



VIRTUAL TEACHER PD WORKSHOP

SUMMER 2020

ABOUT

The NDSGC facilitated a 15-hour virtual professional development workshop for 20 teachers from all across North Dakota. Each teacher received a Sphero Bolt prior to the workshop.

FACILITATORS

- ND Space Grant, *STEM Ambassadors*
- **Intertribal Research and Resource Center** at United Tribes Technical College
 - We met collaborator Anna Bahnon, a ND educator, after she earned a NDSGC travel stipend to attend the Space Exploration Educators Conference (SEEC) in Houston. She proposed the idea of integrating Spheros thanks to a SEEC session she attended.

TEACHING STRATEGIES & RESOURCES

Google Docs, slides, spreadsheets, etc.

[Kahoot.it](#) - interactive quiz game

[Mural](#) - synchronous virtual whiteboard with movable sticky notes

Zoom Breakout rooms: think-pair-share method, reflections

Reflections and Assessments

[Sphero.com](#)

education@sphero.com

Marissa Saad (NDSGC) msaad@space.edu

WORKSHOP STRUCTURE

Tuesday, Day 1

- Introductions, Kahoot icebreakers and breakout rooms
- **Intro to Sphero Edu App**
- **Intro to Basic Blocks**
- **Intro to Intermediate Blocks,**
- **Mural reflections**

Thursday, Day 2

- Welcome and homework review
- Meet team in breakout rooms
- **Intro to Advanced Blocks**
- **Storytelling with Sphero**
- Mural reflections

Tuesday, Day 3

- Welcome and homework review
- **My NASA Data presentation by Elizabeth Joyner (NASA Langley)**
- Concurring sessions using breakout rooms:
 - **Science/Math Applications**
 - **Problem-based Learning Applications**
 - **Early Elementary Applications**
- Reflections using chat box

Thursday, Day 4

- Welcome and homework review
- **Intro to Advanced Blocks**
- **Storytelling with Sphero**
- Sharing of augmented **lesson plans**
- reflection using Mural
- Info about Space Grant

Purple = Sphero Education Team; Red: Keynote Speaker

SPHERO INTEGRATION

We purchased the "[All Access Virtual Training](#)" package (\$1500/20 seats) from Sphero, which included:

- Unlimited PD sessions led by Sphero's education leaders
- One year of free technical/educational support for all teachers
- Flexible scheduling, really supportive during our live events
- Maintained constant communication with us (emails, zoom, text).



Teachers practiced at home with "[Activities](#)". There are many well-done Space and Mars-related activities online already.



Afterwards, we purchased [classroom sets of Bolts](#) or RVRs for these teachers (through a competitive proposal process)

TIPS

- Capture as much information in your registration form (*Submittable: coding experience levels, mailing address, grade range, subject areas*)
- **Agenda** is your "Home Base" and should be dynamic:
 - Use a real-time document (Google Docs) in case anyone is dropped from the call, breakout rooms don't work, meeting times change...
- Use one Zoom room as much as possible (Sphero joined our room).
- Rename teachers right when they arrive, assigning them to a breakout room ("B Caitlin", "A Marissa" "B Erin")
- The pre-office hours were less used than the post-office hours.
- Teachers enjoyed the flipped approach, allowing them to practice at home.
- Edited recordings and posted to an unlisted playlist on our YouTube

FEEDBACK FROM OUR TEACHERS

PILOT QUESTIONNAIRE

In the Spring, the NDSGC distributed a pilot questionnaire: "what type of workshop interests you?" to our ND teacher listserv. By summer, we knew their requests.

SURVEYS

Teachers turned in an "exit ticket" after every session, reflecting on the positive and negative experiences from that day.

Also, we distributed an IRB-approved pre-survey, post-survey, and (a future) secondary post-survey in 2021 (after they have time to experiment with the robots in their own classrooms).

TO GET INVOLVED WITH SPHEROS:

EDUCATION@SPHERO.COM

The North Dakota Space Grant Team:

Director:

Caitlin Nolby (cnolby@space.edu)

Deputy Director

Marissa Saad (msaad@space.edu)

SELECT TESTIMONIALS

- Of 7 years of professional developments, this has been one of the best! Thank you for your time and effort.
- I thought that the class was great. I felt taking the class virtually allowed me to feel more comfortable tinkering with the sphero bot. I also felt that you guys were great with your speediness and your fluency with the online resources that we used-**zoom, zoom breakout rooms, google shares and folders, mural board, shared screens, fast responses in chat...** You guys did a great job! I also thought that the access to all links were presented in a great way and easy to use!
- I really enjoyed the **break out sessions** and wished that we had more of them. It was great to hear from the '**experts' on the Sphero team** as they have all of the knowledge and were so good about sharing Sphero activities. It was hard to ask questions about the Spheros prior to those sessions as I had no idea what it was all capable of doing. Being able to tinker with the bot while the presenters were sharing and talking was very helpful.
- I liked that we got to **perform the coding along side of Jeremy**. I enjoyed playing with the Sphero activities on their website. The breakout sessions were amazing!! So nice to hear from some that have used and implemented!
- I loved the PBL sessions! I learned many great tools to get my kids interested in coding.
- The sessions I attended were very informational and interactive. I love that we had the ability to choose which groups we wanted to break out into!
- Being able to have the **Sphero in our homes** to work with was most valuable!! To just watch these sessions without the Sphero would have been overwhelming with little take-away.

-2020 ND Educator Participants