



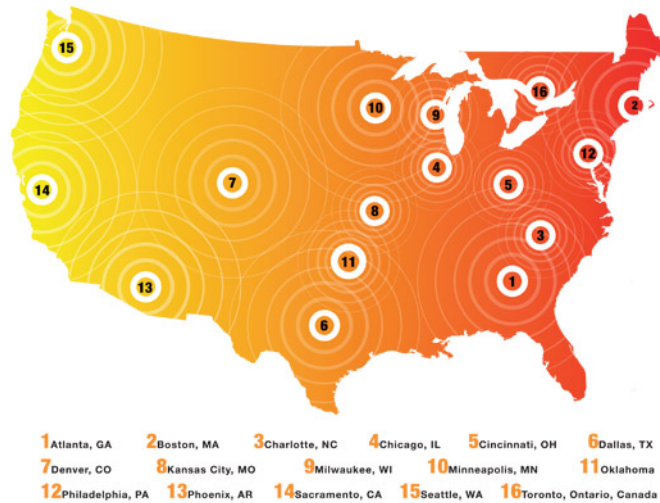
Chicago Regional Rally

c/o Destination ImagiNation
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www.constructionchallenge.org

October 20, 2008

Dear Administrator:

Your school is cordially invited to participate in the *Chicago Regional Rally* of the **2nd Annual Construction Challenge**, sponsored by the Association of Equipment Manufacturers. This innovative (national) career education initiative is designed to engage middle school (grades 6-8) and high school youth (grades 9-12), in real-world, hands-on experiences exploring the 21st century construction industry through competitions in *Manufacturing Design*, *Service Tech Simulation* and *Critical Infrastructure*. Regional Rally competitions will take place on **Saturday, February 7, 2009** throughout the U.S. and Canada, including: Chicago, Atlanta, Boston, Charlotte, Philadelphia, Cincinnati, Dallas, Denver, Kansas City, Milwaukee, Minneapolis, Oklahoma, Phoenix, Sacramento, Seattle, and Toronto.



Over 750 teams drawing more than 5,000 youth nationwide are anticipated to participate. The Chicago Regional Rally is slated to host 50 to 60 teams comprised of over 400 youth. The Chicago Regional teams will compete at the Carpenter's Union Apprentice and Training Facility at 2141 South Union Ave (near Cermack and Halsted) in Chicago from 8:00 a.m. – 6:30 p.m. on Saturday, February 7th, 2009.

The nominal registration fee (*including shipping costs*) of \$120 (for each team of 5 -7 members), includes Challenge Prep materials and a full day of fun and exploration ending with an awards ceremony honoring all participants. Sponsoring companies are interested in meeting the future workforce! Champions from each Regional Rally will advance to the Championship Finals May 19th – 23rd, 2009 at the University of Tennessee in Knoxville, to compete for national awards and scholarships valued at over \$75,000.

Schools may register as many teams as they desire comprised of 5 to 7 middle school and/or high school students accompanied by a supervising adult Team Manager who is at least 21 years old. Team Managers can be teachers, program advisors, parents or community leaders. Due to the overwhelming response to last year's competition, schools are strongly encouraged to register as early as possible. Please use the enclosed registration form and mail/fax to the Destination Imagination corporate office or register online at www.ShopDI.org with your accompanying registration fee. **Registrations for the Chicago Regional Rally registrations by or before November 21, 2008 have special incentives!** Space is limited and the rosters are expected to fill, so sign up early to reserve space for your teams.

Upon confirmation of your school's registration, each registered team will receive a registration packet that will include the following:

- Construction Challenge Introduction and Overview
- Rally Location and Schedule
- Team Profile Form
- Declaration of Independence
- Parental Consent Forms: Medical, Media and Full-Participation Support
- School Consent Form: Full permission from school principal for the team to participate in the Regional Rally AND in the Championship Finals
- Participant Commitment Form: Form for the participant to sign promising commitment to participate and compliance with the code of conduct and rules
- Pre-Rally Survey
- Prep Kit for Rally Challenges

The Prep Kit for Rally Challenges will include team preparation activities (including approximately 6-8 hours of team research) exploring *Manufacturing Design*, *Service Tech Simulation* and *Critical Infrastructure*. These preliminary activities will assist teams in gaining the *competitive edge* and background knowledge and skills needed to *problem-solve, build, plan and/or create* the hands-on challenge to be addressed at the Regional Rally. Teams will compete in these three core areas and be scored according to the criteria of the challenge. Each challenge will be staged and set-up by Regional Rally staff and will include the materials and guidelines needed to address the criteria of the challenge.

The Chicago Regional Rally teams will also participate in building a *Dream-Team Spirit* website. This website will include team profiles and student input about their preparation activities and discoveries. We will also host a virtual *Pep Rally* involving team managers and team members prior to the challenge event. Following the competition, participants will share their rally experiences as well as provide updates on opportunities in which they (and/or their school) have pursued and/or discovered after the rally event. The site will also provide student teams (and non-participants) with information about local internship opportunities, training programs and apprenticeships.

