

January activities

Careers in STEM Month

“What do you want to be when you grow up?” Elementary school students hear this question a lot! That’s why it’s never too soon to start thinking about the possibilities. This month’s Careers in STEM activities take students on an exciting career exploration journey where they’ll learn about career opportunities in the science, technology, engineering and mathematics fields. We’ll find out what leads people to jobs in STEM and discuss the education that’s required for these positions. Students will even start imagining themselves in STEM roles!

STEM heroes

There are heroes among us! Encourage students to begin exploring their interests and future goals by engaging with the stories of a few STEM Heroes.

Using the instructions below, share the stories of three STEM Heroes with your students. The suggested questions will help shape the conversation and encourage students to share what they know (and don’t know) about these Heroes’ chosen careers. After the conversation, students will compare their own interests and goals with what they learned about the Heroes.

Instructions:

1. Before sharing the stories with your students, be sure to get to know your STEM Heroes! You can find their stories on the TVA STEM Careers webpage at <https://www.tva.com/stem/stem-careers>. The three suggested hero stories:
 - a. **Botanist Adam Dattilo:**
[tva.com/powerd-by-people-you-know/my-story/adam-dattilo](https://www.tva.com/powerd-by-people-you-know/my-story/adam-dattilo)
 - b. **Reactor Engineer David Yancey:**
[tva.com/powerd-by-people-you-know/my-story/david-yancey](https://www.tva.com/powerd-by-people-you-know/my-story/david-yancey)
 - c. **Zoologist Liz Hamrick:**
[tva.com/powerd-by-people-you-know/my-story/liz-hamrick](https://www.tva.com/powerd-by-people-you-know/my-story/liz-hamrick)
2. Before watching the videos with your students, ask them questions to get them thinking about the different careers. Start drawing out what they know about each STEM Hero’s job. For each Hero, capture the responses on a whiteboard or flip chart.

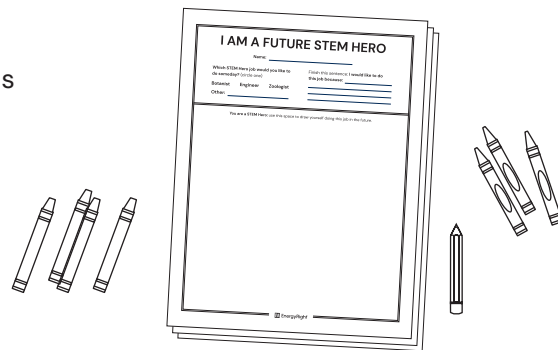
Sample questions may include:

- Does anyone know what a zoologist does?
- First graders, your job is coming to school every day. What does your job look like? Now, what do you think a normal day looks like for a botanist?
- A reactor engineer works at a nuclear reactor, which is a power plant that uses steam from hot water to make giant turbines spin. Does anyone know what a turbine is? Turbines are like giant fans! So imagine using your breath to blow bubbles. That's what steam does to spin the turbines and make carbon-free electricity. What kind of things would a person who works at a power plant be good at or interested in?

3. After your students share their answers, play the selected STEM Heroes videos.
4. After your students watch the videos, revisit your pre-video questions and your students' initial responses to see if the videos provided them with any clarity, changes or additions. Be prepared with some additional questions that might further students' knowledge of the STEM job. An example question:
 - First graders, we said before the video that a zoologist is probably interested in zoos. However, our STEM Hero Liz seemed to work mostly with bats in caves, not in zoos. Did that surprise you?
5. After hearing the stories, prompt students to think through which job sounds most interesting to them. Encourage your students to imagine themselves in that role. Conclude the activity by having your students draw a picture of themselves in their chosen role. Print out and distribute the *I Am a Future STEM Hero Worksheet*. You can find the worksheet at the end of this section or download it at EnergyRight.com/school-uplift-resources.

