



# Elementary GLOBE: K-4

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## Teacher Notes & Glossary

### Storybooks

#### Do You Know That Clouds Have Names

Cloud Fun

Cloudscape

To Spread or Not to Spread

#### Discoveries at Willow Creek

Measure Up

Magnify That

Water Wonders

#### The Scoop on Soils

Getting to Know Soil

Soil Treasure Hunt

We All Need Soil!

### Learning Activities with Student Pages

#### Earth As A System

##### All About Earth

Earth System in a Bottle

We're All Connected

Earth System Play

#### Mystery of the Missing Hummingbirds

All Year Long

The Colors of the Seasons

Honing in on Hummingbirds

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## Inquiry Process Skills

Observing

Sequencing

Patterning

Counting

Measuring

Questioning

Inferring

Comparing

Classifying

Defining

Reporting

Communicating

Hypothesizing

Predicting

Recording



## Inquiry-based Science and Literacy Skill Comparison

- Note details
- Compare and contrast
- Predict
- Sequence events
- Link cause and effect
- Distinguish fact from opinions
- Link words with precise meanings
- Make inferences
- Draw conclusions

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## GLOBE Storybook Narrative Correlations to Essential Features of Inquiry

<b>Essential Features of Classroom Inquiry</b> (National Research Council's Inquiry and the National Science Education Standards)				
<b>Questions</b>	<b>Evidence</b>	<b>Explanations</b>	<b>Connect</b>	<b>Communicate</b>
Learner engages in scientifically oriented questions	Learner gives priority to evidence in responding to questions	Learner formulates explanations from evidence	Learner connects explanations to scientific knowledge	Learner communicates and justifies their explanations
The GLOBE Kids ask "Where did the hummingbirds go?" after observing the birds' disappearance in their garden.	Simon makes a chart to record their observations of the soil from the three different holes that Scoop had dug.	The GLOBE Kids look at the wall charts to observations and explain that the hummingbirds could stay there only when they had enough food and shelter.	Scientist Hannah helps the GLOBE Kids connect their observations to the snowmelt feeding the creek.	The GLOBE kids each justify why their part of the Earth system is most important, and then how each is connected in the Earth System, during the classroom play.

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## Classroom Implementation

- Correlate to national standards: science, math, geography
- Integrate one or all storybooks
- Create journals to use throughout the year
- Build a comparison to earlier year's (past years') work
- Read storybooks aloud or independent reading
- Encourage reading, writing & communication skills with meaningful content
- Model behavior by GLOBE kids for what students will do

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## Classroom Implementation

- Introduce or extend with learning activities
- Use learning activities as stand alone lessons
- Develop reading, listening, speaking and writing vocabulary
- Foster collaborative learning
- Give content and structure to science
- Enable research and observation skills
- Encourage text to self, text to text and text to world connections
- Provide inquiry-based opportunities

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## K-4 GLOBE Connections to 5-12 GLOBE

- pose questions
- make observations
- collect data
- come to conclusions
- read, write, and orally communicate
- explore the natural world



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## For Students

GLOBE provides the opportunity to learn by:

- Taking scientifically valid measurements in atmosphere, hydrology, soils, and land cover/phenology
- Reporting data through the Internet and contributing data for scientists' research
- Publishing research projects based on GLOBE data and protocols
- Using a free access Web site
- Creating maps and graphs to analyze data sets
- Expanding the pipeline of potential future scientists and researchers for industry, academia, and government
- Collaborating with scientists and other GLOBE students around the world



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GLOBE provides assistance through:

- Current real world issues for relevant education in the classroom
- Format to follow for year-long instruction
- Professional development workshops and online materials
- Teacher guide, "how-to" videos, and other support materials
- Support from Help Desk, scientists, and partners
- Contact with other teachers, students, and scientists worldwide



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What would you like to see next?