



Electronic Submission of Competitive Events: 2012-2013 Middle School Events Guide

PA-TSA Green Initiative

Prepared by the PA-TSA Green Committee

Goals

- To reduce the overall negative impact that the Technology Student Association makes on the environment.
- To inspire green thinking in competitive events by reflecting the environmentally-conscious options and components of today's technological world.

Explanation

The need to use paper is gradually disappearing in today's business and academic world. With the widespread availability of computers in offices and in schools as well as ease in transfer of electronic information and files, the step of printing out material becomes quite unnecessary and can be easily skipped. Thanks to internet technologies, flash drives, and networks, an English class or a Social Studies class can go a whole term without using a single scrap of paper, and some businesses can go without making copies or sending faxes and letters. Even new technologies like the Amazon Kindle or the Apple iPad make it unnecessary to buy hard copies of books. Electronic management, distribution, and transmittal of information have already made our lives easier as students, teachers, and advisors of TSA in leadership and in organization. Not only are our leadership activities more efficient in terms of time but also in terms of resources. To better reflect the technological world, our competitive events could go paperless in the years to come, and the technology is already available to go paperless in many events.

In preparation of TSA events with binder documentation, students naturally use the computer for almost all of the steps along the way. The environmental impacts of content creation steps are outside of TSA's control. However, by having documentation and other such components submitted electronically, we can do away with the step of printing things out and instead make the last step a simple process of encoding and transferring files.

Going paperless entails inherently saving trees, ink and toner, and, of course, binders. The process of buying binders, which often occurs solely for the purpose of TSA events, can be detrimental for the environment. Often in the production of consumer goods, seventy times the mass of the product is put into the environment as byproducts. In fact, when we purchase binders, paper, ink, or toner, damage is done to the environment not just in production but also in material extraction, distribution, and eventual disposal.¹ By the aforementioned principle of pollution in production, the manufacture of a single binder could cause over 50 pounds of pollution², while running a laptop for three to four extra hours per event entry per conference, which is the

¹ *The Story of Stuff*. By Annie Leonard. Prod. Perf. Annie Leonard. *The Story of Stuff Project*. Free Range Studios, 4 Dec. 2007. Web. 24 Sept. 2009. <<http://storyofstuff.org/>>.—The statistic is near the end of the movie. For a text source, use the annotated script. (1) For honesty in source-citing, I should say that this movie is very liberally biased.

² Searching on Amazon.com for various three-ring binders showed various numbers for the weight of a three-ring binder, most of them above 12 ounces. Furthermore, by using a bathroom scale, I took my own weight and then took my weight when holding the binder, showing that I gained a full pound when holding the binder. To be conservative, we'll use 12 ounces as an estimate. Multiply that by 70 to get the amount of weight in pollution. $12 \cdot 70 = 840$ ounces. Divide that by 16, and we get 52.5 pounds.

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maximum of what the implementation of this proposal could entail, only causes a little more or less than 0.16 pounds carbon dioxide pollution per event entry per conference.³

Implementation

We on the PA-TSA Green Committee conducted a survey to pick up ideas and to decide on what to include in these proposals.⁴ After much thought, we've decided that we don't want to modify every event, so we are proposing just nine events we can try out with electronic submission, and we include specific ideas on how to modify them.

We propose that event documentation be submitted in Portable Document Format (PDF). There are numerous free software programs that can be found online that convert Microsoft Office documents to PDF, some of which are on the Microsoft Office website. We believe that PDF is the best format to submit documentation in because it cannot be edited and because it is assumed that almost everyone can open PDFs; the National TSA organization uses PDF on the TOTAL TSA CD and on the website. People may not be aware of free PDF converters, so we suggest that the CRC do one of three things. 1) Make competitors aware of free, safe to download PDF converters in the events' rules or in the general guidelines of the rulebook. 2) Enlist the help of programming-savvy members, advisors, corporate members, or a company to develop a PDF converter made available on the TSA website.⁵ 3) Allow members to submit events in Microsoft Office formats if they are unable to convert to PDF.

The events can be submitted on flash drives. This is what a majority of survey takers have chosen as a possible method of submitting events. This will only be environmentally friendly if the drop-off process at conferences is such that the judges get off the files they need and give the flash drive back to the competitor. Rules can be put in that require events to be put in folders labeled with "TSA" and/or the event name and ID number(s).

