



## The Young Dino Experts



Patricia Lynch, a second grade teacher at the Shelter Rock School in Manhasset, New York, developed a dinosaur curriculum for her students. After some training with staff in the Museum's Education Department, the class spent one day working as "Explainers," helping visitors to understand the exhibits in the Museum's fossil halls.



*Interviewee, Mark Norell, Chairman and Associate Curator in the Museum's Department of Vertebrate Paleontology and a co-leader of the Gobi expedition, fields questions.*

In June, seven students from the class interviewed members of the Museum's Gobi Desert expedition team just before they left for Mongolia. On July 15, as part of [Discovery Channel Online's coverage of the expedition](#), these same students were able to ask follow-up questions of the scientists out in the field during a live, satellite phone connection to the Gobi.

## Expertise Unit Overview

Week	Monday	Tuesday	Wednesday	Thursday	Friday
<b>1</b>	<b>Establish and Build Upon Prior Knowledge</b>				
Activities	<p>Present Unit Overview</p> <p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Expert</li> <li>• Research</li> </ul> <p>Distribute "Checklist for Student Journal Research" and explain its usage.</p>	<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Museums</li> <li>• Teaching volunteers</li> </ul>		<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Natural history museums</li> </ul> <p>Read Aloud</p> <ul style="list-style-type: none"> <li>• <u>Dinosaurs, Dragons and Diamonds</u></li> </ul> <p>Model concept mapping and summarization of the read-aloud book.</p>	
Standards	ELA 1 – 1A, 2D	ELA 1 – 1A, 2D		ELA 1 – 1A, 2D	
<b>2</b>	<b>Establish and Build Upon Prior Knowledge</b>				
Activities	<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Reptiles</li> <li>• Dinosaurs</li> </ul>	<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Paleontology</li> <li>• Fossils</li> </ul>	<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Evolution</li> <li>• Extinction</li> </ul>	<p>Establish Prior Knowledge</p> <ul style="list-style-type: none"> <li>• Classification</li> <li>• Cladistics</li> </ul>	
Standards	ELA 1 – 1A, 2D	ELA 1 – 1A, 2D	ELA 1 – 1A, 2D	ELA 1 – 1A, 2D	
<b>3</b>	<b>Teach Research and Note Taking Skills</b>				
Activities	<p>Library Media Center</p> <p>Introduce places to find information in the library:</p> <ul style="list-style-type: none"> <li>• Non-fiction section</li> <li>• Computer stations</li> <li>• Reference section</li> <li>• Vertical file</li> <li>• Newspaper and magazine section</li> </ul> <p>Mini-lessons</p> <ul style="list-style-type: none"> <li>• Card catalog</li> <li>• Encyclopedia</li> <li>• Guide words</li> </ul>	<p>Library Media Center</p> <p>Teach and provide guided practice using:</p> <ul style="list-style-type: none"> <li>• Card catalog</li> <li>• Computer</li> <li>• Dewey decimal system - call numbers</li> <li>• Locating books on the shelves</li> </ul>	<p>Library Media Center</p> <p>Teach and provide guided practice using:</p> <ul style="list-style-type: none"> <li>• Index</li> <li>• Glossary</li> <li>• Table of contents</li> </ul>		<p>Library Media Center</p> <p>Review lesson:</p> <ul style="list-style-type: none"> <li>• Card catalog</li> <li>• Card catalog computer</li> <li>• Call numbers</li> <li>• Index</li> </ul>
Assessment	Journal entry with reflection 1/27/97, p. 14				
Standards	ELA 1 – 1B, 1D	ELA 1 – 1B, 1D MST2 – inf. sys. 1C	ELA 1 – 1B, 1D		ELA 1 – 1B

*I am embedding student journal entries throughout this prototype to give the reader a sense of how this process showed up for the students at each phase. Here I've selected some entries from the research and note taking weeks. These journals were created to document student progress towards becoming experts. Therefore, students were not required to revise and edit, as their work was not intended for publication.*

Jan. 27, 1997

Today we learned there are five places to do research. Here they are - inciklapetaea, non-fiction books, computer, vertical file and newspaper. We also learned to tipto throw the pages and follow the guide words.

