HANDS-ON SCIENCE ACTIVITIES

Activity 3

Icebreaker Activities

For use with participants ages 5 to 7, 8 to 9, and 10 to 13

Choose from these four 15-minute activities to open any Discover Earth activity!
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Discover Earth Themes and Overview of Activities

The Discover Earth activities focus on Earth science topics close to home – such as local weather and the plants, animals, crops, and environmental features particular to your region – as well as a global view of our changing planet. Through hands-on investigations and discussions, young audiences discover that Earth’s global environment changes – and is changed by – the local environment. The activities explore three key messages relating to this overall theme: A. We belong to Earth; B. Each region is unique; and C. Your home is changing. These messages all relate to the overall theme: Earth’s global environment changes – and is changed by – the local environment. The activities were developed with guidelines set forth by the National Science Education Standards and American Association for the Advancement of Science (AAAS) benchmarks, and they were designed for audiences in the following four age ranges: 5 to 7, 8 to 9, 10 to 13, and teens.

Overall Theme
Earth’s global environment changes – and is changed by – the local environment.

A. We Belong to Earth
We belong to a complex system of interacting water, ice, air, and life.

Community Activities
The community contributes to two exhibits: In Century of Change Display, the community gathers and compares photos and/or illustrations of the local areas taken a century and more ago with more contemporary photos of the same areas. In Weather Wall, children track the local weather over a period of two months or more, plotting weather data on a kid-friendly sticker chart.

Icebreaker Activities
Children ages 5 and up are introduced to Earth’s major characteristics (or parts or systems) -- water, ice, air, and life – through the brief icebreaker activities Catch!...the World’s Ocean, Ice-y Experience, Share the Air, and Web of Life.

Discover Earth through Reading
I Belong to Earth can serve either as part of a kick-off celebration or as an outreach program to area schools. Children and teens discover Earth science questions and answers using the library’s resources and participate in reading games — customized for ages 5 to 9, 10 to 13, and teens — that combine book lists and reading logs into take-home adventures! After this activity, the reading...
games continue to connect patrons with the Discover Earth activities and resources. Participants advance by reading, engaging in suggested at-home activities, attending Discover Earth library programs, or investigating Earth and the environment through a variety of citizen science programs. Completed game boards may be submitted to the library for display, and if desired, entry into promotional drawings. Participants earn a decal upon completion.

B. Each Region Is Unique
Changes to distant oceans, air moving freely around our globe, and all living things have an influence on our regional environment, now and in the past and future.

Weather Explorations
Children ages 5 to 7 explore various aspects of weather through a series of stations featuring games, crafts, and weather observations in Weather: The Many Faces of Mother Nature. Children ages 8 to 9 and 10 to 13 undertake more advanced investigations of rain, wind, clouds, and weather instruments and consider how locally collected weather data relate to the broader Earth systems of water, ice, air, and life in Weather Stations.

Regional Explorations
In Climate Tour, children ages 10 to 13 celebrate their region of the United States by creating a regionally-inspired postcard and recipe. Finally, they use a set of What if... cards about their region to reconsider their postcards and recipes in light of future climate change. In Polar Bears or Penguins?, children ages 10 to 13 use a fast-action matching game to demonstrate how each of Earth’s polar regions is distinct and special.

C. Your Home Is Changing
Earth’s water, ice, air, and life will continue to interact over long-term scales, shaping the particular features of that place we each call home.

Environmental Stewardship
In teams, children ages 11 to 13 build an understanding of how human actions impact global change by playing a board game, Polar Bears Go with the Floes, in which chance and choice determine the fate of a lone polar bear on an ice floe. Teens, ages 14 to 18, engage their communities in science through art in Earth: Artistically Balanced. The teens first interact with a climate scientist to unravel, on a very basic level, the complexities of Earth’s climate system, and then they create a three-dimensional artistic representation of Earth’s climate. The art may be created on a large scale and displayed at the library or made on a smaller scale to take home.
How to Use These Activities in Your Programs

You may design your own program of one or more of these flexible activities, or you may choose to build the story of Earth and its changing environment through the complete series of activities! Background information and facilitator resources are provided to help you prepare to lead the activities. Encourage further exploration with the books, websites, and videos listed in the Facilitator’s Resources packet. Programming ideas for all ages, infant to adult, are also provided.

