
Using Project WILD and Project Learning Tree Materials with Second Language Learners of English



**An introduction for K-12 teachers
and environmental educators**

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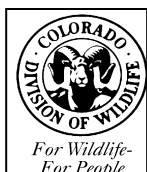
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INTRODUCTION

Across the country linguistic diversity is increasing. The number of second language learners of English was estimated at 3.4 million in 2000. In many schools in urban and rural areas the number of second language learners can exceed half a school's population. This project was initiated to insure that all students have the opportunity to actively participate in environmental and outdoor education. Second language learners can and must benefit from the tremendous power of the Project Wild (PW) and Project Learning Tree (PLT) materials.

This document is designed with the following beliefs in mind:

- All students should be presented with suitably challenging curriculum
- Similar levels of achievement will be expected for both second language learners and native English speakers
- Instructional accommodations can and should be made so that every student can learn

While many factors influence how well students acquire a second language, the only things teachers can control are the learning environment and the nature of instruction. Second language learners do best when their instruction is part of an overall approach designed to address the needs of different learners. This is the essence of a standards-based approach to instruction.

PW and PLT are sometimes viewed as stand alone curricula. However, students benefit most when the curricula are integrated into the overall instructional program. Further, they are most powerful when incorporated in a standards-based approach to instruction. Standards-based instruction is guided by the following questions:

- What is the knowledge base?
- What should students know as a result of instruction?
- What should students be able to do as a result of instruction?
- What skills should they acquire?
- What are the instructional activities that will constitute instruction?
- How will students demonstrate what they have learned and what they can do?
- What formative and summative assessments will be used?

The PW and PLT curricula are already organized to tie into content area standards. This document is focused on the instructional moment—how the PW and PLT materials can be made even more accessible to second language learners.



PROJECT WILD AND PROJECT LEARNING TREE OVERVIEW

Project WILD PW is an interdisciplinary, K-12, conservation and environmental education curriculum and activity guide program emphasizing wildlife. For instructional purposes in PW, wildlife is defined as any non-domesticated animal. PW is based on the premise that young people and their educators have a vital interest in learning about the earth as home for people and wildlife. PW helps students of any age in developing awareness and knowledge of wildlife, along with relevant skills. The goal is that such will engender interest and commitment, resulting in informed decisions, responsible behavior and constructive actions concerning wildlife and the environment.

PW is administered by the Council for Environmental Education and is cosponsored by the Western Association of Fish and Wildlife Agencies, along with most state governments and a number of non-governmental organizations and federal agencies.

Project Learning Tree PLT is a 'lesson plan style', K-8, activity guide centered around forest and woodland topics or settings. According to its mission statement, "PLT uses the forest as a "window on the world" to increase students' understanding of our complex environment, to stimulate critical and creative thinking, to develop the ability to make informed decisions regarding environmental issues, and to instill the confidence and commitment to take responsible action on behalf of the environment."

Included among the PLT goals are:

- To enable students to apply scientific processes and higher order thinking skills to resolve environmental problems
- To help students acquire an appreciation and tolerance of diverse viewpoints on environmental issues and develop attitudes and actions based on analysis and evaluation of the available information

PLT is a program of the American Forest Foundation, in partnership with a number of government agencies, national associations, and nongovernmental organizations.



BACKGROUND INFORMATION ON SECOND LANGUAGE ACQUISITION

INTRODUCTION

A very brief introduction to second language acquisition is included here to help the reader better understand the situation of linguistically diverse students.

It is normal and desirable for people to speak more than one language. A person can begin to acquire a second language at any time. One is never too young and never too old to learn another language. Many factors influence how well a person acquires a second language. These include:

- Reasons for needing or wanting to acquire a second language
- Possibilities for using the second language in day-to-day life
- Context in which learners must use the language
- Personality of the individual (introvert vs. extrovert)
- How individuals feel about the language they are learning
- Whether the learner feels safe to take risks or make mistakes
- Nature of the instructional program including access to conceptual development in the first language

HOW LONG DOES IT TAKE?

An important concern for educators in this country is how long it takes for students to become proficient in English. The answer is that it depends on how ‘proficient’ is defined. In school, students must:

- Develop and use English for social interaction
- Develop and use English for academic purposes
- Develop and use English in culturally and socially appropriate ways

From the Standards developed for Teacher of English to Speakers of Other Languages (TESOL), social language includes talking and playing with friends, making your way around the school or community, following basic directions, communicating about concrete objects and activities. Social language can be acquired relatively quickly.

Academic language is more complex. Think about what it takes to write a research paper with both content and grammatical accuracy or to present an oral argument fluently without hesitation or errors. This takes more time. It typically takes five to seven years to become proficient enough to do schoolwork at the same level as a native speaker. For students without primary language literacy skills, it can take up to ten years.

Other factors can also influence how long it takes to become academically proficient in English. Students may be unfamiliar with the U.S. school system and teachers’ expectations. This can be especially true in the kinds of nonformal settings where PW and PLT materials are often used. These settings simply may not exist in the educational process in students’ home countries.

GUIDING QUESTIONS

- What are some basic elements of first and second language acquisition that all teachers should be familiar with?
- How do academic and linguistic skills develop in a second language?
- What is the relationship of students' learning in their first and second languages?
- What are some specific strategies for instruction that allow for differentiation to meet the needs of second language learners regardless of where and how they are served?

The suggestions in this manual are based on the following beliefs:

- There are ways to modify instruction to better meet the needs of a linguistically diverse population
- Instruction organized with the needs of second language learners in mind will be beneficial to all students in the classroom
- An overall instructional plan needs to include flexible grouping that accounts for students' language proficiency and their need to develop both linguistic and academic skills
- Big ideas and enduring understandings are central elements in curriculum planning in standards based instruction

IMPORTANCE OF CONTINUING FIRST LANGUAGE DEVELOPMENT

Second language learners build on what they already know and can understand in their first language. The more they know and the stronger their skills in their first language, the easier it will be to become proficient in their second. What people know and learn in one language can be expressed through another language. It isn't necessary to relearn concepts, they just need to learn vocabulary and language structure to express what they know in the other language. Of course, with appropriate instruction students can (and must) learn new things through their second language. They can in turn use that information through their first. Good instruction builds on this relationship between students' learning in their two languages.

