TEAM GUIDE 2024

SCIENCE • TECHNOLOGY • ENGINEERING • MATH

IDAHO ECOSYSTEM

IDAHO EXHIBITION OF IDEAS (IDX) TEAM GUIDE 2024

Idaho Exhibition of Ideas (IDX) is a multi-week, team-based digital design and fabrication competition where students learn and practice design, iteration, and rapid prototyping skills with 3D printing technology. Student teams brainstorm, develop, and prototype an idea for a solution that responds to a challenge theme and incorporates 3D design/printing in some way. Each team works with an educator Coach, who guides the team through the design process and assists with documentation. IDX culminates in a regional Student Showcase, where teams will present their solution to a panel of judges and compete for prizes.

The Challenge Theme for the Spring 2024 Student Showcase is **Veterinary Science**. You can find more information about this theme, as well as suggested topic areas and resources, in the "2024 Theme Information" section at the end of this document.

Team Eligibility:

- Each team should consist of 4-6 youth.
- Youth must be in grades 5-10. Submissions for the 2024 Showcase will be judged in two divisions: *Junior* (Grades 5-6) and *Senior* (Grades 7-10). Mixed-grade teams are welcome; however, division will be determined based on the grade level of the oldest student on the team.
- Each team should have at least 1 adult coach who is responsible for guiding the team, assisting with documentation and submission, and coordinating travel to the Showcase.
- Coaches should have previously completed an Idaho FabSLAM or IDX 3D Printing / Digital Fabrication for Educators training between 2016-2023. Schools/organizations where one staff member has completed this training may be eligible to bring additional teams, led by Coaches who have not received training, provided there is collaboration with the educator who has been trained. One coach should not lead more than one team.
- Teams must have access to a 3D printer and associated software in order to complete their Showcase entry.

Please contact Erica Compton (erica@idahostem.org) with questions about team/coach eligibility.

Regional Showcase Locations, Dates and Times

Three Regional Showcases will be held at the following dates/locations. Showcases will begin with team set-up at approximately 11:00am and conclude between 3:00 and 4:00pm.

DATES AND FINAL LOCATIONS COMING SOON

Teams must attend the Regional Showcase in the location closest to the sponsoring school/organization.

Exact schedules and venue information will be provided to registered teams closer to the event.

Showcase Submission Requirements

Teams are required to submit an **original** idea that responds to the Challenge Theme.
Team entries should include the following:

1. **Solution Prototype:**
   a. A physical representation of the solution idea created primarily by 3D printing.
   b. Prototype should be thoughtfully designed and respond to the theme in a meaningful way.
   c. Teams are highly encouraged to bring and display previous prototypes and iterations, including failed prints, that help tell the story of the team's process.
2. **Digital Documentation:**
   a. A minimum one-page website detailing the team's process and what they have learned. Structure/platform of the website is up to the team.
   b. Webpage should include both visual (photos/video) and written content.
   c. Coaches should have previously completed an Idaho FabSLAM or IDX 3D Printing / Digital Fabrication for Educators training between 2016-2023. Please contact Erica Compton (**erica @idahostem.org**) with questions about team/coach eligibility
   d. Teams will be asked to provide the URL to their published webpage a week prior to the Showcase.

3. **Presentation:**
   a. A presentation of no more than 5 minutes introducing the team's idea and describing the design process.
   b. Include information about the solution, how the team arrived at the idea, challenges encountered, changes made, roles of individual team members, and how the team might reiterate the design in the future.
   c. A slideshow is NOT required; however, teams may use one if they wish.
   d. The presentation will be followed up by a 3-minute Q&A with the judges. Students should be prepared to answer judge questions independently, without assistance from the Coach.
4. **Visual Materials:**
   a. Each team will be allotted a (6-8ft.) table to display the prototype, previous iterations and any accompanying visual materials.
   b. Team presentations will take place at team tables.
   c. No specific visual materials are required however teams will receive a "Display" score based on how they use the space to explain their idea and process.

