

Appendix 13: Summer and School-Year Professional Development Implementation Form



National Aeronautics and Space Administration

www.nasa.gov

Summer of Innovation Teacher PD Implementation Form

The National Aeronautics and Space Administration (NASA) is conducting a national evaluation of its Summer of Innovation (Sol) Program. Abt Associates Inc. and its partner the Education Development Center have been hired to conduct this study.

This form is intended to document the implementation of the Sol teacher professional development offerings across the awardee sites. All Sol awarded PIs are required to designate an individual(s) to complete this form at the end of any teacher professional development activities/sessions that occur between the months of June and March. This form is to be submitted to the national evaluation team within two weeks of the last day of EACH professional development activity/session.

You have been asked to complete this form based on your role in the Sol professional development activities. Completing this form will help NASA understand awardees' efforts with classroom teachers this summer and during the school year. We estimate that it will take approximately 10 minutes to complete this form.

If you have questions about this evaluation, please contact the evaluation director, Hilary Rhodes of Abt Associates Inc. at (877) 520-6840 (toll-free) or send an email to NASASummerofInnovation@abtassoc.com.

Paperwork Reduction Act Statement - This information collection meets the requirements of 44 U.S.C. § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget control number. We estimate that it will take about 10 minutes to read the instructions, gather the facts, and answer the questions. **Return this form by entering the submit button when you are finished. You can find additional information on this program at <http://www.nasa.gov/offices/education/programs/national/summer/home/index.html>.** You may send comments on our time estimate above to: NASASummerofInnovation@abtassoc.com. **Please send only comments relating to our time estimate or comments to this address, not the completed form.** If you have questions about this evaluation, please contact the evaluation director, Hilary Rhodes of Abt Associates Inc. at (877) 520-6840 (toll-free) or send an email to NASASummerofInnovation@abtassoc.com. If you have questions about your rights as a research participant, you contact Teresa Doksum, the Abt Institutional Review Board Administrator at (877) 520-6835.

A. Professional Development (PD) Information

Site name (e.g., name of school, community learning center, YMCA)	
Sol PD session name	

In what format was the PD session offered? Check one.

- ☐ Face-to-face training
☐ Live webinar
☐ EPDN (Electronic Professional Development Network) or other online Sol course
☐ Other, please explain: _____

Was this PD session developed specifically for NASA Sol?

- ☐ Yes
☐ No
☐ Don't know

Programming note: If face-to-face-training or other, continue. If webinar, skip to webinar section below.

Start date	Calendar icon
End date	Calendar icon
Number of PD days for this session	Limit to numeric characters (max 3 values)

Total Number of Contact Hours	Limit to numeric characters (max 3 values)
a) Total Number of Hours Focused on NASA Content	Limit to numeric characters (max 3 values)
b) Total Number of Hours Focused on Other STEM Content (non-NASA)	Limit to numeric characters (max 3 values)

B. Content Information

Below is a list of the NASA units that were identified for Sol. Please indicate which ones were used during the PD session. Check all that apply.

Earth & Space Science

- ☐ Climate and Seasons IF SELECTED, ASK:

Which *Climate and Seasons* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Climate (*Globe Soil Learning Activities: Soil Temperature; How Does Earth's Energy Budget Relate to Polar Ice?; Surface Color and Effect on Temperature Change; What is the Right Answer?*)
- ☐ Seasons (*Habits of the Mind; Is Grandpa Right, Were Winters Colder When He was a Boy?; Kinesthetic Astronomy; Seasonal Change on Land and Water*)
- ☐ Other, please specify

☐ Destination Mars (*Can We Take it with Us?; Mars Bound*)

☐ Earth Moon System **IF SELECTED, ASK:**

Which *Earth Moon System* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Earth's Attic: The Moon (*Lava Layering; Moon Math: Craters!; Reaping Rocks; Regolith Formation*)
- ☐ The Sky is Falling (*Finding Impact Craters; Falling the Falling Meteorite; Lava Layering; Searching for Meteorites; Space Rocks! A Meteorite Game*)
- ☐ Other, please specify

☐ Planetology **IF SELECTED, ASK:**

Which *Planetology* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Earth: A One of a Kind Planet? (*Assessing Planets as Candidates for Life; Astro-Venture: Search for and Design a Habitable Planet!; Mars and Earth Physical Comparison*)
- ☐ Finding Earth-like Planets (*Count Your Lucky Stars, Detecting Planet Transits; Paint by Numbers*)
- ☐ How Does Earth Compare? (*Earth, Moon, Mars Balloons Activity; Exploring Planet Sizes; Solar System Missions; Walking the Planet Distances*)
- ☐ Other, please specify

☐ Remote Sensing **IF SELECTED, ASK:**

Which *Remote Sensing* lessons were presented? Select one or more.

