



# STEM Everyday Training Plan

Use this Training to Go training plan with the [PowerPoint](#) to lead a staff training. Customize it to fit you, the time and setting, and the participants. Break it into shorter parts, delete or add sections, change the activities, or expand on topics. All handouts referenced are available here. If participants don't know each other, you may want to add a warm-up or icebreaker, or go around with introductions.

TRAINING TO GO Training Plan STEM Every Day		
<b>Time:</b> 55 minutes		<b>Materials:</b> <ul style="list-style-type: none"> <li>• Index cards (for slide 4 activity)</li> <li>• House of cards materials                             <ul style="list-style-type: none"> <li>• 50 index cards per group</li> <li>• One roll of tape per group</li> <li>• One paper plate per group</li> <li>• Bags of marbles</li> </ul> </li> <li>• STEM Everywhere</li> <li>• STEM Programming Examples</li> </ul>
<b>Prep:</b> <ul style="list-style-type: none"> <li>• Print handouts for all participants</li> <li>• Bring copies of the program schedule</li> <li>• Arrange the space for group and pair work</li> </ul>		
Slide Number and Title	Timing	Notes and Talking Points
1. STEM Every Day	1 min	<b>Explain:</b> STEM Every Day is about promoting engagement with, exposure to, and learning in STEM. Even without expertise in STEM, we can plan and lead engaging, exciting, and inspiring STEM activities that increase youth's STEM interest. Through utilizing afterschool's flexible schedules, smaller ratios of staff to children, community connections, and child- and youth-centered approaches, we can design and offer unique STEM programming and experiences.
2. Objectives	1 min	<b>Explain:</b> Whether we recognize it or not, STEM is an important part of our lives every day. STEM is more than just math problems or scientific formulas, it's about figuring out how things work, asking good questions and finding answers to them, and exploring our world.  So today's session focuses on recognizing our own STEM experience and background, finding ways to integrate that knowledge and other everyday STEM lessons into our program, and coming up with innovative and flexible ways to fit STEM into our schedule.



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3. STEM Process	3 min	<p><b>Ask and Discuss:</b> Who has heard of the scientific process? And who can explain it in their own words? Make sure to mention the ideas of forming hypotheses, experimenting, observing, and revising hypotheses accordingly.</p> <p><b>Explain:</b> This diagram represents another way of thinking about and explaining STEM. Try and incorporate an example from your everyday life (watching a toddler figure out how to reach something on a high table, figuring out how to make coffee when you don't have any filters, etc.). And one of our goals for integrating the STEM process into afterschool is to help youth experience STEM in many settings and begin to understand the underlying ideas behind the scientific process even if they don't know all the specific vocabulary or concepts yet.</p>
4. STEM Experience and Knowledge	8 min	<p><b>Ask:</b> Participants to hold up their fingers, on a scale of 1-5, to show how confident they feel about STEM (1 being 'not confident at all' and 5 being 'math whiz or science buff.'). Reassure everyone that we are all capable of facilitating STEM learning with our students, even if we have minimal background in science or struggled with math as kids.</p> <p><b>Explain:</b> In fact, everyone in the room has some STEM experience to offer through the activities we engage in as hobbies, as past professions, and in our everyday lives. Let's take a few minutes to discover what kinds of STEM-related expertise we have right here on our own staff.</p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• Think about your skills and interests – for example, cooking, gardening, home electronics, computers.</li> <li>• On a note card, write down your everyday STEM experience. Include as much detail as possible. Make sure not write your name on the card.</li> <li>• Pass cards back to the facilitator who will then shuffle them and have everyone select a card at random.</li> <li>• Participants will then need to match the card with the person who they think wrote it.</li> <li>• Once they find the right person, they should ask them the following questions:             <ul style="list-style-type: none"> <li>- How did you learn to do this STEM activity?</li> <li>- What motivates you to do it?</li> </ul> </li> <li>• Share out what you learned that your colleagues have to offer in the STEM field.</li> </ul>



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5. STEM in Afterschool	2 min	<p><b>Explain:</b> We need to support everyday STEM, like the types we all have just discussed, in our programs. Afterschool is an ideal place for this to happen because:</p> <ul style="list-style-type: none"> <li>• It is a relaxed environment that gives youth opportunities to try things out and ask questions</li> <li>• There is often time and space for hands-on projects or field trips to better understand underlying STEM theory</li> <li>• Programming can respond to youth questions and be driven by youth interests</li> <li>• Real-world problems and issues can be addressed</li> <li>• Principles and ideas learned during the school day can be reinforced</li> </ul>
6. House of Cards	15 min	<p><b>Explain:</b> To give you a better idea of what STEM in afterschool can look like, we are going to do an activity.</p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• Form small teams (3-5 individuals)</li> <li>• Pass out the materials (50 index cards, one roll of tape, and a paper plate) – the marbles are used at the end to test the strength of the houses.</li> <li>• Explain that teams need to pick one shape (a square, triangle, or arch) to use to build their house of cards. They should pick the shape that they believe will produce the strongest house.</li> <li>• Follow the instructions on the screen.</li> <li>• After houses are built, have groups place their paper plates on top so that you can then stack bags of marbles on the plates to test the strength of the houses.</li> <li>• Continue adding bags of marbles until there is only one house remaining.</li> </ul> <p><b>Ask and Discuss:</b> What STEM concepts and skills were used during this activity? Mention forming hypotheses, experimenting, and revising your hypothesis accordingly.</p>



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7. STEM Everywhere	10 min	<p><b>Explain:</b> STEM can take a few minutes or a few months – it all depends on the STEM concept we are trying to teach and the amount of time we have available. So we need to figure out how to fit STEM into our daily, weekly, and monthly schedules.</p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• Distribute <i>STEM Everywhere</i></li> <li>• Have pairs or groups of three review the handout and pick one or two short activities during snack or homework time and one or two longer activities that occur a few times a week that they would like to try and/or adapt.</li> <li>• Have groups think about potential challenges and resources that are necessary for the different activities.</li> <li>• Have small groups share what they discussed with the larger group.</li> </ul>
8. STEM in Our Program	10 min	<p><b>Explain:</b> Now that we’ve looked at sample activities, we need to get specific and begin designing activities that will fit into our program.</p> <p><b>Activity:</b></p> <ul style="list-style-type: none"> <li>• Distribute copies of the program schedule and the <i>STEM Programming Examples</i> handout</li> <li>• Have groups, either using examples from the handout or by coming up with them on their own, create a short and longer term activity to fit within the program schedule</li> <li>• Share back with the group</li> </ul>
9. Next Steps	5 min	<p><b>Explain:</b> STEM Every Day means getting youth interested in, engaged with, and experiencing STEM on a daily basis. To do this, we have to find STEM opportunities that will interest and challenge program youth and be creative about how to weave them into our schedule.</p> <p><b>Ask:</b> What STEM project or activity do you want to try first? How can it fit into our schedule? And what support do you need?</p> <p><b>Thank everyone for participating, and move on to next steps!</b></p>



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