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WILDLIFE ALL AROUND US: A SECOND GRADE GUIDE
TO CITY WILDLIFE EDUCATION

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Environmental Education

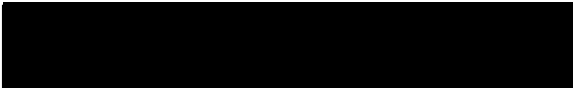
by
Melanie Anne Pendegraft
June 2006

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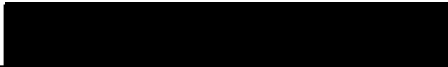
by
Melanie Anne Pendgraft
June 2006

Approved by:



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May 15, 2006
Date



Dr. Gary Negin, Second Reader

ABSTRACT

Wildlife All Around Us: A Second Grade Curriculum Guide to Local Wildlife provides opportunities for second grade students to explore, study, and apply critical thinking skills in reference to the local wildlife and current environmental issues. The lessons in this guide are place-based in and around the school setting, creating a genuine and authentic learning experience. This guide offers teachers the opportunity to integrate environmental education into their core subjects, specifically language arts and science, while using the local outdoor settings for explorations. Lessons are correlated to the California State Content Standards for Language Arts and Science as well as Environmental Principles.

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CHAPTER ONE

INTRODUCTION

As an elementary educator concerned with the environment, I decided to write a curriculum guide that would provide teachers with lessons they could use to teach their students about the local habitat and wildlife and how to protect it. This guide was developed in response to personal experience with students who disregard the importance of habitat and wildlife by throwing trash on the ground and disrupting nature. I have seen many students who seem to lack knowledge about their local habitat and wildlife, but when provided with that knowledge, became eager to learn about how they could help the environment. Teaching students about the environment and empowering to make positive differences in their communities were the purposes of this curriculum guide. The lessons were also developed with the teacher in mind, requiring few materials and limited preparation, so as to increase the likelihood of their use in the classroom. It is my hope that environmental education will be integrated through the core curriculum in public schools so that students will grow up with a greater sense of environmental responsibility.

General Statement of the Problem

With current trends in education primarily focusing on language arts and math, our children may be lacking the knowledge and experience to become environmentally responsible citizens. With some scientists warning that human interaction with the environment is affecting resource depletion and species extinction, it is critical that our public education incorporate environmental education within the school day to create a generation of citizens able to work toward the sustainability of Earth, its natural resources, and the perpetuation of plant and animal species. I believe that educating children about the importance of local habitat and wildlife may help to improve the way these students and their families respond to the environment. If more emphasis in education was placed on caring for our local environments, children will grow up with a better idea of how human actions affect habitat and wildlife, as well as how to be environmentally responsible citizens. With this knowledge, future generations will be able to make choices that preserve and protect habitat and wildlife.

It has been my observation as a classroom educator that city wildlife and habitats are often ignored when wildlife education is presented to students. This lack of

focus on wildlife in backyards, schoolyards, and public parks means that students may be unaware of how to respect and take care of local habitat and city wildlife. City wildlife constitutes those plant and animal species which live near and in cities and whose existence is directly affected by human inhabitation. The focus of this curriculum guide is to provide opportunities for second-grade students to understand the impacts human settlement has on city wildlife as well as ways in which they can respect and protect habitats and wildlife in their city communities.

Significance of the Project

Wildlife All Around Us is a second-grade cross-curricular education guide designed to provide wildlife education by providing lessons and activities that are easily accessible, require minimal preparation or resources, focused on schoolyard or city wildlife, and take place in outdoor settings. The wildlife education lessons aim to enable children to learn about local wildlife in order to develop responsible decision making skills concerning their local environment.

Developing sensitivity in students for their environment and the local wildlife is essential in the

effort to ensure sustainability of our Earth. As a basis for developing this environmental sensitivity, this guide offers standards-based lessons for second-grade students focused on using outdoor areas in the community. The lessons are specifically designed to be integrated across all subject matter, applying a multitude of learning modalities. The lessons aim to enable children to access knowledge about habitat and city wildlife, examine and study the outdoors in their community, and apply problem solving skills to common community problems.

