

## **EngineerGirl! Essay Contest for Youth Now Open for Entries**

News Date: November 3, 2011

The National Academy of Engineering's EngineerGirl! website has announced its 12th annual essay contest. Students are asked to write about the role of engineering in providing safe and nutritious food. Details and contest rules can be found on the EngineerGirl! website. Participation is open to both girls and boys in grades 3-12 and submissions must be entered by 6:00 pm (EST) on March 1, 2012. All winning entries will be published on the EngineerGirl! website and winners will receive cash prizes: first place winners \$500, second place winners \$250, third place winners \$100. The 2012 EngineerGirl! Essay Contest was made possible by the generous support of Lockheed Martin Corporation.

The EngineerGirl! website is designed to spark the curiosity of young people, girls in particular, and encourage them to consider careers in engineering. EngineerGirl! provides career descriptions, profiles of successful women engineers, information about exciting engineering projects, and interactive tools for girls, parents, teachers, and guidance counselors, all designed to encourage girls to pursue an engineering education and career. Launched in 2001, the site is visited by more than 18,000 unique visitors a month and has been featured by the Girl Scouts of America, the Society of Women Engineers, and local and national media in the United States and around the world. Engineer Girl! is a trusted and entertaining resource for young girls, parents, educators, and volunteer engineers involved in student outreach. In a 2011 poll, girls reported that viewing the EngineerGirl! website or participating in its annual essay contest influenced 63% of them to consider a career in engineering and 81% to consider studying engineering in college. Please visit [engineergirl.org](http://engineergirl.org) to learn more.

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## ***EngineerGirl! Contest***

Every year, the EngineerGirl website sponsors a contest dealing with engineering and its impact on our world. Usually the announcement is posted in the fall with judging and winners announced in the spring. You can enter this year's contest or see past results.

### **2012 Food Engineering Essay Contest - Enter Now!**

### **2011 Engineering & Human Service – Relief from a Disaster**

### **2010 Survival Design Challenge Essay Contest**

### **2009 Imagine That! Engineering Innovation Essay Contest**

### **2008 Engineering Energy for the Future Essay Contest**

### **2007 Engineering's Grand Challenges Essay Contest**

### **2006 Engineering: Improving our World Essay Contest**

### **2005 Save the Dolphins Contest**

### **2004 Engineering is a Dream Career Essay Contest**

### **2003 Engineers Improving the World Essay Contest**

### **2002 Women Inventors: Improving the World Website Design Contest**

## **2001 Engineering: It's a Girl Thing!**

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# EngineerGirl! Food Engineering Essay Contest - 2012

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## Contest Description

Shopping at your local supermarket is a different experience today than it was even 50 years ago. Today the food we eat comes from around the world and is often already prepared in a wonderful variety of ways. Engineers are actively involved in every step of the process—they design the specialized machines used to plant and harvest crops and develop unique manufacturing processes to prepare, package, and transport foods in safe and secure ways.

Consider these popular foods:

- Applesauce
- Ice cream
- Peanut butter
- Potato chips
- Sandwich bread
- Spaghetti sauce



### Grades 3-5: (No more than 500 words)

Choose one of the foods from the list and explain how it is produced, from the planting and harvesting of raw material to being ready to eat. Describe how engineers are involved in different steps of the process.

### Grades 6-8: (No more than 750 words)

Choose one of the foods from the list and explain how it is produced, from the planting and harvesting of raw material to being ready to eat. Choose a technology critical to one or more steps in the process and explain how it works. Describe how different types of engineers (e.g. civil, mechanical, electrical, etc.) might have contributed to the design of the technology as well as key elements of that design.

**Grades 9-12: (No more than 1500 words)**

Choose one of the foods from the list and explain how it is produced, from the planting and harvesting of raw material to being ready to eat. Choose a technology critical to one or more steps in that process and explain how it works. Describe how different types of engineers (e.g. civil, mechanical, electrical, etc.) might have contributed to the design of the technology as well as key elements of that design. Talk about what engineers are currently doing to improve this technology. Be sure to include your references.