PROGRAMS FOR SECOND LANGUAGE LEARNERS OF ENGLISH

There are many different types of programs for second language learners of English. They differ in the ways students receive specialized instruction in English, as well as whether or not the primary language of the students is used for a portion of the instruction. [See glossary, pp. 18-19, for specific names & descriptions] In the vast majority of schools in the U.S., students receive all of their instruction in English. There are some schools where students are able to review some content area topics in their first language. In others, students may be taught to read and write in their first language while learning English. In a very small percentage of schools students receive both content area and literacy instruction in their first language while they are learning English.

All of these different types of programs include instruction in English and all can help students succeed academically. However, they vary in some important ways. While it may seem counterintuitive, programs where students receive all of their instruction in English are the most challenging for both the students and their teachers. To be effective, teachers need to modify

the delivery of their instruction to make the curriculum understandable to all students. In addition, research shows that it takes longer for students to become fully proficient in English when all of their schooling is through their second language. Another important outcome in all-English programs is that most of the students lose their native language and the possibility to become academically bilingual. This represents a loss to both the individual and the community.

To understand why this is so, it can be helpful to think of the brain as a ‘conceptual reservoir’. As we learn language, we begin to fill this reservoir with concepts, schema, understandings and skills. Ideally we continue to add to and expand this reservoir for our entire lives. The fastest and easiest way to learn is through the language you know best. Monolingual speakers always add to and access what they know through their one and only language.

When people learn a second language, both languages become available to the learner as tools for adding to their knowledge base and thinking skills. Second language learners do not need to create a separate new reservoir of concepts. Once they know and understand something in one language or context, they can learn to express it in another. It is like learning a new label for the same thing.

It is of course, possible to learn new things and become academically successful in a second language, but it takes more work on the part of both the learner and the teacher to make learning happen. This is why students in programs that use their first language acquire English more quickly. Students can continue to build their conceptual knowledge at a quicker pace, while they are learning English. Second language students benefit most from instruction that accounts for their specialized language needs. This kind of teaching learners utilizes a range of strategies that are collectively known as Sheltered Instruction.

SHELTERING: GOOD INSTRUCTION FOR SECOND LANGUAGE LEARNERS

There are many strategies that can help second language learners be successful and they are very effective for native speakers, as well. These strategies, generally termed ‘SHELTERING’, can be summed up as follows: Do whatever is necessary to make the lesson understandable without relying solely on lecture or written text.

There are two especially important aspects to good instruction for second language learners:

COMPREHENSIBLE INPUT By using more than text and words, i.e., pictures, gestures and graphic organizers, teachers teach in a way that better enables students to understand the essential ideas and concepts.

OPPORTUNITIES FOR INTERACTION Teachers must provide constant opportunities for students to practice their second language. They especially need to be able to talk and articulate what they are learning about out loud. This means that teachers need to pay attention not only to the content of the lesson, but also to the ways language will be used to talk, read and write about the content.

STANDARD PRACTICES

Listed below are a number of established practices to improve comprehension and provide opportunities for interaction. The good news is that PW and PLT materials already embody many of these understandings.

- Create a safe, caring environment that promotes risk taking
- Use pictures, models, graphs, diagrams, charts and information, and graphic organizers
- Utilize hands-on activities that allow for student participation
- Identify the ‘big ideas’ and vocabulary and highlight them in instruction
- Write big ideas, key concepts and notes on the board or overhead projector transparency
- Seek out materials on big ideas with lower vocabulary load or simplified text
- In content area instruction, place more emphasis on students’ understanding of the big ideas and less on how they express that knowledge
- Use cooperative grouping strategies
- Assign peers, mentors and buddies
- Take time to preview and review concepts
- When soliciting verbal participation, allow adequate (more) time for responses
- Utilize materials that acknowledge students’ cultures and help them feel like they belong in your classroom

ELEMENTS OF A SHELTERED CLASSROOM

A VISUAL APPROACH:	Show what you are talking about
‘GUARDED’ VOCABULARY:	Identify and focus on the most important vocabulary and concepts
COOPERATIVE LEARNING:	Encourage learners to work together
A HANDS-ON APPROACH:	Use manipulatives and task-oriented projects

WHAT CAN TEACHERS DO TO SHELTER THEIR INSTRUCTION?

SIMPLIFY THE INPUT

- Control sentence length by using short phrases, one new topic per phrase
- Use a slower speech rate by leaving pauses between phrases and chunks of meaning
- Enunciate clearly, but don’t ‘oh-ver-ee-nun-CEE-ate’ or put the accent on the wrong syllable
- Control the vocabulary and limit idiomatic speech. Be consistent with the words that are used (e.g., ‘ocean’ vs. ‘sea’). Stay with one term initially.
- Seek out materials on the topic with a lower vocabulary load or with simplified text

CHECK FREQUENTLY FOR UNDERSTANDING

- Use questions and directions that allow students to show comprehension by pointing, gesturing, nodding, shaking their heads or performing an action
- Review main topics and key vocabulary
- Repeat, restate, expand, and give examples as necessary
- Allow for more wait time before expecting students to answer questions

- Place more emphasis students' understanding of the material and less on how they express that knowledge. While grammar is not the objective, help the students with word choice and sentence structure.

USE CONTEXTUAL CLUES

- Act out meaning with gestures and facial expressions
- Use lots of visuals and manipulatives such as pictures, models, graphs, diagrams, charts, and other graphic organizers
- Write big ideas and organize information on the board or overhead; refer to them frequently

PREPARE FOR THE SECOND LANGUAGE LEARNER

- Create a safe, caring environment that promotes exploration, discovery, and creativity
- Utilize materials that acknowledge students' cultures and help them feel like they belong in your classroom
- Assign peers, mentors and buddies
- Use cooperative grouping strategies
- Identify in advance challenging parts of the activity (see the Text and Task Analysis Rubric)
- Remember, there is a difference between activating background knowledge and previewing the information they are about to learn
- Identify the most important information and keep coming back to it using appropriate strategies from those listed above

WHEN DO I USE SHELTERED INSTRUCTION?

In linguistically diverse schools, teachers work with three different groups of students—native language, linguistically heterogeneous, and second language groups. Each grouping provides necessary opportunities for the students and places particular demands on the teachers. The setting most teachers have been prepared to work in is one in which teacher and students are fluent in the language of instruction. This is the easiest and most comfortable of instructional contexts. For example, the language of instruction or learning is English and both students and teachers are native English speakers. In such settings, students can easily access their background knowledge and teachers can use a wide range of strategies.