Reading games, geared toward different age levels, support this module and connect the activities and resources. The games combine the traditional reading log and book list into a board game, where participants advance by reading, engaging in suggested at-home activities, attending library programs, or investigating Earth and the environment through a variety of citizen science programs. These games are introduced in Activity 4: I Belong to Earth. The game boards may be customized with your institutions’ address, and if desired, an additional step in the instructions for winning prizes. Matching decals may be printed and awarded as prizes. Read Me bookmarks are available as a way for children to read, review, and recommend titles to others. These materials (shown below), including the supporting book lists, are available free for educational use at www.lpi.usra.edu/explore/discoverEarth.
Correlations to National Standards

National Science Education Standards

Grades K-4
Life Science - Content Standard C
The Characteristics of Organisms
- Organisms have basic needs. For example, animals need air, water, and food; plants require air, water, nutrients, and light

Earth and Space Science - Content Standard D
Properties of earth materials
- Earth materials are solid rocks and soils, water (and ice), and the gases of the atmosphere. Earth materials provide many of the resources that humans use.

Science in Personal and Social Perspectives - Content Standard F
Types of Resources
- Some resources are basic materials, such as air, water, and soil.

Grades 5-8
Life Science - Content Standard C
Populations and Ecosystems
- Populations of organisms can be categorized by the function they serve in an ecosystem. Plants and some microorganisms are producers—they make their own food. All animals, including humans, are consumers, which obtain food by eating other organisms. Decomposers, primarily bacteria and fungi, are consumers that use waste materials and dead organisms for food. Food webs identify the relationships among producers, consumers, and decomposers in an ecosystem.

Earth and Space Science - Content Standard D
Structure of the Earth System
- Global patterns of atmospheric movement influence local weather.
- Water, which covers the majority of the earth's surface, circulates through the crust, oceans, and atmosphere (and cryosphere) in what is known as the "water cycle."
Catch!...the World’s Oceans
Activity Procedure

Adapted from Water Cycle Lesson, http://inside.mines.edu/~lgallagh/Water_Cycle_Lesson_Plan_2010%5B1%5D.pdf and used with permission.

Overview

Children get to know each other through an icebreaker activity that introduces the importance of water on Earth. They stand in a circle and toss a soft Earth globe (such as an inflatable or stuffed globe), noting with each catch that his or her (left or right)index finger usually touches an ocean rather than land. The percentage of Earth covered by oceans — roughly three quarters, or 71% — can be tallied by keeping track of the number of “land” and “ocean” contacts during the game.

What’s the Point?

- Water is an important characteristic or part of Earth.
- Oceans cover most (roughly three quarters, or 71%) of the Earth’s surface.
- Oceans play an important role in weather and climate all over the world, even in locations far from the coast.

Materials

Facility Needs

☐ An area large enough for the children to be able to comfortably mingle and where a ball can be safely tossed
☐ Optional: Writing space viewable by the entire group, such as white board or poster paper and markers, or a black board and chalk

For Each Group of 15 Children

☐ 1 inflatable Earth globe, or a Hugg-a-Planet Earth, purchased from a retailer such as http://www.peacetoys.com/Hugg-A-Planet-Collection/Hugg-A-Planet-Earth.html
☐ Optional: 1 calculator
For the Facilitator

☐ Facilitator’s Resources packet (available at www.lpi.usra.edu/explore/discoverEarth), which includes:
  ☐ Background information
  ☐ Be a Science Guide!
  ☐ Resource lists
  ☐ Shopping list

Preparation

- Review the background information and Be a Science Guide.
- Advertise the program separately to ages 5 to 7 and 8 to 13, and keep the ages separate, if possible. If mixed ages attend the program, separate into two groups guided by separate facilitators.
- Prepare an area large enough for the children to be able to comfortably mingle.

Activity

1. Ask the children what they know about water.
   - How do you use water in your daily life? It is a drink; it’s used for cooking, cleaning, and washing; the grass that we play on and plants that we eat use it to grow; etc.
   - Where is water found on Earth (at or below the surface)? In our oceans, lakes, rivers, and groundwater (and frozen as snow and ice — such as in glaciers, ice caps, and sea ice). Plants and animals — including people — have water inside them.
   - Where is water found in the air? Water is also rain, the tiny droplets that make up clouds, and frozen as snow, hail, and ice. Water is also a gas in our atmosphere (water vapor).

