



Credit: Space Science Institute

## "Guide on the Side" Strategies for Your STEM Programs

In this brief video, we outline four strategies to help you guide library patrons in their own learning journeys as a "Guide on the Side."

## "Guide on the Side" Strategies for Your STEM Programs



STEM learning is much more than knowing and memorizing every fact, definition, or statistic about a topic.

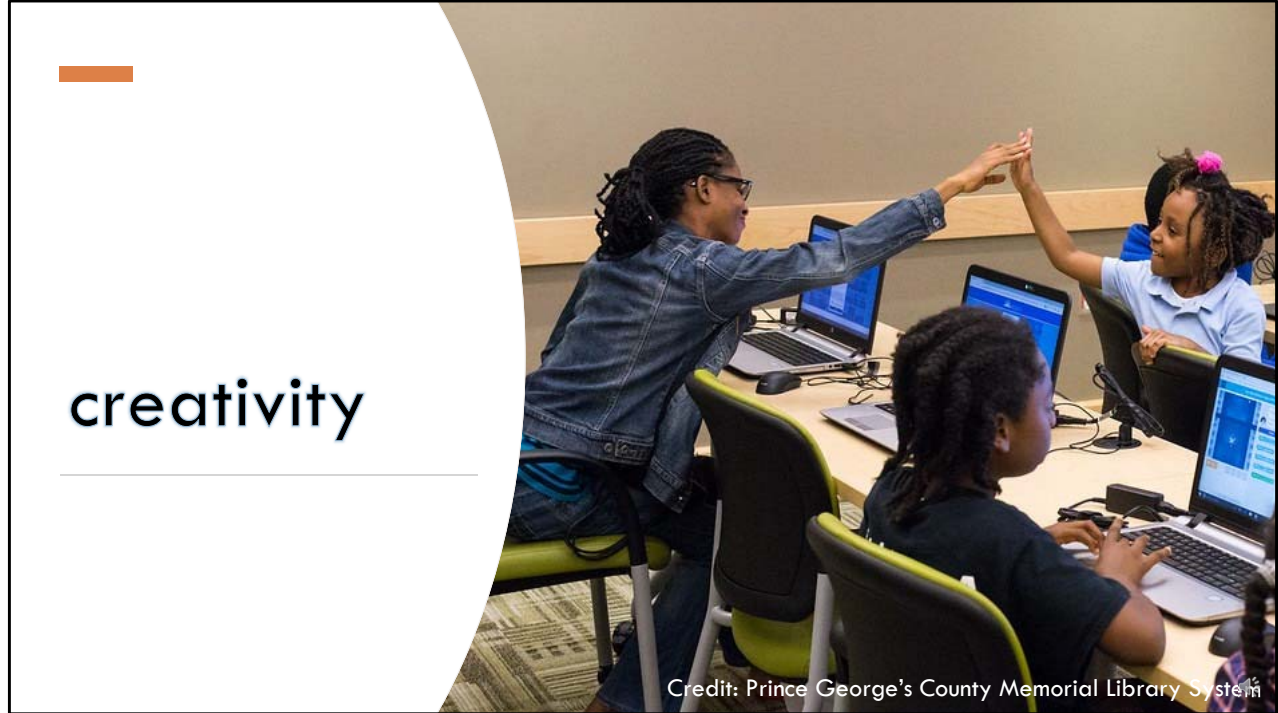


STEM learning is a process of **exploration**...

## "Guide on the Side" Strategies for Your STEM Programs



...inquiry...



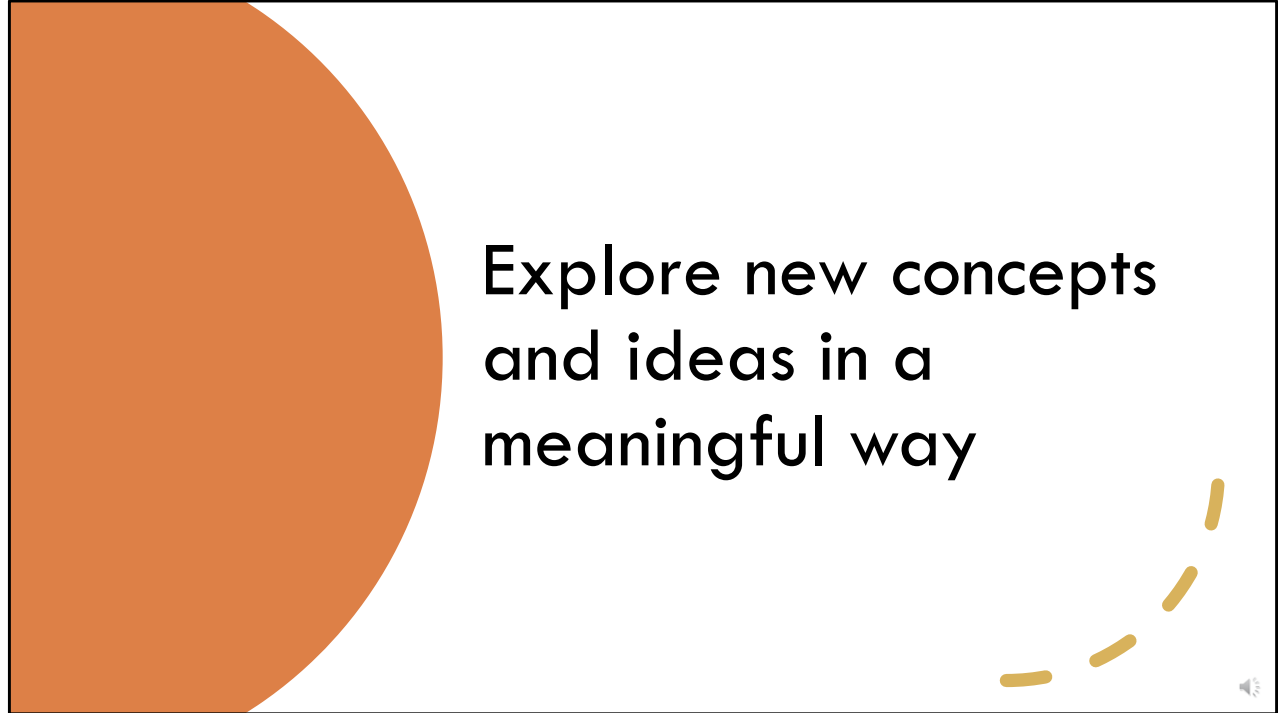
...and **creativity**



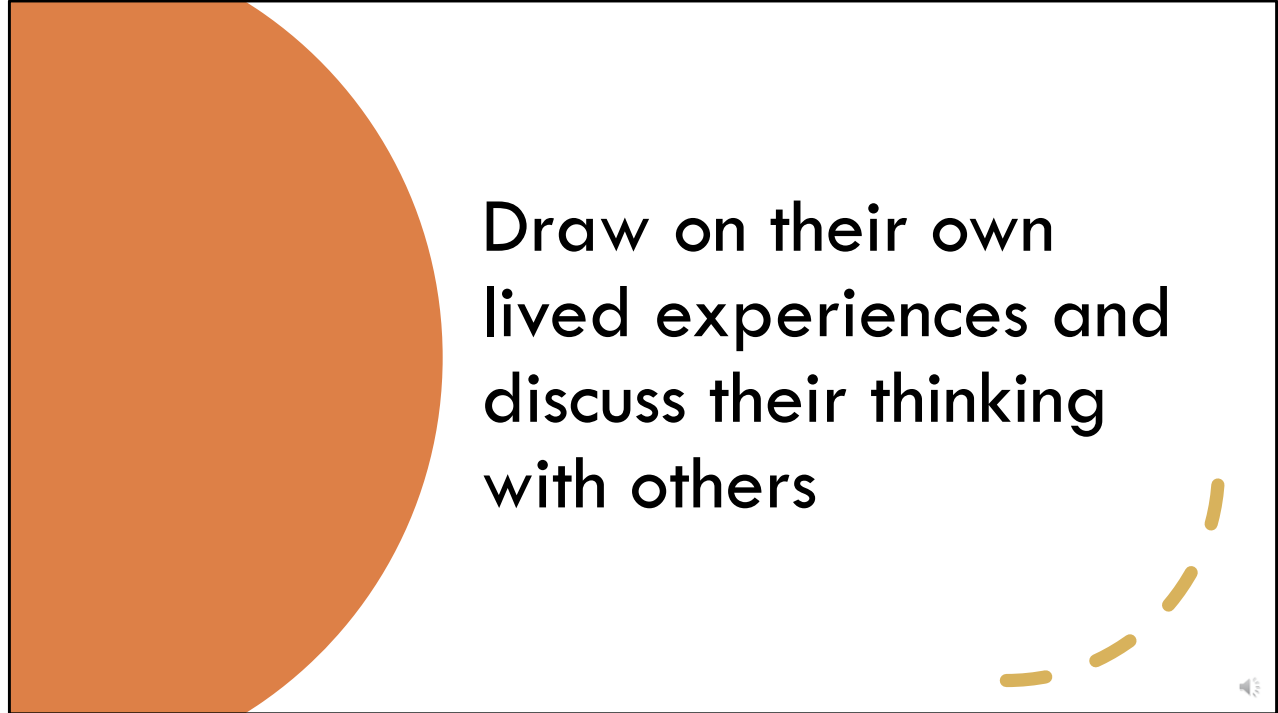
## "Guide on the Side" Strategies for Your STEM Programs



Library staff have an important role to play in STEM learning by helping patrons:



- Explore new concepts and ideas in a meaningful way



- Draw on their own lived experiences and discuss their thinking with others

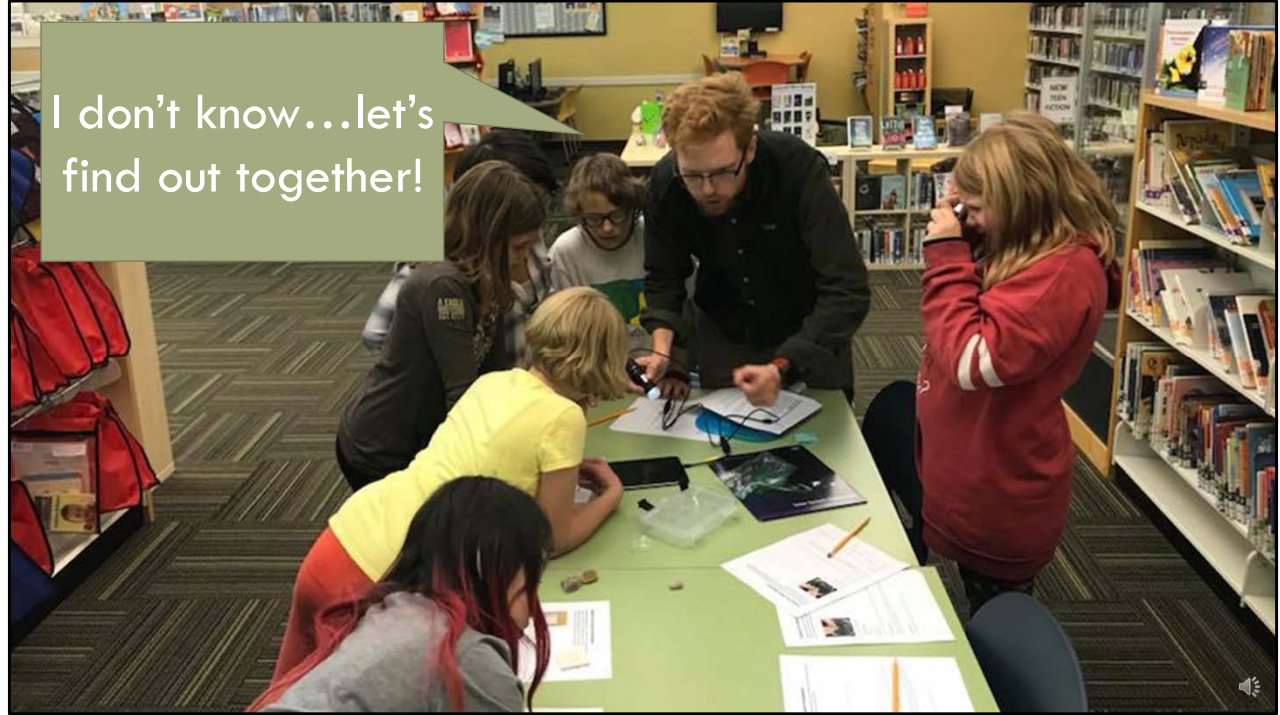




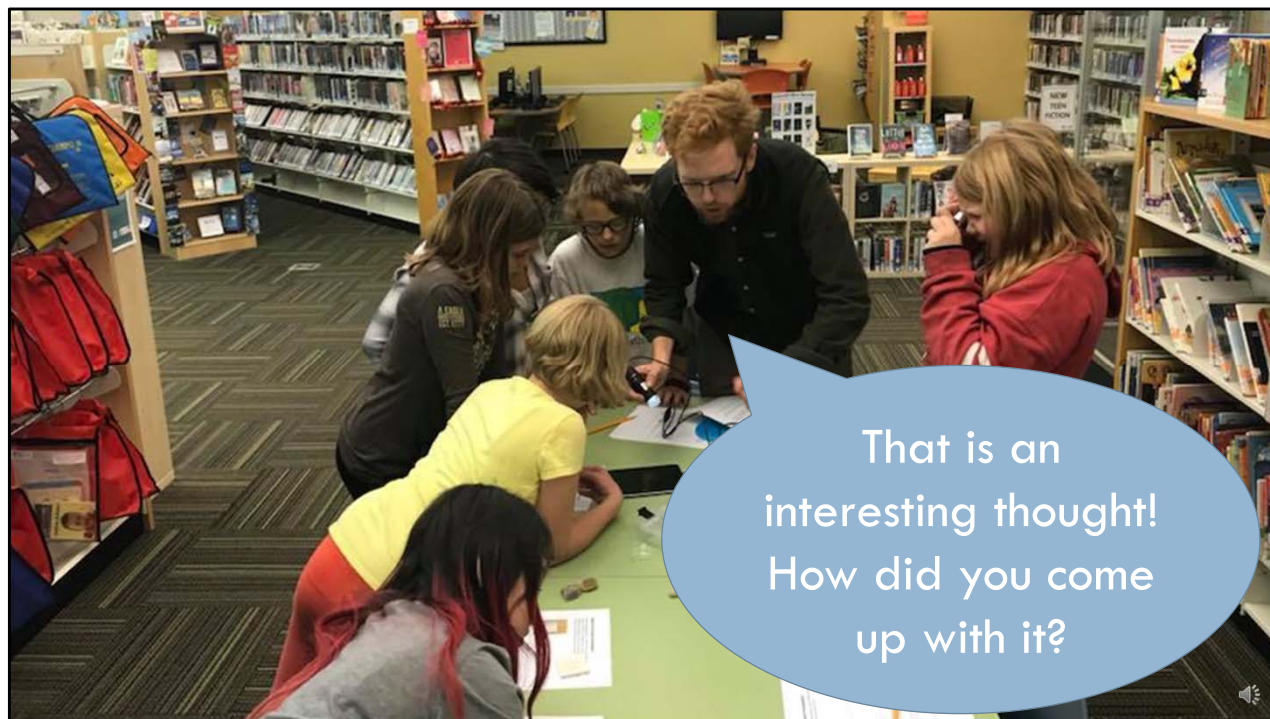
Strategy 1: Create an atmosphere that is safe for exploring – and where it's okay to fail. Let patrons know that being wrong is the first step in learning!

Encourage patrons to use their own knowledge and experiences to help answer each other's questions.

Show that you are not a "keeper of knowledge," but rather that you are there to learn **with** your patrons.



Try responding to challenging questions with phrases like: "I don't know...let's find out together!"

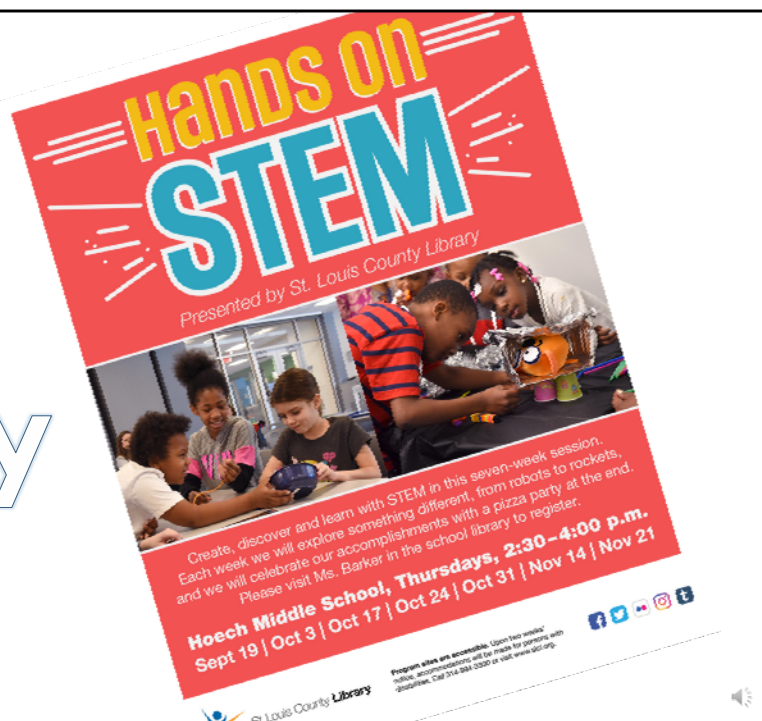


When responding to patron's answers, comment on the process of how they came to that answer, rather than on whether it is "right" or "wrong."

Try phrases like: "That is an interesting thought! How did you come up with it?"



# Strategy 2



Strategy 2: Design programs that are centered around fun, interactive STEM learning experiences. Choose activities that allow patrons to interact and engage with unfamiliar concepts, ideas, and physical objects or tools.



[clearinghouse.starnetlibraries.org](http://clearinghouse.starnetlibraries.org)

Looking for good STEM activities? Visit the STAR Library Network's STEM Activity Clearinghouse for activities that encourage exploration and discovery and work well in a library setting.



Strategy 3: Use open-ended questions to access patron's prior knowledge and experiences. Open-ended questions are prompt learners to reflect and lead to more than one right answer.





For example, encourage patrons to try new things with questions like:

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Credit: Pioneer Library System

“Help each other figure this out. Take your time. I will come back in a few minutes to see how you’re doing.”

Give patrons space and time to try things for themselves with prompts like:



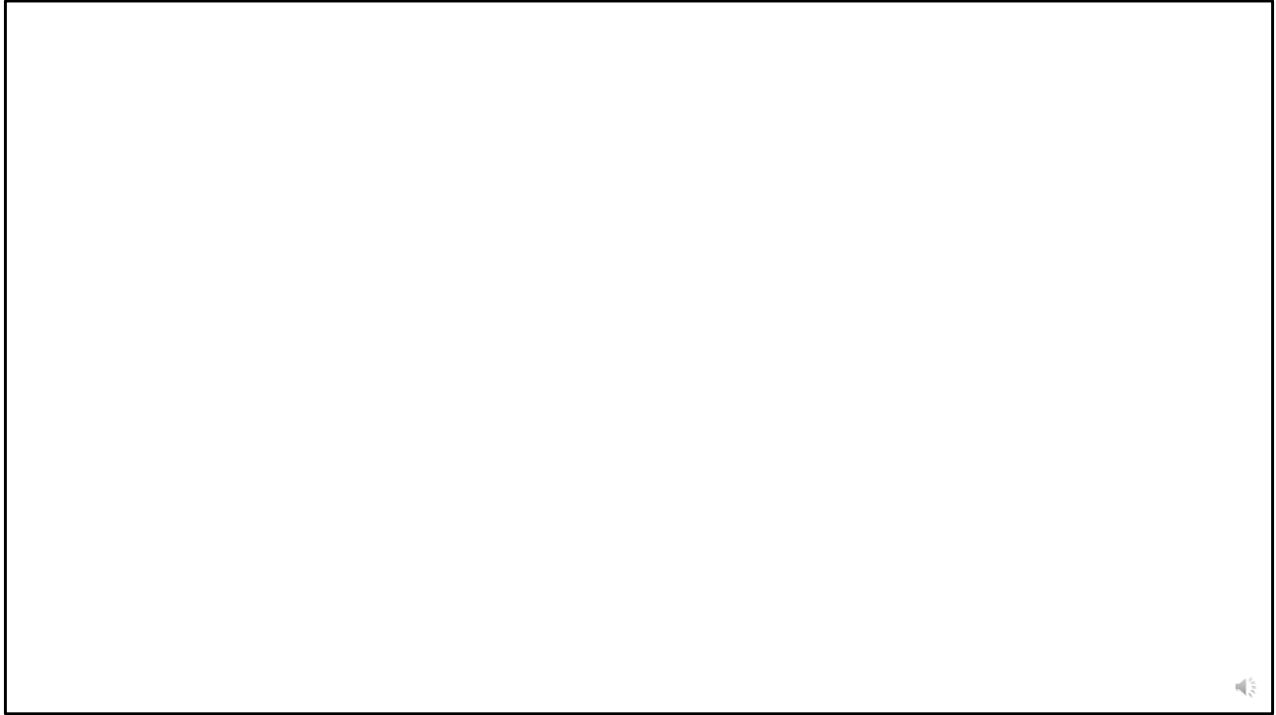
Become a better listener with prompts like, “how did you come up with that design?”  
Some of the answers may surprise you!



Tip 4: Use “wait time” of approximately 5 seconds after asking a question.

# Why?

Think about this question. Why might you wait 5 seconds after asking a question before calling on a patron? (1, 2, 3...)



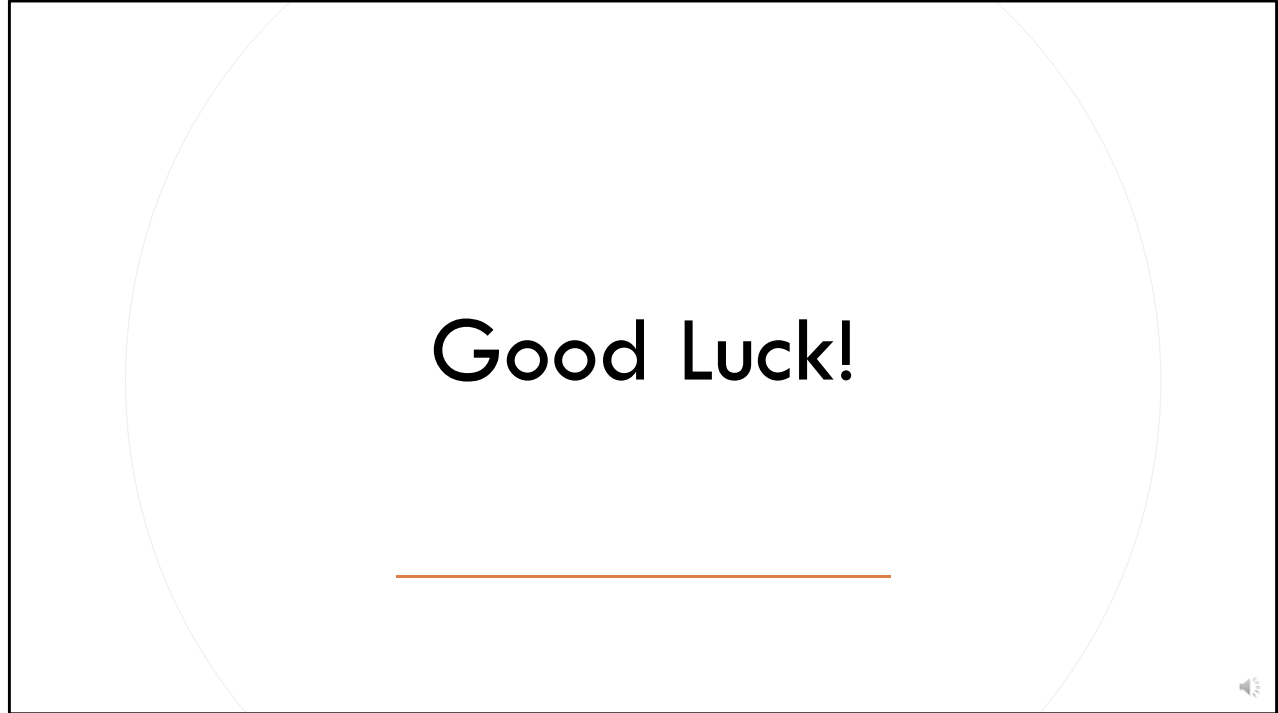
Now how long did it take for you to come up with an answer? (1, 2, 3 ...)





Waiting 5 seconds might feel a little uncomfortable at first, but it gives every patron a chance to stop and come up with a deeper thought, and not just share the first thing that comes to mind. Give it a try and see if quieter individuals start to join in.

After all, we could use more deep thinkers to help us tackle the challenges of the future!



Even the most experienced STEM facilitators are continually developing new strategies for supporting learning. Have fun, and good luck with your STEM programs!

This video was developed by the  
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