



Innovation Generation

MIDDLE SCHOOL STUDENTS MAKING A DIFFERENCE

Middle School Students Making a Difference



FIRST STOP: Entering the Christopher Columbus Awards.
NEXT STOP: You Decide!

Thanks to the Christopher Columbus Fellowship Foundation, the six finalist teams in the Christopher Columbus Awards will enjoy five days filled with excitement, fun, friends and discovery. That's what National Championship Week is all about. But for two teams, it's something more. Awarded to the two finalist teams that demonstrate their enterprising spirit and resourcefulness, there's also the possibility of winning U.S. savings bonds and gold medals.

THE CHRISTOPHER COLUMBUS ACADEMY

The Christopher Columbus Academy is a one-of-a-kind chance for students and coaches to work alongside scientists, engineers and technical experts while exploring the science and technology behind Walt Disney World. Through this specially designed program, the finalist teams not only learn about science and technology but also gain knowledge of important techniques for communicating their idea to the media and the public. The academy illustrates the important role of science in everyday life and provides a strong foundation for science achievement.



National Championship Week

The Christopher Columbus Awards

COMPETITION GUIDELINES

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COMPETITION RESOURCES

COMPETITION WEBSITE:

www.christophercolumbusawards.com

COMPETITION HOTLINE:

800-291-6020

Christopher Columbus Awards

105 Terry Drive, Suite 120

Newtown, PA 18940-3425

Fax: 215-579-8589

E-mail: success@edumedia.com

MADE POSSIBLE BY:

CHRISTOPHER COLUMBUS FELLOWSHIP FOUNDATION

ENDORSED BY:



Get Your Kids Psyched About Science!

Enter the Christopher Columbus Awards and your team could **win an all-expense-paid trip to Walt Disney World® for National Championship Week. Plus compete for \$16,000 in prizes, grants and U.S. Savings Bonds!**

Entry Deadline: February 6, 2012



Your kids can learn a lot inside and outside the classroom. But when they roll up their sleeves and

tackle a project important to them, that's when they really get psyched about science! And that's what the Christopher Columbus Awards are all about.



National Championship Week

The idea is simple. *Three or four students working as a team put their heads together to solve a problem in their own community. You act as their coach, giving them a helping hand with some of the details.*



This is science at its best. *Your team will identify a problem, look into it, come up with an innovative solution, refine the solution . . . and have fun doing it! Plus the team — including you as their coach — will be competing for an all-expense-paid trip to National Championship Week at Walt Disney World and U.S. Savings Bonds of \$2,000 for each student team member.*

The Christopher Columbus Awards *program is a high-energy, hands-on experience using science and technology. It's a unique opportunity to use your classroom as a tool for learning and improving your community while meeting National Science Education Standards. Plus, it's the perfect cross-curricular activity for science and social studies classes — even youth groups and summer camps!*

HOW IS THIS COMPETITION DIFFERENT?

☀ **It appeals to everyday kids, not just the brightest.** Your students will use their natural creativity to solve an everyday problem. Past winners have included a team from San Diego that designed a seat cushion that uses sensory feedback to train people to maintain a healthy posture while sitting at a computer; and a group of students from Illinois who developed a multifaceted recycling awareness campaign that has increased recycling in their community by 60% in just four months. The problems aren't abstract. They're real and relevant. What's important is that kids use the scientific methods of inquiry and investigation to identify a problem and develop a possible solution that's based on science or technology.

☀ **Your kids get experience in a real scientific process.** Most of today's scientists are not lone geniuses, but team members, working together to solve practical problems. This competition requires that your students work in a team and that each member contribute his or her own unique talents. They go through the same steps that scientists do — identifying a problem, analyzing it, exploring possible solutions and testing the validity of their assumptions.

☀ **Your kids help their own community.** Your team will solve a problem in your own area, so the work will be both interesting and beneficial. It's a confidence building program that's good for establishing community relations and recognition.

☀ **The competition is open to all 6th, 7th and 8th graders — and there is no fee to enter.** All middle school-age students are welcome. The competition encourages entries from any public, private or home school, as well as youth groups.

☀ **It's real science — with real rewards!**

Hundreds of teams across the U.S. will enter. Thirty teams from across the nation will go on to the semifinals, and six finalist teams will be selected to advance to the finals judging.

Semifinalist teams win a competition T-shirt for each member and a Certificate of Participation.

Finalist teams win a \$200 grant to develop their ideas further and an all-expense-paid trip for team members and their coach to National Championship Week at Walt Disney World to participate in the finals judging and the Christopher Columbus Academy. The two Gold Medal Winning Teams selected during National Championship Week at Walt Disney World will receive **\$16,000 in U.S. Savings Bonds** — a \$2,000 U.S. Savings Bond for each team member!

* For a complete list of Christopher Columbus Awards winners, visit www.christophercolumbusawards.com.

EVERYTHING YOU NEED TO GET STARTED IS RIGHT HERE . . .

Spend a few moments with this booklet. Everything you need is here: entry forms, contest rules, tips for coaching your team and more. We've even written a separate student booklet for you to share with your team.

This will be one of the best learning experiences your kids ever have. The entry deadline is **February 6, 2012**, so get your kids started now. And get them psyched about science! **GOOD LUCK!**



TOP: A.M. Kulp Elementary School, Pennsylvania
BOTTOM: River Bluff Middle School, Wisconsin



Questions?

Call 800-291-6020

or visit our website at

www.christophercolumbusawards.com

Helpful Tips for Coaches

THE COACH AS FACILITATOR

Who can be a coach?

- Anyone over the age of 18 years old.
- Teachers, parents or guardians, youth organization leaders, business people and community members are eligible to participate.

What are the coach's responsibilities?

- Facilitate one or more teams.
- Sign the Entry Form (see pp. 15-16) and verify the originality of the work completed and compliance with the rules.
- Chaperone the team if the team is selected to attend National Championship Week (see p. 11).