2. Have everyone stand in a circle and toss the inflatable Earth globe back and forth. Start by introducing yourself and then tossing the ball to someone across from you. Invite each member of the circle to point downward toward the “real” land, and then instruct the children to keep track of where that finger lands on the globe. (Note that some children will point with their right index fingers, others will point with their left, or some other variation depending on the child and his or her physical abilities. The children can use any single point on their bodies to keep track during the game...as long as they are consistent!) Tell them that they will each shout “ocean”
or “land,” thank the previous circle member by name, and state his or her own name. Each individual then tosses the ball to someone who has not yet had a turn.
a. For children ages 5 to 7, begin by discussing what the different colors on the ball mean (i.e. land or ocean). After each child has a turn, he or she will move outside of the circle to join one of two lines. Designate the area immediately behind one side of the circle as “ocean” and the other side as “land.” After each child catches the globe and sees where his or her finger lands, he or she moves to one side or the other of the circle. Two lines will form as the game progresses. The game ends after each child has had a turn.

a. Which line is longer? The “ocean” line.

b. For children ages 8 to 13, have one of the children also serve as record keeper. Tally the number of “land” and the number of “ocean” contacts. If possible, repeat the game three or more times to gather more data. If desired, challenge the children to remember the order in which the ball is tossed — as well as the names of the circle members they each receive from and toss the ball to. Finally, calculate the percentage of “ocean” contacts (using a calculator, if desired).

- What is the percentage of “ocean” contacts for our group?
- How much of Earth’s surface do you think is actually covered by water? 
  Accept all answers.
- How does that compare to what we calculated during the game?

3. Summarize that the children’s index fingers usually contacted ocean; and, indeed, 71% of the Earth’s surface is covered by ocean!

4. Guide a discussion about how the oceans influence the local region’s weather — even if your region is far from the ocean. With children ages 8 to 13, elaborate that oceans influence winds, evaporate into the air (providing much of the moisture distributed across the globe by clouds), and absorb energy from the Sun — creating our local weather and providing warmth. Oceans help control what kinds of weather an area usually gets (i.e. its climate), such as whether rain, snow, or dry conditions are typical.

Conclusion

Water is an important characteristic or part of our planet! Explain that the children will have the chance to explore water on Earth through Discover Earth activities, and for
those libraries hosting the *Discover Earth: A Century of Change* exhibit, through a weather station and the exhibit displays and interactives.
Ice-y Experiences
Activity Procedure

Overview

Children get to know each other through an icebreaker activity that introduces the importance of ice on Earth. Children ages 5 to 7 play “Walls of Ice,” where the facilitator reads personal, ice-related statements to two lines (“walls”) of children and the participants run to the opposite line if the statement is true. Children ages 8 to 9 and 10 to 13 play “Ice Bingo” using cards that contain squares with different types of ice experiences — like getting their tongues stuck on ice! — interspersed with ice facts and information about ice on Earth. Children have 5 minutes to find as many participants as they can who have had experiences described on the card.

What’s the Point?

- Ice is an important characteristic or part of Earth.
- Although we do not often think about it, ice plays a role in all of our lives.
- Some areas on Earth have ice all of the time; some areas sometimes have ice; and other areas almost never have ice outside.

Materials

Facility Needs

☐ An area large enough for the children to be able to comfortably mingle

For Each Group of 15 Children

☐ Optional: 1-2 globes

For Each Child Between the Ages of 8 and 13

☐ Ice Bingo card, printed on heavy paper or cardstock and preferably in color
☐ 1 pen or pencil
For the Facilitator

☐ Facilitator’s Resources packet (available at www.lpi.usra.edu/explore/discoverEarth), which includes:
  ☐ Background information
  ☐ Be a Science Guide!
  ☐ Resource lists
  ☐ Shopping list
  ☐ Walls of Ice Facilitator’s Guide (for use with an audience of children ages 5 to 7)

Preparation

- Review the Facilitator’s Resources packet.
- Advertise the program separately to ages 5 to 7 and 8 to 13, and keep the ages separate, if possible. If mixed ages attend the program, separate into two groups guided by separate facilitators. For family programs, you may wish to invite parents to guide young children in the use of the game cards.
- Prepare an area large enough for the children to be able to comfortably mingle.
- For an audience of children ages 5 to 7, print out one copy of Walls of Ice Facilitator’s Guide for each facilitator to use. For children ages 8 to 13, make enough copies of Ice Bingo cards for each child to have one. (If clipboards or tables are available for the children to use to write on, it is not necessary to print the Ice Bingo cards on heavy paper or cardstock.)