## Contest Guidelines

### Who Can Enter?

The contest is open to individual girls and boys in each of three categories (Choose your category by grade-level unless you are unsure of your grade):

- 3rd grade to 5th grade (Ages 8-11)
- 6th grade to 8th grade (Ages 12-14)
- 9th grade to 12th grade (Ages 15-18)



If you are a prior winner and have received a cash prize from EngineerGirl! in any of the above grade categories, you may not enter again in the same age group.

### How Do I Enter?

Write an essay which addresses the requirements in the contest description. Essays should be clearly written. They may be shorter than, but should not exceed, the word limit listed in the contest description. Submit your essay with the help of your parent/guardian using our [Online Submission Form](#).

### When Is the Deadline?

Entries must be received by 6:00 p.m. (EST) on March 1, 2012.

### What Are the Awards?

All winning entries will be published on the EngineerGirl! website. (Please review our [publication agreement](#) before you submit your essay. All finalists will be asked to fill out and

return the publication agreement in order to advance to the final round of judging.) In addition, all winners will receive the prizes listed below:

- First-place winners will be awarded \$500.
- Second-place entries will be awarded \$250.
- Third-place entries will be awarded \$100.
- Honorable Mention entries will not receive a cash award but will be published on the EngineerGirl! website.



## Additional Rules

- Essays will be judged on the basis of design content, research, expression, and originality. You may wish to preview the [2012 Contest Scorecard](#).
- All essays must be the original work of the author submitting the entry and must not have been published anywhere else.
- A contestant may enter only one essay.
- No contestant may win more than once in a single age category.
- All entries will be read by a panel of judges, whose selections will be final.
- Management, employees and families of the National Academy of Engineering (NAE) are prohibited from winning any prizes offered by EngineerGirl!
- Entry in the contest grants the NAE non-exclusive rights to publish winning essays in full or in part on the EngineerGirl! website. ([publication agreement](#))
- Entries must be submitted using the [Online Submission Form](#).

## Additional Links

You may want to look at some of these [recommended links](#) to begin thinking about how engineers are related to the food we eat. If you are a teacher, this page also includes some great resources for the classroom.

## Sponsorship

This year's contest is made possible by the generous support of [Lockheed Martin Corporation](#).

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# **EngineerGirl! Food Engineering Essay Contest Scorecard**

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## **DESIGN CONTENT (40 points)**

Essay demonstrates author's understanding of the design process and the engineering role. In older divisions, authors are able to accurately describe the different contributions of various types of engineers and how each might contribute to an overall design and continuing improvements.



## **RESEARCH & ANALYTICAL THINKING (30 points)**

Essay expresses accurate knowledge of the process and technology described and demonstrates a clear understanding of its function. Author is able to imagine the actual process and the use of technology in context and describe real, functional reasons for design decisions. Resources should be accurate and clearly cited. Please avoid the use of Wikipedia as a solitary resource.

## **CLARITY OF EXPRESSION (20 points)**

Essay clearly and convincingly communicates the author's ideas. It is well-written and uses both proper grammar and correct spelling. It presents information in an engaging manner.

## **ORIGINALITY (10 points)**

Essay is original and includes the author's own thoughts.

## **TOTAL SCORE (100 points)**

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**ENGINEERGIRL! ESSAY CONTEST PUBLICATION AGREEMENT**

\_\_\_\_\_ (“Student”)  
\_\_\_\_\_

The undersigned, either Student, or if Student is less than 18, Student’s parent or legal guardian agrees to and/or warrants the following.

