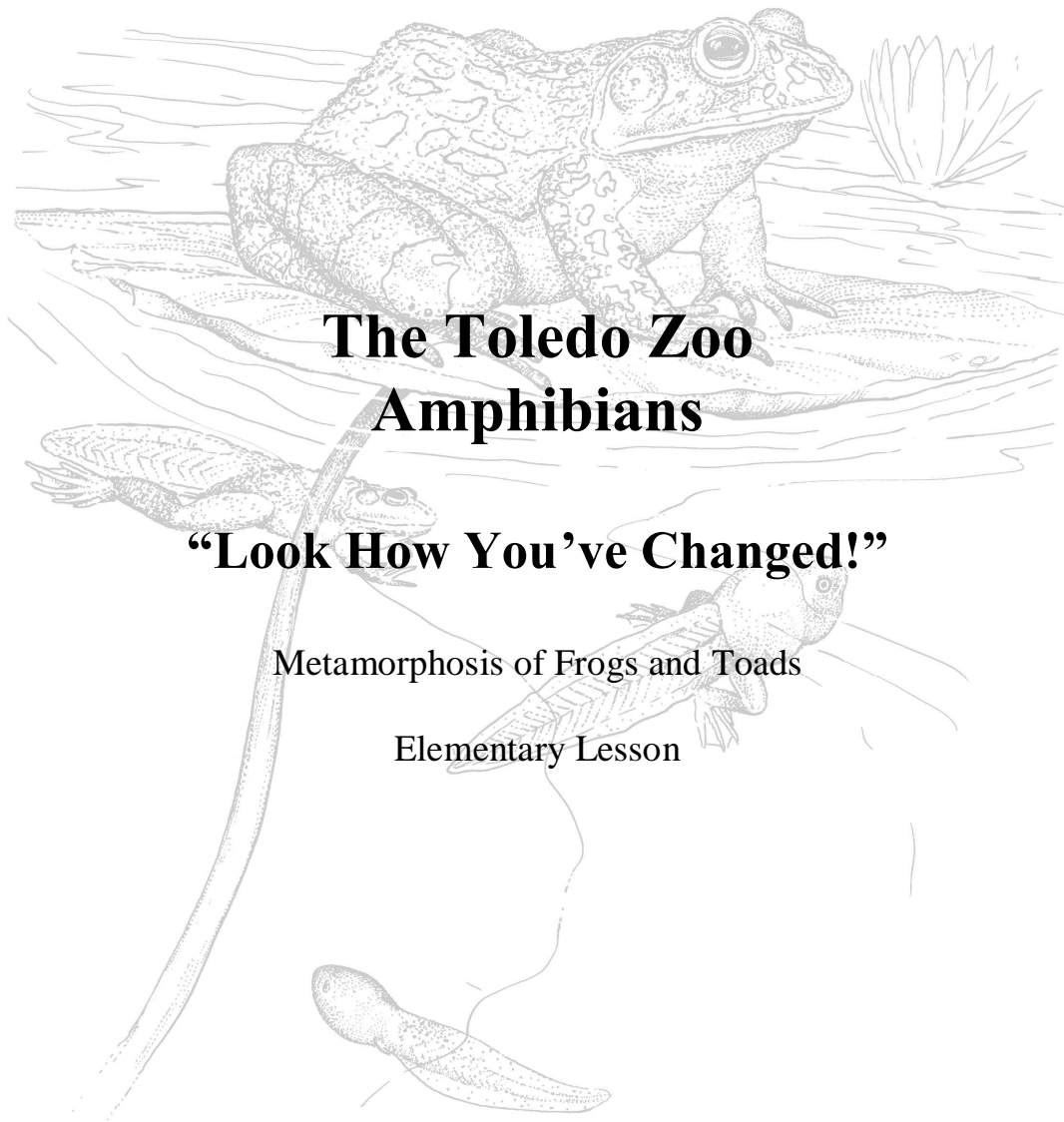




TOLEDO

ZOO®



The Toledo Zoo Amphibians

“Look How You’ve Changed!”