- ☐ A World of Change (*Paint by Numbers; Quantifying Changes in the Land Over Time*)
- ☐ Earth Versus Mars (*What Similar Physical Processes Occur on Both Earth and Mars; Charting the Physical Characteristics of Both Earth and Mars*)

- ☐ Finding Impact Craters
- ☐ Finding Water Systems (*Hydrology Investigation: Model a Catchment Basin*)
- ☐ Other, please specify

☐ Universe **IF SELECTED, ASK:**

Which *Universe* lessons were presented? Select one or more.

- ☐ Is It Safe? (*Astroventure Geology Mission; Space Weather Action Centers*)
- ☐ Points of Light (*Counting Your Lucky Stars; Hubble Deep Field Academy; Light Pollution Star Count; Stories in the Sky*)
- ☐ What's in the Stars? (*Cycles in the Cards; Elements and You; What's Out There*)
- ☐ Other, please specify

☐ Weather **IF SELECTED, ASK:**

Which *Weather* lessons were presented? Select one or more.

- ☐ Air has Weight and Temperature Affects it? (*Does Air Have Weight? How Do You Know?; Can You Show That Temperature of Air Has an Effect on Its Weight and Its Weight and Direction of Vertical Movement?*)
- ☐ Moisture and Clouds (*Does Cloud Type Affect Rainfall?; How Much Water is Available in the Atmosphere for Precipitation?*)
- ☐ What Influences Planetary Weather (*Coriolis Effect; Atmospheric Science, Geology, and Design a Planet*)
- ☐ Other, please specify

☐ Year of the Solar System **IF SELECTED, ASK:**

Which *Year of the Solar System* lessons were presented? Select one or more.

- ☐ Comet on a Stick
- ☐ Make a Comet and Eat it
- ☐ Scale Models of the Solar System (*Exploring Planet Sizes; Walking Planet Distances; Solar Pizza*)
- ☐ Solar System Missions
- ☐ Solar System Simulator (*Solar Pizza; The Schoolyard Solar System*)
- ☐ Space Rocks! A Giant Meteorite Board Game (*Space Rocks! A Meteorite Game*)
- ☐ Vegetable Light Curves
- ☐ Where Do We Choose to Live and Why? (*United States at Night*)

- ☐ Other, please specify

Life Science units

- ☐ Body *IF SELECTED, ASK:*

Which *Body* lessons were presented? Select one or more.

- ☐ Brain in Space (*Find Your Way Around Without Visual or Sound Cues; How Quick are Your Reflexes?; Vestibular-Ocular Reflex; Visualizing How the Vestibular System Works*)
- ☐ Space Adaptations (*Bag of Bones; Get a Leg Up; Hole-y-Bones; O2-How Much?; Vomit Comet*)
- ☐ Train Like an Astronaut (*Base Station Walk-Back; Crew Strength Training; Do a Spacewalk!; Jump for the Moon; Mission: Control!*)
- ☐ Other, please specify

- ☐ Food (*Food Preparation for Space; Food Selection; How Much is Waste?; Mold Growth; Planning and Serving Food; Ripening Fruits and Vegetables*)

- ☐ Life Out There? *IF SELECTED, ASK:*

Which *Life Out There* lessons were presented? Select one or more.