If the TSA Competition Regulations Committee does not accept the idea of such a process, we propose CD or DVD media as a "second choice." We do not propose this as our first choice because of environmental impact of the disk. A disk is made of a thin piece of aluminum between two layers of plastic, so the production of it may very easily create the same environmental damage of a binder and paper. A CD or DVD is already submitted for various events to include finalist presentations. However, many students already utilize flash drives as convenient tools to use files on multiple computers, and, unlike with CDs, they are much more likely to reuse flash drives for years to come.

To "green" the display component of certain events, we suggest that the CRC put as a suggestion in the sidebar of applicable events' rules that participants reuse tri-folds from previous years, use a cardboard display board instead of a foam display board, and/or use a display board made of recycled materials.

Communications Challenge

Simply make each portion of the binder, which aren't many, a part of a PDF. The consent forms, if necessary at all, can be submitted in a folder. This can be the only prepared portion

³ The average laptop uses 30 watts of energy in normal use. (2) Multiply that by 4 hours, the maximum amount of extra laptop time we estimate per conference. We get 120 watt hours, or 0.12 kilowatt hours (kWh). On average, electricity sources emit 1.297 pounds of CO₂ per kWh. (3) 1.297*0.12=0.16 pounds CO₂.

⁴ (4)

⁵ We don't know if this idea could be implemented easily, but it is an idea worth mentioning, taken from a conversation with another TSA member.

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submitted in solid form. We also propose a modified form of the consent form to reduce the amount of paper necessary by condensing three or more consent forms on one 8.5"x11" sheet of paper so that a competitor can cut it and use less paper in the distribution and recollection of consent forms.

Digital Photography

Make the binder a PDF. Have competitors include all image files as well in the electronic folder that the judges will collect. Use the aforementioned modified consent form as the only solid thing that the judges collect.

Electronic Gaming and Lights, Camera, Action!

Keep these events submitted on DVDs. Have permission letters and consent forms submitted solidly. Make the binder a PDF. The storyboard can be made so that it's not hand-drawn, although for the sake of making things fair for those who would more easily do a hand-drawn storyboard, it may be better to allow either a computer-generated storyboard or a hand-drawn storyboard. For Lights, Camera, Action!, use the aforementioned modified consent form.

Agriculture and Biotechnology Issues and Medical Technology Issues

We propose making the binder a PDF, submitted on a flash drive along with the multimedia presentation. We propose that the CRC make sidebar suggestions for cardboard displays instead of foam board and/or getting recycled material display boards.

Environmental Focus and Inventions and Innovations

Make the binder a PDF, submitted on a flash drive along with the multimedia presentation.

Career Prep

To more accurately reflect the process of job application in today's world, make the resumé and cover letter into an email with the resumé attached as a PDF to the event coordinator or other designated email address before the conference. Due to the inherent potential unreliability of email, perhaps there could be two email addresses that the resumé is emailed to.

The biggest issue with getting rid of a solid binder is the open viewing of events. Participants should have the opportunity to display their work just as always. Our solution to this is recommending a science fair style of open viewing. Since a laptop is already required for numerous events, participants should have their events' documentation on their laptops. We recommend an option of competitors to come to open viewing with their laptops and stand at their displays with their laptops to watch their equipment and to answer questions. This way, people can come around and view documentation just as always except that it would be on a computer screen. For Lights, Camera, Action! and for Digital Photography, images could be put on a slideshow and showcased on a projector and screen. Depending on the traditions of each state and of each region, this would only work out if it were optional because of scheduling; many people are busy during open viewing at their state conferences and at the National Conference, and some states don't even have open viewing. The idea may involve reworking schedules at each conference that implements the idea.

Of course, these are only our suggestions. These suggestions could be perceived as drastic changes to the events, so we encourage the CRC to use their own ideas for greening competi-

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tive events if they do not like ours. Due to potential economic/financial differences, traditional differences, and differences of opinion, we also encourage the CRC to give state delegations their own liberties with how events are submitted, even allowing states to go by the current process, so as to allow states to warm up to changes at their own pace.

Written by:

Josh Hoffman
Project Manager
Pennsylvania TSA Green Committee

Sponsored by:

Pennsylvania TSA State Officer team

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