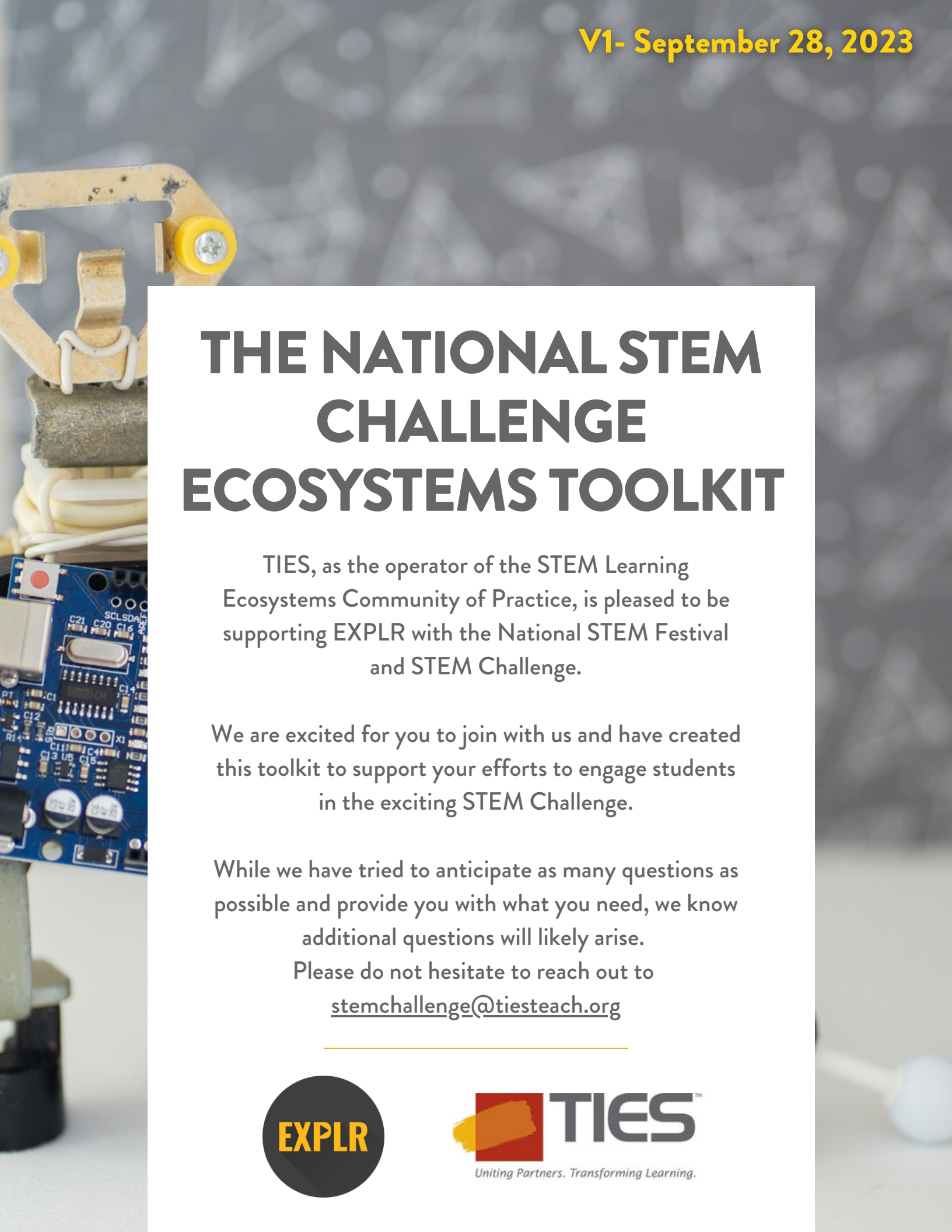
V1- September 28, 2023



THE NATIONAL STEM CHALLENGE ECOSYSTEMS TOOLKIT

TIES, as the operator of the STEM Learning Ecosystems Community of Practice, is pleased to be supporting EXPLR with the National STEM Festival and STEM Challenge.