What are the coach's primary objectives?

- Facilitate brainstorming sessions to help identify and narrow ideas for topics.
- Help teams identify what makes an issue a "community problem." How are people truly affected? Is the problem ongoing?
- Remind teams that science and technology must play a role in their solution.
- Guide the team to use sound scientific methods.

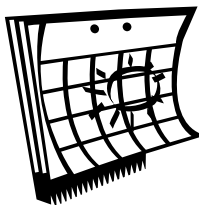
How can the coach help the team protect its ideas?

Documenting the project is important for several reasons:

- To make sure students have a complete record of all their ideas and the project history.
- To make sure students have a record of what works and what doesn't work.
- To make sure students can rely on the information in the documentation notebook to reproduce their work.
- The information in the notebooks may be used to pursue patent protection, if the idea is new, useful and not obvious. (Refer to Student Guide for detailed documentation information.)

How else can the coach assist a team?

- Create meeting schedules and set work deadlines.
- Suggest resources for researching the team's topic.
- Help the team locate or pick up materials for constructing the entry.
- **Review the final entry to check for grammatical errors, clarity and compliance with the rules.**



What is the coach prohibited from doing?

- Conducting research on behalf of the team.
- Creating any section of the entry.

FACILITATING A BRAINSTORMING SESSION

Why brainstorming?

- Young people usually need help identifying and narrowing ideas for topics.
- It promotes creativity.
- It draws out the participation of all the team members or a whole class.



How does a coach facilitate a session?

- Encourage kids to think beyond the obvious.
- Allow only one person to speak at a time.
- Remind the group that arguments waste time and are counterproductive.
- All comments should be positive. Do not allow censorship.
- Keep a running list of ideas and then eliminate ideas the group decides are not useful.
- Conduct more in-depth discussions on the most promising ideas.

NATIONAL SCIENCE EDUCATION STANDARDS

As both a national competition and an exceptional learning experience for middle school students, the Christopher Columbus Awards program can provide links to important principles and content standards outlined in the National Science Education Standards. Below are just a few examples of how the Christopher Columbus Awards support the active learning process and contribute to students' competency in science:

- **Science as Inquiry** – Students design and conduct a scientific investigation, use appropriate tools and techniques to gather, analyze and interpret data, and apply critical thinking skills to establish relationships between evidence and explanations.
- **Science and Technology** – Students design a solution or product, implement a proposed design, and communicate the process of technological design.
- **Science in Personal and Social Perspectives** – Students identify community-based problems that have personal meaning and relevance, then propose solutions using science and technology insights and skills. Students study the role of populations, resources and environments in science and technology issues, explore personal and societal challenges caused by natural hazards, and study how science and technology influence society.
- **History and Nature of Science** – Students see that science is a human endeavor that relies on individual contributions as well as teamwork, and that scientists may change their ideas about nature when faced with new evidence.

GUIDING INQUIRY-BASED LEARNING

How is inquiry-based learning central to this competition?

The Christopher Columbus Awards are designed to support inquiry-based learning as described in the National Science Education Standards: "Inquiry is central to science learning. When engaging in inquiry, students describe objects and events, ask questions, construct explanations, test those explanations against current scientific knowledge, and communicate their ideas to others. They identify their assumptions, use critical and logical thinking and consider alternative explanations. In this way, students actively develop their understanding of science by combining scientific knowledge with reasoning and thinking skills."

The Christopher Columbus Awards encourage teams to:

- Investigate problems in their communities and make educated observations in order to identify a particular problem.
- Use a variety of community resources to collect information (e.g., websites, technical experts, political organizations, museums, community leaders, etc.).
- Repeatedly pose questions, look for patterns and think about relationships in the community.
- Use tools to gather, analyze and interpret data.
- Propose explanations, predictions and solutions.

How can coaches encourage team members' use of inquiry?

- Explain the importance of inquiry while working in teams. Asking questions of others can reveal different viewpoints on an issue, and it also helps to uncover life experiences.
- Point out how inquiry can help with community research. Asking many different people a variety of questions will open doors and help teams discover new ideas.
- Remind teams that using inquiry is a good way to assess their progress and to discuss alternative solutions.

How can coaches facilitate inquiry-based learning?

- Pose questions to the team to stimulate students' thinking (who, what, where, when, why and how).
- Assist students in working through the problem-solving process.
- Remind teams to consider all avenues of investigation and suggest research into:
 1. historical background
 2. social and emotional reactions to the problem
 3. economic influences, cost issues
 4. political issues and potential obstacles
 5. scientific variables (e.g., duration, weight, distance, temperature, speed)



SUGGESTIONS ON USING SCIENTIFIC METHODS

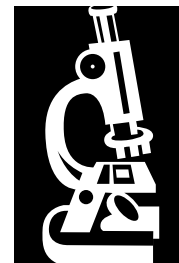
What are scientific methods?

For years students were expected to perform scientific investigations using a single scientific method. This approach required formulating a hypothesis, designing an experiment to test the hypothesis, collecting data and drawing a conclusion. While this methodology represents one standard approach to scientific inquiry, it is only one of many methods employed by practicing scientists.

Participants in this program will identify community-based problems across a wide range of topics and conditions. They may be environmental, mechanical, technological or social in nature. The unique dimensions of the subject will determine which scientific methods are most appropriate. Teams may use a variety of methods in order to progress successfully through their work, and should be encouraged to find out what methods are used by scientists and community members who may be assisting them as mentors.

In general, the following suggestions represent the range of scientific methods in practice today. Student teams should be creative in selecting the most appropriate methods for their work, effectively describe the techniques they use and document their results as a part of their record-keeping for the project.