Linguistically heterogeneous groups are increasingly common as more second language learners attend schools here. In these mixed groups, second language learners of English are learning side by side with native speakers. Such heterogeneous groups are both the most common and the most challenging for teachers because instruction must be both sufficiently demanding for the native speakers and comprehensible to the second language learners.

Second language groups such as ESL classes provide students with opportunities to focus on their English language learning needs without having to compete with students who are already proficient in English. Such a setting allows students to work on aspects of language not needed by native speakers. It allows them to respond more favorably to instruction and can increase exploratory and risk-taking behaviors. While the strategies described in this manual can be used in any academic setting and with all students, they are absolutely essential with second language groups and are also beneficial in the heterogeneous category described above.

THE TEXT AND TASK ANALYSIS RUBRIC FOR EVALUATING MATERIALS FOR SECOND LANGUAGE LEARNERS' NEEDS

INTRODUCTION

The Text and Task Analysis Rubric was designed to help teachers judge the appropriateness of any instructional activity for a particular setting or group of students. The experienced teachers who created this rubric did so to assist their colleagues in meeting the needs of second language learners. Their goal was that all students become able to participate successfully in learning activities.

With the rubric, activities or learning materials can be analyzed and assigned a rating in each of six dimensions. A simple, three-step scale is used: 'Level 1' for easy or easier; 'Level 2' for intermediate; 'Level 3' for difficult or harder. Generally, it is less burdensome to modify activities rated '1' or '2' than those rated '3'. The ratings—and therefore the amount of modification necessary for any activity—will vary depending on the age/grade level of the students, their prior experiences with the same topic, and where the lesson fits into the instructional sequence. Thus, the rating scale is not normative nor absolute. It is relative to a given group of learners, rather than based on a set of standard criteria.

As teachers decide how to deliver the curriculum, they can use the rubric to assess activities and match them to time allocations and planning demands. For example, an activity that is rated as '1' or '2' for most dimensions will usually need less additional teacher preparation than one rated as mostly '2's and '3's. Note that while in some cases Level 3 activities might be inappropriate for beginning students, they are precisely the kinds of activities that will move students forward in their academic and linguistic development.

Keep in mind that:

- It takes conscious planning to adapt activities to make them accessible to second language learners
- Some activities are easier than others to adapt
- There are a number of dimensions in which an activity can be analyzed
- Having a sense of how much an activity needs to be modified is useful in determining if it is appropriate to use with a given group of second language learners

The rubric form—the text and task analysis form—is on the next page. It is followed by a page with Table 1 that provides direction regarding the various dimensions of analysis—such as 'vocabulary' and 'reading requirements'. This is followed by Table 2, which is a guide to determining the rating numbers/levels. Then, the next two pages have Table 3 with suggestions for rating level-specific modifications that teachers can make so that activities are more comprehensible to and appropriate for a particular student group. Finally, an example is given of a completed form. The appendix includes several more such examples.

RUBRIC FOR EVALUATING MATERIALS FOR SECOND LANGUAGE LEARNERS' NEEDS

TEXT & TASK ANALYSIS FORM

TO SUMMARIZE RATINGS AND COMMENTS REGARDING AN ACTIVITY OR EDUCATIONAL MATERIAL

Activity:

Source:

Grade levels:

Content areas:

DIMENSION	LEVEL			COMMENTS
	1	2	3	
Vocabulary				
Higher Order Thinking				
Interaction with Text— Reading requirements				
Language Structures: Syntax, Morphology, Semantics				
Language Production Requirements				
Background Knowledge/Schema				

POTENTIAL MODIFICATIONS, SUPPLEMENTARY MATERIALS (TEACHING AIDS), SPECIAL CONSIDERATIONS

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TABLE 1
Considerations for rating educational materials and
planning educational activities using the
Text & Task Analysis Rubric

DIMENSION	CONSIDERATIONS
VOCABULARY	<p>What words in the lesson are new to monolingual English language students?</p> <p>What other words do second language learners need to know to understand the new words and concepts?</p> <p>Which words will be difficult? How can they be represented visually?</p> <p>How will these difficult words be taught?</p>
HIGHER ORDER THINKING	<p>What is the level of abstractness?</p> <p>What kind of reasoning skills are required?</p> <p>Are these skills part of the extensions or the main activity?</p> <p>Review Bloom's Taxonomy: analyze, summarize, infer, evaluate, etc.</p>
INTERACTION WITH TEXT—READING REQUIREMENTS	<p>How much reading is required by the activity?</p> <p>Will it be familiar text, from trade books, magazines or an academic text?</p> <p>Are there contextual clues within the reading material or is it pure text?</p>
LANGUAGE STRUCTURES	<p>Language use/English language structures—What kinds of grammatical structures do the activities require?</p> <p>What vocabulary and language structures are already in place?</p> <p>What language will need to be taught related to the content of this lesson/activity/reading?</p>
LANGUAGE PRODUCTION REQUIREMENTS	<p>Will students primarily be listening, speaking, reading or writing?</p> <p>Can they respond through gestures, answer in unison or do they have to come up with own responses based on their understandings either through speaking or writing?</p> <p>Are the production requirements integral to the activity or primarily for assessment purposes?</p>
BACKGROUND KNOWLEDGE/SCHEMA	<p>What background knowledge do they have to use to relate to concept and other content?</p> <p>How will we activate their background knowledge so the students will make connections?</p> <p>Do we have examples to help them connect?</p>

TABLE 2
Criteria for making rating level assignments in the analysis of materials and activities for second language learners

Note: Although the three step rating scale is applied relative to each particular instructional group, the specifications in this table are applicable to all combinations of instructional group and educational material or activity.