Supplies

- Crayons, markers and coloring pencils
- Printed worksheets

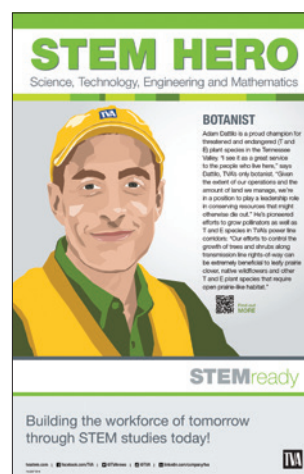
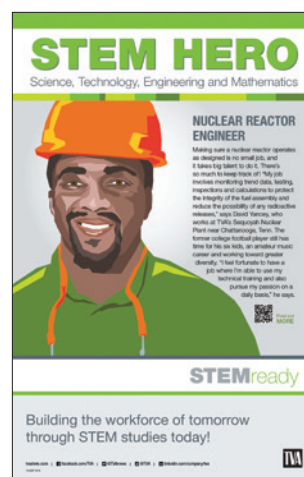


Passive teaching option: STEM Hero posters

Hang eye-catching posters from the TVA STEM careers webpage to reinforce this month's STEM hero activities. (Posters were sent to your school at the beginning of the school year. You can also find them at [TVA.com/stem/stem-careers](https://www.tva.com/stem/stem-careers).) These colorful posters encourage ongoing awareness and conversation around potential STEM jobs.

NOTE: The posters can be used to support the active teaching option or used on their own.

Sample posters:



Additional resources and ideas



Local STEM Hero show-and-tell

Build off the STEM Heroes activity by exploring additional STEM jobs. Contact your Energy Coach to find a STEM industry expert or Hero in your community! For example, invite a lineworker or electrical engineer to visit your class and talk about their work. Prepare students with questions like those used in the STEM Heroes activity.

Use class reading time to highlight books with main characters with STEM interests or in STEM careers.

If you regularly read out loud to your class, consider reading fiction/chapter books with characters that have STEM jobs or who are interested in STEM jobs. Or create a reading nook stocked with STEM-focused books.

STEM book examples:

- “The Questioners” book series highlights kids interested in STEM work.
- “How to Code a Sandcastle” by Josh Funk.
- “Olga and the Smelly Thing from Nowhere” by Elise Gravel.
- “Emmy in the Key of Code” by Aimee Lucido.
- “Spin the Golden Light Bulb” by Jackie Yeager.
- “Click’d” by Tamera Ireland Snow.

For more examples, visit the National Teaching Science Association (NTSA) website at nsta.org/beststem22.

I AM A FUTURE STEM HERO

Name: _____

Which STEM Hero job would you like to do someday? (circle one)

Botanist Engineer Zoologist

Other: _____

Finish this sentence: I would like to do this job because: _____

You are a STEM Hero: use this space to draw yourself doing this job in the future.

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Local Power Company Day

A strong relationship with schools and their local power company (LPC) can be mutually beneficial. In many cases, LPCs are looking for ways to connect with the community. Often, they even have an educational program ready to share with their local schools.

Suggestions for organizing LPC Day

- **Connect with your Energy Coach.** Your coach is available to support you and can help you build a relationship with your LPC. They can help you identify the right contact! Your Energy Coach may know of additional programming options on STEM-related topics, energy careers or workforce development, too.
- **Start planning early.** LPCs have a lot going on and appreciate plenty of advance notice for an event. Planning a month or two ahead will help make sure LPC Day gets onto their calendar.
- **Be a trailblazer!** In some cases, your LPC may not have done any educational programming before. A program focused on STEM jobs is a great place to start. Working with your LPC to create this event may even open the door for more joint programming in the future.

January activities

Careers in STEM Month

“What are you going to do after you graduate?” High school students hear this question a lot. That’s why now’s the time to start thinking about the possibilities. This month’s Careers in STEM activities take students on an exciting career exploration journey where they’ll learn about career opportunities in the science, technology, engineering and mathematics fields. We’ll find out what leads people to jobs in STEM and discuss the education that’s required for these positions. We’ll also discuss things students can do now and after high school to prepare for these roles.