Metamorphosis of Frogs and Toads

Elementary Lesson

Learning Strategies

Background Knowledge

Quickwriting with Knowledge Rating Scale

Vocabulary

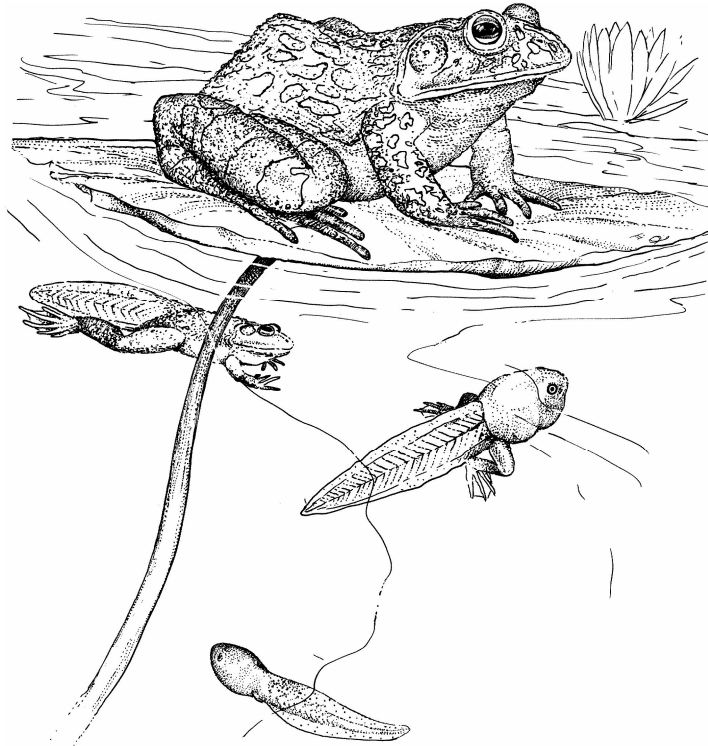
List Group Label

Comprehension

Sequence Frame

Application/Extension

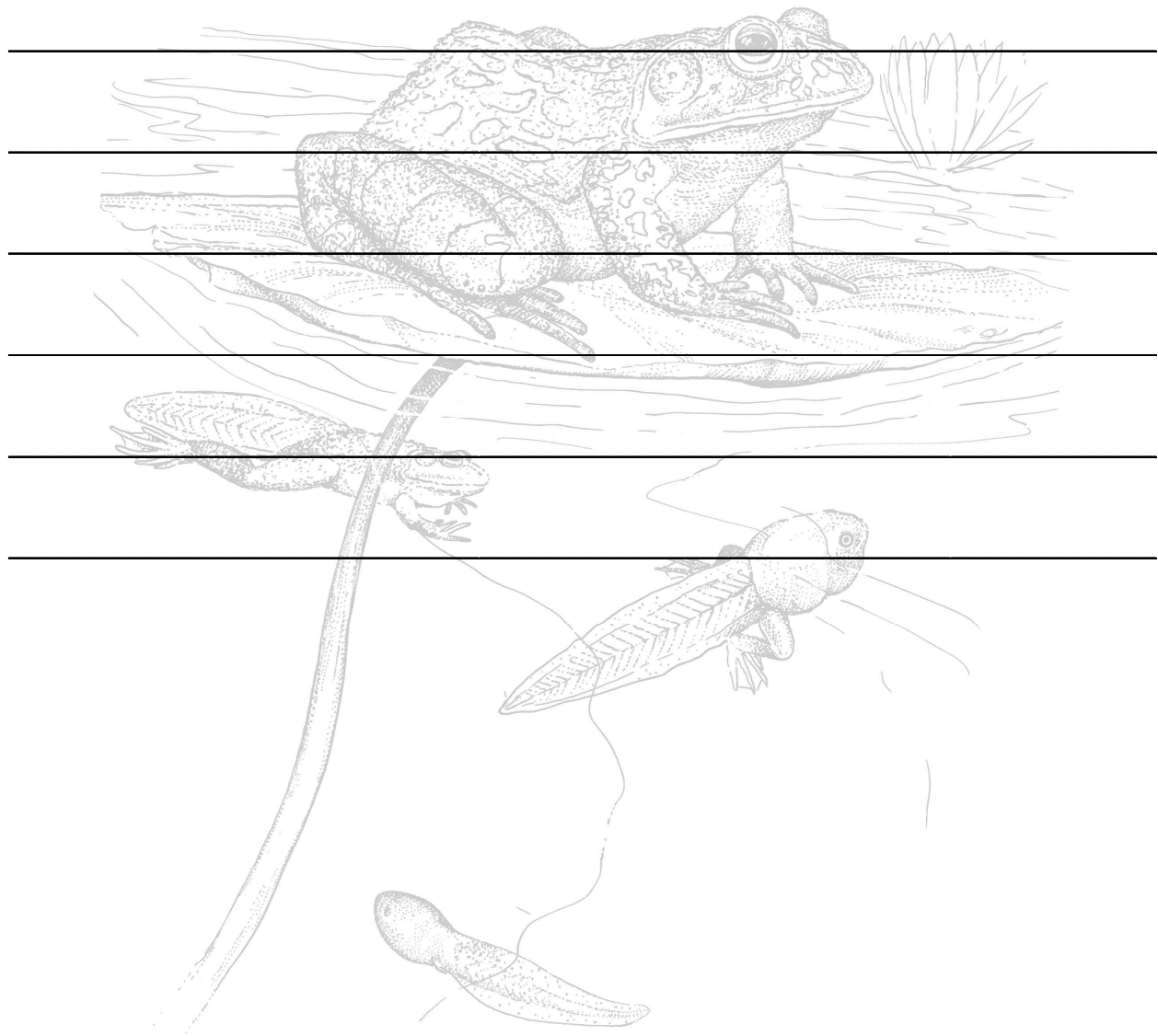
Journal



Quickwriting with Knowledge Rating Scale

Teacher Directions: Before your Zoo visit, ask students to brainstorm and write down anything they