

NASA STEM Spanish Immersion Educator Professional Development Workshop Series



NASA Langley Research Center

NASA STEM Spanish Immersion Professional Development for Elementary Educators

Developed by NASA Education Specialists:

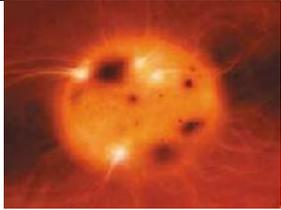
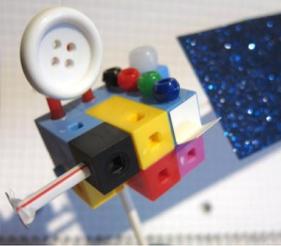
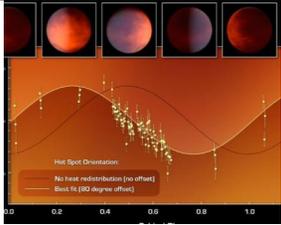
Marilé Colón Robles and Karen Ricks

Starting in July 2013 Aerospace Education Services Project, AESP, and NASA Digital Learning Network™, DLN, presents a series of professional development workshops tailored to Elementary Spanish Immersion Educators. These free workshops are designed to enhance the curriculum activities with NASA inspired lessons. All professional development workshops provide participants interested in receiving continuing education units applicable towards license renewal mNASust register and complete the 4 workshop series to accumulate 5 workshop hours.

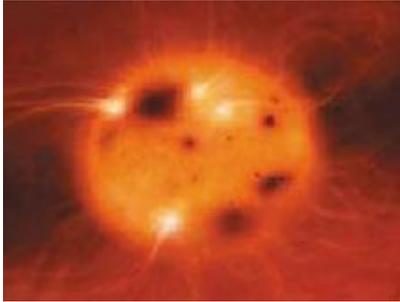
Workshop sessions are presented by highly acclaimed, certified education specialists through video conferencing. NASA subject matter experts equip your teachers with the content needed to improve student learning. Courses run twice a week for 2 weeks, 75 minutes during each session, covering a range of topics in science, technology, engineering and mathematics.

Registration is required! Please use the following link:

https://docs.google.com/forms/d/1EXcQJN-ZRYZAitPJo58Va5MWyh7J4_t6Gu6faEESVng/viewform

2:15 PM – 3:30 PM EDT		
	Science – Our Magnificent Sun Weathering the Seasons	July 15, 2013
	Technology – Gauging the Weather	July 17, 2013
	Engineering – Designing Observations	July 23, 2013
	Math – Tally the Sun's Energy	July 25, 2013

2013 NASA STEM Spanish Immersion Workshops



Science – Our Magnificent Sun Weathering the Seasons

Description:

Discover highly interactive activities in which students learn about different features of the Sun and its importance as our very own star. This session will also focus on seasons and ways to use a kinesthetic approach to teach why we have seasons. Teachers will also learn how to participate of NASA's Exploration Design Challenge where students learn about radiation and its effects on human space travel by analyzing different materials that simulate radiation shielding for the Orion Multipurpose Crew Vehicle. All students that participate in this challenge will have their names flown on board of the Exploration Flight Test-1 of Orion as honorary crew members!

NATIONAL SCIENCE CONTENT STANDARDS K-4 & 5

SCIENCE AS INQUIRY STANDARDS A

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

EARTH AND SPACE SCIENCE STANDARDS D

- The sun, moon, stars, clouds, birds, and airplanes all have properties and locations
- The sun provides the light and heat necessary to maintain the temperature of the Earth
- Objects in the sky have patterns of movement
- The sun is the major source of energy for phenomena on the earth's surface, such as growth of plants, winds, ocean currents, and the water cycle. (5th grade)
- Seasons result from variations in the amount of the sun's energy hitting the surface, due to the tilt of the earth's rotation on its axis and the length of the day.

PHYSICAL SCIENCE: CONTENT STANDARDS B

- The position and motion of objects can be described by locating it relative to another object or background.
- The motion of an object can be described by its position, direction of motion, and speed (5th grade)
- The sun is a major source of energy for changes on the earth's surface (5th grade)



Technology – Gauging the Weather

Description:

Create different weather instruments to keep an eye on the weather with very simple every day materials. Students become meteorologist and measure wind speeds with a simple anemometer, tell wind direction by creating a wind vane and see how much precipitation accumulates in your area by creating a rain and a snow gauge.

Students will be able to take their own measurements and observe the daily variations in weather.

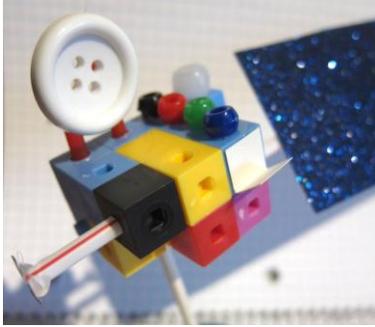
NATIONAL EDUCATIONAL TECHNOLOGY STANDARDS

- Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (Grades PK-2)
- Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem-solving, self-directed learning, and extended learning activities. (Grades 3-5)

NATIONAL SCIENCE CONTENT STANDARDS K-4 & 5

SCIENCE AND TECHNOLOGY

- Tools help scientists make better observations, measurements, and equipment for investigations
- Objects can be categorized into two groups, natural and designed
- Technological designs have constraints (5th grade)



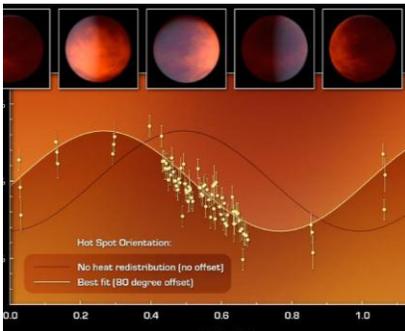
Engineering – Designing Observations

Description:

Scientists use satellites to study the Earth and the weather. Learn about satellites, how NASA uses satellites to study the Earth and discover the unique instruments used to monitor our changing weather and climate. Use everyday materials and design a satellite to monitor the weather. Add different instruments to look at different aspects of the weather through different building materials. Once the satellite is built and ready you will be able to launch it into orbit!

NATIONAL ENGINEERING STANDARDS

- An ability to design a system, component or component to meet desired needs
- An ability to identify, formulate and solve engineering problems
- An ability to communicate effectively



Math – Tally the Sun's Energy

Description:

Distances can be measured horizontally as well as vertically. Use the Earth's atmosphere and the objects we find within it to show students vertical distance. Use hands-on activities to talk about distances and have students decide where different types of clouds, satellites, airplanes and other objects are found in our atmosphere.

Engage students in basic line graph analysis using real NASA data and looking at the Sun's energy over your area. Review seasons and how the Sun affects the temperatures we feel.

Math is found all over and we will use this opportunity to review the past activities and see Math in Action!

NATIONAL MATH STANDARDS (NCTM)

Data Analysis and Probability

- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Measurement Standard

- Understand measurable attributes of objects and the units, systems and processes of measurement
- Apply appropriate techniques, tools, and formulas to determine measurements