- ☐ Astrobiology: Life Here and Out There (*Are Microbes Alive? Could Life Exist in Other Places in the Solar System; Do You Think Aliens Exist?; Do the Mystery Samples Contain Life?; Is it Living; Now What Do You Think About the Possibility of the Life in the Universe; What Does Life Need?; Where Does Life Live?*)
- ☐ Habitable Zones (*Astrobiology in Your Classroom: Life on Earth... and Elsewhere?; Fingerprints of Life; Sun's Habitable Zone*)
- ☐ Search for Life On Other Worlds: Observing and Classifying Life (*Animal Antics; Are Two Eyes Better Than One?; Creature Feature*)
- ☐ Search for Life on Other Worlds: What is Life and What Does it Need to Live?
- ☐ Shapes and Food Chains (*Chain Games; Supporting Structures; Weighty Questions*)
- ☐ Other, please specify

- ☐ Plants *IF SELECTED, ASK:*

Which *Plants* lessons were presented? Select one or more.

- ☐ Have Seed Will Travel
- ☐ How do Plants Know Which Way to Grow? Tropisms (*Space Garden*)

- ☐ Light Effects On Plant Behavior (*Can Photosynthesis Occur on Saturn?; Phototropism: Do Plants Prefer the Blues?; Phototropism: How Little Light Will Bend a Seedling?*)
- ☐ Living Clocks (*Plant Leaf Movement*)
- ☐ Other, please specify

☐ Survival **IF SELECTED, ASK:**

Which *Survival* lessons were presented? Select one or more.

- ☐ Cool Spacesuits (*Cool Suits; Keeping Your Cool*)
- ☐ Field Trip to the Moon (*Ecosystem Investigation; Engineering Investigation; Geology Investigation; Habitation Investigation; Medical Investigation; Navigation Investigation*)
- ☐ Survivor: The Space Environment (*Chain Reaction; Exploration Then and Now – Human Needs; Modeling Radiation-Damaged DNA; Solar Radiation and SPF Levels*)
- ☐ Other, please specify

Physical Science and/or Engineering units

☐ Aeronautics **IF SELECTED, ASK:**

Which *Aeronautics* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Air Foils (*The NASA Why Files: The Case of the Challenging Flight*)
- ☐ Bag Balloons
- ☐ Beginners Guide to Aeronautics (*Aerodynamics of Baseball / Soccer*)
- ☐ Bernoulli and More Bernoulli (*The NASA Why Files: The Case of the Challenging Flight*)
- ☐ Controlling the Plane (*The Straw Plane Experiment 1-4*)
- ☐ Designing Aircraft in 5 Easy Steps: It's a Challenge! (*The Design Center, The Design Laboratory, The Poster Activity*)
- ☐ Fluttering Fun, Point of Balance (*The NASA Why Files: The Case of the Challenging Flight*)
- ☐ Four Forces of Flight (*The NASA Why Files: The Case of the Challenging Flight*)
- ☐ Getting off the Ground into the Smart Skies (*LineUp with Math Educator Guide*)
- ☐ Getting the Drop on Flight with the "X" Planes (*Constructing and Testing the Ring Wing Glider, Constructing the X-33*)
- ☐ Jet Propulsion
- ☐ Learning the "Wright" Way to Fly! (*Engineering the Sled Kite, NASA Connect: the "Wright" Math*)

☐ Other, please specify

☐ Challenges **IF SELECTED, ASK:**

Which *Challenges* lessons were presented? Select one or more.

- ☐ Electrodynamic Propulsion
- ☐ On Target Challenge
- ☐ Spacecraft Structures
- ☐ Thermal Protection Systems Challenge
- ☐ Touchdown Challenge
- ☐ Other, please specify

☐ Design Process **IF SELECTED, ASK:**

Which *Design Process* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Build a Solar Oven
- ☐ Lunar Plant Growth Chamber
- ☐ Mars Pathfinder Egg Drop Challenge
- ☐ Project X51 Water Rocket Construction (Rocket Activity Project X-51)
- ☐ Spaghetti Anyone? Building with Pasta (NASA "Why?" Files: *The Case of the "Wright Invention"*)
- ☐ Space Place: Make a Balloon Powered Nanorover (*Build a Nanorover; Be Glad You're Not a Cyclops1; Marsdial: Show Me the Way to Go Home*)
- ☐ Student Glovebox: Droplet Investigation of Liquids
- ☐ Water Filtration System
- ☐ Other, please specify

☐ Exploration **IF SELECTED, ASK:**

Which *Exploration* lessons were presented? Select one or more.

