

**Adapting Explore Science:
Earth & Space Toolkit Activities for**

Virtual and Physically Distanced Programs

www.nisenet.org/earthspacekit

We realize COVID-19 has many implications for how we are all able to run our institutions and work with the public. The safety of your staff, volunteers, and public audiences is of the utmost importance to all of us in the NISE Network. As museums, science centers, planetariums, and other informal science institutions do their part to help slow the spread of COVID-19, our partners are finding creative ways to adapt programming to virtual platforms and/or physically distanced formats.

Virtual Programs

Whether you are hosting live, interactive sessions online or recording videos for your audience to access at any time, many Earth and space activities can be done using materials commonly found in participants' homes. Graphic materials like activity guides, challenge or prompt cards, and information sheets can be shared on the screen to support learning and move the activity forward, or provided as links for participants to explore at their leisure.

Alternately, your institution may choose to create activity kits of all the materials needed for the activity that participants can pick up and take home. They can then follow along with your virtual program using their personal materials kit.

Here are some example ways activities from the 2020 Explore Science: Earth & Space toolkit can be easily adapted to virtual learning format.

Exploring the Solar System: Asteroid Mining

<https://www.nisenet.org/catalog/exploring-solar-system-asteroid-mining>

- Participants will need paper and markers. They may print the Asteroid drawing worksheet, but it is not necessary in order to complete the activity.
- Rather than using the Camp del Cielo meteorite sample as a “hook,” try showing images of asteroids captured by NASA spacecraft to introduce the concepts of asteroids and asteroid mining. Ask participants to make observations about the images they are seeing. What do asteroids appear to be made of? Where do we mine resources on Earth? For example this NASA collection: <https://solarsystem.nasa.gov/asteroids-comets-and-meteors/asteroids/galleries>
- Use the same “Conversational Prompts” listed in the facilitator guide to encourage interaction (for live sessions) or reflection and action (for recordings).

Exploring Earth: Bear’s Shadow

<https://www.nisenet.org/catalog/exploring-earth-bears-shadow>

- Participants can follow along with this activity using a flashlight and any small plastic toy. You may modify the language from the prompts to refer to “your toy” rather than “Bear.”
- You may choose to read the *Moonbear’s Shadow* storybook by Frank Asch at the beginning or end of your virtual program, but like for any virtual story time be aware that many publishers retain copyright of recorded readings.

Exploring Science Practices: Early Explorations

<https://www.nisenet.org/catalog/science-practices-early-explorations>

- Many caregivers will be able to collect a variety of materials to experiment with, including sponges, aluminum foil, and plastic toy bricks. While they may not have access to eyedroppers, spray bottles or petri dishes, the activity can be adapted so that participants pour water from a cup or scoop it up with a spoon. If you’re doing the activity live, start by asking participants to show you what types of surfaces and materials they are working with, and then adapt your prompts accordingly.
- As facilitator, ask questions that prompt young learners to explore and observe the way that water behaves on these different surfaces.

- You may choose to read *Water Rolls, Water Rises: El agua rueda, el agua sube* by Pat Mora, illustrated by Meilo So, at the beginning or end of your virtual program, but like for any virtual story time be aware that many publishers retain copyright of recorded readings.
- Be sure to share the “Do Science Together” bookmark with caregivers.

Exploring the Moon: Story Blocks

<https://www.nisenet.org/catalog/moon-story-blocks>

- Participants will not have their own Space Mission 1 Block Set, but could use Legos or other blocks to build a story about a mission to explore the Moon. Alternatively, you could change this from a block-based storytelling activity to a conversational drawing activity.
- Use the same “Conversational Prompts” listed on the facilitator guide and share the “_____’s Mission to the Moon” booklet to help participants structure their science story.

Physically Distanced Programs

During this time, your institution may choose to offer physically distanced, facilitated floor programs. Be sure to follow local, state and federal guidelines when planning your programs. We suggest physically marking out at least six feet of space between the facilitator and participants, and sanitizing materials between uses. Plexiglass shields provide an additional barrier, and help participants understand the transition to a no-touch interaction.

The suggestions below assume less hands-on interaction for the participants, but many of the toolkit activities also lend themselves to creating multiple copies of an activity set-up so that family groups or other pods can safely interact with their own set of materials. Those set can then be sanitized or quarantined between groups.

Exploring the Universe: Star Formation

<https://www.nisenet.org/catalog/star-formation>

- Try modifying this activity into a demo format. Only the facilitator should touch the materials, while narrating the model for participants.
- You can still use the data collection board to record and show the variety of sizes of space objects made by the facilitator throughout the day.
- Use the poster and information sheets included with this activity to further explain the process of star formation and characteristics.

Exploring the Universe: Nebula Spin Art

<https://www.nisenet.org/catalog/nebula-spin-art>

- With some modification you may still offer Nebula Spin Art as a STEAM activity! Place a circle of black construction paper in the salad spinner, and ask participants what colors they want to use. Only the facilitator should touch the paint bottles. The facilitator can then step back and allow the participant to use the salad spinner, and then remove their “nebula.”
- Be sure to sanitize the salad spinner between uses.
- Use the information sheets included with this activity to further engage participants in thinking about nebulas.

Exploring the Solar System: Moonquakes

<https://www.nisenet.org/catalog/moonquakes>)

- Rather than having participants sort the cards themselves in the “card-sorting activity,” have them tell the facilitator where to place each card.
- For the Moonquake model with spring toys, pre-mark spots for each participant to stand, between six and ten feet from the facilitator (rather than three and ten feet). Make sure to sanitize the spring toys in between uses!

We are deeply impressed and inspired by all the ways NISE Network partners are using previous toolkit activities to engage local audiences in safe, creative ways.

We hope that some of these new materials will support this important work. We also look forward to a time when we can all invite our audiences to gather, explore, and learn together again. Partners have been sharing their experiences in our monthly newsletter and online workshops; you can learn more about partner’s work at <https://www.nisenet.org/blog-categories/partner-highlights>.

This past summer and fall, the NISE Network Online Workshop team has hosted several webinars to collect and share partner stories during this difficult time. Recordings and associated resources about additional virtual engagement and physically distanced programming strategies can be found here: https://www.nisenet.org/search/product_type/online-workshops

You can also reference the **Do Science at Home!** page on [nisenet.org](https://www.nisenet.org) for more ideas on ways to support science learning in your community: <https://www.nisenet.org/athome>



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