GLOBE offers five K-4 books in the Elementary GLOBE suite
Storybooks include both images and text suitable for early readers and beginning scientific vocabulary.
Inquiry Process Skills

Observing  Sequencing  Patterning  Counting
Questioning  Inferring  Comparing  Measuring
Defining  Hypothesizing  Reporting  Classifying
Predicting  Communicating  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
### Essential Features of Classroom Inquiry
(National Research Council’s Inquiry and the National Science Education Standards)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Evidence</th>
<th>Explanations</th>
<th>Connect</th>
<th>Communicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner engages in scientifically oriented questions</td>
<td>Learner gives priority to evidence in responding to questions</td>
<td>Learner formulates explanations from evidence</td>
<td>Learner connects explanations to scientific knowledge</td>
<td>Learner communicates and justifies their explanations</td>
</tr>
<tr>
<td>The GLOBE Kids ask “Where did the hummingbirds go?” after observing the</td>
<td>Simon makes a chart to record their observations of the soil form the</td>
<td>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.</td>
<td>Scientist Hannah helps the GLOBE Kids connect their observations to the snowmelt feeding the creek.</td>
<td>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.</td>
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<td>birds’ disappearance in their garden.</td>
<td>three different holes that Scoop had dug.</td>
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**GLOBE Storybook Narrative Correlations to Essential Features of Inquiry**

- 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 form 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.
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
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
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
GLOBE provides students 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
Each storybook set also includes learning activities and a Teacher’s Implementation Guide.
Students learn Earth system science through engagement with these storybooks.

Figure 1: Earth System.