Activity

1. Ask the children what they know about ice.
   - Where do you find ice in your daily life? We use ice cubes and some freezers are coated with ice on the inside. In some locations, winter weather brings ice outside.
   - Where is ice found on Earth? At the tops of mountains, in Earth’s polar regions, and — depending on the location — on streets, sidewalks, and hanging from buildings in the winter.

2. Play a classic icebreaker game — with a science twist!
   a. Children ages 5 to 7 play “Walls of Ice,” a modified version of the “Ice Bingo” game. Explain that the children are to form two even lines — “walls” — (of about the same lengths) and run to the opposite line every time they hear something that is true about themselves. The facilitator reads one fact, joke,
or personal statement from the *Walls of Ice Facilitator’s Guide* aloud. The children learn who else has had similar experiences with ice by seeing who runs at the same time as they do.

b. Children ages 8 to 13 play “Ice Bingo.” Distribute *Ice Bingo* cards and pens or pencils to the children. Ask the children to look at the white colored squares on their *Ice Bingo* cards. These represent experiences with ice that some of them here may have had. Their task will be to find participants who have had any of these experiences. They will have five minutes to find the largest number of people with different experiences. Each participant initials the square that represents the experience they have had.

3. **After five minutes, stop the game and reassemble the group.** Ask the older children if anyone was able to get initials in all 12 squares. Chances are that the farther north a child has lived, the more experiences he/she has had! Follow the game with a discussion of their experiences.
   - Do you find ice or snow in your region?
   - Do you see ice and snow during a particular season?
   - Have you ever visited a region with lots of ice and snow? What was it like? Were you on a mountain or far up north (or way down south)?

**Facilitator’s Note:** In our everyday experiences, we encounter water typically in its liquid state. Most of our fresh water, however, exists in its frozen form. About three-quarters of it is found in snow, sea ice, icebergs, ice shelves, glaciers, ice caps, and inside ground that has remained frozen for two or more years (permafrost). Snow and ice may appear only seasonally at mid-latitudes, but at high altitudes and in the polar regions, frozen water persists year-round as glaciers and very large ice caps, called ice sheets. Glaciers form in regions where more snow accumulates than melts, such as in high mountain valleys. In the extremely cold polar regions, the glaciers grow to form continent-sized ice sheets. The largest ice sheets cover Antarctica, and smaller ice sheets cover Greenland. Some of the ice in the Antarctic ice sheet represents the build-up of nearly a million years of snow.

4. **Optional:** Have the children point out areas on the globe where there is always ice and snow. Find areas that only have ice and snow in the winter. Find areas that almost never have ice and snow.
Conclusion

**Ice is an important characteristic or part of our planet!** Explain that the children will have the chance to explore ice on Earth through *Discover Earth* activities, and for those libraries hosting the *Discover Earth: A Century of Change* exhibit, through a weather station and the exhibit displays and interactives.
Share the Air Activity Procedure

Overview

Children get to know each other through an icebreaker activity that introduces the importance of air on Earth. As they stand in a circle, each child introduces him- or herself and then tosses a beanbag across the circle to another child. Each child must remember the name of the child who catches the beanbag. After circulating the beanbag to each member of the circle, the pattern is set and the challenge begins! The entire pattern is repeated multiple times, with each child tossing the beanbag to the same member of the circle and saying that child’s name. The group must work together — rearranging themselves, if necessary — to complete the entire pattern as quickly as possible. Finally, the children consider how air is continually cycled across the globe in the same way that the beanbag was passed between people.

What’s the Point?

- Air is an important characteristic or part of Earth.
- The air we breathe isn’t “used up,” but cycles continuously across the globe.