DIMENSION	Level 1	Level 2	Level 3
Vocabulary	Requires little vocabulary development. Familiar content, concrete ideas. Easy to represent through pictures.	Requires some vocabulary development. Extension of a familiar topic.	New content; abstract ideas. Requires extensive vocabulary development; sheltering, pictures, multiple exposure.
Higher Order Thinking	Requires limited-to-no high-order thinking—literal, recall	Requires some high-order thinking such as inference	Requires higher-order thinking skills such as synthesis.
Interaction with Text—Reading requirements	Activity involves limited amounts of reading with familiar content and many context clues, pictures, visuals, diagrams, etc.	Requires moderate amounts of reading of text with some contextual clues from visuals or diagrams	Requires extensive reading of text without context clues.
Language Structures: Syntax, morphology, semantics	Simple sentences. Language most children control.	Simple sentences with some complexity. Includes some structures that students do not yet master.	Complex sentences. Complicated English language structures are needed to successfully participate in the activity.
Language Production Requirements	Activity requires students to mostly listen with little speaking. Can indicate comprehension through gestures, pictures, etc.	The activity requires the student to produce dialogue that makes sense and to read and write simple text.	The activity requires a high level of productive responses to reading tasks including extensive speaking and writing.
Background Knowledge/Schema	Students have a large background on the subject based on prior knowledge and/or personal experience.	Students have some awareness or concept of the subject, but there are gaps in the knowledge base.	Students' prior knowledge & schema for activity is negligible. Many connections and schema must be built.

TABLE 3
SUGGESTED STRATEGIES BASED ON THE SCORING RESULTS OF THE TEXT AND TASK ANALYSIS RUBRIC

The greatest value in this rubric are the suggestions provided for modifying activities to make them more comprehensible. Once you have used the rubric to rate an activity across the five dimensions, you can use the charts below to help you decide what kinds of modifications might be necessary or useful as you plan the activity to include the needs of second language learners. There are suggestions for each aspect of the rubric and at each level of difficulty. This is not an exhaustive list—there is always more you can do. Remember these modifications will also benefit native English speakers who may lack the background knowledge and or literacy skills required by many of the PW / PLT materials. Consult Glossary, pp. 18-19, for unfamiliar terms and abbreviations.

DIMENSION	If LEVEL 1 Then focus should be:	If LEVEL 2 Then the focus should be:	If LEVEL 3 Then the focus should be:
VOCABULARY	Synonyms, review vocabulary, demonstrate knowledge of vocabulary: oral, writing, modified Cloze procedure.	Some sheltering of specific new vocabulary, some demonstration/ role playing/pictures/ hands-on objects, scaffolded instruction.	Sheltering through pictures, cognates, vocabulary in context, demonstration, role-play, hands-on items, small group cooperative activity, multiple exposure use of vocabulary in various contexts, scaffolded instruction.
HIGHER ORDER THINKING	May have to shelter some depending on student needs. Review vocabulary beforehand.	Modify presentation of ideas and text. Introduce/ Review vocabulary in reading using visuals or realia. Spend time building background knowledge. Use of graphic organizers for high-level thinking activities. Use cooperative groups for	This activity may be inappropriate for L2 learners in a mixed group with native English speakers. It would be better suited to a primary language lesson or a concept-focused lesson for only second language learners. If chosen, follow steps for Level 2. Focus on essential learnings. Build background knowledge beforehand, spend a lot of time with visuals, realia, hands-on. Use cooperative groups (jigsaw, think-pair share, etc.).
INTERACTION WITH TEXT—READING REQUIREMENTS	Do shared reading instead of independent	Use different learning modalities to respond to text (kinesthetic, artistic, etc.).	Find similar text that deals with the same key concepts at different reading levels. Modify reading materials to make them more Accessible. Reduce the amount of text, chunk, and choose main ideas.

LANGUAGE STRUCTURES	<p>Connect vocabulary to objects, pictures.</p> <p>Tie text to meaningful ideas.</p> <p>Limit the number of vocabulary items introduced.</p> <p>Work on simple phrases, present tense.</p>	<p>Provide opportunities to build on prior knowledge.</p> <p>Connect visuals/text/simple definitions.</p> <p>Allow time for vocabulary development outside of the actual activity.</p> <p>Introduce/ use model /Review the structures.</p> <p>Provide opportunity to practice—oral, writing, scaffolds, drama.</p>	<p>Do not choose for beginning English Language Learners without extensive modification.</p> <p>For intermediate and advanced students, use strategies as indicated herein.</p> <p>Focus on structures needed to participate in the activities.</p>
LANGUAGE PRODUCTION REQUIREMENTS	<p>Allow students to demonstrate comprehension through non-verbal means.</p> <p>Ask questions that require one/two word answers.</p> <p>Encourage all attempts to respond.</p> <p>Continue to explain language with modeling and moving students physically through the task (TPR).</p> <p>Use concrete objects and role playing.</p>	<p>Determine the language structures needed to successfully participate in the activities.</p> <p>Allow for oral language practice outside of the actual activity in groups of second language learners.</p> <p>Use students' experiences with the activity to build written expression skills.</p> <p>Support the Zone of Proximal Development through modeling of high order thinking skills such as literal, analytical, and question interpretation.</p>	<p>This activity may be inappropriate for second language learners in a mixed group with native English speakers. It would be better suited to a primary language lesson or a concept-focused lesson for only second language learners. If chosen, follow steps for Level 2.</p> <p>Provide opportunities for the development of high-order thinking skills through questioning techniques.</p> <p>Consistently use scaffolding techniques throughout the lesson, assisting and supporting student understanding.</p> <p>Provide language models through a "think aloud" strategy.</p>
BACKGROUND KNOWLEDGE/ SCHEMA	<p>Refresh their memory.</p> <p>Activate prior knowledge through: shared journal entry, warm-up activity (e.g., creation of a web).</p> <p>Viewing a video or oral reading.</p> <p>Think Pair Share.</p>	<p>Use graphic organizers to present information.</p> <p>Use examples that students are familiar with and then extend to new concepts.</p> <p>Ex: Opinion piece on WWII – begin with their opinions on school uniforms.</p> <p>Look for those areas where students lack understanding and support with additional activities.</p> <p>KWL Survey.</p>	<p>Explicitly link students background to text.</p> <p>Identify universal similarities between students' background and new knowledge.</p> <p>Acknowledge and respect the different ideas and assumptions that are attributed to cultural variation.</p> <p>Use resources such as the internet, books, simulations, etc., to expand or highlight the aforementioned connection.</p>
DIMENSION	If LEVEL 1 Then focus should be:	If LEVEL 2 Then the focus should be:	If LEVEL 3 Then the focus should be:

Example: A completed Text & Task Analysis form

ACTIVITY: What's for Dinner?