- Observe a natural phenomenon.
- Observe a human interaction with a natural phenomenon.
- Ask questions about the natural world.
- Identify a problem that involves human interaction with the natural world.
- Research background information on the topic, problem or observed phenomenon.
- Brainstorm possible explanations and/or answers to the team's questions.
- Propose possible solutions to the problem.
- Design experiments that test the team's ideas.
- Document the results of experiments.
- Research others' work on similar problems.
- Refine ideas based on the results of experiments and research findings.
- Re-test ideas with refined experiments, more focused research.
- Analyze the combined research and experimental data.
- Select a best explanation or proposed solution.
- Construct a prototype or model of the solution to further test its validity and help communicate the idea to others.



Suggested Project Timeline

Preparing for the **Christopher Columbus Awards** can fit easily into your plans. This is hands-on learning at its best — students work in teams, just as real scientists do. Each student contributes his or her own unique talents and perspectives to reach an outcome that can make everyone proud. And the students use scientific methods to solve problems that are important to them and their community.

Preparing a competition project is a great learning experience for students in science or social studies classes, or for cross-curricular use in team teaching or block-scheduled classes. You and your students can start today to talk about the important issues in your community and brainstorm possible solutions. A sample timeline is provided, but you may wish to adjust it to your schedule and the amount of meeting time available. Just follow these easy steps to get your students started — **and get them psyched about science!**

STEP ONE

Brainstorm community problems with your students.

Ask students what's going on in their community that is important to them. As students list their topics and concerns, write their ideas on the board. Guide students to think about problems that could be solved with the help of a new, creative way of thinking.

Once several ideas have been suggested, begin a more in-depth discussion about these issues. Why are they important to students? Do they affect other people in the community? Is there more than one side to a particular issue? Encourage students to share their ideas and opinions, even if they seem "outlandish." Allow enough time for differing sides to voice their opinions.

Team Exercise: Ask students to think further about community issues that are important to them and bring in two or three more ideas. As an extension, students could write a brief, one-page essay about the different sides of one specific issue or conduct interviews with friends or relatives to learn about other sides of the issue. Suggested timeline: one week.

STEP TWO

Talk about a solution, and introduce the competition.

Your students are already thinking about the community problems that are important to them. The next step is to let them know they have the power to make a change. This is their chance to come up with an innovative solution using science and technology.

Choose one of the community problems that was discussed earlier and ask students to share any new thoughts on that issue since your first discussion. Then ask them to brainstorm possible

scientific or technological solutions for that problem. How could the community work together to solve the problem? What would be the best solution? Would everyone involved agree on one solution? What resources would be necessary — time, financial support, materials or supplies, etc.? Are the needed resources readily available in your community? Again, make sure that everyone has a chance to voice an opinion.

Introduce the competition project by photocopying the "Student's Guide to the Christopher Columbus Awards" and reviewing it with students. Let students know that this is their chance to choose a community issue that's important to them, identify an innovative solution using science and technology, refine the solution — and they'll be competing for an all-expense-paid trip to National Championship Week at Walt Disney World and a U.S. Savings Bond of \$2,000 for each student team member!

Ask students to form teams of three to four members each. Students may wish to choose teams based on their particular talents or shared interest in a community issue. Work with teams to narrow their lists of community issues to one problem they want to address. Help students evaluate the nature of their community issues and the feasibility of their solutions to reach their final decision.

Team Exercise: Have teams decide which community problem they want to address and spend some time brainstorming scientific and technological solutions. Each student should write out three or four possible innovative solutions for the issue. Encourage students to engage in creative thinking as they develop their solution ideas — at this stage, all ideas are acceptable, and the more the better. Suggested timeline: one week.

STEP THREE

Review basic research techniques.

This step takes the competition project from minds-on to hands-on. When each team has selected a community problem to address, discuss how to conduct inquiry-based research in the community. Students first will need to gather background information to learn as much as they can about the problem. Students should brainstorm potential resources they could use and how to make use of those resources. Community mentors who are experts or have an interest in a particular issue can help students fine-tune their approach to the problem and its solution. Remind students to take into account differing opinions on their issue — their research should be well-rounded, not one-sided.



Christopher Columbus Academy Session

Team Exercise: Have teams conduct research and write a one-page essay identifying their problem and explaining how they chose that problem, why it's important to the team and to the community and what would happen if this issue is not addressed. This will serve as the team's first draft of Section I of the competition entry (see p. 8). Suggested timeline: one to two weeks.

STEP FOUR

Begin more in-depth research.

Discuss scientific methods and ways of conducting more in-depth, inquiry-based research. Help students understand that the answer to a problem can be confirmed by forming a hypothesis, testing it, refining the solution and testing again until they can prove that it works. But before they can begin testing, they need to learn more about the problem and their proposed solutions.

Have team members summarize their community issue and proposed solutions for the group and/or collect their first draft of Section I to review for an assignment grade. Allow time for team members to work together to create a basic plan or strategy for conducting in-depth research on their problem and solution.

Team Exercise: Have students research their community issue to learn as much as they can about the problem and its potential solutions. As they conduct their research, students should keep a list of the resources they used (people, organizations, the Internet, etc.), the information they used to understand the issue and the steps they took to formulate their proposed solution. Have students use this information to write their first draft of Section 2 of the competition entry (see p. 8). Suggested timeline: two to four weeks.

STEP FIVE

Formulate and test a solution.

Students' next step is to test how their solutions will work. Review basic information about scientific testing, methodology, using variables, analyzing data, etc. Have students narrow their proposed solutions to the one or two choices they think are best. As students test their solutions, they may find that one idea works better than another, or that one isn't very practical. Remind students that a solution should work when tested under various conditions. Students will need to control variables and record data as they test.

Allow time for teams to review the research they've conducted and create a strategy for testing their proposed solution. You shouldn't tell students how to test their solution, but you can ask questions about the project to guide them in a reasonable direction.

Team Exercise: Have students test their proposed solution. As they test, they should also complete Section 3 of the competition

entry, explaining how they organized the test, what problems or variables they accounted for, the results of their test and any re-testing they needed to do. Suggested timeline: three to four weeks.