Materials

Facility Needs

☐ An area large enough for the children to be able to comfortably mingle
☐ Optional: Writing space viewable by the entire group, such as white board or poster paper and markers, or a black board and chalk

For Each Group of 15 Children

☐ 1 bean bag (or other small, soft object)
☐ 1 stopwatch
For the Facilitator

☐ Facilitator’s Resources packet (available at www.lpi.usra.edu/explore/discoverEarth), which includes:
  □ Background information
  □ Be a Science Guide!
  □ Resource lists
  □ Shopping list

Preparation

- Review the Facilitator’s Resources packet.
- Advertise the program separately to ages 5 to 7 and 8 to 13, and keep the ages separate, if possible. If mixed ages might attend the program, plan to separate into two groups guided by two or more facilitators.
- Prepare an area large enough for the children to be able to comfortably mingle.

Activity

1. Have everyone stand in a circle and toss the beanbag back and forth. Start by introducing yourself and then tossing the beanbag to someone across from you. (If desired, invite each member of the circle to recite the names of those who have already passed the bean bag — in order.) Then, he or she passes the beanbag to a new person (preferably someone who is not sitting next to him or her). Each child must remember the name of the child who catches the beanbag. After circulating the beanbag to each member of the circle, the pattern is set and the challenge begins!

2. Challenge the children to pass the beanbag as quickly as possible, saying the name of the receiving person as they toss it. The entire pattern is repeated multiple times, with each child tossing the beanbag to the same member of the circle and saying that child’s name. Time each successive round, and invite the children to work together to increase their speed. The bean bag must pass to each member, but they may rearrange themselves and stand or sit.

Facilitator’s Note: The children may discover a speedy method: Stand in order, in a tight circle, with one arm outstretched. The hands are arranged to form a descending spiral, and the bean bag is rolled down this “ramp” as the children chant their neighbor’s name.
3. **Congratulate the children on working together to solve the challenge!** Tell them their “winning” time.

4. **Discuss how the air we breathe is also passed from person to person and across the globe.** The air in your lungs can be thought of like the beanbag; it is something that can be passed on. Air isn’t “used up” by our bodies when we breathe it, but is recycled. While the gases in the air undergo changes as they interact with each other, life (including us!), and the environment, the “stuff” that makes up the air (atoms) has been around for a long time. We are breathing the same “air stuff” that the dinosaurs did!
   - How is air important to life on Earth? *In addition to food and water, animals need to breathe air in order to survive. Plants convert water and a gas in the air — carbon dioxide — into sugars using the energy in light.*
   - Besides breathing, how do you experience air in your daily life? *Air is always all around us. Air moves around the globe, influencing our weather.*

For children ages 8 to 13, note we experience the weight of air above and around us as pressure. Add that air pressure is an important part of weather: In areas where there is high pressure, the weather is fair. In areas where there is low pressure, there are storms.

**Conclusion**

Air is an important characteristic or part of our planet! Explain that the children will have the chance to explore air on Earth through *Discover Earth* activities, and for those libraries hosting the *Discover Earth: A Century of Change* exhibit, through a weather station and the exhibit displays and interactives.
Web of Life
Activity Procedure

Overview

Children get to know each other through an icebreaker activity that introduces the importance of life on Earth. As they sit in a circle, each child introduces him- or herself and then tosses a ball of yarn — while keeping a hold on his or her own end of the string — to another child. In a science twist for ages 5 to 7 on this classic “spider web” icebreaker game, each child names a favorite natural food (e.g. an apple) that they would catch if he or she were an imaginary spider at the center of the group’s “web.” For ages 8 to 13, the first child also states a favorite animal. All subsequent players state a plant or animal that the first animal eats.

What’s the Point?

- Life is an important characteristic (or part) of Earth.
- All life depends on other forms of life in order to survive.

Materials

Facility Needs
☐ An area large enough for the children to be able to comfortably mingle

For Each Group of 15 Children
☐ 1 ball of yarn, any color

For the Facilitator
☒ Facilitator’s Resources packet (available at www.lpi.usra.edu/explore/discoverEarth), which includes:
☐ Background information
☐ Be a Science Guide!
☐ Resource lists
☐ Shopping list
Preparation

- Review the Facilitator's Resources packet.
- Advertise the program separately to ages 5 to 7 and 8 to 13, and keep the ages separate, if possible. If mixed ages attend the program, separate into two groups guided by separate facilitators.
- Prepare an area large enough for the children to be able to comfortably mingle.