We are excited for you to join with us and have created this toolkit to support your efforts to engage students in the exciting STEM Challenge.

While we have tried to anticipate as many questions as possible and provide you with what you need, we know additional questions will likely arise.
Please do not hesitate to reach out to
stemchallenge@tiesteach.org

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Uniting Partners. Transforming Learning.

Step 1: Familiarize Yourself with the STEM Challenge and How to Leverage it as an Important Tool for Your Ecosystem

Step 2: Develop Strategies for Recruiting Entries & Spread the Word

Step 3: Pre-Register Students & Teachers Before October 4, 2023 and Get a Step Ahead!

Step 4: Submit Entries! Window is open from October 4- Nov 12, 2023

Step 5: Get ready to celebrate STEM Champions! Learn from the valuable work of students across the country

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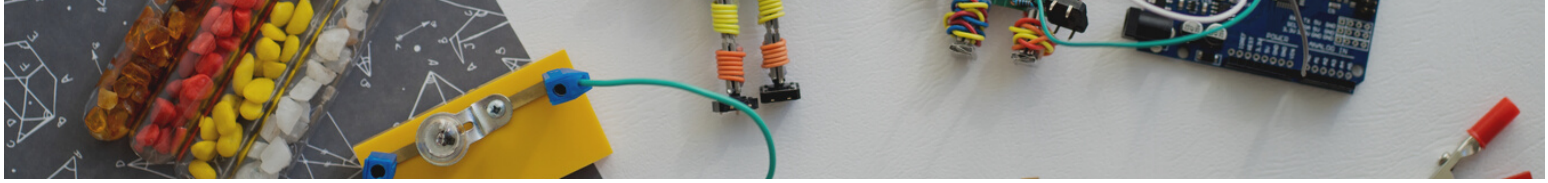


Talking Points about the STEM Challenge

Overview

Today's students will be tomorrow's innovators, and research has clearly established the value of broadly diverse STEM workforces.

Many students remain underexposed to and under-enrolled in STEM education, a fact reflected in nationwide STEM employment numbers.

- Underrepresented racial and ethnic groups comprise 27 percent of the population but comprise only 11 percent of the STEM workforce, and though women make up half the population, they comprise less than 30 percent of the STEM workforce.

The STEM Challenge is designed to eliminate barriers and offer equal opportunities for all students to excel in STEM fields while engaging them in deep and critical thinking around challenges facing our world.

- Through the challenge, students design solutions for problems in one of six key areas: Environmental Stewardship; Future Food Systems, Health and Medicine; Powering the Planet; Tech for Good and Space Innovation.

Explaining Value to Educators

As STEM Ecosystem leaders, your relationship with school district leaders is invaluable. By connecting them to the National STEM Challenge, you are bringing them a mechanism to move project-based learning/projects to a new height.

Students, their families and entire communities are growing more aware than ever of the need to address what really matters.

The STEM Learning Ecosystem that you lead can help this to happen and we are pleased that the National STEM Challenge is yet another tool that you have for creating awareness of STEM in your communities and for engaging students.

Possible Strategies for Educators to Use With Students

Students are motivated by solving problems, by working on issues that matter to them and by being able to use their own ingenuity in a hands-on way. The STEM Challenge gives students an opportunity to do all of these things.Please remember that our students are well aware of the challenges that their communities face and are looking to solve those problems. The Engineering Design Process always helps problem-solvers to move from ideation to action.

Consider asking students to think about the issues that they can brainstorm that fit with one or more of the six Challenge topics - Environmental Stewardship, Future Food Systems, Tech for Good, Health and Medicine, Powering the Planet and Space Innovation.

What projects have they done that address them and can be revised with a more contemporary approach?

How can we save the planet? What is great use of AI and other emerging technologies?

You might also want to suggest that they see videos produced and on YouTube that speak to issues around these Challenge Topics.

What parents in your school or community partners are working on these Topics now and can be a great resource?

Additionally, please spend some time acquainting yourself with LabXchange, and exploring the many resources offered there that may be useful.