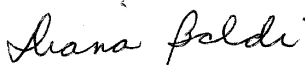
Sponsored by the Association of Equipment Manufacturers (AEM) in partnership with Destination ImagiNation, the Construction Challenge is a multidisciplinary program that integrates technical preparation and career exploration while building upon standards-based school curriculum, to prepare students for both post-secondary education and technical training for entry into the 21st century construction workforce.

ARE YOU UP FOR THE CHALLENGE?

With a growing number of Baby Boomer retirees and national infrastructure challenges, the construction industry is currently looking to recruit thousands of young people to the industry as they face an increasing workforce shortage with more than 1,000,000 jobs available by 2012. **Join us at the 2009 Construction Challenge to explore this highly diverse industry and discover more.**

Register your student team(s) today! See attached pages for more detailed information.

Sincerely,



Diana Baldi
Chicago Regional Rally Leader
Destination ImagiNation Far North Illinois Regional Director



Construction Challenge 2009

PROGRAM IMPACT

The Construction Challenge integrates academics, technical preparation, career awareness and exploration that build upon standards-based school curriculum, while preparing students for post-secondary education and technical training for entry into the construction workforce.

This multidisciplinary program:

- Provides students with comprehensive academic enrichment
- Builds student's communications skills
- Broadens their scope of career planning and management knowledge
- Enhances their technology use and innovation
- Promotes problem-solving and critical thinking
- Broadens their knowledge of health and safety issues related to the workplace
- Promotes responsibility and flexibility
- Enhances their knowledge of ethics and legal responsibility
- Promotes leadership and teamwork
- Enhances technical knowledge and skill
- Provides opportunities for knowledge demonstration and application.

This year's challenge activities will focus on *Manufacturing Design*, *Service Tech Simulation* and *Critical Infrastructure*.

- **Manufacturing Design** refers to the totality of the design & manufacturing process as defined by implementation.
It differs in detail within every manufacturing company and has changed over time due to new technology and tools. *Conceptual Design*: Also referred to as "preliminary design" or "functional design," is the stage that deals not only with aesthetic issues such as styling, but with practical issues such as simulation and industrial design for manufacturability. Paper and pencil, brush and oils, and sculptor's clay used to be the conceptual designer's tools in earlier years, however, today modern CAD/CAM systems provide designers with more powerful tools which free them from the necessity to create physical models. Photorealistic rendering output is also becoming an essential capability for conceptual design. It allows management to view the design as it would be manufactured, and also allows engineers to try different variations of the design without the accompanying investment in cost and time that normal prototyping techniques traditionally require.
- **Service Tech** refers to the specialty job(s) that require individuals to have a working knowledge of multiple systems and processes related to the operation of a variety of equipment and hardware. Growing career opportunities with this sector include: shop technician, special projects technician, field technician, dealership sales and customer service.
- **Critical Infrastructure** is a term used to describe the issues related to important assets that are essential for the functioning of a society and economy. These assets include:
 - electricity generation transmission and distribution;
 - gas production, transport and distribution;
 - oil and oil products production, transport and distribution;
 - telecommunications
 - water supply (drinking water, waste water/sewage)
 - agriculture: food production and distribution;
 - heating (e.g. natural gas, fuel oil, district heating)

- public facilities/housing (including hospitals, schools, banks, etc.)
- transportation systems: (highways, railway network, airports, harbours, inland shipping);

The following is a broadly defined listing of program indicators (and outcomes) for project-based benchmarks and activities for the 2009 Construction Challenge.

Construction Challenge Benchmarks and Indicators		
1. Provide Academic Enrichment	1.1 MATHEMATICS INDICATORS	
	(a). Number Sense	
	i. Students ... add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.	ii. Calculate the percentage of increases and decreases of a quantity.
	(b). Mathematical Reasoning:	
	i. Students ...use estimation to verify the reasonableness of calculated results.	ii. Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.
	iii. Apply strategies and results from simpler problems to more complex problems.	iv. Make precise calculations and check the validity of the results from the context of the problem.
	v. Estimate unknown quantities graphically and solve by using logical reasoning, math/algebraic techniques.	vi. Evaluate the reasonableness of the solution in the context of the original situation.
	vii. Make and test conjectures by using both inductive and deductive reasoning.	viii. Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation.
	ix. Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	x. Express the solution clearly and logically by using the appropriate mathematical notation/terms and clear language; support solutions in both verbal & symbolic work.
	(c). Specific applications of Algebra:	
	i. Students ... solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step.	
	(d). Specific applications of Geometry:	
	i. Students ... determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.	ii. Perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.
	1.2 SCIENCE INDICATORS	
	(a). Specific applications of Physics:	
	i. Students ... explore how to solve problems involving heat flow, work, and efficiency in a heat engine	ii. Formulate explanations by using logic and evidence.
	1.3 HISTORY-SOCIAL SCIENCE INDICATORS	
	(a). Students ... explore and discover the connections among natural resources, entrepreneurship, labor, and capital in an industrial economy.	(b). Discuss common economic terms and concepts and economic reasoning and explore the influence of the federal government on the American economy.
	1.4 VISUAL & PERFORMING ARTS INDICATORS	
	(a). Students ... create a two- or three-dimensional work of art that addresses and/or depicts schematic building plans, tools or products.	(b). Solve conceptual project ideas through the effective use of the elements of art and the principles of design.