Activity

1. Ask the children what they know about life.
   - What do we need in order to live? Accept all answers, which may include family, love, shelter, knowledge, air, water, and food.

   Focus the discussion on the basic necessities of our bodies: air, food, and water.

   - Where does our food come from? Accept all answers and prompt the children to think beyond the grocery store as the source of their food. Answers might include farms, ranches, streams and oceans (for fish,) and forests (for game).

2. Explain to the children that they will be creating a “web of life.” Have them sit in a circle and explain the game: Each child will introduce him- or herself and help make a web by tossing a ball of yarn — while keeping a hold on his or her own end of the string — to another child.

   a. Children ages 5 to 7 each also name a favorite natural food (e.g. an apple) that they would catch if he or she were an imaginary spider at the center of the group’s “web.” Explain that the children do not need to name foods that real spiders eat, but rather their own personal — and natural — favorites.

   b. Children ages 8 to 9 and 10 to 13 build a web based on the first child's favorite animal. Challenge the children to create a web that allows that animal to live. For example, if the first child states her name and then “bear,” the second child might say his name and “salmon.” The third child would continue the life web with “smaller fish” then “water plants,” at which point a child might mention “snails” as another type of animal that eats water plants. Once the food chain is complete, invite a child to begin another food chain, beginning with his or her own favorite animal.
3. After all children have introduced themselves, untangle the “web” — without letting go of the yarn! — to form a circle. Congratulate the children on building the “circle of life”!

**Conclusion**

Life is an important characteristic or part of our planet! Explain that the children will have the chance to explore life on Earth through Discover Earth activities, and for those libraries hosting the Discover Earth: A Century of Change exhibit, through the exhibit displays and interactives.
Contact Information

Your questions and comments about the *Discover Earth: Hands-on Science Activities* are welcome!

*Explore* Program Team
Department of Education and Public Outreach
The Lunar and Planetary Institute
3600 Bay Area Boulevard
Houston, Texas 77058
explore@lpi.usra.edu

**STAR_Net** Project Overview

The **STAR Library Education Network** project (**STAR_Net** for short) is part of a national initiative to support libraries that are already providing informal STEM learning, or want to provide it. The **STAR_Net** project has a number of components, including:

- Two traveling exhibits for libraries: *Discover Earth: A Century of Change*, and *Discover Tech: Engineers Make a World of Difference*.
- An Education Program, which includes developing exemplary hands-on activities for libraries, as well as conducting training (both online and in-person) for library staff.
- An Outreach Program that helps libraries to develop STEM programming and find local partners for collaborations on programming.
- An online Community of Practice (CoP) (http://community.discoverexhibits.org) for librarians (both hosts and non-hosts of the exhibits) and STEM professionals who want to support STEM programming in public libraries.

The National Science Foundation (NSF) provided funding the **STAR_Net** project. **STAR_Net** is led by the National Center for Interactive Learning (NCIL) at the Space Science Institute. Dr. Paul Dusenbery is the project director. **STAR** stands for “Science-Technology Activities and Resources.” In addition to NCIL staff, the project team includes:

- The American Library Association (ALA), which is managing the exhibit tours and helping to raise awareness among librarians of the many opportunities for providing STEM programming.
• The Lunar and Planetary Institute (LPI), which is leading the Education Program component. For some years, LPI has led the Explore program for libraries, which has been at the forefront of developing STEM programming and training for librarians.

• The National Girls Collaborative Project (NGCP), which is leading the project’s Outreach Program. As a project partner, this NSF-funded project is helping libraries across the country partner with a variety of organizations to provide STEM programming.

• NCIL's Kate Haley Goldman and staff from Evaluation and Research Associates are conducting evaluations of the project’s components. The project also includes a research component that explores how public libraries can serve as STEM learning centers in rural, under-served communities. The evaluation and research results will be shared with the informal science education community.

The activity described in this packet was developed for libraries to use in support of the Discover Earth traveling exhibit, though it may be implemented independently.

Online Community

Librarians, scientists, engineers, educators, museum staff, and others are invited to join the STAR_Net online community! The website fosters collaboration among professionals who want to provide or support Science, Technology, Engineering, and Mathematics (STEM) learning experiences in libraries. The STAR_Net project team hopes you find the following activity useful. Please join the online community (http://community.discoverexhibits.org) and share your experiences implementing it with your colleagues.