MEDIA TOOLKIT

Sample Press Release You Can Send

This is a sample press release that you can modify and send to local media contacts in your community. Please be sure to copy stemchallenge@tiesteach.org on any releases that are sent. Also, please be sure to also send her links to any stories that are published or broadcast about your work with the STEM Challenge.

Sample Social Media Posts

Twitter/Facebook:

"The [YOUR ECOSYSTEM NAME OR HANDLE] is excited to spread the word about the National STEM Challenge! Join the rest of the @STEMecosystems in ensuring that all young innovators in grades 6-12 have a chance to submit to NationalSTEMchallenge.com #STEMecosystems #STEM"

"📣Calling all young innovators! 📣 Start building your projects for the Oct. submission window. Head to NationalSTEMchallenge.com for all the details and deadlines. #STEMecosystems"

" 🚀 Exciting news! @nationalstemfestival is NOW accepting project submissions. Embrace your inner scientist, engineer, tech or math whiz! 💡 Let your curiosity be a driving force to help the planet. Submission close Nov. 12. Visit: nationalstemchallenge.com"

LinkedIn:

The [YOUR ECOSYSTEM NAME OR HANDLE] is excited to spread the word about the National STEM Challenge! Join the rest of the @STEM Learning Ecosystems and @Teaching Institute for Excellence in STEM in ensuring that all young innovators in grades 6-12 have a chance to submit to NationalSTEMchallenge.com

Select top-scoring STEM Champions from all 50 states, including the District of Columbia, U.S. territories, Department of Defense schools, Bureau of Indian Education schools, and non-public schools, will be invited to present their projects at the National STEM Festival in Washington, D.C., in April 2024. The Festival is co-presented by the U.S. Department of Education and EXPLR. Submissions open Oct. 4 and end on November 12.

For additional information and assets, access the National STEM Festival STEMpact Toolkit

Key Links

National STEM Challenge Website
National STEM Festival STEMpact Toolkit
National STEM Festival Brand Guidelines
STEM Learning Ecosystems Community of Practice Website
EXPLR-Media Website

Key Dates

September 12th - Ideation Phase Begins (start developing those projects!)
October 4th - Entries Open
November 12th - Entries Close
December 22nd - Challenge Finalists Announced
February 6th - National STEM Champions Announced
April 12th - National STEM Festival in Washington D.C.

A Step by Step Set of Recommendations for How to Engage Schools and Other Organizations

Step 1: Educate Yourself

Review the Talking Points about the STEM Challenge and the STEM Festival as well as the Basic Facts and FAQ. You will want to have a basic understanding of the goals of both and be able to speak about the value of encouraging students to exercise their creativity, critical thinking and passion for STEM.

Step 2: Develop Lists

Develop a list of schools, out-of-school-time providers you believe may have students who might be interested in submitting an entry.

Step 3: Create Outreach Strategy

Develop your outreach strategy. You will likely want some combination of social media, website postings, earned media, email outreach or a webinar. (See sample press release and other media assets linked in the Media Toolkit section.)

Step 4: Execute Outreach Strategy

Send contacts on your outreach list an email introducing the STEM Festival and the STEM Challenge and inviting them to a webinar - if you'd like. (If you opt to use these two powerful vehicles as an engagement tool for bringing together some of your Ecosystem's stakeholders. If you'd like to host a webinar, please reach out to stemchallenge@tiesteach.org and we will help plan and facilitate a webinar for your community.)

Sample email language:
Dear XXXX,

I wanted to share an exciting opportunity for students in grades 6 through 12 to enter the National STEM Challenge.

As the XX of the XXXX Ecosystem, we are always on the lookout for cool and engaging ways of elevating STEM in our community, and we believe that the National STEM Challenge holds amazing promise for doing just that.

The National STEM Challenge is an open event for U.S. students in grades 6 - 12 where students craft a STEM project that tackles a real-world challenge in one of six key themes using the scientific method or the engineering design process.

The submission window opens Oct. 4 and all entries must be in by 8:59 p.m. (PT) on Nov. 12. Official rules and more information is available here.

I would be happy to set up a call with you to discuss this. Or, please join us at XXXX on XXX for a webinar to learn more. (YOU MAY WANT TO HOST A WEBINAR.)