- ☐ Crew Exploration Unit
- ☐ Landing a Rover
- ☐ Moon Rovers
- ☐ NASA Simulations
- ☐ Other, please specify

☐ Forces and Motion **IF SELECTED, ASK:**

Which *Force and Motion* lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Danger: Space Debris (*Aerogel-Io: Technology for Studying Comets, Collision; Potato Astronaut – Exploration Brief: Micrometeoroids and Space Debris*)
- ☐ Inertia and Friction (*Newton Car; Racing Against Friction*)

- ☐ Thrust, Air Pressure, Rockets and Newton's Third Law (*Balloon Staging; Pop Can Hero Engine; Rocket Pinwheel; Rocket Races*)
- ☐ What Goes Up... Must Come Down: Projectile Flight (*3...2...1 Puff!; Accelerometers; Foam Rocket; Pop! Rockets*)
- ☐ Other, please specify

☐ Gravity **IF SELECTED, ASK:**

Which Gravity lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Fighting Gravity – A Matter of Balance (*Fluttering Fun; Point of Balance; Heavy Lifting*)
- ☐ Gravity Games
- ☐ Heavy Duty Topics (*Falling Weight Apparatus; Inertial Balance; Mass vs Weight; Pendulums*)
- ☐ Other, please specify

☐ Properties of Matter **IF SELECTED, ASK:**

Which Properties of Matter lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Composite Materials (*Museum in a Box*)
- ☐ Nature of Salt
- ☐ Reaction Rates (*Antacid Tablet Race*)
- ☐ Space Weather (*Build a Magentometer; Radiation Exposure on Earth; Space Weather Action Center; What's Hidden Inside?*)
- ☐ States of Matter (*3-2-1 Pop!, Heat as the Agent of Change: Atoms and Molecules in Motion; Liquid Rainbow; Potato Float*)
- ☐ Student Glovebox
- ☐ Other, please specify

☐ Robotics **IF SELECTED, ASK:**

Which Robotics lessons were presented? Select one or more.

- ☐ Heavy Lifter
- ☐ Robotics: Hands Down!
- ☐ Using Robotics
- ☐ Other, please specify

☐ Rocketry **IF SELECTED, ASK:**

Which Rocketry lessons were presented? *Specific activities associated with each lesson are italicized.* Select one or more.

- ☐ Heavy Lifting Air Engines (*Air Engines; Heavy Lifting; Vectoring*)
- ☐ Nose Cone Aerodynamics (*Adventures in Rocket Science*)

- ☐ Ride the Wind: Compressed Air Rocketry (*High-Powered Paper Rockets; Pop! Rockets*)
- ☐ Other, please specify

- ☐ Waves and Optics **IF SELECTED, ASK:**

Which *Waves and Optics* lessons were presented? Select one or more.

- ☐ Making Use of the Electromagnetic Spectrum (*Amazing Rays, Investigating Ice Worlds*)
- ☐ Manipulating Waves (*Exploring Diffraction with a Spectroscope/Constructing a Spectroscope; Simple Magnifiers; Space Operations Learning Center*)
- ☐ Wave Measurements (*Intro to the Electromagnetic Spectrum; Red Shift, Blue Shift; Simple Spectroscope; Wavelength and Energy; What's the Frequency, Roy G Biv?*)
- ☐ Other, please specify

Please provide any additional NASA content and/or activities that you used during this session.

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C. Participants

Total number of participants who attended the PD session	_____
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What types of participants attended this PD session? Check all that apply.

- ☐ K-12 classroom teachers
- ☐ K-12 informal educators (e.g., community learning center educator)
- ☐ University faculty or staff
- ☐ Pre-service teachers
- ☐ Americorps volunteer
- ☐ Other, please specify: _____

Programming note: If K-12 classroom teacher is checked AND another category, show follow up question.

What percent of the participants were K-12 classroom teachers (e.g., 50)	_____ percent
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D. NASA Support Tools

NASA educational materials used during this PD session (choose all that apply):	
☐	Video
☐	Activity Demonstration
☐	Toolkit, NASA websites
☐	Online learning resource
☐	NASA equipment
☐	Exhibits
☐	Learning games
☐	Other, please specify: _____

Please provide any additional information you would like to share with us about this professional development session:

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