

## Professional Development Situation: Training

**Skill Focus: Developing a STEM Identity**

**Time Required: 60 minutes**

# EVERYDAY STEM

Participants will engage in STEM Storytelling to learn to help youth develop identities in STEM.

## Agenda

Welcome—5 minutes

Introduction—20 minutes

- STEM Storytelling

See the Skill in Action—10 minutes

- [Seeing Themselves in STEM](#) video-based learning module

STEM Career Connections—20 minutes

- [STEM Career Connection Cards](#)

Conclusion—5 minutes

## Materials

- Noisemaker (bell, buzzer, whistle, party favor, etc.) one per participant or table
- Computer with Internet connection
- Projector and speakers
- Option 1: A guest speaker who is a STEM professional
- Option 2: One set of [STEM Career Connection Cards](#) cut out for each participant (8 per page; more than one copy might be needed)
- [Seeing Themselves in STEM](#) video-based learning module

## Before the Session

- **Read this training guide** to become familiar with the content and allow time to personalize the activities to best suit your presentation style. Watch all videos and read informational materials.
  - *Italics indicate text that can be read aloud or emailed to participants.*

- Send reminder email about the training. Determine if any participants require accommodations (sight; hearing; etc.).
  - *The next professional development opportunity to enhance our STEM skills will be on DATE at TIME at LOCATION. Our focus for this session will be “Developing a STEM Identity.” Let me know if you require any accommodations to participate in the training. I am happy to answer any questions you have and look forward to seeing you at the workshop. I can be reached at CONTACT INFO.*
- Gather all materials needed for the training.
- Develop a list of possible questions participants might have during the training. Create potential responses to be explored through informal conversation. Review any key terms or ideas that may be unclear.
- On the day of the training, test the audio and video equipment.

## Training Outline

### Welcome (5 min)

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce yourself and the focus of the session: "Developing a STEM Identity".
- Ensure participants are aware of the locations of restrooms facilities, refreshments, etc.

### Introduction (20 min)

- Have each participant introduce themselves and share one STEM job they might have liked to have if they could have.
- You will now do something called STEM Storytelling.
- Pass out the noisemakers.
  - *We all do some science or engineering every day of our lives—but we are not always aware of it. What we lack is the awareness of the nature of what we are doing. No “bells” go off for us that say we are doing an activity that is full of STEM skills and content. Let’s very briefly list some STEM skills together.*
- Chart participants’ responses. Be sure to include: asking questions, observing, collecting data (information), using math, being creative, problem solving, analyzing, paying attention to detail, using spatial skills, working collaboratively, communicating ideas with detail, building and organizing, and breaking ideas into smaller parts.
- Give each group a bell or noise maker.

- *Let's make those bells go off! In your small group, take turns describing a typical day. If you think the activity that is being described either requires STEM skills or has STEM content, please ring your bell or use your noise maker.*
- Allow groups to work for 15 minutes. Then, summarize the activity:
  - *We are all scientists and we use STEM skills and knowledge every day.*

### See the Skill in Action (10 min)

- Cue up the [Seeing Themselves in STEM](#) video-based learning module.
  - *Watch as Perrin talks about the ways that she thinks of STEM identities as they relate to STEM careers. Why does she think STEM identity is important?*
  - *What activity are the youth doing in support of STEM identities?*
- Show the video.
- If needed, show the video again.
  - *What are the youth doing here?*
  - *Why might an activity like this be important?*
  - *Have you ever had an experience where you saw someone doing something and thought, "Well I can do that too!"? What happened?*
  - *How can we foster that attitude of "I can do that!" with our youth?*

### STEM Career Connections (20 min)

#### Option 1: A Guest STEM Expert

- Introduce your guest and the activity.
  - *This is NAME and they have a career in STEM. We are going to play a game where we will try to guess her/his profession. Each group will take turns asking "yes or no" questions until someone wants to make a guess. For example, you can ask, "Do you work outdoors?" You can't ask, "Where do you work?"*
- Allow time for participants to ask questions until they guess the profession of the guest speaker.
- Allow the visitor to talk about their profession, why they chose that particular career, what some barriers might have been, and what the rewards are in that career.
  - **Note:** It may be helpful to notify the STEM expert ahead of time that you would like them to speak about these particular topics.
- Debrief with participants.
  - *Now, that we've gotten a chance to talk to someone with a strong STEM identity, let's think about the factors that might help us develop youths' sense of selves as scientists and engineers.*

## Option 2: A Room Full of STEM Experts

- Distribute one [STEM Career Connection Cards](#) to each participant, without allowing anyone to look at the cards.
- Have each participant place their card on their forehead and walk around the room asking people questions about the profession on their card such as “Do I work outdoors?” etc. The questions must be yes or no questions.
- Let people ask questions about their STEM profession or identity until they are able to guess what their career might be.
- Debrief with participants.
  - *What career did you have?*
  - *How might youth be encouraged to choose this STEM career in the future?*
  - *How might youth be encouraged to incorporate STEM into their identity?*

## Conclusion (5 min)

- Help participants think about the role that a STEM identity plays in choosing a career. Record their responses.
  - **Note:** It might be helpful to draw a relationship between a STEM identity, a STEM career, and out-of-school-time learning:



- *What might have been necessary for the STEM Expert(s) guest to develop an identity that led them along a path to doing STEM for their careers?*
  - **Note:** It is very important to emphasize that education is a factor, but perhaps the love of STEM and inquiry or design was even more important.
- *What is the relationship between OST learning and STEM identity? What can we do in our program to help develop this sense of self in STEM?*
- Thank participants for attending.
- Encourage them to keep thinking about the importance of STEM identities relative to their program.

## After the Session

- From notes you took, compile a list of STEM skills and strategies for developing a STEM identity in youth. Share this in your follow-up email to participants.
- Within 2-3 weeks of the training, email participants:
  - *Thank you for your participation in the recent Click2Science training on “Developing a STEM Identity”. I hope you found it useful. Attached are some strategies the group discussed during the training. Consider meeting with a co-worker, supervisor, or friend to share what you learned. I look forward to continuing our learning at the next session on SKILL/FOCUS on DATE at TIME at LOCATION. Please let me know if you have any questions. I can be reached at CONTACT INFO.*

Want to Earn Credit? Click2Science has teamed up with Better Kid Care to provide continuing education units. Check it out at: <http://www.click2sciencepd.org/web-lessons/about>

## STEM Career Connection Cards

Pharmacist	Wildlife Biologist
Astrophysicist	Software Developer
Film Editor	Statistician
Nurse	Landscape Designer
Architect	Sports Medicine Therapist
Civil Engineer	Physicist