Statement of Needs

Human interaction with the environment can negatively affect the survivability of some plant and animal species. There is a need for the co-existence of humans and wildlife to be balanced. This balance is in jeopardy as many plants and animals are being threatened or endangered as a result of habitat loss. Human contact tends to contribute to the depletion of critical habitats. Researchers have reported that the lack of designated critical habitats and recovery plans for endangered species is resulting in endangerment or extinction (Taylor, Suckling, & Rachlinski, 2005).

Environmental education is necessary in order to teach children about the direct effect of their actions on wildlife and habitats. Without developing a sense of environmental responsibility and stewardship in children at an early age, we risk the likelihood that future generations will continue to threaten the existence of many species leading to endangerment and extinction.

Wildlife education at the second grade level is the focus of this project. It is based on the goal of building a citizenry that is environmentally aware and knowledgeable about the existence of wildlife outside of local zoos or non-human inhabited areas. Environmental education, integrated into other basic skills, is critical for achieving this environmental awareness in children. Environmental education is important because it can help build critical thinking and decision-making skills so children will grow up with a better understanding of the importance of wildlife and our environment. If teachers relied on teaching students about the environment during science only, many teachers may not find the time or resources to do this, as some schools lack science curricula. I believe there is a need in public education to bring science and environmental education back into the core curriculum, and one solution is to integrate the

subjects while connecting the lessons to the California Content Standards.

Local wildlife education, as presented in this guide, is supported by the benefits of place-based education. Students who engage in hands-on, relevant learning about their local environment, have been shown to have higher self-esteem and score higher on academic tests, and have higher attendance (Leiberman & Hoody, 1998; Loveland, 2003; Smith, 2002).

In summary, this guide aims to enhance the quality of life for species in the local environment while improving the learning experiences of the students involved.

CHAPTER TWO

LITERATURE REVIEW

To develop lessons for teaching about local habitat and wildlife, I looked at the history of environmental education, place-based education and standards in education. By researching the history, I was better able to construct lessons that support the goals of environmental education. Researching place-based education provided information on student learning in place-based settings and how these settings contribute to students' understanding of the environment as well as academic achievement and positive citizenship. Finally researching standards in education provided a framework within which to construct the lessons, focusing on both California Content Standards and environmental principles.

History of Environmental Education

Since the 1960s, environmental educators have recognized that urbanization has led to a diminished understanding of human dependency on natural resources (Stapp, et al., 1969, p. 31). Environmental educators have since attempted to encourage responsible environmental citizenry by increasing human awareness and understanding of community problems as it pertains to the environment.

According to Stapp, et al., environmental education is "...aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution" (1969, p. 31). Also Stapp et al. went on to write that environmental education should be designed to reach learners of all ages and should focus on community environment and problems associated with that environment.

The goals of environmental education have been based on providing students with experiences in the environment in order to gain ecological knowledge and an "...awareness and concern about environmental interactions with urban and rural systems..." (Simmons, 1998, p. 23) In additional efforts to propel the development of environmental education in public education curriculum, The Tbilisi Declaration was also proposed in 1977. As a result of the world's first Intergovernmental Conference on Environmental Education, The Tbilisi Declaration was adopted which declared that "Environmental education should be provided for all ages, at all levels and in both formal and non-formal education" (The Tbilisi Declaration, 2001, p. 13). It also aimed to set forth preparation of individuals through understanding problems and attaining

skills for improving and protecting the environment. Of the proposed goals and principles of The Tbilisi Declaration, four are particularly relevant to the development of this curriculum guide. As stated in the declaration,

...to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; to create new patterns of behavior of individuals, groups and society as a whole towards the environment; be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective; and relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years.