SOURCE: Project WILD

GRADE LEVEL: 5-8

CONTENT AREAS: Science, Language Arts, Environmental Education

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary	X			Requires little vocabulary development. Familiar content, concrete ideas, easy to represent through pictures.
Higher Order Thinking		X		Requires some higher order thinking and moderate amounts of reading. Activity is based on food eaten at home and then deciding on where food comes from.
Interaction with Text— Reading requirements		X		Make a list of foods and ingredients.
Language Structure	X	X		This would be very basic with formation of sentences being, "Last night I ate". This would give ALL the students a pattern to follow.
Language Requirements		X		Some speaking will be required for this lesson in order to describe what was eaten for dinner. Also the group will need to use language to figure out where that food item came from. Can indicate comprehension through gestures, pictures, etc.
Background Knowledge/ Schema	X	X		Because this activity is based on what each child has eaten, the background knowledge will not need to be built. Children from different cultures may not know where certain items come from.

POTENTIAL MODIFICATIONS:

Have students work in groups of 3-4 students. Mixed groups of first and second language learners would be best so native speakers could help the ESL students. Teachers can prepare students with the understanding that food in different cultures varies and encourage students of different cultures to share food they typically eat at home. Many cultures will have food items that the group may not be able to identify. Parents could support students in their native language if they are given advanced notice about this lesson. (E.g., they could talk with their child about the food they eat during dinner that night, and where it comes from.) Teachers may need to conduct some research about some of the foods their students are likely to talk about. For example, a teacher might need to know the ingredients of tamales. (An educational assistant or parent that shares the culture of the students might help this lesson to move smoothly).

ADAPTING PROJECT WILD AND PROJECT LEARNING TREE MATERIALS FOR A LINGUISTICALLY DIVERSE AUDIENCE

This section provides ideas and sample materials that have been designed to address the needs PW-PLT educators responsible for second language learners. The following two subsections support the delivery of the activities to make them more comprehensible to all learners.

BASIS CONCEPTS:

A LISTING OF SOME IMPORTANT IDEAS FROM THE PW AND PLT CURRICULA

The PLT and PW activities to some extent or another reflect the following understandings fundamental to environmental education.

1. All living things need food, water, shelter and space.
2. Wildlife numbers and species composition are not static, but are constantly changing.
3. Food webs illustrate some of the interrelationships of all living things.
4. A population tends to increase in size until limited by one or more environmental factors.
5. Loss and degradation of habitat are considered the greatest problems facing wildlife today.
6. Climate and habitats influence species diversity.
7. Natural resources include water, air, minerals, soil, fossil fuels and plant life, as well as aquatic and terrestrial wildlife.
8. Organisms are both interdependent and dependent on or affected by nonliving things—the abiotic components of the earth.
9. All humans consume products and thereby affect the availability of renewable and nonrenewable natural resources.
10. Natural resources provide products of commercial value and for subsistence needs of humans.
11. Natural resources can be conserved and managed.

VISUAL IMAGES THAT SUPPORT THE BASIC CONCEPTS

Second language learners benefit from being able to visualize concepts they are learning. For concrete objects this is relatively easy—take a picture of a tree or a wetland. It is more difficult to represent deeper concepts such as the role that each part of a tree plays in its life cycle or the place of a wetland in the water cycle. Yet these are the really important ideas students should learn as a result of their instruction. For this reason visual images have been developed to illustrate many of the concepts in the PW/PLT materials. More will become available in future updates.

While these images can be helpful, it is important to remember that pictures don't automatically mean what they are supposed to represent. Connections must be made in instruction such that the image and concept become tied together. The visual image then remains to help students remember the concept.



Decomposition

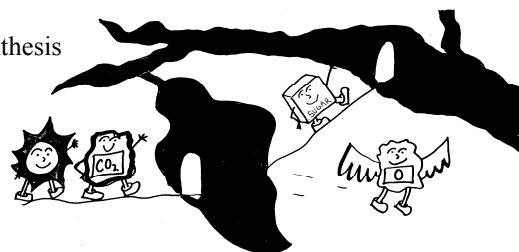


VISUAL IMAGES

Along with the text of this document, images to represent the following numbered items and concepts—along with additional images—are available at <http://wildlife.state.co.us/education/>.

- | | |
|--|--|
| 1. Deer | 40. Furniture |
| 2. Home | 41. Forest uses |
| 3. Habitat | 42. Factory |
| 4. Water | 43. Natural Resources |
| 5. Shelter | 44. Products |
| 6. Space | 45. Pine Bark Beetle |
| 7. Food | 46. Nocturnal |
| 8. Reproduction | 47. Diversity |
| 9. Carrying Capacity | 48. Pond Ecosystem |
| 10. Decomposition | 49. Aquatic Habitat |
| 11. Limiting Factors | 50. Exoskeleton |
| 12. Drought | 51. Gills-Lungs /Oxygen / Dissolved Oxygen |
| 13. Fire | 52. Pollution |
| 14. Predator/ Prey | 53. Lab Study: Microscope, Focus, Magnify |
| 15. Disease | 54. Water Cycle |
| 16. Graph | 55. Types of Precipitation |
| 17. Population | Rain |
| 18. Years | Snow |
| 19. Forest Ecosystem | 56. Precipitation |
| 20. Tree | 57. Evaporation |
| 21. Parts of a tree | 58. Transpiration |
| 22. Heartwood | 59. Condensation |
| 23. Sapwood | 60. Volcano |
| 24. Cambium | 61. Formation / Lava |
| 25. Phloem | 62. Plate Tectonics |
| 26. Taproot | 63. Mining |
| 27. Bark | 64. Rock |
| 28. Photosynthesis | 65. Weathering of Rock |
| 29. Sun | 66. Chemical Change |
| 30. Oxygen | 67. Working together |
| 31. Carbon Dioxide | |
| 32. Sugar | |
| 33. Measure | |
| 34. Tree Diameter | |
| 35. Tree Height | |
| 36. Lumber | |
| 37. Cubic Feet / Volume / Cord of Wood | |
| 38. Logging / Saw / Forest Management | |
| 39. Houses | |

Photosynthesis



GLOSSARY

Terms commonly used (and misused) in relation to second language learners of English.

General terms about language development

L1 First language, primary language.

L2 Second language. (for some students, English may be their 3rd language.)

Proficiency How well someone communicates with a language.

Terms used to describe students

ELL English Language Learner.

LEP Limited English Proficient. Used in federal legislation. There are many objections to the term because of its deficit orientation.

FEP Fully English Proficient.

NEP Non English Proficient.

Bilingual A person who speaks two languages. (Sometimes incorrectly applied to students who are monolingual in a language other than English).

