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Education Collaborative

2017 MIDDLE SCHOOL WEBCHALLENGE
ENVIROTECH:
SOLUTIONS FOR TOMORROW'S
ENVIRONMENTAL CHALLENGES

Overview

TAG Education Collaborative (TAG Ed) is excited to partner with the Atlanta Science Festival and HowStuffWorks for the fifth annual **Middle School WEBChallenge!** This competition engages students in the latest technology with a hands-on design experience. Students develop websites based on a pre-determined theme, which will be judged on different aspects of content as well as site design. WEBChallenge has been engaging middle and high school students in technology for 14 years. The program also works to recognize and reward educators of the winning teams with a contribution to their school supply budget.

The 2017 Middle School Challenge Theme

Fostering a scientifically literate generation of problem solvers will help ensure that tomorrow's workforce is prepared for the future they will inherit. In collaboration with the **Atlanta Science Festival** and **HowStuffWorks,** the 2017 TAG Ed **WEBChallenge** theme is: **EnviroTech: Solutions for Tomorrow's Environmental Challenges!** Our planet is our most precious resource. This competition will encourage middle school students to face potential environmental challenges head on using science, technology, engineering and math. Changes in our natural resources, climate, and plant and animal populations are inevitable. We want our next generation to consider the problems we will face and how those issues will affect our daily lives. What are the environmental challenges we should be most concerned with? What new exciting emerging technology will help combat these issues and catapult our society forward in the next 30-50 years? How can we prevent negative environmental changes from continuing? These are the questions that students will answer though this exciting hands-on design competition.

Website Components and Content:

1. PROBLEM: Identify your topic/problem:

    A: Include a 2-3 minute **VIDEO** evaluating the aspects of a problem or issue of your choice that focuses on future environmental challenges and their potential effects on our daily lives. What is happening currently? What will the impact be in our local and global community? Who/how many will be affected, and at what costs if this problem persists? Where is the problem the worst? How might the topic change over time? Use current information and research to support and discuss your point of view. **– Make sure the video is embedded in your website for judging!**

    B: Create a **visual representation** of the topic and its future impact on our community. Visuals can include images, diagrams, comic strips, animations, games or videos**. Note: student teams that embed something they have coded will receive additional points toward their overall score.**

2. SOLUTION: Discuss what the future solution(s) for your problem will be and ***how it will work***:

    A: Describe a new or existing technology that will address the problem you have identified. What is it and how does it work? What will it cost? Who will test it, ensure its safety and effectiveness, distribute it, and put it in place?

    B: Using HowStuffWorks.com as an example, specifically define the science behind your solution, explain the science and engineering concepts at work. For some examples of websites that may be helpful when planning your site as well as useful resources, please find a list of web links at the end of this document.

C: Evaluate our current capacity to implement this technology. Is it something that is not yet possible given our current understanding/capacity? Explain the advances in environmental science/technology that are necessary to get us there. Is there existing research on where your topic is going? What additional information do we need? What is the current gap in knowledge or innovation?

3. CAREER: Describe how one might address your topic through a specific **STEM career.**

    A: How could one pursue such a career that focuses on environmental science and issues? What training/education is necessary? What education/training pathways in Georgia lead to this career?

    B: Describe the profile of a real or imaginary STEM professional who might be responsible for addressing your topic. For example, create a mock news article or video interview, digital resume, Facebook profile, or other creative presentation. (Consider finding an actual professional in this line of work and asking them about their career path)

4. IMPACT: Describe how the advances in your environmental topic will affect your local, national, and even global community.

    A: How will the development of your topic's science and technology improve our planet and people's lives? What are the long term effects of your topic's changes and what are the possibilities?

    B: What other changes (e.g. in policy, funding, education, workforce, conservation) are necessary to enable the development of your science and technology?

Judging

Industry professionals from business, technology, and education serving as volunteer judges will evaluate projects according to multiple criteria as detailed in the rubric to identify 20 finalist websites. These twenty finalists will then be evaluated by a group of judges from HowStuffWorks. From this pool, the top 4 finalists will be chosen. All teams in the top twenty will have components of their website hosted by HowStuffWorks.

Teams should use the rubric below to examine the details of the criteria on which they will be judged.