STEP SIX

Discuss the results of students' tests.

Ask teams to discuss what their research and testing revealed. If their results appear skewed or inconclusive, guide them to adjust the test variables or think of a different way to test their solution.

Team Exercise: Have students complete Section 4 of the competition entry, explaining their solution and how it could be made a reality in their community. Students will also need to address any challenges to implementing their solution. Any additional tests the team needs to conduct should be completed by the next deadline. Suggested timeline: one to two weeks.

STEP SEVEN

Prepare the competition entry materials.

Students already have completed a first draft of the four written sections of the competition entry. Review basic editing and proofreading tips they should use to refine their written entry. You may want to photocopy and share with the students the Entry Guidelines found on page 8 of this guide.

Discuss the four visual presentation options: mechanical drawing, diagram, photographic series or videotape presentation. One of the visual options may lend itself better to explaining the specific problem and solution students have addressed. Work with students to decide how best to demonstrate their work.

Team Exercise: Students should review their written entry and finalize it within two weeks for coach review or a class grade. Give your comments back to students by mid-January so they can complete their entry and prepare it for submission to the competition.

Students also should prepare the visual component of their competition entry for your review. Remember, all entries must be postmarked by February 6, 2012. Make sure students allow enough time to finalize their entry materials and mail by the deadline. Timeline should be adjusted to meet competition deadline.

STEP EIGHT

Finalize and submit the entry.

Use the Team Entry Checklist on page 13 of this guide to help the students review the written and visual entry materials they have prepared. It is especially important to review the visual presentation with students to check for clarity and sound consistency (if applicable). Work with students to fill out the entry form (pp. 15-16) and mail the entry by **February 6, 2012**.

Entry Guidelines

A complete entry consists of 5 sections: 4 written and 1 visual. Entries must be postmarked by February 6, 2012.

THE WRITTEN ENTRY – SECTIONS 1 THROUGH 4

Section 1: Project Overview (Max. 1 page)

1. Clearly outline the team's problem and solution.
2. How did the team identify the problem?
3. How does the problem affect the community?
4. What will happen if the problem is not solved?

Section 2: Research (Max. 3 pages)

1. What kind of resources did the team use (people, organizations, Internet, etc.)?
2. What information did the team gather for understanding its problem?
3. If appropriate, the team should present its research results in charts and graphs.
4. How did the team's research help to formulate a proposed solution using science and technology?

Section 3: Testing (Max. 3 pages)

1. How did the team organize the test?
2. What problems or variables did it need to test?
3. What were the results of the testing?
4. Was the proposed solution supported by the test or did the team need to change the proposed solution? What did the re-testing show? Results can be presented in charts and graphs.

Section 4: The Solution (Max. 3 pages)

1. Show the science and technology used and describe how the solution works in theory.
2. If the team had unlimited resources and time, how would it make its idea a reality in the community?
3. What major challenges must the team overcome to make its idea a reality?

WRITTEN ENTRY GUIDELINES

- The total written entry may not exceed 10 pages (single-sided printing, with one-inch margins).
- Use only 8½" x 11" white, unlined paper.
- Each page must be numbered and have a section title as shown above.
- Text must be printed 10-14 characters per inch, 12-point type, double-spaced.
- Use a single staple in the upper left-hand corner to fasten the pages. (Do not use covers, binders, folders, etc.)
- A cover page should not be included. **The Official Entry Form must be included with the entry.** Entries are judged anonymously and will be assigned a reference number for identification.
- Submit three copies and the original (total of four) for judging. Please keep a copy for your records.

THE VISUAL PRESENTATION – SECTION 5

Choose one of the five options to demonstrate your project concept.

OPTION 1: Mechanical/Blueprint Drawing

(Maximum size: two pages, 8½" x 11")

- Consider using this option if the team would like to present its model/prototype in a mechanically or technically detailed format.
- Ask an expert for advice on scale and the use of symbols in the drawing.

OPTION 2: Diagram

(Maximum size: two pages, 8½" x 11")

- Consider this option if the team wants to represent the community problem and solution artistically.
- This option may demonstrate the artistic talents of one or more team members.

OPTION 3: Photograph Series

(Maximum size: four photos mounted on two pages, 8½" x 11")

- Consider this option if actual pictures of a model/prototype or the community setting are important to understanding the solution.
- Make sure the photographs are clear and light enough to be photocopied.
- No more than four photos total and no collages.

OPTION 4: DVD Presentation

(Length limit: five minutes)

- Use this option if the team wants to act out its problem and solution or wants to actively demonstrate its model/prototype.
- DVDs will be judged on content. Please make sure the team's DVD is of good production quality. Students may use computer graphics in the DVD.

OPTION 5: PowerPoint Presentation on CD

(No more than 20 slides maximum)

- Presentation will be judged on content and relevance.
- No video elements inside the slides.

VISUAL PRESENTATION GUIDELINES

- The team's community solution must be capable of actually being implemented or built.
- Actual models or prototypes should not be submitted with the written entry.
- In the spirit of fair competition, teams are limited to spending \$100 on materials used to make the visual element of the entry (including the value of donated materials).
- The team must submit three copies of the visual presentation and the original (total of four) for judging. This requirement includes the videotape option. **Please keep a copy for your records.**
- If color is an important part of the visual component of your entry, submit color copies of the team's artwork for the judging process.

General Rules

Entries/projects that have been recognized as finalists or national award winners in another competition, as well as any entry that has been recognized as a semifinalist in a previous Christopher Columbus Awards competition year, may not be entered into the 2011-2012 Christopher Columbus Awards competition.