Monolingual A person who only speaks one language. (Sometimes used to refer to students who don't speak English, but then not also applied to native English speakers who are speak only one language).

Terms and acronyms applied to programs

Bilingual Program A program that uses both English and another language for instruction. (Sometimes used misused for any program that serves students who don't speak English).

ESL, English as a Second Language Instruction in English that is specifically designed for second language learners. A part of all good programs for second language learners, whether bilingual or all-English.

Immersion A program in which students are totally immersed in the language of instruction. The strategies used are specifically designed for second language learners.

Sheltered A term used for both a set of strategies and a content instruction program that is modified to make it understandable to second language learners.

Submersion The 'sink or swim' approach. Students are placed in all-English instruction with native English speakers. No modifications are made to meet their needs as second language learners.

Dual Language A specialized bilingual program that includes both second language learners and native English speakers learning through both languages. Also called dual immersion.

Other terms related to instruction

Realia A fancy word for 'stuff'. Actual objects that students can touch and manipulate.

Cloze Procedure/Activity A means of assessing comprehension and word knowledge. Students fill in words in a text that have been replaced with blank spaces. (e.g., "The ____ got stuck __ the tree.")

Jigsaw A cooperative learning structure in which different expert groups of students each learn about one aspect of a topic. Then they form new groups in a jigsaw composed of one person from each expert group. Each person shares their part so that all students can learn about all the aspects of the topic.

Think-pair Share A cooperative learning structure. The entire group is given a question to think about silently. Then students join in pairs to report their answers to each other. Then pairs share with other pairs or with the entire class. This provides more students opportunity to talk in a more risk free environment.

Zone of Proximal Development A term related to cognitive development based on the idea that learning takes place just beyond what we already know. Learning is facilitated by interaction with others who are more knowledgeable about the topic.

Scaffolded Instruction Refers to instruction that has extra built-in supports such as visuals, hands-on experiences, and models to help students understand the concepts. Like scaffolds on a building under construction, these strategies can provide additional support during the learning process, but can eventually be removed when concepts are well understood.

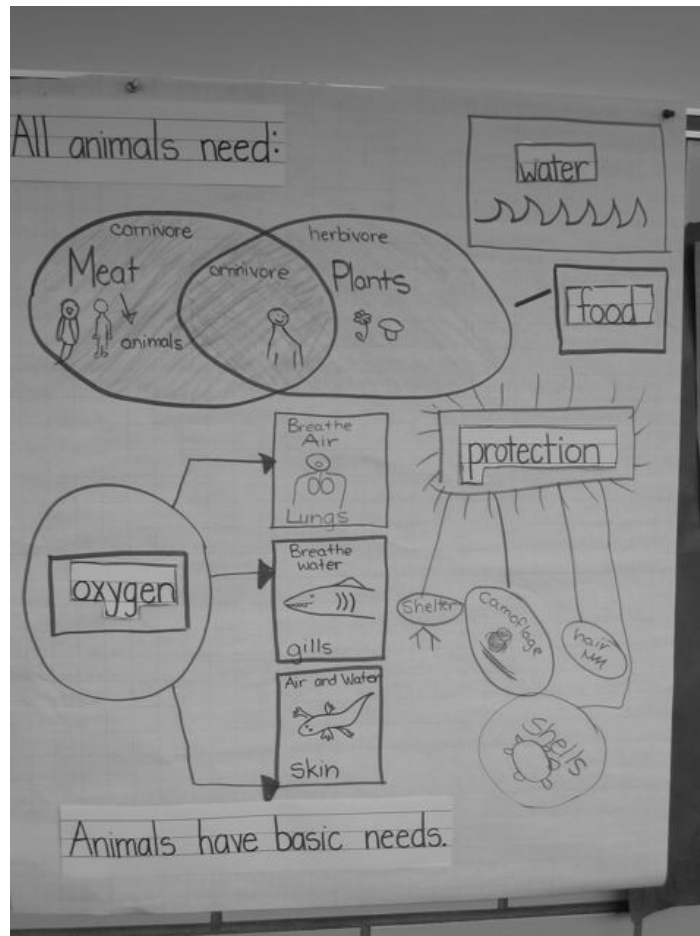
Think Aloud This literally means saying out loud what you are thinking as you complete a task or solve a problem. This strategy can be used by teachers to model the thinking process and to assess students' understanding of a topic.

Higher Order Thinking Levels of thinking that are more abstract than recall and retell. Includes synthesis, analysis, evaluation, interpretation, and making inferences.

KWL Chart K = What we **Know**.
W = What we **Want** to Learn
L = What we **Learned**

This is an activity used to begin and end a unit of study. Students create a chart that is added to during the unit. Allows teachers to tap into background knowledge. Lets students pose their own questions and compare what they have learned with their initial understandings.

Big Idea Important ideas that frame what students should learn as a result of instruction. For example "All living things adapt to their physical environment." A part of curriculum planning.



SELECTED RESOURCES
for
WORKING WITH A LINGUISTICALLY DIVERSE POPULATION

Commins & Miramontes. (2005). *Linguistic diversity & teaching*. Rahwah, NJ: Lawrence Erlbaum.

Echevarria, Jana, Vogt, MaryEllen, & Short, Deborah H. (2000). *Making content comprehensible for English Language Learners: The SIOP Model*. Boston, MA: Allyn & Bacon.

Freeman, D.E. & Freeman, Y.S (2001). *Between worlds: Access to second language acquisition*. Portsmouth, NH : Heinemann.

Gibbons, Paula (2002). *Scaffolding language, scaffolding learning: Teaching Second Language Learners in the mainstream classroom*. Portsmouth, NH: Heinemann .

Gottlieb, M. 2006). *Assessing English Language Learners: Bridges from language proficiency to academic achievement*. Thousand Oaks, CA: Corwin Press.

Goudvis, A. & Harvey, S. (2006). *Reading the world: Content comprehension with linguistically diverse learners (Professional Development DVDs)*. Portland, ME: Stenhouse.

Hamayan, E. & Freeman, R., Eds. (2006). *English Language Learners at school: A guide for administrators*. Philadelphia, PA: Caslon Publishing.

Herrell, Adrienne & Jordan, Michael (2004). *Fifty strategies for teaching English Language Learners*, 2nd edition. Upper Saddle River, NJ: Pearson Education.