(2001, p. 15-16)

In addition to The Tbilisi Declaration, other blueprints have emphasized providing environmental education for all ages and levels and have urged the need

for cross curricular integration. According to the World Commission on Environment and Development in 1987:

Environmental education should be included in and should run throughout the other disciplines of the formal education curriculum at all levels-to foster a sense of responsibility for the state of the environment and to teach students how to monitor, protect, and improve it. (in Westing, 1993, para. 7)

It has long been acknowledged that environmental education is a critical element for human well-being and survival (Westing, 1993). With trends in resource depletion and species endangerment continuing, environmental education is the roadmap for developing new ways of thinking (Westing, 1993). It has been suggested that cultural norms include new concepts such as thinking in terms of future generations and the effects of human's actions as well as "...the rights of the other living things with which humans share the Earth" (Westing, 1993, para. 7). Furthermore, 131 parties to the Convention on the Rights of the Child agreed that "...the education of the child shall be directed to...the development of respect for the natural environment" (in Westing, 1993, para. 3).

The Tbilisi Declaration propelled a movement toward environmental education integration through curricula guides, teacher training, and outdoor field experiences. However, a report by Kirk, Wilke and Ruskey showed that environmental education programs are inconsistent and incomprehensive (2001). Their study defined a model aimed at providing data regarding the comprehensiveness of environmental education programs in the United States. The model of a comprehensive program was defined as consisting of 16 components that identified program, structure, and funding components. Data were collected to survey the status of environmental education in the U.S. and results indicated that "...no state has all 16 components in place..." (Kirk, et al., 2001, p. 60). Although no state had all 16 components of a comprehensive environmental education program in place, a comparison study, surveying 173 state environmental education leaders and the programs they had in place, found that the number of components increased from 263 in 1995 to 334 in 1998 (Wilke, 2001, p. 63).

Since environmental education (EE) can be aligned with the goals of education to "...foster societal values and promote certain desirable behaviors, the goals of EE could be viewed as being very consistent with general

education goals..." (Culen, 2001, p. 37). The ability for environmental education to become an integrated part of general education curriculum is important in the development of active learning communities where "...learners share ideas, expertise, and prompt continued inquiry" (Simmons, 2001, p. 67).

The placement of comprehensive environmental education programs in all education settings may not be consistent; however, education is moving toward an increase of comprehensive environmental education programs which will lead to environmental literacy (Kirk, et al., 2001, p. 60). There is a need for more well-developed cross curricular environmental education. How education arrives at creating effective environmental education depends on several factors including, "...differences among school systems, community support and awareness of EE, state agency personnel support for EE, and the state's political climate all ensure that each state will find its own way towards creating a strong and effective EE program" (Kirk, et al., 2001, p. 62).

Environmental education is a valuable and necessary tool that can be used to educate future generations about global ecological threats and to improve environmental behavior. "Most environmental psychologists and educators

believe that environmental education (EE) is linked to environmental behavior" (Zelenzy, 2001, p. 235). As a means of fostering responsible environmental behavior, elementary educators can integrate environmental education across all curricula. The value and importance of environmental education integration are evident by statements from the World Conservation Union, the United Nations Environment Programme (UNEP), and the World Wide Fund for Nature stressing that "...governments, through central and local education authorities, should review the present state of environmental education (including social education) and should make it a part of all courses at primary and secondary, and many at tertiary level" (in Westing, 1993, para. 10).

Place-Based Education

Place-based education allows students to experience learning developed around real issues and needs. Providing environmental relevance stimulates academic achievement and positive citizenship. Students are also able to solve real life problems and achieve accountability by helping to improve local communities (Loveland, 2003, para 2). Simmons reported that environmental education programs that provide opportunities for students to work hands-on

and in the place are responsible for student achievement.

