

- 1 device (laptop, desktop or ChromeBook) per student
- The *SketchUp* software is now housed online in a browser-based platform called *SketchUp for Web*. *SketchUp for Web* is available for Chromebooks, laptops or desktops running ChromeOS, Windows or OSX and requires a mouse, keyboard and Internet browser (Chrome 59+ or Firefox 52+ recommended). To run on a Chromebook, *SketchUp for Web* needs (1) minimum of 2.1 GHz Intel processor, 2.8+ recommended; (2) 4GB+ RAM, 8GB+ recommended; (3) 700MB+ of available hard-disk space, 1GB+ recommended; (4) Intel HD integrated graphics card with at least 512MB video memory, discrete graphics card such as AMD Radeon R9 M37X 2048 MB recommended.

Logistics & Storage:

Each camp curriculum comes in two expanding file folders, keeping each day's handouts organized and ready for easy access and storage.

All handouts are printed on virtually indestructible, no-tear paper. This design eliminates the need for copying as the handouts can be used again and again, class to class and year to year.

Assessment:

Formative or summative assessment in the Check for Understanding section at the end of each lesson.

Training Available:

Professional development webinar training is available. Talk to 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.

- Applying Past Knowledge to New Situations
- Creating, Imagining, Innovating
- Persisting
- Striving for Accuracy
- Thinking and Communicating with Clarity and Precision

21st Century Skills:

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

- Communication and Collaboration
- Creativity and Innovation
- Critical Thinking and Problem Solving
- Initiative and Self Direction
- Technology Literacy

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Common Core State Standards for Language Arts

- CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multi-step procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CCSS.ELA-LITERACY.RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
- CCSS.ELA-LITERACY.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Common Core State Standards for Math

- CCSS.MATH.CONTENT.4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
- CCSS.MATH.CONTENT.4.MD.C.5.A An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $1/360$ of a circle is called a “one-degree angle,” and can be used to measure angles.
- CCSS.MATH.CONTENT.5.OA.B.3 Analyze patterns and relationships.
- CCSS.MATH.PRACTICE.MP5 Use appropriate tools strategically.

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Next Generation Science Standards*

- 3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 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.

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