Laternau, J. (2002). *Standards based instruction for English Language Learners*. Pacific Resources for Education and Learning, www.prel.org.

Miramontes, Ofelia, Nadeau, Adel & Commins, Nancy. (1997). *Restructuring schools for linguistic diversity: Linking decision making to effective programs*. New York, NY: Teachers College Press.

Nieto, Sonia. (1999). *The light in their eyes: Creating multicultural learning communities*. Multicultural Education Series. New York, NY: Teachers College Press.

Tomlinson, Carol Ann. (1999). *The Differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.

Tomlinson, C. A. & McTighe, J. (2006). *Integrating differentiated instruction and understanding by design: Connecting content & kids*. Alexandria, VA: Association for Supervision and Curriculum Development.

APPENDIX

Additional examples of the application of the Text and Task Analysis Rubric to Project WILD and Project Learning Tree activities

The Text & Task Analysis Rubric has been applied to the activities listed below (Another such example is included in the body of the text, p. 17.). For each Project WILD (PW) or Project Learning Tree (PLT) activity the analysis results in the following:

- 1) A rating assignment (level '1', '2', or '3') to indicate the difficulty—relative to a group of second language learners—for each of the six dimensions of analysis
- 2) Comments for each of the dimensions
- 3) Suggestions for potential modifications

The Rubric was applied to the 2000 version of PW and the 1995 (3rd) edition of PLT.

ACTIVITY	CURRICULUM PAGE	GRADE LEVEL*	CONTENT AREAS ADDRESSED PW, PLT TOPIC CATEGORIES
Habitacks	PW 51	K-4	Science Ecological Knowledge: Interdependence
Graphanimal	PW 56	Pre-K, K-4	Science, Math Ecological Knowledge: Habitats, Ecosystems, and Niches
Etithinking	PW 312	K-4	Language Arts Sustaining Fish & Wildlife Resources: Human Impacts
Pass the Plants Please	PLT 77**	Part A: K-8	Science, Social Studies, Math, Language Arts Diversity
How Plants Grow	PLT 179**	4-8 Variation, K-2	Science, Math Systems
Web of Life	PLT 194**	4-8	Science, Language Arts, Visual Arts Systems
School Yard Safari	PLT 197**	Pre-K, K-5	Science, Language Arts Systems

*Here, the designations such as 'K-4' refer to the grade level range for which the activity was designed, not the grade level of the student group for which the Rubric was applied.

**In 2006 version.

ACTIVITY: Habitacks

SOURCE: Project WILD

GRADE LEVEL: K-4

CONTENT AREAS: Science, Environmental Education

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X		Essential Vocabulary: People, Wildlife, Food, Water, Shelter, Space. Extended Vocabulary: Habitat, Track, Survival, Basic Needs, Arrangement.
Higher Order Thinking		X		Students must be able to identify the essential elements that different types of wild animals need to survive and match them with those of different animals. Task is relatively difficult for younger students.
Interaction with Text— Reading requirements	X			None beyond the basic vocabulary.
Language Structure	X	X		Students control the language they use and have the opportunity to use simple sentences in addition to more complex structures. Not required to speak a lot to do the activity.
Language Requirements	X			This lesson requires work with partners or groups. Gestures and pictures can be used for comprehension purposes. Non-verbal or 1-2 word answers possible.
Background Knowledge/Schema		X	X	Background knowledge from the previous lesson and literacy connections are important. If they do not have this background knowledge, the students may not be able to make the appropriate connections needed to be successful in this activity.

POTENTIAL MODIFICATIONS:

Review essential vocabulary before proceeding with the lesson through the use of pictures. Have students work in small cooperative groups to accomplish the task. Conduct an oral language lesson to teach the specific language structures needed to respond appropriately.

Visual Images: Pets vs. Wildlife poster; Habitat needs Wildlife posters, Images of different habitats.

ACTIVITY: Graph an animal

SOURCE: Project WILD

GRADE LEVEL: Pre-K, K-4

CONTENT AREAS: Science, Math, Environmental Education

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X		Environment, Habitat, Graph, Forest & Desert, Mountains & Prairie. Incorporates the use of pictures, objects.
Higher Order Thinking	X			Evaluation asks students to tell why different animals are in different places.
Interaction with Text— Reading requirements		X		Tally numbers of animals. Copy list of animals. Create a bar graph.
Language Structure	X			Language demands are minimal. Simple sentences about where animals live.
Language Requirements	X			Can mostly listen and use pictures, gestures.
Background Knowledge/Schema		X		Have some idea of where animals live (not completely new information); building on prior knowledge.

POTENTIAL MODIFICATIONS:

Need to develop the meaning of habitat/environment; use of sheltering techniques; conduct the activity in pairs or small groups; build background using nonfiction materials. Have models of bar graphs and tally sheets available.

Visual Images: Habitat posters: Desert and Forest, Mountains & Prairie.

ACTIVITY: Ethi-Thinking

SOURCE: Project WILD

GRADE LEVEL: K-4

CONTENT AREAS: Environmental Education, Language Arts

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary	X	X		Limited number of key terms. Wildlife, Harmful, Appropriate, Inappropriate.
Higher Order Thinking		X		Reasoning about what is harmful and what is not and why.
Interaction with Text— Reading requirements		X		Students can write, draw pictures, and / or create skits.
Language Structure		X		Explain reasoning.
Language Requirements		X		Participate in small group discussion.
Background Knowledge/Schema	X			Builds on prior knowledge; connection to visuals; practicing oral skills. As a summary activity, students should be able to draw on their background knowledge.

POTENTIAL MODIFICATIONS:

Review key vocabulary; talk about synonyms; teacher modeling of activity "thinking aloud" for the higher-order thinking; provide a model for how to respond orally; show a video related to the topic.

Visual Images: Helping/Harming; Deforestation; Conservation (2); Pollution Solution; Let's do Something!

ACTIVITY: Pass the Plants Please (Part A)

SOURCE: Project Learning Tree–Activity 16

GRADE LEVEL: K-8

CONTENT AREAS: Science, Social Studies, Math, Language Arts

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X		Parts of a plant: Seed, Stem, Underground, Above ground, Fruit, Leaf, Stalk, Root Extension activity requires some additional vocabulary Pictures provided
Higher Order Thinking	X			Brainstorming ideas; identifying plant parts. Organize information.
Interaction with Text— Reading requirements	X			Fill in chart—Extensions will take more reading.
Language Structure	X			Most children control the language; one word writing.
Language Requirements		X		Minimal speaking; read some text.
Background Knowledge/Schema	X			Know what certain vegetables look like; have knowledge of plant parts.