A full scoring rubric can be accessed at this **link**

At the Showcase: What to Expect

- Each Showcase will be approximately four hours in length, though times may vary depending on the number of teams attending.
- Teams will be allotted one hour at the beginning of the Showcase to set up. Most teams complete set-up within 20-30 minutes.
- A catered lunch will be available for students and coaches following set-up.
- Judges will travel from table to table for team presentations. A judging line-up will be provided so that teams know when they will be visited by the judges.
- Judges will spend 8 minutes with each team: up to 5 minutes for the presentation and an additional 3 minutes for Q&A.
- In order to expedite the judging process, websites will be reviewed by judges prior to the start of the Showcase. **Teams will be asked to submit their website URLS a week prior the scheduled Showcase date.**
- While the judges deliberate, student tables will be open to family members/members of the public. Students are also encouraged to visit the displays of other teams. All participating students will be asked to vote on a "Student's Choice" award for their favorite entry. The Student's Choice Award will be given out alongside other prizes at the end of the Showcase. Students are not allowed to vote for their own project.
- **The Showcase will conclude with a brief Awards Ceremony, where prizes will be given to selected teams.**

Prizes

- Prizes will be awarded based on the scores given by judges on the rubric.
- A 1st, 2nd, and 3rd place prize will be awarded .
- All students are eligible to vote for a "Student's Choice" prize, which will be awarded to the team that receives the most votes. Students are not permitted to vote for their own team for Student's Choice.

IDX: Team Roles & Responsibilities
Student Role:

Students are the "makers" and bear most of the responsibility for developing a solution idea and completing a prototype. Student responsibilities include:

- Attending meetings/work sessions and participating by sharing ideas, giving feedback and contributing talents to get the work done.
- Using 3D design software to design and model the agreed-upon solution.
- Using 3D printing software (with Coach supervision/assistance) to complete prints and subsequent iterations.
- Working to reach milestones and complete the project on time.
- Documenting the team's process on a webpage, including:
  - Developing an idea and prototype from start to finish.
  - Important discoveries and decisions along the way.
  - Challenges encountered and how the team responded/iterated.
- Being able to explain the project idea and the design process, including:
  - The role of each individual team member in developing the final prototype.
  - The reasoning behind different design decisions.
  - The overall value of the solution idea.
- Answering judge questions.
- Creating the presentation and display materials for the Showcase.

Coach Role:
Each team has an educator who supports the team and acts as the point of contact with the EcosySTEM.

The Coach's responsibilities include:

- Registering the team with EcosySTEM.
- Arranging travel to the Showcase (EcosySTEM will provide travel stipends).
- Ensuring that any school-required permission slips or forms are completed by youth and their parents/guardians.
- Coordinating with youth/parents as needed to set up meetings and work sessions for them to complete the project.
- Introducing youth to 3D design software and printing technology and assisting with technical troubleshooting.
- Guiding youth through problem-solving/design thinking process.
  - Provide a scaffolding/process for students to identify a problem, brainstorm a solution and develop a prototype.
  - Ask questions about design ideas and prototypes.
  - Prompt them to think about factors/users/circumstances they may not have considered.
- Submitting team webpage URL final and any information requested by EcosySTEM.

2024 THEME INFORMATION

The 2024 IDX Student Showcase Challenge revolves around the theme of Veterinary Science. This theme encourages students to explore the fascinating world of veterinary medicine and its implications, both on a local level and in the context of broader global environmental concerns. To guide participants in their research and project development, the challenge has identified three distinct subtopic areas. However, teams also have the option to choose their own veterinary science-related topic.

Your task: **To design a solution to an issue identified within the category of veterinary science. Represent your solution with a prototype which incorporates 3D Printing.**

TOPIC AREA #1
Animal Health and Welfare

This subtopic focuses on the well-being of animals in various environments, including domestic pets, farm animals, and wildlife. Students may delve into the latest advancements in veterinary care, explore preventive measures to ensure animal health, investigate methods for treating illnesses and injuries, and examine ethical considerations related to animal welfare.