James

*Pat Devaney, our library-media specialist who taught the students library and research skills, suggested that students "tip-toe" through the corners of the encyclopedia when they were using guide words.*

Feb. 3, 1997

Today when we went to the library I learned how to do research on the computer in the library. I also learned that the World book encyclopedia is on cd-rom. So if I have to do research I could look in the world book encyclopedia book, or the world book encyclopedia cd-rom. There was another computer program called golden book program. Both of these programs have something called captions with a picture and some word with it. I love this program it is going great for me. I like it.

Jamie

*The following entries are related to the lesson on paraphrasing. Here's Allison's...*

Feb. 6, 1997

Today we went to the library and did research. We were taking words from the text and made our own notes.

Allison

*and James'...*

Feb. 6, 1997

Today we learned how to copy a book in our own words.

James

*When Kara began conducting her independent research, she wrote in her journal:*

April 8, 1997

Today I went on the Golden book computer. My partner was Shannon. We took notes on Dinosaurs and Meat-eating Dinosaurs. We have a Index box and I have ten cards in it. I rote a lot about satapus and I got two cards on Dinosaurs. The prosses is going great for me! and I hope the class is doing good too! exspesholey Tommy! I'm having a great time doing this!

*Allison goes to the vertical file one day as she's conducting her independent research.*

April 9, 1997

Today I went to the vertacle file. I also did my poster It was Stegosaurus I wrote about Stegosaurus on my Poster. I took out one of the vertil file papers home. This Is going great I LOVE THIS PROJJECT!

*At the same time, students were designing their dinosaur museum. Here Megan begins the process...*

April 7, 1997

This week wear curators and made a museum. We had partners. My partner was Jamie. We decidid to do ornithischian and saurischian for our museum. We took index cards and wrote the name of the dinosaur and put facts. Then we put a plastic modile of the dinosaur on the index card. Then we put the sudorder of ornithischian and saurischian.  
p.s. I learned it taks lots of pation to make a museum.

*And on April 10<sup>th</sup>, Ryan continues...*

I got information on Deinonychus. I made two suborders on my museum plan, Therapods and Sauropods. I learned to make two suborders. This process is going well for me.

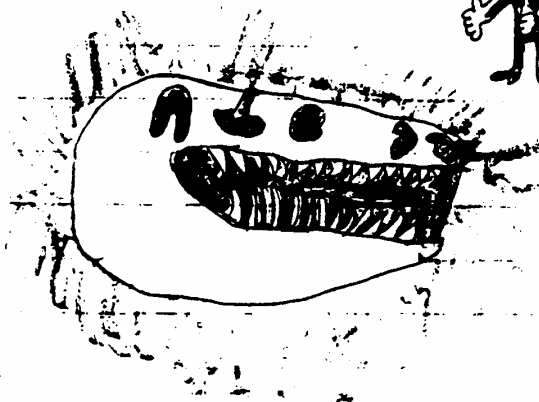
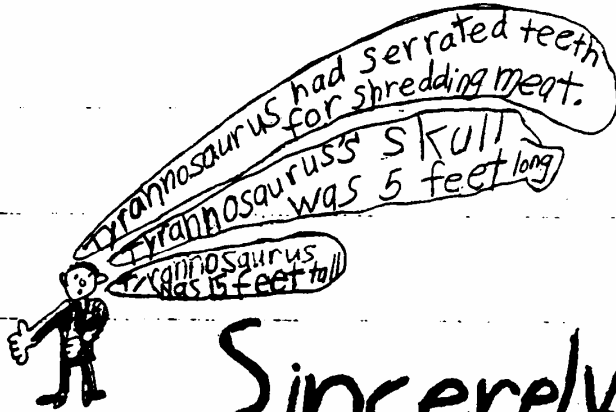
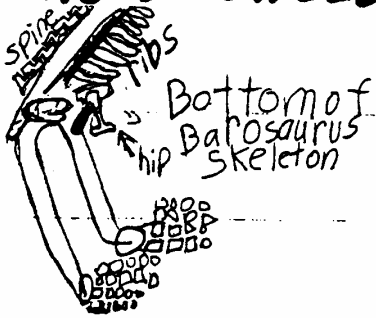
Sample Student Thank You Letters

June 4, 1997

Dear Craig,

Thank you for giving us the opportunity to be a teaching volunteer. I enjoyed the dinosaur dig. I had a good time teaching the audience. I think my group and I were great.