POTENTIAL MODIFICATIONS:

- ~ Provide a real veggie tray for students to observe/identify in groups of two, then sample one of each vegetable and name.
- ~ Teacher observes and guides as necessary.
- ~ Keep diagram posted for future reference of labeled parts.
- ~ Provide pictures/realia that best describes the plant parts and names of vegetables.
- ~ Have the students describe vegetables using color, shape, and size.

ACTIVITY: How Plants Grow**SOURCE: Project Learning Tree–Activity 41****GRADE LEVEL: 4-8, variation K-2****CONTENT AREAS: Science, Math, Language Arts, Visual Arts**

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X		Students should be pretty familiar with most of the vocabulary, seedling, test, needs, sunlight, water, soil, air, and space. Perhaps the word that will be the hardest is "control", but throughout the experiment they should be able to understand the meaning.
Higher Order Thinking		X		During this activity students will need to identify the factors that "help" plants grow. Since they will be able to see this happen it should be pretty concrete, but there is still some reasoning involved. The students will conduct a test in which one of the needs will be eliminated and the affect observed.
Interaction with Text— Reading requirements		X		The students will measure and record the growth and activity of each plant. Students will graph the growth of each plant and will be able to compare the graphs to see the differences.
Language Structure	X			The assessment used in this lesson involves drawing a series of pictures showing a plant under different environmental conditions. Students can use symbols to represent what the plant lacks.
Language Requirements	X			As stated under the language structure criteria, students are able to "show" their understanding through the use of pictures and symbols.
Background Knowledge/Schema		X		Plants need sunlight, water, soil, air, and space in order to grow and be healthy. When plants do not receive the things they need to live and grow, they will either die or be stunted. Children should already know about the components needed by plants, but not necessarily know how each component affects the plant. Through observation of different test groups this will be easily identified.

POTENTIAL MODIFICATIONS:

Use hands on experimentation to make content comprehensible. Demonstrate stages of growth for the plant. Develop vocabulary through the use of visuals. Constant review will allow students to develop the concepts. Also use cooperative learning—each group would have one plant in each of the 4 test categories so they could discuss changes within their group. Possibly introduce some language structures that would allow the students to explain how their plant grew and why or why not. (My plant (did, did not) grow because...) Students should be able to compare/contrast plants under different conditions. Illustrations need to be provided that give the phrases needed to identify effects of the different conditions. Students could work cooperatively to fill in Venn Diagrams and then provide fill-in-the-blank activities (Cloze) that ESL students can complete to compare their plants. Link what people need to survive to what plants need to survive. Talk about the lifecycle of a person (Maybe read *I'll Love You Forever* to help make the connection.) and how that may relate to the lifecycle of a plant.

ACTIVITY: Web of Life**SOURCE: Project Learning Tree–Activity 45****GRADE LEVEL: 4-8****CONTENT AREAS: Science, Language Arts, Visuals Arts**

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X	X	Essential Vocabulary: People, Wildlife, Food, Water, Shelter, Space Extended Vocabulary: Habitat, Track, Survival Needs, Arrangement, Frog, Bear, Fish, Bird.
Higher Order Thinking		X		Students are required to do research on a particular animal that is part of the forest ecosystem. There will be some reasoning involved along with description of the ecosystem of the animal or plant.
Interaction with Text— Reading requirements		X		Reading will be required and visuals must be accessible.
Language Structure		X		Students will control the language. They can use simple sentences or more complex ones.
Language Requirements		X		The activity requires a high level of productive responses to reading tasks including speaking and writing. Students will have to speak among themselves as well as report back to the whole group using simple sentence structures.
Background Knowledge/Schema		X	X	Background knowledge from the previous lesson and literacy connections are important. Students lacking this background knowledge will not be able to make the appropriate connections needed to be successful in this activity.

POTENTIAL MODIFICATIONS:

Students could classify different pictures from things found in cities, farms, deserts, and forests. Teacher creates a chart of the students' answers of animals on one paper and plants on another paper. Have precut animals for students to identify or draw the pictures next to the vocabulary word. As a class pick out 3 plants and 5 animals. Divide the students into teams of those plants or animals to research. Each team is given questions on note cards. On the back of the note cards are sentence starters to help the L2 learners. Provide multi-level books, dictionaries, magazines and other resources to find their information. Have students practice oral language with a partner before group to discuss their selected topic. Use sentence starters. Allow students to choose whether to present their mural to the whole class. Model one type of question and answer and then students could use the structure to answer a similar question about a slightly different plant or animal. Texts with great illustrations and high interest should be used. A chart for a sample can be modeled and then each group can be given a chart to fill out what is represented in their system.

ACTIVITY: School Yard Safari**SOURCE: Project Learning Tree–Activity 46****GRADE LEVEL: Pre K-5****CONTENT AREAS: Science, Language Arts, Visual Arts**

NOTE: RATINGS & MODIFICATIONS MAY VARY DEPENDING ON THE AGE/GRADE LEVEL OF THE STUDENTS, THEIR PRIOR EXPERIENCES WITH THE SAME TOPIC, AND WHERE THE LESSON FITS INTO THE INSTRUCTIONAL SEQUENCE

DIMENSION	1	2	3	COMMENTS
Vocabulary		X		Signs (eggs masses, spider webs, feathers, nests, tracks, sounds), Safari school yard, observe, evidence, names of animals.
Higher Order Thinking		X		Requires students to observe and infer.
Interaction with Text— Reading requirements	X	X		Very little reading and some writing.
Language Structure		X		Simple sentences with some complexities. Teach one structure.
Language Requirements		X		The activity requires the student to produce dialogue that makes sense and read and write simple text.
Background Knowledge/Schema		X		Students may have some idea of the subject but likely there are gaps in the knowledge about the topic.

POTENTIAL MODIFICATIONS:

Depending on the class's experiences, this activity will be more or less complex. Create a poster with different signs of animals and present it before going outside. Do the activity in more than one locale for example as part of a field trip to an outdoor wildlife habitat. Students could then compare what they discovered on the playground to a space with less human contact. This lesson would also be a great connection to the social studies unit on communities. That unit could serve as a shared base of background knowledge.