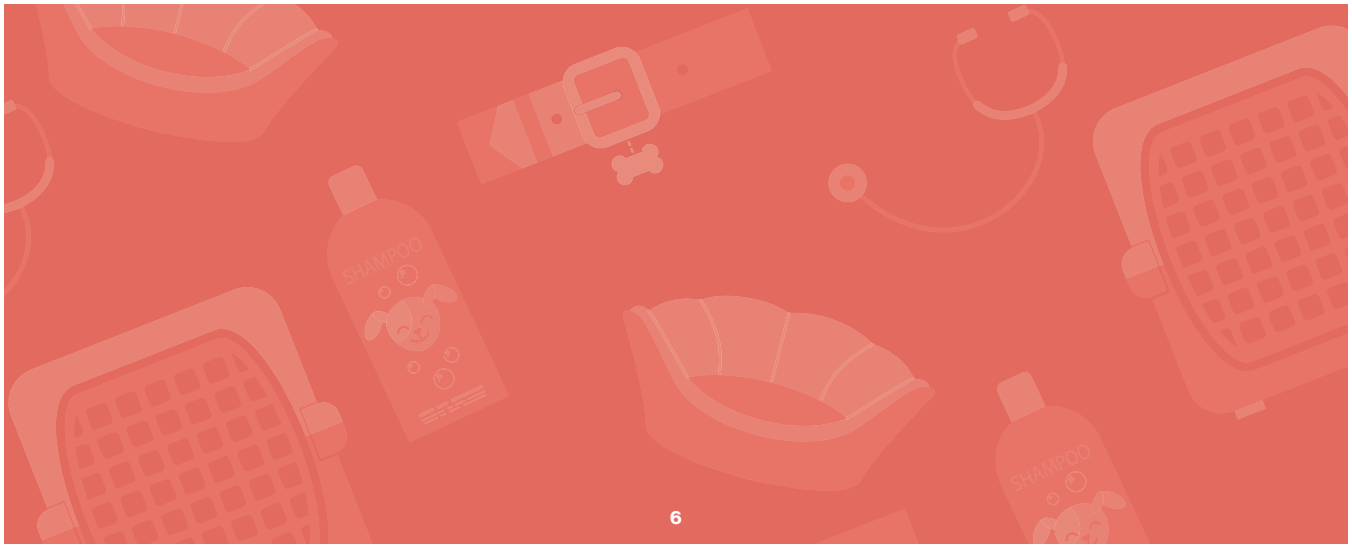
Suggested Resources:

https://carrington.edu/blog/newest-advances-veterinary-technology/

https://todaysveterinarybusiness.com/innovations-to-watch-in-veterinary-medicine/

https://extension.psu.edu/keeping-animals-healthy

https://www.woah.org/app/uploads/2021/03/p-c-en.pdf



TOPIC AREA #2
One Health Approach

The "One Health" concept recognizes the interconnectedness of human, animal, and environmental health. It emphasizes the need for collaboration between veterinary medicine, human medicine, and environmental science to address complex health challenges. Students exploring this subtopic might analyze the impact of zoonotic diseases (diseases that can be transmitted from animals to humans), study the role of veterinarians in public health, and propose solutions that enhance the well-being of all living organisms.

Suggested Resources:

https://www.cdc.gov/onehealth/who-we-are/one-health-office-fact-sheet.html

https://www.onehealthcommission.org/

https://veterinary.rossu.edu/research/research-center/one-health-center-for-zoonoses-and-tropical-veterinary-medicinehttps://www.woah.org/app/uploads/2021/03/p-c-en.pdf

TOPIC AREA #3
Conservation and Biodiversity

In this subtopic, students are encouraged to explore the vital role of veterinary science in the conservation of biodiversity and the preservation of endangered species. They can investigate the challenges facing wildlife populations, explore the use of veterinary techniques in conservation efforts, and propose strategies to protect and rehabilitate threatened ecosystems.

Suggested Resources for our planet:

https://vet.tufts.edu/center-conservation-medicine

https://avmajournals.avma.org/view/journals/javma/261/7/javma.23.02.0094.xml

https://www.vet.cornell.edu/departments/public-and-ecosystem-health/about-us/conserving-biodiversity
(See videos at the bottom of the web page)

https://www.veterinary-practice.com/article/conservation-medicine

TOPIC AREA #4
Custom Veterinary Science-Related Topics

IDAHO EXHIBITION OF IDEAS

This option allows teams to choose their own veterinary science-related topic, allowing for creativity and innovation beyond the predefined subtopics. This empowers students to explore unique ideas, novel applications of veterinary science, or address specific issues that they are passionate about within the field.