	(c). Plan and create drawings and models that reflect complex ideas, such as distortion, color theory, arbitrary color, scale, expressive content, and real versus virtual.	
2. Build Communications Skills	COMMUNICATION INDICATORS	
	2.1 Students ... demonstrate use of a variety of learning tools by following technical directions.	2.4 Use appropriate grammar, word choice, enunciation, and pace during formal presentations.
	2.2 Verify and incorporate facts from a variety of expository texts in presentations and projects, including a bibliography of reference materials for presentations.	2.5 Organize, record and deliver narrative presentations with props, visual aids, charts, maps video, CD-ROMs, graphics, sketches and electronic media to enhance the appeal and accuracy of presentations.
	2.3 Plan and conduct multiple-step information searches by using computer networks and modems.	2.6 Achieve an effective balance between researched information and original ideas.
3. Broaden Scope of Career Planning & Management Knowledge	CAREER PLANNING & MANAGEMENT INDICATORS	
	3.1 Students ... explore the personal qualifications, interests, aptitudes, knowledge, and skills necessary to succeed in careers.	3.4 Explore the past, present, and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning
	3.2 Explore the scope of career opportunities, the nature of entrepreneurial activities, and the requirements for education, training, and licensure.	3.5 Discover important strategies for self-promotion in the hiring process, such as job applications, résumé writing, interviewing skills, and preparation of a portfolio.
	3.3 Learn to develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.	3.6 Explore the role and function of professional organizations, industry associations, and organized labor .
4. Enhance Technology Use and Innovation	TECHNOLOGY INDICATORS	
	4.1 Students ... explore the past, present, & future technological advances as they relate to a chosen pathway.	4.2 Discover the influence of current and emerging technology on selected segments of the economy.
	4.3 Explore the use of technological resources to gain access to, manipulate, and produce information, products, and services.	
5. Promote Problem-Solving & Critical Thinking	PROBLEM-SOLVING & CRITICAL THINKING INDICATORS	
	5.1 Students ... apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.	5.2 Use critical thinking skills to make informed decisions and solve problems; including trouble-shooting strategies, such as failure-analysis procedures, in three-dimensional product material and design work.
	5.3 Participate in systematic problem-solving models that incorporate input, process, outcome, and feedback components.	5.4 Apply the design process in the design, development, evaluation, and refinement of a prototype for a construction industry product.
6. Promote Responsibility & Flexibility	RESPONSIBILITY/FLEXIBILITY INDICATORS	
	7.1 Students ... discuss the qualities and behaviors that constitute a positive and professional work demeanor, including the roles of the employer and employee in the workplace.	7.3 Explore how individual actions can affect the larger community.

	7.2 Assess the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.	7.4 Discuss the need to adapt to varied roles and responsibilities.
7. Enhance Knowledge of Ethics & Legal Responsibility	ETHICS/LEGAL INDICATORS	
	8.1 Students ... explore the major local, district, state/ federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.	8.2 Discover how social, organizational, and technological systems work.
8. Promote Leadership & Teamwork	LEADERSHIP/TEAMWORK INDICATORS	
	9.1 Students ... discuss the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.	9.4 Practice multiple approaches to conflict resolution and explore their appropriateness for a variety of situations in the workplace.
	9.2 Explore how pre-professional associations, apprenticeships and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.	9.5 Practice how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.
	9.3 Practice how to organize and structure work individually and in teams for effective performance and the attainment of goals.	9.6 Communicate ideas to justify positions, persuade and convince others, confirm responsibility, and evaluate existing policies and procedures.
9. Enhance Technical Knowledge & Skill	TECHNICAL KNOWLEDGE INDICATORS	
	10.1 Students ... learn about the role of the construction industry in the U.S., and discuss construction processes and systems and their importance in construction technology.	10.2 Discover the attributes of good design.
10. Provide Demonstration & Application Opportunities	DEMONSTRATION/APPLICATION INDICATORS	
	11.1 Students ... participate in the planning and design of the Construction Challenge applying the concepts and technical resources of the program.	11.2 Use, store, and allocate materials efficiently, and use space efficiently.