For more information about the STAR_Net project, please contact:

Lisa Curtis
Projects and Exhibits Manager
National Center for Interactive Learning at the Space Science Institute
Boulder, CO
(720) 974-5821
curtis@spacescience.org
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Development Team (Lunar and Planetary Institute, Houston, TX)
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Module Development and Workshop Implementation
Keliann LaConte
Dr. Stephanie Shipp
Yolanda Ballard–Zimmermann

Web Development and Graphics
John Blackwell
Ronna Hurd

Resources
Linda Chappell

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Content and Education Review
Dr. Gil Compo, Research Scientist, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO
Dr. Sara Harris, University of British Columbia, Vancouver, BC Canada
Dr. Walt Meier, National Snow and Ice Data Center, University of Colorado, Boulder, CO

Beth Barrett, Louisville Public Library, Louisville, CO
Dr. Susan Buhr, Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO
Tiffany Clendenin, Ruby M. Sisson Memorial Library, Pagosa Springs, CO
Dr. Paul Dusenbery, National Center for Interactive Learning at the Space Science Institute, Boulder, CO
Deborah Morrison, University of Colorado, Boulder, CO
Karen Peterson, National Girls Collaborative Project, Lynnwood, WA
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- Laura Goss, Adams County Library System, Gettysburg, PA

Evaluation Team
- John Baek, National Oceanic and Atmospheric Administration
- Vicky Ragan Coulon, Evaluation & Research Associates, Lynnwood, WA
- Ginger Fitzhugh, Evaluation & Research Associates, Lynnwood, WA
- Kate Haley Goldman, National Center for Interactive Learning at the Space Science Institute
Appendix:
Activity Materials to Print
Walls of Ice
Facilitator’s Guide

 Invite the children to form two even lines (of about the same lengths), and explain that they are to run to the opposite line every time they hear something that is true about themselves. Read each fact, joke, or personal statement listed below out loud. The children learn who else has had similar experiences with ice by seeing who runs at the same time as they do.

I have heard an ice cube crackle and pop!

What happens to ice when it hears a funny joke? *It cracks up!*  
(Submitted by Eliza, age 8, to www.jokesbykids.com)

I have slipped on ice.

Melting and freezing ice at Earth’s poles helps make our ocean currents flow.

I have been ice skating.

There is less sea ice in the north polar region than there was 40 years ago.

I have been snow skiing.

I have had a snowball fight!

In the U.S., many major weather patterns start out in the Arctic.

I have gotten my tongue stuck on ice.

Glaciers are found on mountains on all continents, except in Australia.

I have been ice fishing.

I have seen icicles hanging from a roof or tree.

If you live in an igloo, what’s the worst thing about global warming? *No privacy!*
I have made a snowperson.

What do you call fifty penguins in the Arctic? *Lost!* *REALLY lost!* (Penguins live in Antarctica.)

I have added ice cubes to water and seen the ice float

Antarctic ice is almost three miles thick in some places!

I save energy (e.g. turn off the lights when I’m not using them) and help the polar bears.

I have seen wispy clouds high up in the sky, which are made of tiny ice crystals.
**Ice Bingo**

Put your name or initials on the line in the blocks for the ice experiences you have had. Then find different people who have had other experiences and ask them to initial that box.

<table>
<thead>
<tr>
<th>I have heard an ice cube crackle and pop!</th>
<th>What happens to ice when it hears a funny joke?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(initials)</td>
<td>It cracks up!</td>
</tr>
<tr>
<td></td>
<td>Submitted by Eliza, age 8, to <a href="http://www.jokesbykids.com">www.jokesbykids.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I have slipped on ice.</th>
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<tr>
<th>Melting and freezing ice at Earth's poles helps make our ocean currents flow.</th>
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<th>I have been ice skating.</th>
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<th>Sea ice in the north polar region has decreased by 40% in the last 40 years!</th>
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<th>I have made a snowperson.</th>
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<th>What do you call fifty penguins in the Arctic?</th>
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<td>Lost! REALLY lost! (Penguins live in Antarctica.)</td>
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<th>I have added ice cubes to water and seen the ice float / sink (circle one).</th>
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Jokes from www.athropolis.com unless otherwise noted.