Step 5: Identify Needs

Determine and develop plans for any additional needed support or outreach, based on responses to outreach you've conducted to date.

For instance, would you like to hold a follow-up webinar or in-person meeting to encourage more participation? Or, might you like to hold a meeting to discuss projects that are under development and how students are responding to and thinking about the challenges? (TIES is happy to assist you with any needed follow-up.)

Step 6: Send Reminders

As the date nears, set up a series of reminders through email and social media to the schools and organizations you identified.

Sample Reminders

To send on Oct. 4:
Today is the day that entries are being accepted for the National STEM Challenge. Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more. Remember that all submissions are due by 8:59 p.m. (PT) on Nov. 12.

To send on or near Oct. 11:
We don't know exactly how many students have submitted entries, but we know that the best ones are going to come from right here in XXXXXX. So, let's show the rest of the country what innovators we are. Please encourage students in grades 6 through 12 to get their entries in for the National STEM Challenge. Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more. Remember that all submissions are due by 8:59 p.m. (PT) on Nov. 12.

To send on or near Oct. 18:
There are about three weeks left to submit entries into the National STEM Challenge.
Please encourage students in grades 6 through 12 to get their entries in for the National STEM Challenge. Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more. Remember that all submissions are due by 8:59 p.m. (PT) on Nov. 12.

To send on or near Oct. 25.
Is there a National STEM Champion in your midst? We think so and there's still time for them to prove it. Please encourage students in grades 6 through 12 to get their entries in for the National STEM Challenge. Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more. Remember that all submissions are due by 8:59 p.m. (PT) on Nov. 12.

To send on or near Nov. 1.
Remember that the National STEM Challenge closes in about 11 days. If your students in grades 6 through 12 haven't yet submitted their entries, please encourage them to do it soon. And remember that the project that they submit doesn't have to be "brand new." It could be something that they worked on before and just are continuing to perfect.
Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more. Remember that all submissions are due by 8:59 p.m. (PT) on Nov. 12.

To send on or near Nov. 11:
All entries for the National STEM Challenge are due by 8:59 p.m. tomorrow, Nov. 12. Please remember that the project that students submit doesn't have to be "brand new." It could be something that they worked on before and just are continuing to perfect.
Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more.

To send on or near Nov. 12:
Today is the day… The country's National STEM Champions have until 8:59 p.m. (PT) today to submit their entries. Visit https://www.nationalstemchallenge.com/2024 to submit entries or learn more.

Step 7: Recruit Judges

With schools in every state and a national network of more than 100 student-serving organizations taking part, we are expecting approximately 20,000 student submissions!

The digital review process will take place in November-December 2023 with each volunteer reviewing between 10-12 projects. Top-scoring STEM Champions will be invited to participate in the 2024 National STEM Festival in Washington D.C., co-presented by the U.S. Department of Education and EXPLR.

STEM education plays a vital role in shaping the future of our world. As such, it's important that every student receives meaningful feedback and encouragement to help cultivate and foster a genuine interest and passion for STEM learning and careers. Participation from scientists, engineers, educators, and professionals would help instill a sense of confidence and motivation to pursue their passions further.

Here's a link to the Festival Review Panel interest form.

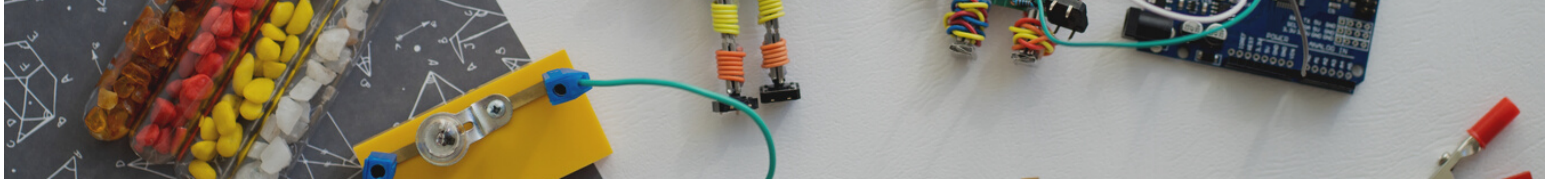
Step 8: Celebrate

Whether or not a student in your Ecosystem was selected as one of the 200 STEM Champions to participate in the National STEM Festival, it's time to celebrate.
There are so many ways to celebrate and to use the entries that students in your community created to elevate the role and visibility of STEM in your community.
Here are a few options:

- Invite students who entered to a public meeting to share their work and discuss how it addresses one of the challenges facing society.
- Send out social media posts and other public communications about the local entries.
- Convene some of the students and educators with local Ecosystem stakeholders, including those from business and industry, to discuss the inventions and how they connect to workforce needs.
- If you have a winner - TIES and the EXPLR team will work with you to develop a media outreach campaign to elevate this.

Step 9: Leverage STEM Festival and STEM Challenge to Elevate STEM in Your Ecosystem

Once the STEM Challenge ends, your opportunity to engage students in STEM will only grow.



Basic Facts and FAQ

What is the National STEM Festival?

The National STEM Festival is a nationwide celebration of creativity, critical thinking and passion for STEM. During the National STEM Festival, which will be held at key locations in D.C., middle and high school students will be able to showcase their projects to key leaders from across the country and build valuable connections with their peers and others.

What is the National STEM Challenge?

The National STEM Challenge is an digital event for U.S. students in grades 6 - 12 where students craft a STEM project that tackles a real-world challenge in one of six key themes using the scientific method or the engineering design process.

When will the National STEM Festival occur and where?

April 12 to April 13, 2024, in Washington, D.C.

Who will be eligible to attend the National STEM Festival?

Up to 200 National Champions will win a trip to the National STEM Festival where they will have an opportunity to showcase their projects to some of our nation's most influential leaders.

Who is leading the National STEM Festival?

Presented by EXPLR in collaboration with the U.S. Department of Education and with support from TIES and the STEM Learning Ecosystems Community of Practice, this event is a key initiative under the Biden-Harris Administration to promote STEM education and careers, advancing equity and excellence for all students.

Additionally, an advisory committee of globally recognized industry leaders, co-chaired by Paula Golden (Broadcom Foundation) and Dr. Calvin Mackie (STEMNOLA), is helping to advise organizers.

What are the 2024 Festival Themes?

Students participating in the Challenge will design projects within six categories, utilizing the engineering design process or the scientific method to address local or global challenges. These categories include:

1. Environmental Stewardship: Projects promoting responsible use of natural resources, conserving water and energy, addressing climate change, and exploring scalable solutions to environmental issues.

2. Future Foods Systems: Research equitable and sustainable practices in food production, distribution, and consumption, considering factors like climate change, population growth, resource scarcity, and food security.

3. Health & Medicine: Innovating medical devices, disease diagnosis and treatment methods, and healthcare solutions, focusing on equitable access to healthcare.

4. Power the Planet: Designing alternative and sustainable energy sources, energy storage technologies, energy efficiency, and grid optimization.

5. Space Innovation: Tackling challenges in aviation and aerospace, from life on Mars habitats to carbon emissions reduction and fuel efficiency optimization.

6. Tech for Good: Utilizing AI, data visualization, robotics, and other technologies to develop programs or devices addressing real-world challenges, including closing the digital divide and addressing racial biases in technology.

What are the deadlines for submissions?

Submissions are being accepted from Oct. 4, 2023, through 8:59 p.m. (PT) on Nov. 12, 2023.

What are the guidelines for submission?

Please see a full list of submission guidelines here.

What students are eligible to enter?

Students in grades 6-12 are invited to showcase their scientific projects, innovations, inventions and research aimed at solving real-world problems.

How will the entries be judged and by whom?

With schools in every state and a national network of more than 100 student-serving organizations taking part, we are expecting approximately 20,000 student submissions!

The digital review process will take place in November-December 2023 with each volunteer reviewing between 10-12 projects. Top-scoring STEM Champions will be invited to participate in the 2024 National STEM Festival in Washington D.C., co-presented by the U.S. Department of Education and EXPLR.

More details are available here.