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The National Informal STEM Education Network (NISE Net) is a community of informal educators and scientists.

NISE Net is dedicated to supporting learning about science, technology, engineering, and math (STEM).
NISE Net supports informal learning about STEM in communities across the United States.

Our activities are fun and accessible for everyone.
Hundreds of organizations participate in the Network.

NISE Net partners include museums and universities.
NISE Net creates engagement materials for a variety of audiences and settings.

Public resources include hands-on activities, public programs, exhibits, and media.
Partner organizations use Network resources to engage audiences in their communities.

Local collaborations increase our reach and impact.
The Network provides professional development for educators and scientists.

Professional resources include meetings, guides, videos, and online workshops.
Together we reach **millions of people** each year!

**NISE Net** brings together diverse people to share and learn from each other.
NISE Net has projects in many areas of STEM.

- Synthetic biology: 2014-2018
- Chemistry: 2016-2019
- Nanotechnology: 2005-2017
- Responsible innovation: 2015-2019
- Earth & Space: 2016-2020
SPACE & EARTH
Space and Earth
STEM focus

Astrophysics

Earth Science

Heliophysics

Planetary Science
Project team

NASA
SMD & STEM Activation team

LEAD INSTITUTIONS
Arizona State University
Children’s Creativity Museum
Science Museum of Minnesota
Museum of Science

TEAM MEMBERS
Astronomical Society of the Pacific
Museum of Life and Science
Sciencenter
University of Notre Dame
Audiences

PUBLIC
Museum audiences
• Families with children ages 6-10
• School groups K-6
• Other museum visitors

Underserved audiences
• Museum visitors
• Offsite programs

PROFESSIONAL
Educators
• Museums
• Out of school settings

Subject matter experts
• Event volunteers
• Project partners
Project activities

PUBLIC ENGAGEMENT MATERIALS
STEM activity toolkits
Small-footprint exhibitions

PROFESSIONAL RESOURCES
Professional development
Regional hubs, website, and infrastructure

EVALUATION
Public impacts
Professional impacts

SHARING & CONNECTING
STEM Activation community
NASA Museum Alliance
Other resources
### Planning tools

#### DESIGN PRINCIPLES
- Engaging
- Authentic
- Current
- Relevant
- Accessible

#### LEARNING FRAMEWORK
- Experience Earth and space **phenomena** and explore scientific discoveries.
- Use the scientific **process** and reflect on science as a way of knowing.
- **Participate** in the scientific community and identify as a science learner.

#### CONTENT OVERVIEW
- The **Sun** powers Earth and our solar system.
- **Earth** is a changing planet of air, water, rock, and life.
- **Planetary systems** like ours may contain water and life.
- The **universe** is very large, old, and mysterious.
STEM activity toolkits support programming and partnerships.
# STEM activity toolkits

## DESCRIPTION

STEM learning resources, including hands-on activities and programs  
Professional resources for planning, implementation, and training  
Materials and supplies to engage the public, build partnerships, and provide professional development

## TIMELINE

Four toolkits developed 2016–2019  
250 copies distributed 2017 and 2018  
350 copies distributed in 2019 and 2020
Public engagement materials
Exploring the Solar System: Ice Orbs
Professional training materials
Exploring the Solar System: Ice Orbs
Toolkit distribution – 250 copies
(2017 and 2018)
Toolkit distribution – 350 copies (2019 and 2020)

PURPOSE
Increase project reach and impact
Engage geographically diverse communities across the United States

TIMELINE
Applications due in November 2018/2019
Informal learning institutions such as museums, planetariums, and NASA Visitor Centers are eligible
Free digital materials are available to everyone
www.nisenet.org/earthspacekit
Exhibitions reach millions of people and promote institutional investment in Earth and space content.
Interactive exhibition

DESCRIPTION
STEM learning components, including hands-on exhibits, graphics, and a seating area
Professional resources for planning, implementation, and staff training
Compact, modular design can be arranged in different configurations within 500 square feet (46 square meters)

TIMELINE
Exhibition developed in 2016-2017
Application process spring – summer 2018
50 copies distributed in 2018-2019
Exhibition  500 square feet (46 square meters)
Exhibition
Professional development raises the capacity of informal educators and organizations to participate in project activities.
Professional development

DESCRIPTION
Online workshops provide “just in time” professional development for informal educators
In-person meeting provides deeper learning opportunities and networking across STEM Activation projects
Professional resources support public engagement products and activities

TIMELINE
Online workshops 2017–2020
In-person meeting 2019
Professional resources packaged with toolkits and exhibitions
Network and NASA infrastructure and expertise support the project and increase its impact.
Network infrastructure

Regional hubs provide coordination, communication, and partner support.

Website distributes resources and information.

Project databases and systems facilitate reporting and record maintenance.
NASA infrastructure

- NASA Science Mission Directorate
- STEM Activation team
- NASA Education
- NASA Museum Alliance
- NASA Visitor Centers
- NASA Space Place
- NASA Wavelength
- Night Sky Network
- Solar System Ambassadors
- STEM educational resources
- STEM images, visualizations, and other assets
- Subject matter experts
- ...and more!
Subject matter experts

Institute for Global Environmental Studies
Harvard-Smithsonian Center for Astrophysics
NASA Ames Research Center
NASA Goddard Space Flight Center
NASA Jet Propulsion Laboratory
NASA Langley Research Center
NASA Science Mission Directorate
Space Telescope Science Institute
Cross-collaborations with SMD STEM Activation projects

American Museum of Natural History
Arizona State University
Exploratorium
GLOBE
Gulf of Maine Research Institute
Lunar and Planetary Institute Education
NASA Wavelength
NASA WOW!, NASA Education EXPRESS
National Institute Of Aerospace Associates
Night Sky Network
Northern Arizona University
Space Science Institute
University Of Washington, Seattle
Evaluation informs product development, helps the team make decisions, and allows stakeholders to understand the project’s reach and outcomes.
Evaluation

TYPES OF EVALUATION
Front-end
Formative
Summative

PUBLIC IMPACTS
Who and how many members of the public do SEISE STEM learning products reach?
How do SEISE learning products impact the public’s knowledge, interest, and understanding of STEM content areas?

PROFESSIONAL IMPACTS
Who and how many professionals are reached by the SEISE project?
What kinds of partnerships are formed between professionals during SEISE?
How does SEISE impact professionals’ use of relevant products and practices?
How does SEISE impact professionals’ knowledge and understanding of SMD content areas?
Project outcomes

1. **Widespread use** of project resources, including STEM learning and professional development products

2. **Broad reach** to sizeable public and professional audiences across the US

3. **New and strengthened partnerships** among national and local organizations that support informal and lifelong learning

4. **Demonstrated learning** by public and professional audiences