The people who came in my family were my mom, my grandma Pearl, my other grandma and my one and only grandpa. The fossils and especially the Teddy Roosevelt Rotunda were awesome!



Sincerely,

Brian Sternemann

## Rubric for the Design of Exhibits for the Dinosaur Halls of a Natural History Museum

	EXPERT	ADVANCED INTERMEDIATE	INTERMEDIATE	BEGINNER	NEEDS COACHING
<b>EXHIBIT'S REFLECTION OF THE SCIENTIFIC RESEARCH AND THE SCIENTIFIC METHOD USED TO CONDUCT THE RESEARCH</b>	Exhibition reflects current scientific research and provides insights into the scientific method used to conduct the research.	Exhibition reflects current scientific research. It does not reflect the scientific method used to conduct the research.	Design reflects significant amount of student research. No insight into the scientific method used to conduct the research.	Some evidence of student research. No insight into the scientific method used to conduct the research.	Exhibit appears arbitrary, random and capricious. No evidence of research or the scientific method used to conduct the research.
<b>ORGANIZING PRINCIPLE</b>	The organizing principle is consistent, abstract, challenging, current, and complex. Exhibition may be concept-oriented and not just a collection of objects.	The organizing principle reflects key current scientific concepts in the field and is consistent throughout the exhibit.	Clear understanding of classification. Sorting based upon student research and readily observable traits.	Although some sorting is apparent, the basis for classification is inconsistent and variable. Some exhibits based upon shared similarities and differences but may be simplistic and based upon readily observable traits.	Specimens randomly placed into groups. Design does not reflect an understanding of classification-sorting not based upon shared similarities or differences.
<b>QUALITY OF DATA</b>	Design based upon accurate, challenging, relevant, up-to-date research. In-depth, highly detailed material. Includes the great unanswered questions and controversies within the field. Possible innovative interpretations of research. Is interactive and involves the visitor in the learning.	Design is based upon accurate, relevant and up-to-date material. Detailed material. Includes present unanswered questions and controversies in the field. Contains interactive learning activities for the museum visitor.	Design based upon relevant, up-to-date scientific information. Basic facts, not detailed. Few, if any, factual errors.	Design may have some irrelevant, inaccurate or out-of-date material. Sketchy.	Design reflects irrelevant, inaccurate or out-of-date material.
<b>QUANTITY OF DATA</b>	An extensive amount of data.	A large amount of data.	A sufficient amount of data.	A small amount of data.	An insufficient amount of data.
<b>PRESENCE OF DISTINCTIONS</b>	Distinctions are very clearly drawn and elucidated among factual, controversial, and theoretical material.	Distinctions are drawn among factual, opinionated, controversial, and theoretical material.	Design primarily factually based. If opinions are offered, they are distinguished as such.	Opinions and facts are presented and not distinguished.	Erroneous material is presented as accurate. No distinction between factual and erroneous material.
<b>SENSE OF AUDIENCE AND PURPOSE</b>	Very clear sense of purpose and appeal to a wide range of visitors, from the general public to the serious researcher. Purpose primarily educational and somewhat entertaining but may also be designed to challenge beliefs and/or stimulate inquiry.	Purpose primarily educational, and appeal to regular and novice museum visitors	Purpose may be to educate and / or entertain novice museum visitors.	Purpose of exhibition appears variable. Intent uncertain at times. Little sense of audience.	Museum visitor left wondering what the exhibit was trying to accomplish. Audience left with a sense that no intention or thought was directed towards their museum experience. No apparent sense of audience.
<b>COLLABORATION</b>	Exhibition's design reflects extensive collaboration among experts from several fields of knowledge including curatorial paleontologists, preparators, lead scientists and museum staff, as well as outside expertise such as graphic artists and educational psychologist as well.	Exhibition may primarily be the result of collaboration with museum staff such as curatorial paleontologists, and preparators.	Exhibition is the result of a researcher/researchers' vision with occasional input from others.	Exhibit the result of one person's efforts / thinking.	Exhibit appears thoughtless and careless and reflects no collaboration.