Purpose: Afterschool staff members and volunteers will be able to stimulate interest, wonder and excitement in STEM.

Sparking interest is a critical skill used to stimulate interest in the STEM areas. Catching and holding the attention of youth in a learning activity gives them confidence to gain knowledge and skills and connect STEM to real-life experiences. Sparking interest should also be fun and creative for both the leader and the participant.

There are many ways to spark interest and each individual should use what fits his or her personal style and situation. However, it is important to provide staff and volunteers with some tools to develop sparking interest strategies that can be used as they plan learning activities. This Sparking Interest meeting plan uses six strategy categories to help stimulate ideas of ways to spark and maintain interest in STEM areas: demonstration, prompt, model, challenge, invitation and questioning.

The trainer will need to be familiar with these terms and model Sparking Interest strategies while conducting meetings and training sessions. Review the attached Background (Training Resource A) and Sparking Interest Strategies Sheet (Handout A) before the meeting. Think of different ways you can spark interest at the meeting. As you model sparking interest strategies, be sure to point out what you are doing. Provide examples to support and encourage staff and volunteers to try new things. Energy and enthusiasm go a long way in sparking interest.

**Step One:** Before the meeting, send an email asking participating staff members and volunteers to:

- Review the Sparking Interest Strategies sheet (Handout A), being sent as an attachment in the email announcing the meeting. This will help participants become familiar with the strategy terms. Encourage staff members and volunteers to come prepared to share examples of sparking interest from their learning experiences.
• Bring an item/object they have used in a STEM activity. The group will be using these to discuss and develop possible Sparking Interest examples to use with youth. (Anyone who has not led a STEM activity can use an item from another meeting or activity.) The object can be anything that helps describe what the activity is about and represents something related to STEM. Examples might include:
  ▪ One of the ingredients in an experiment – yeast, hydrogen peroxide, flour, sugar, chemical, etc.
  ▪ Building material – sticks, glue, nails
  ▪ Drawing supplies – markers, paper, paint
  ▪ Equipment – mixer, Bunsen burner, flask, petri dish, hammer
  ▪ Clothing item – apron, lab coat
  ▪ Pictures of a person, place or object related to a STEM experience

NOTE: This Sparking Interest Strategy – asking participants to bring something – is a way to spark interest by making a challenge in the invitation to come learn something new. It also creates some curiosity or a question about why this item is needed. Sparking interest does not have to be complicated or difficult, just thoughtful.

**Step Two:** At the meeting, ask participants to introduce themselves and show the items they brought, telling how they used it in a STEM activity. Was it a component of the activity or a piece of equipment? How does it relate to a STEM area?

**Step Three:** Now split into small groups to discuss the items in terms of how they might be used to spark interest in a STEM topic. Use the Sparking Interest Strategies sheet as a way to categorize and discuss their ideas: demonstration, prompt, model, challenge, invitation or question. Challenge each group to develop an example for at least 3 categories from the objects in their group. Encourage creative ideas and multiple approaches.

Examples might be something like:

• **Demonstrating** how a centrifuge spins to separate solids from a liquid
• **Exhibit of model** robots
• **Challenge** to make the fastest soapbox car
Step Four: Have the groups share what they feel is their best or most interesting idea. Record the ideas on a poster board. Reflect with the group how they might use the examples and ideas as they work with youth. Summarize their comments and ideas.

Step Five: Ask the participants to commit to trying two new ways to spark interest in STEM and report back at the next meeting. Have them write these down on colorful 3 x 5 cards and take them to post in a prominent place as a reminder to spark interest every day.

Step Six: After the meeting, send an email summary of the ideas that were shared, with a reminder to report back at the next meeting. Be sure to ask if they have questions or need extra support.
Training Resource A

Background for the Trainer

This module focuses on sparking interest in your planned STEM experiences. Capturing the youth’s attention and creating interest, wonder and excitement in the topic/project will make the learning experience more meaningful and relevant. Strategies for creating the spark can include demonstration, providing a challenge, prompts, modeling, inviting or provocative questioning.

Exciting experiences lead to intrinsically motivated learning, and those experiences are personally meaningful, providing foundations for more advanced, structured science learning. Using sparking interest techniques “encourages excitement for deep learning.” “A short introductory moment captures what’s interesting and engaging about the material and puts it out front.” (Lemov, Teaching Like a Champion)

Sparking interest is an essential skill that is the catalyst to the learning process and is vital for a good STEM learning experience. Setting the stage, sparking, engages the youth immediately. The initial sparking activity is the introduction to the topic and is critical to capturing the learner’s attention. Using sparking techniques throughout the STEM activity is also important to help sustain interest, wonder and excitement.
Handout A

Sparking Interest Strategies

Here are six different categories of strategies that can be used to spark interest in a topic. There are many ways and combinations to spark interest. As you work with young people, think of ways you can capture their attention and get them excited about STEM topics. Explore ways you can use these strategies in your learning activities.

Demonstration: A demonstration is a way to show or make something visible. It provides an example or display and can be a great way to catch someone’s attention. It could involve using an object or presenting a process.

Prompt: A prompt is a way to remind or provide a clue to remember something. It might be a way to stimulate thinking and explore a certain area. It can cause someone to act or allow for quicker action on their part.

Model: This is similar to a demonstration, except it is usually done without a formal presentation and is often a behavior. It also could be a physical piece (for example, a model robot, car, project, etc.) or an exhibit.

Challenge: A challenge generally refers to things that have a sense of difficulty or victory. It often involves a competition and requires action to solve a problem and be the best.

Invitation: An invitation is a request for something: an idea, an answer, a product. It might be an offer or a call for help or ideas.

Question: A question can be a great way to move to another level of thinking and discovery. Questions are often used to sustain interest and allow for further inquiry.