TEAM RULES

Keep these rules in mind while creating a team for the Christopher Columbus Awards:

- ☛ Each team must have three- or four-student team members and a coach (see “Coach’s Rules” below).
- ☛ All team participants must be enrolled in the sixth, seventh or eighth grade in the U.S., its territories or possessions during the 2011-2012 school year.
- ☛ Team members must be students in good academic and behavioral standing.
- ☛ Team members are limited to participating on one team project per year.
- ☛ Children of senior managers of the sponsoring organization (the Christopher Columbus Fellowship Foundation), contractors, officers, employees who have participated in the development of the competition and judges are not eligible to be team members.

ENTRY RULES

- ☛ For details concerning the entry structure and format, refer to page 8.
- ☛ Entries can be accepted from all 50 states of the U.S., the District of Columbia and U.S. territories and possessions.
- ☛ One Christopher Columbus Awards entry is allowed per team, per year.
- ☛ Teams not selected as semifinalists or finalists may resubmit the same entry for the following contest year.
- ☛ **Teams selected as semifinalists or finalists may not resubmit the same entry for future contest years.**
- ☛ Any entry previously awarded a national-level prize in another competition cannot be considered for the Christopher Columbus Awards.
- ☛ **Experiments on Vertebrates**

The Christopher Columbus Awards provides a real-world experience that recognizes the importance of the participants’ research and work. Laboratories and universities conducting research on vertebrates (an animal with a segmented spinal column and a well-developed brain, e.g. a human, mammal, bird, reptile, amphibian or fish) arrange an Institutional Review Board (IRB) as a matter of common practice to review proposed experiments and processes to make sure no harm comes to the subject. The Christopher Columbus Awards also requires all teams conducting experiments on vertebrates to submit to review and approval by an authoritative group or individual.

This standard practice will help the participants learn to make responsible and ethical decisions regarding their research and experimentation.

Christopher Columbus Awards teams must obtain a signed approval letter from their school/organization’s administration for any experimentation involving vertebrates. **The signed approval letter must be attached to and mailed with the team’s completed entry.**

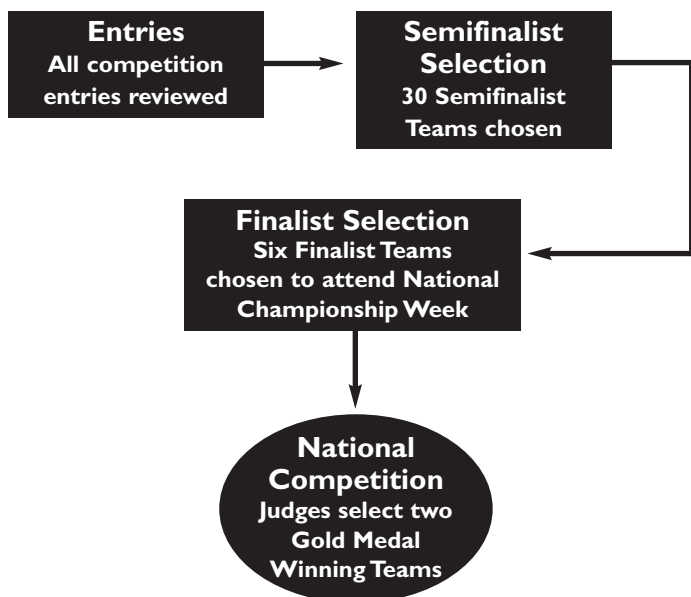
COACH’S RULES

- ☛ All student teams must have one adult who will function as a coach for the team.
- ☛ An individual may participate as a coach for one or more teams.
- ☛ Team coaches must be at least 18 years old.
- ☛ The team coach must be prepared to chaperone the team if the team is selected to attend the finals competition.
- ☛ The team coach will be required to sign an affidavit (on the entry form) stating that the entry is original and has been independently developed by the student members of the team.
- ☛ Senior managers of the sponsoring organizations (the Christopher Columbus Fellowship Foundation) are not eligible to be team coaches.

GENERAL INFORMATION

- ☛ The Christopher Columbus Awards competition and its name are the sole property of the Christopher Columbus Fellowship Foundation.
- ☛ If an insufficient number of qualified entries are received, the sponsoring organization reserves the right to modify or cancel the competition prior to awarding semifinalists or finalists for the current competition year.
- ☛ Awards:
 1. The \$200 development grant given to each finalist team must be used solely for the development of the National Championship Week competition presentation (see p. 11).
 2. All U.S. Savings Bonds awarded to finalist teams are listed as matured value. Finalists must attend the National Championship Week to receive their awards.
 3. All paid awards, prizes and expenses for attending National Championship Week may be taxable. All tax liabilities are the sole responsibility of the winners. All federal, state and local laws apply. Void where prohibited.
- ☛ The sponsors reserve the right to use semifinalist and finalist team members’ and coaches’ names, photographs, quotes, likenesses or entry materials for publicity and/or promotional purposes. Teams may not become semifinalists or finalists unless signed release forms are received by the competition.
- ☛ All questions about the meaning and effect of the competition rules and structure will be decided by the sponsoring organization, whose decisions will be final.

The Judging Process



NATIONAL COMPETITION SEMIFINALIST SELECTION

Process

1. All entries received are assigned a number and are screened for compliance with the rules.
2. One copy is kept on file and one copy is sent to three randomly selected judges (prominent educators, scientists, engineers and community leaders).
3. Each entry is evaluated anonymously based on the stated criteria (see below) and assigned a numerical score by each judge.
4. Entry evaluations are collected and an aggregate score is created based on the sum of the three judges' numerical scores.
5. The top 30 entries with the highest aggregate scores are selected as semifinalists (30 total semifinalists).
6. All teams receive a feedback form with comments from the three judges.
7. Semifinalist teams will be announced on April 13, 2012.

Criteria

Each entry will be evaluated based on creativity, innovation, scientific accuracy, relevance to the community, feasibility and clarity of communication.