Entries will be evaluated based upon the following rubric categories:

1. Layout of site
2. Design and Creativity
3. Web skill, Navigation and Links- (extra points for coding option)
4. Embedded video
5. Visual Representation of Topic
6. Usability/User Engagement
7. Problem
8. Solution
9. STEM Career
10. Community Impact

How to Register a Team

This contest is open to all Georgia middle school students who register a team of 2‑4 with a faculty or adult advisor. **ONLY faculty advisors can register teams. Faculty advisors will be the point of contact with TAG‑Ed.**

- **To Register please** visit: **https://www.eventbrite.com/e/2017-middle-school-webchallenge-envirotech-tickets-31097940778**
- **For more information please visit our website at http://www.tagedonline.org/**
- For questions please contact: Katie Dion at kdion@tagonline.org

Submissions

Email your submission to Katie Dion at kdion@tagonline.org by February 27, 2017 at noon. Please note, <u>all</u> supplemental material must be embedded on your website. <u>Email attachments will not be accepted.</u>

<u>**No password‑‑‑protected entries**</u> **will be accepted. All communications and final entry must be submitted through faculty advisor.**

Finalists will be invited to an awards ceremony the last week of March during the Atlanta Science Festival Exploration Expo on March 25, 2017 in Centennial Olympic Park.

Contest Rules

NO PURCHASE NECESSARY TO ENTER OR WIN.

The *Middle School WEBChallenge* Contest ends at 12:00 p.m. EST on February 27, 2017. Entries may not be acknowledged or returned.

ENTRY: Entries must be emailed to Katie Dion at kdion@tagonline.org. Late entries will not be accepted.

LIMIT: Teams are limited to one entry per team. There is no limit on the number of teams per school teacher advisor.

ELIGIBILITY: Entries must be developed in a team consisting of 2-4 Georgia middle school students.

WINNER SELECTION: A panel of judges will select four finalist teams to attend the WEBChallenge Awards Reception. Decisions of TAG Ed its partners, and its affiliates are final and binding in all respects.

PRIZES: Faculty advisors paired with the winning teams will receive one stipend toward their classroom supply budget. <u>The grand prize winning team also will receive a technology prize from TAG-Ed and the opportunity to record a podcast about their How Stuff Will Work presentation at the HowStuffWorks Atlanta studios. HowStuffWorks will record, edit and release the file to the winning team. The podcast recording is subject to studio availability and must occur within six months after the close of the 2017 Atlanta Science Festival.</u>

PRIVACY: Winners' names and project details, possibly including the finished project, will be included in a widely distributed news release. IF YOU DO NOT WISH TO SHARE YOUR ENTRY, PLEASE DO NOT ENTER THIS CONTEST.

OWNERSHIP OF WEBSITE: All entrants and winners agree that by submitting a website, automatically and without further documentation, Atlanta Science Festival, HowStuffWorks, TAG Ed and the team submitting the website will have joint ownership of the website and all documentation relating to the website. Atlanta Science Festival, HowStuffWorks, TAG Ed and the team shall have the right to modify and create derivative works of the website and documentation and to commercially exploit the website and documentation, together with any modification or derivative work thereof, in any manner, anywhere, without attribution of authorship and without payment or accounting for any revenue received as a result of such exploitation. Notwithstanding the foregoing, the party creating any modification or derivative work of the website or its documentation shall be the only party owning such modification or derivative work and no license is hereby granted to any other party with respect to such modification or derivative work. IF YOU DO NOT AGREE TO THESE TERMS OF OWNERSHIP FOR YOUR ENTRY, PLEASE DO NOT ENTER THIS CONTEST.

OTHER: TAG Ed, its partners and affiliates assume no responsibility for entries they are unable to process due to network, hardware or other technical failures; or any other reason, or incomplete, damaged, misdirected, or lost entries. Promoters further reserve the right to cancel, terminate or modify the contest if not capable of completion as planned, including infection by computer virus, technical corruption, or non---authorized human intervention. TAG Ed shall have the right to resolve any interpretation, question, omission or ambiguity regarding the contest rules and procedure.

