2024 National Order of the Arrow Conference

Session: Introduction to STEM

Session Length: 45 minutes

Session Description

A brief overview of STEM and how it is integrated into Scouting America's activities. Shares hands-on experiences, and discusses the art of the possible for engaging and exciting STEM programs.

Learning Outcomes

Session will show how STEM is integrated into Scouting America's activities. Examples include advancement and awards as well as a variety of hands-on experiences that can be shared for fun, recruitment, or challenge. Explore the art of the possible for engaging and exciting STEM programs

Outcome 1: Awareness of existing STEM aspects of Scouting

Outcome 2: Ability to share ideas for simple STEM activities with unit or lodge

Outcome 3: Knowledge of where to look for additional information

Theme Connection: Seek New Heights

The theme of the 2024 NOAC is Seek New Heights. This session will encourage participants to keep learning new and appropriate ways to use STEM more effectively in their lives and especially in Scouting. Realizing that we use STEM every day in Scouting helps us Seek New Heights.

Facility and Material Needs

[Please put all material and facility needs in this section. We recommend completing this portion last after the rest of the lesson plan is completed. **The more specific you are with your material and facility requests, the better we can accommodate!**]

Facility Needs

Is this session remote delegate-compatible? (ie. can the material be engagingly taught via live stream)	[Yes]
Does this session need audio/video (AV) capabilities? (ie. projector)	[Yes]
Are there any other specific facility needs for this session? (ie. movable chairs, panel-style seating, etc.)	[No]

Material Needs

[Please put "NOAC Training Committee" under "Source" if you need a material and cannot source it yourself - we will try to source it for you. Please note that we would strongly prefer training materials to be in a digital format and would advise against flipcharts and other physical materials. If you need microphones, extension cords, etc., please also specify those needs here.]

Material	Quantity	Source

Session Preparation Steps

Be comfortable with the online “What is STEM” training and its narrative. If comfortable doing so, include examples from your own experience similar to the ones in the training. That is the starting point for this session. Having tangible examples of simple STEM activities to display and show is important.

Step 1: Review STEM training - What is STEM?

Step 2: Collect simple examples

Step 3: Have STEM training slides ready plus this session’s training slides

Additional Staff Members

[If you are having additional trainers assist you with your session, please fill out their contact information below. Please note that due to the conference sell-out, we are limited in our ability to register additional staff members on the training committee. We recommend that your additional trainers come from contingents or other staff members that can break from their duties to facilitate the session.]

Trainer Name	Email	Phone #

Lesson Plan

]

Introduction **5 minutes**
Slides 1-4

- Introduce the team including STEM background

"What is STEM?" **13 minutes**
Slide 5

- This portion of the session is the "What is STEM?" training slides available online. It reminds us that the Scouting America organization has always included STEM. It is something you can share with various audiences especially if you tailor it to the audience's needs and background.
- **Trainer Action**

  https://www.scouting.org/stem-nova-awards/volunteer-support/

Ways we use STEM in OA **5 minutes**
Slides 6

- Ideas:
  Science: recognize nature and our connection to it, conservation projects, weather contingencies
  Technology: social media, webmaster, communicating effectively, digitizing records
  Engineering: teamwork, planning, building fires that can be lit and burn well
  Math: kitchen expenses, amounts for ordeal clans, contingent planning, arrow trajectory

Simple STEM Activities **10 minutes**

Slides 7-8

- Some simple Ideas:
  Science: nature scavenger hunt, chemistry demos (oobleck), hex nut in balloon
  Technology: nature identification apps, geocaching
  Engineering: Pinewood derby cars, spoon catapults
  Math: ROT-13 code, Platonic solids

Maybe use separate whiteboard or display to write down ideas
ROT-13 - have them encode their first name
(letter is encoded/decoded from one above/below):

```
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
```

5 minutes

Making STEM More Visible to Members

Slide 9

- We do STEM, but do our members know that we do STEM? Mention it. Describe what you are doing. Don't hide the planning. Mention the STEM aspects. Give examples of this by walking through an Ordeal Weekend and where STEM was involved. This part could be a Chapter or Lodge Leadership Development session. But it could also be a way to recruit members onto teams. Encourage your Lodge to have effective digital communication. Plan fun STEM activities for chapter, lodge, and section events (more on this in later session)

3 minutes

Making STEM More Visible to Others

Slide 10

- "Those that chose you need you." Your unit members need to know that the skills they are learning are relevant. Become a stealth STEM evangelist mentioning the STEM relevance when appropriate. Mention it to non-Scouting friends - it becomes recruiting. Become a Den Chief for a Cub Scout den and help to incorporate STEM

activities - STEM is more explicit in the new Cub Scout program revision. We will discuss more specifics on this in later sessions. Keeping Scouts in Scouting helps increase our Lodge membership.

Identify Resources **5 minutes**
Slide 11

- There are many resources around us. Many of the adult members in the lodge have STEM connections. Identify them and use them. Many are passionate about what they do.
- Merit badge counselors for STEM merit badges have announced that they can be resources. They might share one fun part.
- Reach out to local schools - trade schools and colleges.
- Reach out to local businesses - large but also small. People want to help and share their enthusiasm.

Conclusion & Takeaway Challenge **3 minutes**
Slide 13

Please take out your notebook and pen. For the final three minutes, think about the role that you will be playing next year in making STEM more visible in your lodge, chapter, and unit. Maybe write down the name of someone you know who does STEM who you could contact. During your break time later today,maybe share these with others in your chapter or lodge.

Appendix: Resources and Source Material

[Please add all referenced sources or handouts that would be useful to share with session attendees.]

Resource	**Link**
Order of the Arrow, Mission & Purpose	Available online at: https://oa-bsa.org/about/mission-purpose
STEM at Scouting.org	https://www.scouting.org/stem-nova-awards/volunteer-support/

[INTERNAL]: Questions/Concerns for Committee Leadership

[Please note any questions, comments, or concerns you have for committee leadership here. This will enable us to give you more helpful feedback]

[Comments here]