The following categories will be used to score the entries:

1. **Creativity: 20 Points** The demonstration of imagination, problem-solving techniques, artistic skills, etc.
2. **Innovation: 20 Points** An assessment of the proposed solution's uniqueness, the use of science to solve the problem and the potential impact of the solution on the community or in general.
3. **Scientific Accuracy: 24 Points** An assessment of the application of scientific laws and theory and an evaluation of the methods used to research the topic and to test the proposed solution.
4. **Feasibility: 18 Points** An assessment of the likelihood that the solution will work as presented based on relevant economic, political and social issues, etc. Higher points will be given to plans that are developed fully versus plans that need adjustments to succeed.
5. **Clarity of Communication: 18 Points** Includes adherence to the entry guidelines (written and visual), as well as grammar, writing skills, organization of the facts and data, etc. Project should show a coherent display and presentation.

Semifinalist Awards

1. Every team member who enters will receive a Christopher Columbus Awards Certificate of Participation and have the judges' comment sheets returned to them.
2. Each of the 30 semifinalist team members receives a certificate, the judges' comment sheets and a Christopher Columbus Awards T-shirt.



St. Philip the Apostle School, Illinois

National Championship Week

NATIONAL COMPETITION FINALIST SELECTION

Process

1. A separate panel of judges will evaluate all 30 semifinalist entries based on the same judging criteria used to select the semifinalists.
2. The judging panel may include prominent educators, scientists, engineers and community leaders, and may include officers of the sponsoring organization.
3. The panel will meet to discuss the entries based on the scored results of each panelist.
4. Discussion will continue until there is a unanimous vote of approval for selecting the six finalist teams.
5. **Finalist teams will be announced on April 27, 2012.**

Criteria

Evaluation criteria for finalist team selection are the same as the semifinalist team selection described on page 10.

Finalist Awards

In addition to the awards received as semifinalists, the six finalist teams will:

1. Receive a \$200 development grant to further refine their idea.
2. Attend National Championship Week at Walt Disney World and compete for valuable U.S. Savings Bonds.
3. Have all travel, lodging and boarding costs paid.
4. Participate in the Christopher Columbus Academy, an interactive behind-the-scenes look at the science and technology at Walt Disney World.

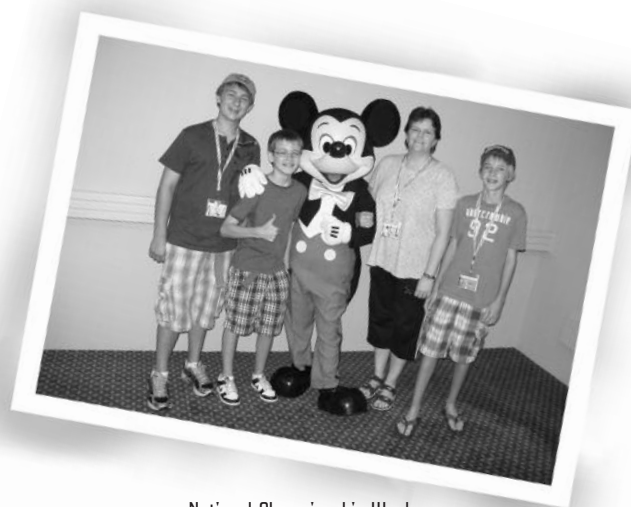
NATIONAL COMPETITION

Process

1. Six weeks before attending National Championship Week, each finalist team will receive detailed instructions concerning the National Championship Week competition.
2. Before attending, finalist teams are asked to develop a five-minute live presentation and display booth. Presentations should be informative and entertaining. Materials used in the display booth may include videos, computer programs, models, etc. Teams may refine and improve upon the original entry idea(s).
3. Each finalist team is provided with a \$200 development grant to fund the development of the presentation and the display booth. Teams may not exceed the \$200 limit, including in-kind contributions. Teams may be asked to submit a ledger of expenses.

4. After the five-minute presentation, the judges will ask in-depth questions and the team will have time to further demonstrate the booth materials.
5. The judges independently evaluate and score each team and meet to deliberate the merits of each finalist team.
6. **National award winners will be announced at the National Championship Week Award Banquet.**

NOTE: National Championship Week will be scheduled for June 15-20, 2012.



National Championship Week

Criteria

1. Evaluation criteria are the same for the semifinalist and finalist selections described on page 10 (creativity, innovation, scientific accuracy, feasibility and clarity of communication).
2. In addition to the components judged at previous stages, finalist teams will be judged on:
 - The five-minute team presentation.
 - The display booth and presentation materials.
 - Question-and-answer session.

Awards

Two Gold Medal Winning Teams will receive a \$2,000 U.S. Savings Bond per member along with a medal for each team member and their school.

NOTE: Competition timeline subject to change.

What Makes a Good Entry?

Year after year, the Christopher Columbus Awards panel of judges has the difficult job of selecting six finalist teams from an ample pool of superb entries. If you're like many students and coaches, you may be wondering what it takes to become one of those teams. So we asked a select group of judges, sponsors and Christopher Columbus Awards staff to tell us what makes a good entry. While they all agreed that creativity and practicality are important, they also identified other qualities that characterize good entries. We've trimmed the list down to the following characteristics, cited consistently by everyone. If you want your entry to stand out in judging, we recommend that you take these tips to heart!

GOOD ENTRIES IN THE CHRISTOPHER COLUMBUS AWARDS:

✓ **Show evidence of teamwork.** Good entries come from teams that work well together and take full advantage of every member's talents. Dividing up tasks is fine, but everyone's contribution should significantly benefit the team and its entry.

Coach's Tip — If possible, allow students to form teams themselves. They will be more likely to help one another without complaint, and less likely to resort to fighting in times of stress.

✓ **Address a widespread problem.** Good entries tackle problems with an observable impact on a large segment of the community. The problem should stem from a recurring phenomenon that has not yet been effectively resolved, rather than an isolated incident.

