The University of Montana spectrUM Discovery Area is Missoula's hands-on science museum, dedicated to inspiring a culture of learning and discovery for all. The spectrUM Six approach aims to cultivate joy in learning, encourage the pursuit of science, and empower critical thinking skills in all spectrUM programs and internal operations.

Inspire Curiosity	Inspire curiosity through asking questions and encouraging students to think critically. Why: Asking questions promotes our natural sense of wonder and creativity, and drives us to explore. Critical thinking empowers students to analyze and evaluate what they are told, leading to more independent thought. How: • Ask open-ended questions (ones that can't be answered with yes or no) to encourage critical thinking and observation. Examples: What do you predict? Why do you think that? • Ask closed-ended questions (ones with few possible answers) to steer the conversation. Examples: What shape do you see? Does this agree with your hypothesis? Follow up with open-ended questions: Why do you think that? How can you tell?
Encourage Growth Mindset	Encourage growth mindset to empower yourself, your coworkers, and program participants. Why: Growth mindset is about having a positive and resilient attitude. Someone's basic strengths are just the beginning, and through trying again and working hard anyone can learn. This theory encourages life-long learning and equal opportunities for all by giving people agency in their education. People who embrace a growth mindset are more likely to overcome obstacles, reach their goals, and flourish. How: • People's confidence grows when you give them feedback about their choices rather than innate abilities. Examples: I was proud of you because when you saw that it didn't work the first time, you tried something else and it solved the problem. • Steer away from language like "you're good at this" because that implies someone is inherently good without trying, and others may be naturally incapable despite their effort. Instead, use language like: I can tell you worked really hard on that.

	• Tell students that you believe that they can progress if they practice and try again, and again, and again. • Cultivate an inclusive community where everyone can do science and embrace growth mindset. Example: Show students how to support each other by using kind language, counteract any behavior that is discouraging. • Demonstrate respect for all learners, and equal confidence in everyone's capacity to learn.
Make Meaning	Make science personal. Why: Students are more inspired when they think science is meaningful and affects the things they care about. When students think science is personally relevant and can make a difference, they are more invested and more likely to see themselves as scientists. How: • Make personal connections. Example: If you're leading ecology activities, look for ways to relate it to the place you're in by asking students about what kinds of plants and animals are in their backyard. • Make cultural connections, and show respect for people who may see different connections to science than you. If someone makes a cultural connection to science that you don't expect, show them humble curiosity to encourage their learning. Example: If you're leading sound experiments, ask them what kind of music or instruments they listen to at their house and connect it to the activity. • If you're leading activities with a student and their caregiver, make time for them to explore the experiment and build their own connections together.
Navigate Your Future	Connect participants with real scientists and professionals. Why: Students benefit from seeing diverse role models, especially ones they can relate to, because it expands their idea of who can do science, and helps them imagine their own possibilities. How: • spectrUM features diverse role models in all programs. Example: Role model signs are featured in spectrUM's museum and traveling programs. Special guests are invited to volunteer in all programs to

	work directly with students. Role models are featured on spectrUM's website under the resources tab. Tell students about scientists that they might be interested in. Example: You said you like learning about fire. Did you know there is a fire science laboratory in Missoula? There are scientists there that spend all their time learning about fire.
Collaborate With Communities	spectrUM collaborates with other individuals, groups, and communities to leverage expertise and resources, and respond to needs. Why: Collaborating with others builds a network of support, creates opportunities, and provides better experiences for program participants by introducing new experts. Strategic collaboration is enriching for both the partner and participant experience, and provides a greater scope of inclusivity. How: - spectrUM has established collaborations with the AUOR partnership, SciNation and Bitterroot Advisory Groups, and EmPower Place. - spectrUM collaborates in the short-term with many partners for events and special programs. - Forming strong interpersonal relationships supports collaboration and provides insight into different worldviews. Example: Educators may steward relationships by creating a welcoming environment and encouraging student participation when collaborators are in our space.
Try It	Include hands-on learning in every aspect of our programs. Why: Hands-on learning promotes a sense of curiosity and creates an immersive experience that students are more likely to remember because it is fun. Hands-on learning also builds student confidence by creating an accessible pathway to science. How: Don't just show students science, encourage them to try it in every step of the way. Whether the activity requires student participation, or is more demonstration-based, always look for ways that they can participate beyond watching. Example: When doing chemistry experiments, invite students to explore the ingredients (safely), or help you pour ingredients.

	• Build time in the program for student-led exploration. Example: If a student is curious about changing a variable in an experiment, help them do the new experiment.