Panel With the Pros

This extracurricular activity will introduce students to career possibilities in the energy field. Create a fun, welcoming event that students will want to attend. (We highly recommend incentives like pizza, donuts, school attire passes or other rewards to encourage students’ interest and participation.) Students who attend this activity will have the opportunity to meet professionals in the energy field, ask questions and gain a broader understanding of energy-related job options.

Planning the event

Below are suggestions for developing and promoting the Panel With the Pros event.

- **Choose a panel host.** Select someone from your school staff who will serve as the host for the Panel With the Pros. This person could be the event planner, but it doesn’t have to be! The host should be able to keep the discussion on track, ask leading questions and have a good idea of the event goals.
- **Plan the panel.** Contact your Energy Coach and ask for recommendations for two to four panelists. Ideally, your panel will include professionals from different departments and with different career stories.

Tip: Utilize your school’s alumni network for potential panelists.

- **Select a date.** Work with your panelists to select the best date for your event.
- **Decide on a location.** Find a space that’s large enough for food, students and your panel of experts. Make reservations if you need to and have a backup location in case your event is bigger or smaller than you’d originally anticipated.

- **Promote the event.** Make good use of your school's communication channels and get creative with your promotion! For example, have your LPC park a bucket truck out front for the week leading up to the event. Make sure parents and guardians are informed as well.
- **Promise food and require sign-up.** Encourage students to attend with the promise of a giveaway — free food works well — and start a sign-up sheet so you have an idea of how much food to order.
- **Invite individual students.** As you plan the event, a few students may come to mind who'll need extra encouragement to attend. Reach out to them directly or work with your counseling office to invite students who have shown an interest in STEM-related work.
- **Finalize details.** As you get closer to the event and you have a good idea of how many people will be attending, reconfirm your panelists and finalize details such as location, event setup and food ordering.

The event

While panel details may vary depending on the time allotted for the conversation, a basic program outline can provide space for introductions, reflection and Q&A.

1. **Welcome students.** Provide any expectations for participation, including good listening practices and space for questions.
2. **Make introductions.** After welcoming students to the event, ask the panelists to introduce themselves. Sharing their name, job and years of service is a great place to start!
3. **Ask questions.** Below are sample questions you could use with your panelists:
 - Tell us about your path to your role. What education and experience did you need to get to where you are today?
 - When did you know you wanted to be in this type of work? How did you know?
 - If your high school self was here today, what would you want to tell them? Would your high school self be surprised by where you are today?
 - If someone wants to learn more about this career path, what can they do now to prepare?

4. Provide space for the students to ask questions. The host can help reframe unclear questions so that the panelists can understand them and respond appropriately.

5. Say thanks. Conclude with a “thank you” for the panelists.

Event follow-up

Take note of any student who is positively engaged during the panel conversation and follow up with an invitation to continue exploring an energy-related career path.

STEM Career and Trade School Fair

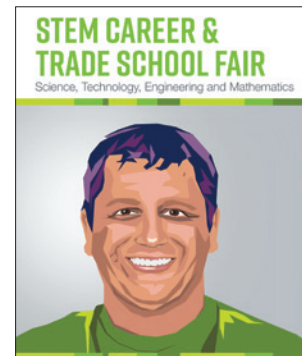
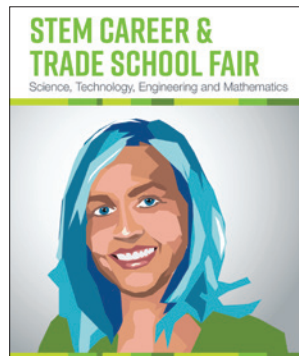
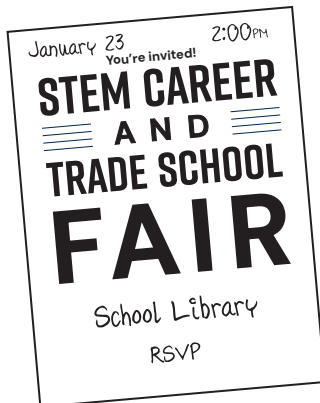
The STEM Career and Trade School Fair focuses on organizations offering pathways toward STEM careers. These include college and university vendors as well as trade schools, apprenticeship programs and companies that provide post-secondary training and hiring. Career and trade fairs give students a chance to expand their knowledge about potential career paths, practice their communication skills and help them make smart curricular choices while still in high school.