Coach's Tip — Encourage team members to select an issue they know and care about. If the students have a vested interest in the problem, they will understand it better and be more eager to find an innovative solution.

✓ **Propose a feasible solution.** Good entries present solutions that are not only creative and original, but also realistic and achievable within the scope of the award.

Coach's Tip — Testing is key. Real-world testing, using appropriate sampling methods, will let your students know if their solution is workable. It will also reveal whether a good solution needs refinement before the team submits its final entry.

✓ **Demonstrate a clear link to science and technology.** Good entries exhibit a strong, direct relationship between the team's problem and solution and science and technology. They also provide credible supporting data grounded in accurate scientific principles.

Coach's Tip — It doesn't matter how critical your team's problem or how ingenious its solution . . . if there's no identifiable connection between them and science and technology, you're in the wrong competition. It's as simple as that.

✓ **Reflect a complete understanding of the issue.**

Good entries illustrate the team's understanding of the problem and its implications, as well as the solution and the science behind it. Background research and ongoing team communication are vital to insuring that every team member understands and can effectively explain the complete entry.

Coach's Tip — Draw on resources. Encourage your team to seek community partners, mentors, advisors and other teachers qualified to add value and insight. Review your team's entry for clarity and scientific accuracy.



Hyde Park Middle School, Nevada

✓ **Include a well-written essay.** Good entries feature a well-organized, detailed essay that adheres to competition guidelines. Accurate spelling and grammar are important, so proofreading is a must.

Coach's Tip — Keep in mind that a good entry should be strong in every category.

✓ **Include a compelling visual.** Good entries employ a powerful visual presentation to illuminate the team's problem and solution. Drawings should be accurate and easy to understand. Photographs should be clear when photocopied. Audio/video components should be intelligible.

Coach's Tip — Students should spend some time thinking about how to best tell the team's story visually, but encourage them to follow their instincts and limit drama to what is needed to make their point.

* Sample entries can be found on the Christopher Columbus Awards website. Please visit www.christophercolumbusawards.com.

Team Entry Checklist

A COMPLETE ENTRY CONSISTS OF FIVE SECTIONS: FOUR WRITTEN AND ONE VISUAL.

THE WRITTEN ENTRY HAS:

- No more than 10 pages (single-sided) of white, unlined 8½" x 11" paper.
- All the pages numbered.
- Typed pages, 10-14 characters/inch, 12-point type, double-spaced.
- One-inch margins on all sides.
- A single staple in the upper left-hand corner.

THE WRITTEN ENTRY INCLUDES SECTIONS TITLED EXACTLY AS FOLLOWS:

- Section 1: Project Overview
- Section 2: Research
- Section 3: Testing
- Section 4: The Solution
- Section 5: The Visual

THE VISUAL PRESENTATION IS ONE OF THE FOLLOWING:

- Mechanical/Blueprint Drawing (no larger than two 8½" x 11" pages)
- Diagram (no larger than two 8½" x 11" pages)
- Photographic Series (**no more than four photos** on two 8½" x 11" pages)
- DVD (five-minute maximum length)
- PowerPoint Presentation on CD (no more than 20 slides maximum; no video elements inside the slides)

THE TEAM AND COACH HAVE:

- Thoroughly proofread, organized and reviewed the entry for compliance.
- Included the original and three copies of the written and visual presentation sections of the entry (four total).**
- Kept one copy of the written and visual sections of the entry.
- Included one copy of the entry form, signed by all members and the coach.
- Postmarked the entry no later than **February 6, 2012.**
- Sent the entry to:
 - Christopher Columbus Awards
 - 105 Terry Drive, Suite 120
 - Newtown, PA 18940-3425

Entry Form

TITLE OF THE ENTRY:

PLEASE LIMIT TITLE TO 45 CHARACTERS, INCLUDING SPACES AND PUNCTUATION

TEAM MEMBERS' INFORMATION

Name: _____ Grade: _____
 Home Address: _____
 City: _____ State: _____ Zip Code: _____
 Name of School or Organization: _____
 E-mail: _____

Name: _____ Grade: _____
 Home Address: _____
 City: _____ State: _____ Zip Code: _____
 Name of School or Organization: _____
 E-mail: _____

Name: _____ Grade: _____
 Home Address: _____
 City: _____ State: _____ Zip Code: _____
 Name of School or Organization: _____
 E-mail: _____

Name: _____ Grade: _____
 Home Address: _____
 City: _____ State: _____ Zip Code: _____
 Name of School or Organization: _____
 E-mail: _____

COACH'S INFORMATION

Name: _____ Grade(s) Taught: _____
 School/Organization: _____
 School/Organization Address: _____
 City: _____ State: _____ Zip Code: _____
 Occupation/Job Title: _____ Subject(s) Taught: _____
 Phone Numbers: (Home) (_____) _____ (Business) (_____) _____
 Fax Number: (_____) _____ E-mail Address: _____
 How many teams did you form, including those who didn't submit an entry? _____
 How many students participated (*not just completed entries*)? _____ Are you a new or returning coach? New Returning
 How did you find out about the competition? (*check one*) Brochure E-mail Website Article (Newspaper/Magazine)
 Educator Recommendation Ambassador Recommendation Student Other _____
 If someone recommended the competition to you, who recommended it? _____

Entry Form

OMB, CLEARANCE #: 3145-0023

Federal agencies may not conduct or sponsor a collection of information unless the collection of information displays a currently valid OMB clearance number and informs potential persons who are to respond to the collection of information that they are not required to respond to the collection of information unless it displays a currently valid OMB clearance number. The OMB clearance number for this collection is 3145-0023. Public reporting burden for this collection of information is estimated to average 12 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Judi Shellenberger, Executive Director, Christopher Columbus Fellowship Foundation, 110 Genesee Street, Suite 390, Auburn, NY 13021; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

SIGNATURES

We affirm that this entry for the Christopher Columbus Awards is original and has been independently developed by the student members of the team. We verify that all members are currently enrolled in sixth, seventh or eighth grade and that our coach is 18 years old or older. We further affirm that we have read and understand the rules of the competition. We understand that if our team is selected as a finalist, we will attend the Columbus Academy at Walt Disney World® in June 2012. Signatures verify that the information is valid and the lack of signatures by all team members and the coach will disqualify the entry.

