![ACRES - Afterschool Coaching for Reflective Educators in STEM, a project of MMSA Maine Mathematics and Science Alliance]

HOW IT WORKS

Each module consists of three two-hour, virtual sessions, over the course of approximately two months. Each module follows the following outline:

Session 1: Participants are introduced to a skill and spend time experiencing and practicing the skill among peers. Participants then return to their program where they capture a short clip of the strategies in action.

Session 2: Participants share their clips, reflect on their practice, and share feedback with one another. They then return to their program to record a second round of practice.

Session 3: Participants gather for another coaching session where they share their second clip, reflect on their practice, and share feedback with one another.

CONTACT

acres@mmsa.org
www.mmsa.org/acres

PROFESSIONAL LEARNING MODULES

Unless otherwise noted, each module consists of three two-hour, virtual sessions, over the course of approximately three months.

Asking Purposeful Questions **is a foundational skill for STEM facilitation.**
Participation in either *Ready, Set, STEM! & Asking Purposeful Questions* **or** *Asking Purposeful Questions* **is a prerequisite for the rest of the modules. The remaining five modules can be completed in any order.**

READY, SET, STEM! & ASKING PURPOSEFUL QUESTIONS

Are you ready to bring meaningful STEM learning into your program? In this introductory module, we discuss ways to structure STEM experiences that engage youth in active and collaborative learning. This module offers educators who are new to facilitating STEM, the opportunity to build supportive relationships with other educators, while exploring the principles of STEM learning. The first clip participants record in this module is of their STEM space. This module combines an introduction to STEM facilitation with the skill of Asking Purposeful Questions.
OR

ASKING PURPOSEFUL QUESTIONS

Questions are the beginning of a path towards discovery, imagination, and STEM exploration. How can we help youth expand and clarify their thinking and develop their reasoning through the questions we ask them? In this foundational module we examine the structure and process of questioning and discuss how we can better listen and follow up with youth throughout STEM learning experiences. This module is designed for participants who have some experience facilitating STEM learning and would like to grow in their practice within a supportive group of other educators.

MODELING THE ENGINEERING PRACTICES

Engineering has become a staple of STEM programming for youth. But just what does engineering entail? How can we confidently bring engineering into our programming and support youth as they engage in problem solving? In this module, participants gain first-hand experience with engineering by solving a design problem. They examine the components of the engineering design process and discuss ways to model the process with youth.

MODELING SCIENCE PRACTICES

How can we facilitate science experiences that capture youths' interests and resemble the way scientists work and think? In this module participants are introduced to approaches for supporting youth as they explore science through a series of connected investigations. We will also examine the role science practices play in helping youth connect and make sense of their developing science ideas.

MODELING MATH PRACTICES

How can we help youth build number sense and problem-solving skills? Math can take on new meaning when it is integrated into daily routines and STEM activities in our afterschool programs. In this module, participants will build on their practice of asking purposeful questions and explore strategies for making math engaging, accessible, and connected to the world around us.

GIVING YOUTH VOICE AND CHOICE

How often do youth in your program get to choose what they're investigating or designing, the materials they might use and/or how they engage in the work? In this module, participants try out strategies for giving youth voice and choice and apply the ideas as they redesign a STEM activity to incorporate a greater variety of youth input. After the session, they'll return to their program with new resources and strategies to practice for strengthening youth voice and choice.

EXPLORING YOUTH UNDERSTANDING IN STEM

What can we do to find out what youth know about a particular topic without resorting to a quiz or test? What strategies can we use before, during and following an activity to surface youths' understanding? In this module, participants will first clarify the purpose of formative assessment and then learn several easy-to-implement strategies for monitoring youths' understanding. They'll revisit the water filter activity from the Asking Purposeful Questions module to see the strategies in action.

DEVELOPING STEM IDENTITIES AND MAKING CAREER CONNECTIONS

How do you help youth recognize their connection to and role in STEM? How do you help youth learn about STEM careers? In this module, participants experience several easy to implement strategies including a photo elicitation activity, learn about how youth form STEM identities, and then learn how to conduct related activities with youth.