



Overview

Participants will use technology to create a digital marketing campaign outlining way to reduce your carbon footprint.

Learning Objectives

A **carbon footprint** is a measure of the impact human activities have on the environment. More specifically it is a measure of all the **greenhouse gases** produced in our daily living. **Greenhouse gases** are gases that occur naturally or are man-made. They vary in their ability to absorb and hold heat and this variation can lead to changes in the Earth's climate. **Environmental scientists** agree that an increase in greenhouse gases in the Earth's **atmosphere** may lead to species extinction, more frequent and severe storms, increased flooding as well as more widespread diseases.

Worldwide, people are making changes to reduce the greenhouse effect. The first step to making changes is understanding how our daily activities impact the concentrations of greenhouse gases in the environment. Many of our daily activities, such as heating and cooling our homes, driving or using public transportation, turning on the lights, surfing the internet and even taking a hot shower all contribute to the greenhouse effect.

Individually and collectively we can work to reduce our carbon footprints. This challenge will focus on researching greenhouse effects and the human activities that contribute to global warming. Using the knowledge gained from research, teams will design a marketing campaign to educate others about what they have learned.

Upon completing this challenge participants will have...

1. Explored earth science principles specific to global warming and its effect on the planet Earth.
2. Gained an understanding the impact of human activities and the advancement of technology on the environment.
3. Applied digital tools to create an original work as a means of group expression.
4. Reflected on the elements of graphic design.





The Challenge

In order to successfully complete this challenge, teams must adhere to the following guidelines: *(Please note that guidelines are age-specific.)*

1. Prior to the competition, teams should use digital literacy resources to locate, analyze, evaluate and synthesize information about **carbon footprints, greenhouse gases, global warming** and **strategies to reduce human production of greenhouse gases**. The level of research completed should be developmentally appropriate for each age group. (i.e. a higher quality and caliber of research is expected of teams as age increases)
2. Each team will have 10 minutes to brainstorm and prepare rough sketches (storyboards) of their marketing campaign. The storyboard should include the following minimum items: message, intended audience, 3-5 points in support of the message.
3. Using either **PowerPoint** or **Digital Image Suite**, teams must design a rough draft of their marketing piece. The marketing piece must include the following:
 - a. A creative slogan or catch phrase that promotes action
 - b. The Club Name
 - c. The Team Name
 - d. At least one graphical element (can be clipart, team generated art, digital photos, etc.)
4. Upon completion of the piece, teams must print a copy and post it on the board indicated by the challenge facilitator. Each team's storyboard should be posted next to the rough draft.
5. Teams ages 13 and above must also consider at least three digital design elements in the creation of the marketing piece. Design factors include but are not limited to using shape to symbolize an idea, creating a sense of motion by





the use of graphical elements, color selection to evoke emotions or ideas, creating texture, the use of white space and so on. Teams may be asked to identify the design factors used in their marketing piece.

Constructive Response

All designs will be evaluated by a group of trained community volunteers. Volunteers use their professional expertise and education to evaluate and provide constructive criticism on each design. Evaluation rubrics are tabulated and made available to each team after the challenge. Evaluation scores may qualify teams for Techathalon honors during the awards ceremony.

PROJECT SCORING RUBRIC

	4	3	2	1
Research	Teams demonstrate the inclusion of 4 or more high quality pieces of data to support their campaign.	Teams demonstrate the inclusion of at least 3 high quality pieces of data to support their campaign.	Teams demonstrate the inclusion of 1 or 2 high quality pieces of data to support their campaign.	Teams do not use data to support their campaign.
Storyboard	Storyboard is well-designed and contains all required elements.	Storyboard is well-designed or contains all required elements, but not both.	Storyboard makes an attempt at good design and contains some required elements, but not all.	Storyboard is poorly-designed and does not contain any required elements.
Marketing Piece	Teams create an original, accurate and interesting product that creatively addresses the issue.	Teams create an original, accurate and interesting product that addresses the issue, but not necessarily in a creative way.	Teams create an accurate product that addresses the issue.	Product is incomplete or does not address the issue.
TOTAL PROJECT POINTS (OUT OF 12):				





TEAMWORK SCORING RUBRIC

	4	3	2	1
Cooperation/ Collaboration	Team members almost always listen to, share with, and support the efforts of others. Try to keep people working well together.	Team members usually listen to, share with, and support the efforts of others. Do not cause "waves" in the group.	Team members often listen to, share with, and support the efforts of others, but sometimes are not good team members.	Team members rarely listen to, share with, and support the efforts of others. Often are not good team players.
Attitude	Team members are never publicly critical of the project or the work of others. Always have a positive attitude about the task(s).	Team members are rarely publicly critical of the project or the work of others. Often have a positive attitude about the task(s).	Team members are occasionally publicly critical of the project or the work of other members of the group. Usually have a positive attitude about the task(s).	Team members are often publicly critical of the project or the work of other members of the group. Often have a negative attitude about the task(s).
Effort	Project represents the team's best effort.	Project represents a strong effort from the team.	Project represents some effort from the team.	Project represents very little effort from the team.

TOTAL TEAMWORK POINTS (OUT OF 24):

(Take total points attained and multiply by 2 for the final score.)





STANDARDS ALIGNMENT

National Academies of Science National Science Education Standards

NS.5-12.4: As a result of their grade level activities, all students should develop an understanding of the structure of the Earth's systems and geochemical cycles.

NS.K-12.6: As a result of their grade level activities, all students should develop an understanding of changes in environment and environmental quality.

ISTE National Education Technology Standards for Students (NETS•S)

NS.1.a: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students create original works as a means of personal or group expression.

NS.3.b: Students apply digital tools to gather, evaluate, and use information. Students locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

NS.3.c: Students apply digital tools to gather, evaluate, and use information. Students evaluate and select information sources and digital tools based on the appropriateness to specific tasks.