know about the words or topics on the Knowledge Rating Scale. Then have students complete the Knowledge Rating Scale for each word or topic. You can put the Knowledge Rating Scale on an overhead and work through it with your students.

Quickwriting:

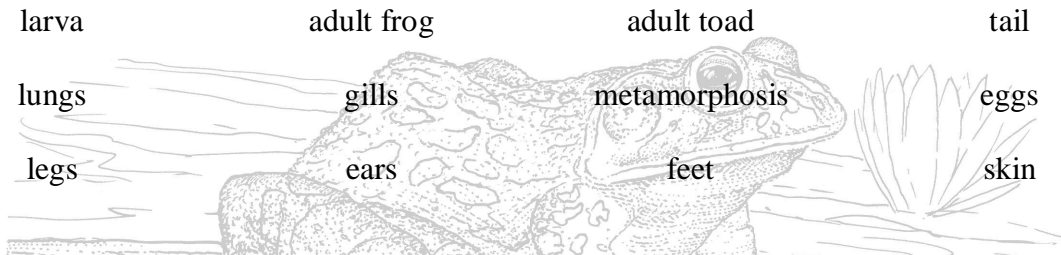


Knowledge Rating Scale

	Have no Idea	Have Seen	Can Define	Can Use in a Sentence
frog				
toad				
larva				
lungs				
gills				
amphibian				
metamorphosis				