1. The submitted essay is Student’s original work. It has not been published before; it is not being considered elsewhere in its final form either in printed or electronic form; and, copyright interests to it have not been assigned or otherwise transferred to another party.
2. The National Academy of Engineering (NAE) and EngineerGirl! will own the entire copyright interest in the essay. Student irrevocably grants and assigns exclusively to the NAE all rights, including copyright interests in the essay, under all laws, treaties and conventions throughout the world, in all forms, languages and media, now or hereafter known or developed without limitation. This includes, but is not limited to the right to publish, republish, transmit, sell, distribute and otherwise use the essay and the material contained therein in electronic and print and Student authorizes NAE to license or permit others to do so. The NAE may publish the essay on the EngineerGirl! website, in any of its publications, on its own, or with other material.
3. Student may re-use the essay as long as it is not sold or reproduced in whole or in part for commercial purposes. All requests by third parties to re-use the essay in whole or in part should be submitted to EngineerGirl! NAE. Such use will be subject to Student’s approval, which will be deemed to be given, if Student has not informed the NAE within four weeks of notice of request from NAE.
4. Student further authorizes the NAE to use Student’s name, likeness, biographical data in NAE’s publications and on electronic media, and in advertising, publicity or promotion related to the NAE and EngineerGirl! and NAE may grant such rights in connection with the license of any subsidiary rights in the work. Student further authorizes the NAE to invite the press to contact Student about the essay and award.

**I have read, understand and agree to the terms of this agreement:**

Student’s Signature: \_\_\_\_\_  
Student’s Name and Age (print): \_\_\_\_\_  
Date signed: \_\_\_\_\_

**If Student is under 18 years old, then parent or legal guardian must make the agreement on behalf of the Student by signing below.**

Parent/Guardian Signature: \_\_\_\_\_  
Parent/Guardian Name (print): \_\_\_\_\_  
Telephone Number: \_\_\_\_\_  
Date signed: \_\_\_\_\_

Current (or corrected address) if different from notification letter: \_\_\_\_\_  
\_\_\_\_\_

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## 2012 Food Engineering Essay Contest Links

Need some inspiration? The following links may help get you started:

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- [Chocolate Engineering](#)—This EngineerGirl! Page describes how Engineers are involved in making one of our favorite foods!
- [EngineerGirl! Career Descriptions](#)—Check out these descriptions of different types of engineering.
- [Great Achievements](#)—Most of the great achievements of the 20th century would not have been possible without engineers. Check out module #7 about [Agricultural Mechanization](#) and # 10 on [Air Conditioning & Refrigeration](#).
- [Sustainable Food Systems—Toward Food for All](#)—This 2010 Statement from the International Council of Academies of Engineering and Technological Sciences (CAETS) describes recommendations for improving food supplies and sustainability throughout the world.
- [Nitrogen cycle and fertilization](#)—One of the Grand Engineering Challenges of our time is to manage the nitrogen cycle. Read this page to find out why.
- [Food Security & Sustainability](#)—This page describes some of what is being done at the National Academies to address this important national issue.
- [Food Engineering Magazine](#)—You can use this magazine to find various articles about products, processing technology, packaging, plant operations, food safety issues and more.



If you are a teacher you might find the following links useful for your class:

[University of Illinois Extension, Just for Kids](#)—This page includes several modules with resources for kids and teachers including "Food Fun", "The Great Plant Escape", and "Where Your Food Comes From".

[Lesson plans from AAAS](#)—AAAS has several lesson plans

that can be adapted for different classes. Check out these for starters:

- [Global Breakfast](#)—Students explore the concept of global interdependence by investigating the origins of the foods they eat. (Grades 3-5)
- [Sanitation and Human Health](#)—Students learn that advances in health and human life expectancy have resulted in large part because of technologies that we now take for granted, such as modern waste-disposal, sanitary food handling, and refrigeration. (Grades 6-8)
- [Risks and Benefits](#)—Students learn to assess and weigh the risks and benefits associated with innovations in science and technology. Topics include food irradiation and transgenic crops. (Grades 9-12)

[Where Does Our Food Come From?](#)—This worksheet shows how food gets from the farm to the kitchen. Students can fill in information about the process along the way.

[Squashed Tomato Challenge](#)—This is a great practical action resource from the UK National STEM Centre suitable for high school students.

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