Preparing for the event

Below is a suggested checklist to prepare for hosting this event.

- **Involve your school counseling or guidance office.** With the focus on post-secondary planning, your school’s counseling or guidance office will be a helpful and resourceful support in planning and hosting this event.
- **Confirm a time and location.** A large gathering space, such as a gym or cafeteria, is an ideal location for a fair.
- **Invite vendors early.** To ensure a strong turnout of fair vendors, send event invitations three months in advance, with instructions on how to RSVP. Follow up with a call or email a few weeks after to increase vendor attendance (see below for a sample invitation).
- **Partner with other high schools or colleges in your area.** By widening the circle, you can share the benefits and responsibilities of hosting an event of this size.

- **Promote the event.** Begin promotion at least a month in advance, if not earlier. Utilize all the promotional channels at your disposal. These could include newsletters, email blasts, social media, announcements, posters, screens, web calendars, etc. **Marketing assets can be found at the end of this section. You can also download them at EnergyRight.com/school-uplift-resources.**



- **Request volunteer support.** It takes a team to make this event successful, so ask for volunteer support from staff, parents or student clubs (National Honor Society, Robotics Club, etc.). Volunteers may be needed in the following areas:
 - o **Setup** (at least three people): They're responsible for getting your space ready to host the event. This includes setting up and arranging tables and chairs, preparing a refreshment space for vendors and setting up event signage to indicate parking, restrooms, etc.
 - o **Vendor hospitality/liaison** (one to two people): They're available to assist vendors with any questions or needs that arise during the event.
 - o **Information and contest table** (two to three people): This "welcome" table should be located near the entrance to the event. Volunteers are responsible for welcoming attendees and answering questions related to the event. They can also handle tasks related to any giveaways or contests.

- o **Tech support** (one person): They're available to troubleshoot any problems that arise around technology issues. Potential questions may involve Wi-Fi log-in and service and AV equipment (if using).
- o **Security** (one to two people): Volunteers are available to monitor the visitors to the school grounds and can step in if needed to provide support.
- o **Teardown** (at least three people): They're responsible for taking down tables and cleaning up after the event.

Sample vendor invitation

Dear [INSERT ORGANIZATION_NAME],
We are excited to announce the [INSERT SCHOOL_NAME] STEM Career and Trade School Fair, taking place on [DATE] at [TIMEFRAME] at [ADDRESS] in the [ROOM_LOCATION].

While this is our first year hosting this event, we are inviting [NUMBER_OF] organizations to attend. There is a great interest in STEM-related careers within our student body of [NUMBER_OF] students. Our team is so excited to fuel their passions with this event.

Vendors for the STEM Career and Trade School Fair will receive the following accommodations: [INSERT_BENEFITS: {information such as exhibit space, special event giveaways or additional marketing opportunities and other exhibitor details}].

Please consider joining us on [DATE] for this inaugural event. You can RSVP by [INSERT information on how to RSVP, deadlines and contact information].

Sincerely,

During the event

Encourage participation through a contest or assignment! Use the *STEM Career and Trade School Participation Form* to encourage student participation!

(The Participation Form can be found at the end of this section or you can download it at [EnergyRight.com/school-uplift-resources](https://www.energyright.com/school-uplift-resources).) This form is designed to encourage students to visit vendors, ask questions and receive vendor signatures.

Use this form for entry into an event giveaway (e.g., vendor-provided merchandise/swag) or encourage teachers to give extra credit for fair participation.

STEM Career and Trade School Fair Participation Form Use this form to gather information on participating vendors!	Name of Organization/Company	Specialization What do they offer? How can they help?	STEM Career(s) Possibilities	Vendor Signature

Event follow-up

Send a note or letter to vendors, thanking them for their participation. Be sure to mention if plans are forming for next year's event (if annual).

[illegible]

Use this form to gather information on participating vendors!

You're invited!

STEM CAREER

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TRADE SCHOOL

FAIR