Science by Storytelling:
Eugene and Sissy and the Curious Egg

Activity Extension: K-W-L
Grades K-4 & 5-8

NSES Standards that support this story:
Grades K-4: Content Standard D—As a result of their activities in grades K-4, all students should develop an understanding of

- Objects in the sky
- Changes in earth and sky

Grades 5-8: Content Standard D—As a result of their activities in grades 5-8, all students should develop an understanding of

- Earth in the solar system

Suggested Activities to Accompany the Story

A. Find out what they Know

Grades K - 4

Make a class list asking the students to guess which words in the story:

1. Represent real objects or places on Earth.
2. Represent real objects or places in the Solar System.
3. Represent fictitious objects or places in the solar system.

Discuss with your class why they think some of the objects or places are fiction, and why they aren't real.

Grades 5 – 8

Make a class list asking the students to guess which words in the story:

1. Represent real objects or places on Earth.
2. Represent real objects in the Solar System.
3. Represent fictitious objects or places in our solar system.
4. Represent science concepts or processes that scientists theorize are true.

In an open class discussion, ask students to share out real and fictitious objects, noting any science concepts or processes that they theorize may be true.

B. Teach them something they Want to learn

After you determine what your students know, choose from the class list of Earth and solar system facts and theories and share new information with them. You may want to refer to the leader version of the story, which has some specific factual information identified as callout boxes in the margins.

Review the fact sheets on the Genesis Web site, where mission information will help your students understand why NASA chose fund this mission, and why it traveled ~20million miles toward the Sun and back in order to collect ~0.4 milligrams of sample material. http://genesismission.jpl.nasa.gov/educate/kitchen/resource/factsheets/index.html

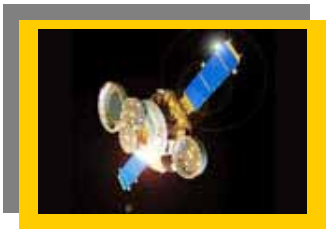
C. What did they Learn?* Grades K - 8

1. Conduct a class discussion on what observations and/or questions your class now has about the Sun and our solar system. Note all observations and questions on the board.
2. Working in small groups, ask students to choose an observation or question and develop their own theory about why they believe the selected item is true or false.

*You can visit the Genesis mission Web site to learn more about the sample return mission and our solar system in general. http://genesismission.jpl.nasa.gov/

D. Let your imagination roam!

1. After hearing the story, ask students to create their own:
    a. Story that leads up to *Eugene and Sissy and the Curious Egg* —a prequel.
    b. That follows behind *Eugene and Sissy and the Curious Egg* —an ending/sequel.
    c. Song or rap that follows the story line.
    d. Poem based upon one or more characters in the story.
    e. Wall mural depicting the storyline.
    f. Model of the solar system out of clay, or another type of medium of your students' choice.
    g. Illustrations to accompany the story.
2. Encourage your class to act out the story.



Genesis Notes:[1]
The Genesis spacecraft journeyed sunward, outside the Earth's magnetic field where conditions resemble those present at the time the planets formed. While in orbit from 2001 - 2004, the spacecraft bathed in solar wind that is flung out from the Sun. Solar wind particles are similar to material from which the planets formed, and are atoms, ions, or high-energy particles. The solar wind samples are stored and cataloged under ultra-pure clean room conditions at NASA's Johnson Space Center in Houston, TX, and are under allocation to the mission science team, and to the world's scientific community for study.

Mission Objectives : 1) To obtain precise measure of solar isotopic abundances. Genesis will measure isotopic compositions of oxygen, nitrogen, and noble gases. These data will enable scientists to better understand the isotopic variations in meteorites, comets, lunar samples, and planetary atmospheres. 2) To obtain greatly improved measures of solar elemental abundances. 3) To provide a reservoir of solar matter for 21st century science research, eliminating the need for future solar wind sample return missions.

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[1] Source: Genesis mission Web site: http://genesismission.jpl.nasa.gov/