Signature of the Team Coach: _____ Date: _____

Signatures of the Team Members:

| | | | |
|----------|------|----------|------|
| 1) _____ | DATE | 3) _____ | DATE |
| 2) _____ | DATE | 4) _____ | DATE |

OPTIONAL TEAM INFORMATION

We ask for the cooperation of the team coach in responding to the following questions. This information will be used to determine how and if the competition is meeting its goals, purposes and audiences. Submission of this information is voluntary. Failure to provide it will not affect your team's chances for an award.

Indicate your community type (check one): Rural Suburban Urban

Indicate the number of student team members who are:

_____ Asian/Pacific Islander _____ Black, not of Hispanic origin _____ Hispanic/Latino

_____ Native Am./Alaskan Native _____ White, not of Hispanic origin

Indicate the number of student team members who are: _____ Male _____ Female

MAIL COMPLETED ENTRIES TO:

Christopher Columbus Awards
105 Terry Drive, Suite 120, Newtown, PA 18940-3425

Note: Mail one original and three copies of the complete entry. Faxed entry material will not be accepted. Entries must be postmarked by **February 6, 2012**, or the entry will be ineligible for the competition. Materials that do not meet the rules and regulations will be disqualified. Permission is granted to duplicate this Official Entry Form.



These kids wanted to make a difference . . .



Stopping Cart
Brandon Middle School
Brandon, Mississippi

P.B.S.:
Pendulum Braking System
Gwyn-Nor Elementary School
North Wales, Pennsylvania

The Baby Beeper
Hyde Park Middle School
Las Vegas, Nevada

Recycle Because You Care
St. Phillip the Apostle School
Addison, Illinois

Purple Martin Houses
Carlinville Middle School
Carlinville, Illinois

Walk N' Rest
Fontainebleau Junior High School
Mandeville, Louisiana

**Now You See It —
Now You Don't**
Bexley Middle School
Bexley, Ohio

SSS:
Sensors Saving Students
A.M. Kulp Elementary School
Hatfield, Pennsylvania

Walker on Wheels
Friendswood Junior High School
Friendswood, Texas

**DWI: Driving While
InTEXTicated**
Hillcrest Elementary School
Holland, Pennsylvania

**Rez Protectors — Solving
the Housing Problem**
Pretty Eagle Catholic School
St. Xavier, Montana

IllumaCoach
Saddle Brook Middle School
Saddle Brook, New Jersey

School Courtyard
Upper Freehold Regional
Allentown, New Jersey

Trash Challenge
Roosevelt Elementary School
Elkhart, Indiana

The Historical Energy Mill
Summit Middle School
Boulder, Colorado

Grassburning
Sacajawea Middle School
Spokane, Washington

**Project T.G.I.F. —
Turn Grease Into Fuel**
Westerly Innovation Network
Westerly, Rhode Island

Enviro Ed R Us
Apopka Memorial Middle School
Apopka, Florida

TASK Force:
Tracking and Saving Kids
Walden Middle School
Atlanta, Georgia

Tackling Traffic Problems
Clara Barton Open School
Minneapolis, Minnesota

The Back Belt
Hyde Park Middle School
Las Vegas, Nevada

Melting Ice at Crosswalks
Summit Middle School
Boulder, Colorado

ErgoPAD
Carmel Valley Middle School
San Diego, California

Pak-Rax
Millennium Middle School
Sanford, Florida

Heal Their Pain
Cold Spring Harbor High School
Cold Spring Harbor, New York

**T.R.A.C.K.S.: Tracking
Railroad Activities —
Crossing Kids Safely**
Saddle Brook Middle School
Saddle Brook, New Jersey

Bus Door Bust
Watts Middle School
Centerville, Ohio

Our Solution to Pollution
Highland Middle School
Kansas City, Kansas

S.P.H.E.R.E.S.:
**Saving Prairies and Helping
Environmental Regions
Expand Successfully**
Carlinville Middle School
Carlinville, Illinois

Bug Off Birds
Antelope Crossing Middle School
Antelope, California

Alarmists:
Light for Life Project
Pattengill Middle School
Lansing, Michigan

SMS — Save Me Sticky
Silverado Middle School
Roseville, California

SnoWheeler 2000
Wasatch Junior High School
Salt Lake City, Utah

Lights Out
Learning Without Limits
Science Club
West Branch, Iowa

Batty 4 Bats
St. Therese School
Parkville, Missouri

Science Squad
Hamilton Middle School
Houston, Texas

Kiddie Katcher
Millennium Middle School
Sanford, Florida

RxAlert
Saddle Brook Middle School
Saddle Brook, New Jersey

The Neck Savers
Cold Spring Harbor High School
Cold Spring Harbor, New York



The Christopher Columbus Awards showed them how!





The Christopher Columbus Fellowship Foundation is an independent Federal government agency created by Congress in 1992 to encourage and support research, study and labor designed to produce new discoveries in all fields of endeavor for the benefit of mankind. The Foundation has established **Frontiers of Discovery – Work in Progress** and **Discover the Future** programs that recognize “cutting edge” innovation, innovative ideas of America’s youth, and honor teachers. These programs include the **Agriscience Awards, Life Sciences Awards, Homeland Security Awards** and the **Christopher Columbus Awards**.

Christopher Columbus Awards

105 Terry Drive, Suite 120 • Newtown, PA 18940-3425

800-291-6020 • Fax: 215-579-8589

www.christophercolumbusawards.com