2017 WEBChallenge: EnviroTech: Solutions for Tomorrow's Environmental Challenges

	0–2	3–4	5–7	8–10	Category Total
Layout	The pages and layout are ineffective and/or confusing for the user. Topics are difficult to follow. Can I type now?	Pages and layout are unorganized and/or inconsistent.	Pages and layout are organized and consistent and have effective formatting for site.	The layout is visually appealing. The pages are well organized and consistent in styling. The layout enhances usability of site.	
Design and Creativity	The backgrounds are distracting and/or unappealing. The design lacks fluidity and inspiration.	The pages appear too "busy" or "boring". The backgrounds are somewhat distracting or ineffective.	The pages are eye---catching and attractive. Text is easy to read. The backgrounds are subtle, appropriate, and effective for enhancing the page.	The backgrounds augment the page well. Page appearance looks professional. The site is creatively designed with a clear theme that resonates with the site topic.	
Website Video (technical skills)	No video.	Video is not embedded, or does not meet length requirement. Poor editing, audio, lighting quality.	Video is embedded in site, and is 2-3 minutes long. Scenes are presented in a logical order. Editing was not done as well as it should have been. Some poor shots remain. Audio and other enhancements were utilized, but not for maximum effect.	Video is creative and compelling. A rich variety of supporting information contributes to the understanding of the selected problem. Video is embedded in site, and is 2-3 minutes long. Scenes are presented in a logical order, are well-edited and transition well from one to another. Audio is clear.	
Web Skill- Navigation and Links **Coding if applicable-5 extra points- (up to 15 points)**	The links and pages may be missing or not working properly. Site includes 1 page with title. Very little web skill evident.	The user may become confused when navigating between pages. Some links may not work. Site includes 2 pages with title, heading and links to other resources.	Links are consistent and easy to find so that the user can easily navigate back and forth through pages. Links and various pages help to enhance the depth of the theme.	Links are created with images and icons to enhance the text links. The user can easily navigate back and forth through pages. The links successfully augment the website theme. The students included a component of the site that they coded originally **(up to 15 points can be awarded here).**	
Usability/ User engagement	Website is difficult to use. User may become lost or confused while navigating pages.	Website does not foster user interaction.	Overall layout and design is interesting and easy to understand for first time users.	Website is engaging through exciting visuals and/or interactive features. Text spacing and alignment make it effective and user friendly. The site encourages long term use.	
Visual Representation of Topic (animation, graphs,etc.)	No supplemental visual material is included beyond the use of graphics on the website.	Supplemental visual is included, but is of poor quality or does not function properly.	Supplemental visual such as video or game function effectively. The visual creatively enhances the website and theme.	The supplemental visual(s) are effectively used to enhance the website and creatively present the theme.	

Problem	Does not identify a problem.	Problem is vague and solutions are unclear. Responds to most questions from program guide. Only general descriptions included. Missing several key components.	Includes satisfactory description of problem, and detail about local/global impact. Responds to all but one of the questions in program guide regarding defining the problem. Research from 2+ sources is cited.	Description of problem is organized and compelling. Thoroughly responds to all questions in program guide regarding content. Research from 4+ sources is included and cited. Solutions are innovative and well developed.	
Solution	Solution and how it *will* work is not Included.	Description only briefly explains the solution and does not provide examples or local context. Information is missing or incomplete and lacks sources.	Description of solution and How It Will Work is presented clearly though underlying scientific concepts are not well-explained. Has few examples or lacks detail.	Description of solution and How It Will Work is well-presented, compelling, innovative. The relevant underlying scientific concepts are identified and explained. Information is well researched, relevant and innovative. Examples assist in presentation.	
STEM Career	STEM Career is missing or is extremely minimal.	Includes career profile but provides no examples of how career contributes to topic or local community.	Includes how career contributes to proposed topic, but lacks key details including local institutions/companies doing this work, or the training/education needs.	STEM career is identified and discussed thoroughly. Examples are provided of how the chosen career can develop the topic addressed described above. There is a clear description of educational needs and tie to Georgia.	
Community Impact	Community impact is not included in solution or on website.	Describes some impacts of topic. Does not provide examples.	Describes some impacts of topic. Explores how the chosen environmental issue could be addressed. Provides broad examples of potential impact. Imagines the changes in policy, funding, education, workforce, etc. that would enable the proposed advances to be successful.	Describes local, global, short-, and long-term impact of topic. Explores in depth the viability of the solution to the environmental issue. Provides clear examples of potential impact on people, resources and the environment. Imagines the changes in policy, funding, education, workforce, etc. that would enable the proposed advances to be successful.	
Overall Total					

Comments: