

## Launch a Discussion about SciGirls in Space!

The real-life SciGirls in [these videos](#) participated in The National Design Challenge. This program, created by the Center for the Advancement of Science and Space (CASIS), invites students to design experiments that become part of the International Space Station's National Lab (ISSNL) research efforts. Design Challenge experiments are flown to the ISSNL aboard unmanned cargo missions. Enjoy watching the girls' stories, then dive into this Discussion Guide. These best practices for media use, paired with the video-specific questions, provide a "jumpstart" for conversations about role models, confidence, self-awareness, STEM exploration, space travel and more.



*Astronauts Dorothy Metcalf-Lindenburger, Stephanie Wilson, Tracy Caldwell Dyson and Naoko Yamazaki on the ISS in 2010  
Image credit: NASA*

**Before you press play, explore these ideas for sharing media with learners:**

- **Watch the videos(s) ahead of time** to assess age-appropriateness. Think about the key points you would like your learners to take away (e.g. "even if you are slow at math, you can still do it well"), and remain open to hearing what parts of the video they find energizing!
- **Define it:** Prior to pressing play, tell your learners what the video is e.g., "We are going to watch the story of a girl who got to fly a science experiment to the International Space Station".
- **Activate prior knowledge:** Help your learners explore what they already know about the video's content. For example, you may ask "So what is the International Space Station? Who is on it, and what do they do? Can anyone share what they know about science in microgravity?" You can tailor your questions and prompts to suit your learners, and help them make connections between the media and the insight they've gained from previous activities and experiences.
- **Make it meaningful:** Across multiple platforms and virtually every setting, most of your youth are constantly consuming media. So why is this particular video important, unique or special? Share **why** you are showing the video, e.g., "we'll watch Abby, who created a science experiment that flew into space; think about what this opportunity meant to her, and what a similar experience might mean to you. " Ask your learners to think about questions and ideas for a post-viewing discussion.
- **Get specific:** Ask learners to watch for/think about particular ideas or themes, e.g., "Make sure you look for all of the things that helped Abby to be successful" or "think about when you've had to do something over and over to get the results you wanted."
- **Press pause:** You might want to stop the video at a suspenseful point and challenge viewers to make predictions or form hypotheses about what happens next. This builds investment; viewers will want to see if they're right, and how the story ultimately turns out.
- **"Watch-Think-Share:"** After viewing the video, use this method to spark lively discussion. Begin by fostering first reactions with general, open-ended questions. What did you like? What didn't you like? What was the best part? Why do you feel that way? Then break into small groups to explore specific questions (on page 2), with members jotting notes on the discussion. These notes help each group "share out" their impressions and ideas with the full cohort.
- **"Write On!":** Another way to encourage active viewing and prompt discussion is to have learners write down one question they have both during and after watching the video. Then they can share their questions individually or in groups, generating answers and insight from their peers.

**Want to send your kids' experiment to space?** The [Student Spaceflight Experiments Program](#) is a STEM initiative immersing students in real research as they design experiments for the International Space Station.

### Credits:

Excerpted from KQED's tips for using videos: <https://ww2.kqed.org/education/2016/08/23/watch-think-write-and-other-proven-strategies-for-using-video-in-the-classroom/> and Common Sense Media's watching videos article: <https://www.weareteachers.com/8-ways-help-students-watch-video-critically-instead-zoning/>.

### Meet Sarah!

- Sarah’s participation on her debate team makes her feel confident. What gives you confidence?
- Sarah is part of an all-girls robotics team. What do you like about participating in single-gender activities? Are there any drawbacks?
- Sarah’s team explored how pea shoots would grow in a microgravity environment. Why might the answers to this question be important?
- The missions on which Sarah investigation flew failed not once, but twice! Talk about a time when you experienced challenges or failure. Did you try again, and if so, what was the outcomes?



### Meet Abby Sofia!

- Abby says that if someone tells her she cannot do something, she will prove them wrong. Talk about a time when you achieved something without encouragement, or did something no one thought you could do.
- Taking things apart and putting them back together helps Abby discover how things work. How do you prefer to learn? Reading, listening to instructions, hands-on activities or a combination?
- In Abby Sofia’s Flamenco group, all dancers are dependent on one another. In what situations do you rely on other people? When do they rely on you? How or why is this important?
- Abby Sofia says that “in a way, I became my own role model” and that she felt a duty to get young girls into STEM. Who is your role model, and why? Are you someone’s role model?



### Meet Julia!

- Julia loves hiking, plants and being outdoors. What have you learned or experienced from spending time in nature?
- Julia says that she always thought of space travel as “hard and problematic.” What do you envision when you think about space travel? What have you learned about the realities of life in a microgravity environment?
- Julia is passionate about sharing her ISS experience with younger students at her school. Talk about a time when you’ve learned something important from a peer. What can you teach your friends or classmates?
- As a cross-country runner, Julia experiences independence and achievement. What makes you feel this way, and why?



### Meet Abby Schmid!

- Abby’s experiment was about how bacteria is affected by the conditions of microgravity. Why might these findings be important for human space flight?
- Taking art classes allows Abby to express her creativity, but she claims that solving math problems also requires creative thinking. What do you think she means?
- As a Colorado native, Abby’s life in urban Chicago is a big change! What would you enjoy about moving to an unfamiliar place? What might be difficult? What new city (or country) would you like to experience?
- Although Abby is studying college mathematics, she says that “to this day, I’m very slow at doing math problems. But that doesn’t mean that I’m not good at it. It just takes me a little bit longer.” Discuss an activity for which you need extra time or resources. How do you feel when you complete it and/or succeed?



**For more about SciGirls, visit SciGirls CONNECT at [scigirlsconnect.org](http://scigirlsconnect.org).**