List Group Label

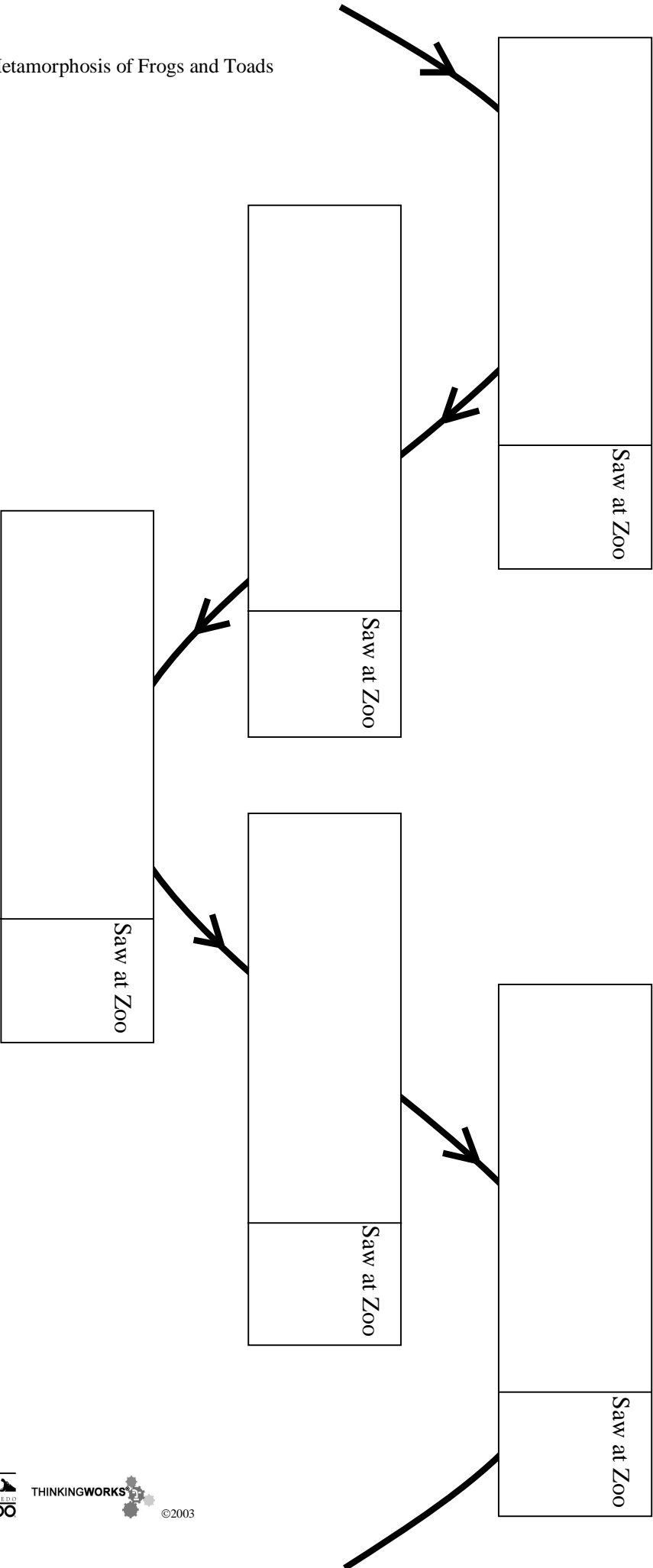
Teacher Directions: Before your Zoo visit, have students discuss the meaning of the words listed and the meaning of the category labels. Then have them group the words into the appropriate categories and explain their reasons for placing a word in one or the other category. You can assist your students by doing this activity on an overhead and by using pictures or illustrations related to the words. When students have finished grouping the words, ask them if they can add more words to each group.



Life Cycle	Body Structures

Sequence Frame

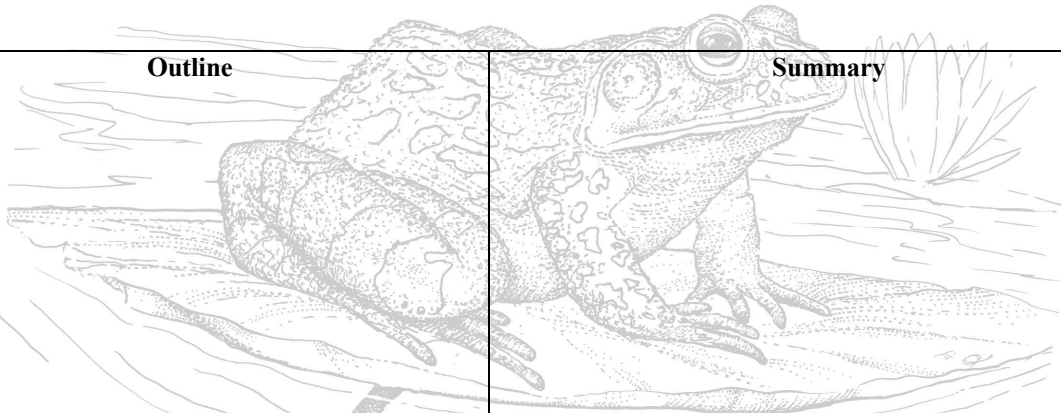
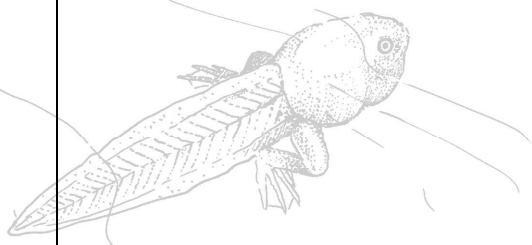
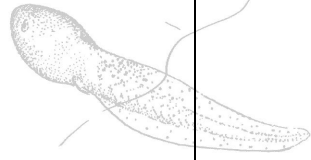
Teacher Directions: Before your Zoo visit, have students complete the Sequence Frame describing the development of a frog. You can use pictures that illustrate the development process and you can work through the frame on an overhead. During the Zoo visit, have students look to see what stages of a frog's development they can observe and check them off on their frame. When you return to the classroom, discuss why all stages may not have been visible at the Zoo. Then have students write a summary of the information on the Sequence Frame using the About Point Writing Response Outline. As an added support, be sure to remind students to use sequence words such as first, then, and next in their summary.



Sequence Frame (continued)

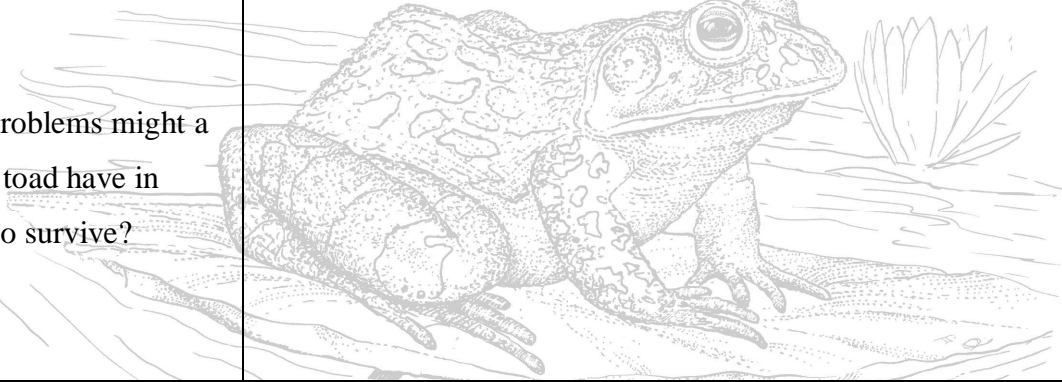


About Point Writing Response Outline and Summary

Teacher Directions: Students can use this outline to organize and write their summary. (1) In the left column, they write down the topic they have selected (the "about"). (2) They write down the point they want to make about their topic (the "point"). (3) They write three or more details to support their "about point." (4) They write a closing sentence that restates the "about point" in different words. They are now ready to write their summary in the right column.

Outline	Summary
About:	
Point:	
Details: 1.	
2.	
3.	
Closing:	

Journal

Teacher Directions: Have your students think about their day at the Zoo using the following questions as a guide. They can discuss the journal questions in class using the cooperative learning strategy, Think Pair Share (e.g., once a question is presented, students pair up in teams to discuss their ideas about it. Each pair then relates its ideas to the class.) In a journal format, students can respond to one or more of the questions, noting their reactions to what they saw at the Zoo and to what they discussed in class.

Question	Journal Response
<p>What problems might a frog or toad have in trying to survive?</p>	
<p>How can people's actions affect the life cycle of frogs or toads?</p>	
<p>Why should we care about whether frogs and toads survive?</p>	

State of Ohio Benchmarks for Language Arts in the Early Grades

ThinkingWorks Lesson

Amphibians	Background Knowledge	Vocabulary	Comprehension	Application/ Extension
	Quickwriting/ Knowledge Rating Scale	List Group Label	Sequence Frame	Journal
Acquisition of Vocabulary				
Use context clues to determine the meaning of new vocabulary.		✓		
Read accurately high-frequency sight words.		✓		
Apply structural analysis skills to build and extend vocabulary and to determine word meaning.		✓		
Know the meaning of specialized vocabulary by applying knowledge of word parts, relationships and meanings.		✓		
Use resources to determine the meanings and pronunciations of unknown words.				
Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies				
Establish a purpose for reading and use a range of reading comprehension strategies to understand literary passages and text.	✓		✓	
Make predictions from text clues and cite specific examples to support predictions.				
Draw conclusions from information in text.			✓	✓
Apply reading skills and strategies to summarize and compare and contrast information in text, between text and across subject areas.			✓	
Demonstrate comprehension by responding to questions (e.g., literal, informal and evaluative).				
Apply and adjust self-monitoring strategies to assess understanding of text.			✓	✓
Informational, Technical and Persuasive Text				
Use text features and structures to organize content, draw conclusions and build text knowledge.			✓	
Ask clarifying questions concerning essential elements of informational text.				
Identify the central ideas and supporting details of informational text.			✓	✓
Use visual aids as sources to gain additional information for text.				
Evaluate two- and three-step directions for proper sequencing and completeness.				
Literary Text				
Compare and contrast plot across literary works.				
Use supporting details to identify and describe main ideas, characters and setting.				
Recognize the defining characteristics and features of different types of literary forms and genres.				
Explain how an author's word choice and use of methods influences the reader.				
Identify the theme of a literary text.				

ThinkingWorks Lesson

Amphibians	Background Knowledge	Vocabulary	Comprehension	Application/ Extension
	Quickwriting/ Knowledge Rating Scale	List Group Label	Sequence Frame	Journal
Writing Process				
Generate ideas for written compositions.				
Develop audience and purpose for self-selected and assigned writing tasks.			✓	✓
Use organizers to clarify ideas for writing assignments.			✓	
Use revision strategies and resources to improve ideas and content, organization, word choice and detail.			✓	✓
Edit to improve sentence fluency, grammar and usage.			✓	✓
Apply tools to judge the quality of writing.				
Publish writing samples for display or sharing with others, using techniques such as electronic resources and graphics.			✓	✓
Writing Applications				
Compose writings that convey a clear message and include well-chosen details.			✓	✓
Write responses to literature that demonstrate an understanding of a literary work.				
Write friendly letters and invitations complete with date, salutation, body, closing and signature.				
Writing Conventions				
Print legibly using appropriate spacing.			✓	✓
Spell grade-appropriate words correctly.			✓	✓
Use conventions of punctuation and capitalization in written work.			✓	✓
Use grammatical structures in written work.			✓	✓
Research				
Generate questions for investigation and gather information from a variety of sources.				
Retell important details and findings.			✓	✓
Communications: Oral and Visual				
Use active listening strategies to identify the main idea and to gain information from oral presentations.				
Connect prior experiences, insights and ideas to those of a speaker.				
Follow multi-step directions.				
Speak clearly and at an appropriate pace and volume.				
Deliver a variety of presentations that include relevant information and a clear sense of purpose.				

**National Science Education Standards
Grades K-4**

ThinkingWorks Lesson

Amphibians	Background Knowledge	Vocabulary	Comprehension	Application/ Extension
	Quickwriting/ Knowledge Rating Scale	List Group Label	Sequence Frame	Journal
Science as Inquiry				
Abilities necessary to do scientific inquiry				
Ask a question about objects, organisms, and events in the environment.				
Plan and conduct a simple investigation.				
Employ simple equipment and tools to gather data and extend the senses.				
Use data to construct a reasonable explanation.				✓
Communicate investigations and explanations.	✓		✓	✓
Understanding about scientific inquiry				
Scientific investigations involve asking and answering a question and comparing the answer with what scientists already know about the world.				
Scientists use different kinds of investigations depending on the questions they are trying to answer. Types of investigations include describing objects, events, and organisms; classifying them, and doing a fair test (experimenting).		✓	✓	✓
Simple instruments, such as magnifiers, thermometers, and rulers, provide more information than scientists obtain using only their senses.				
Scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge). Good explanations are based on evidence from investigations.	✓		✓	✓
Scientists make the results of their investigations public; they describe the investigations in ways that enable others to repeat the investigations.				
Scientists review and ask questions about the results of other scientists' work.				
Life Science				
The characteristics of organisms				
Organisms have basic needs. For example, animals need air, water, and food; plants require air, water, nutrients, and light. Organisms can survive only in environments in which their needs can be met. The world has many different environments, and distinct environments support the life of different types of organisms.	✓	✓	✓	✓
Each plant or animal has different structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.	✓	✓	✓	

ThinkingWorks Lesson

Amphibians	Background Knowledge	Vocabulary	Comprehension	Application/ Extension
	Quickwriting/ Knowledge Rating Scale	List Group Label	Sequence Frame	Journal
Life Science				
The behavior of individual organisms is influenced by internal cues (such as hunger) and by external cues (such as a change in environment). Humans and other organisms have senses that help them detect internal and external cues.	✓			
Life cycles of organisms				
Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying. The details of this life cycle are different for different organisms.	✓	✓	✓	✓
Plants and animals closely resemble their parents.			✓	
Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interaction with the environment. Inherited characteristics included the color of flowers and the number of limbs of an animal. Other features, such as the ability to ride a bicycle, are learned through interactions with the environment and cannot be passed on to the next generation.				
Organisms and environments				
All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.				
An organism's patterns of behavior are related to the nature of that organism's environment, including the kinds and numbers of other organisms present, the availability of food and resources, and the physical characteristics of the environment. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations.				✓
All organisms cause changes in the environment where they live. Some of these changes are detrimental to the organisms or other organisms, whereas others are beneficial.				
Humans depend on their natural and constructed environments. Humans change environments in ways that can be either beneficial or detrimental for themselves and other organisms.				✓