She wrote,

Well constructed environmental education programs are learner-centered, providing students with opportunities to construct their own understandings through hands-on, minds-on investigations. Learners are engaged in direct experiences and are challenged to use higher-order thinking skills. (2001, p. 66)

Place-based education is a structure or method of teaching that involves using place, or the relevant environment (i.e., the outdoors), as a context for learning (Smith, 2002). Place-based education integrates subjects such as language arts, mathematics, and the sciences with social, cultural, economic, political, and natural environments (Smith, 2002). The benefits of place-based education for students are increased accountability and improved academic performance (Loveland, 2003), increased self esteem, improved behavior and higher grade point averages (Smith, 2002).

Students attending schools with place-based education programs showed an increased enthusiasm for and engagement in learning, greater independence and responsibility, and a greater sense of pride and ownership compared to

traditional school settings (Lieberman & Hoody, 1998, p. 19.) Lieberman and Hoody (1998) conducted a study of 40 schools in the United States using Environment as an Integrating Context (EIC) programs and reported that, "...within an environment-based context, student enthusiasm and engagement, as well as a sense of pride and ownership, work together to improve self-control and decrease discipline and classroom management problems" (Lieberman & Hoody, 1998, p. 19).

The Alaska Rural Systemic Initiative (AKRSI) founded in 1995, has been documenting student achievement as related to the use of place-based education. AKRSI found that "students in AKRSI districts are exposed to a variety of place-based education projects that help improve their academic performance" (Loveland, 2003, para 7). According to the AKRSI documentation of eighth-grade CAT 5 math scores, students in 20 of 48 rural school districts using place-based education, over a four year period, showed gains in their scores, with 24.3 percent of students performing in upper quartile (Loveland, 2003, para 5).

Conservation biologists recognize the need for increased environmental education in school yard settings. According to Carol Brewer (2002), "finding ways to reconnect people to nature, through relevant experiences

in school, work, and recreation, is a critical challenge..." (p. 577). Schoolyards can be used as science laboratories rich with diversity, structure, and complex systems. Environmental education can easily be integrated when place-based education occurs in the schoolyard or community setting. Wildlife is abundant in these local areas and is readily available for place-based cross-curricular environmental learning. Although schools in rural settings may have more abundant wildlife, city or urban schools have many ecological lessons waiting in their backyards. Shrubs, trees, and ponds contain a variety of ecosystems and environmental exploration possibilities. Through using schoolyards as ecological laboratories "teachers and students discover...science is not only a corpus of knowledge, but also one way of knowing the world around us" (Brewer, 2002, p. 577). It has been reported that "...even a short outdoor learning experience can have a positive influence on the future environmental attitudes of children" (Brewer, 2002, p. 577).

Place-based activities are successful in reaching a multitude of learners for several reasons (Smith, 2002). First, place-based education supports student individuality and critical thinking by centering the

curriculum around student inquiry. Second, place-based education allows students to be active recipients of their learning by focusing on the production rather than the consumption of knowledge. Finally, projects that emphasize place-based learning provide direct experiences of the world. Teachers become facilitators and focus on guiding instruction rather than constructing the learning for the student. "By locating learning in the lives and concerns of students and their communities, place-based education takes advantage of students' natural interest in the world and their desire to be valued by others" (Smith, 2002, p. 30). Through these processes, children engage in learning and directly contribute to the improvement of school and community as related to the environment while improving academically and behaviorally.

Standards in Education

National and state standards in education were designed to "...delineate the knowledge and skill bases of their respective fields...to define what students should know and be able to do..." to be considered literate in the core subjects. (Simmons, 2001, p. 65) With the focus in California education on content standards, it is imperative that environmental education also be standards

driven. Although environmental education is not yet part of the content standards, it can be integrated across a variety of core subject matter in order to be accepted as relevant and necessary. The integration of environmental concepts into other curricula allows for environmental education to become an integral part of learning rather than a separate subject matter. Considering core subject standards, environmental education can easily become a means of teaching those concepts. "Environmental education has the potential of linking the K-12 curriculum, providing the opportunity to meet the requirements of the core disciplines by creating a comprehensive and cohesive program of study" (Simmons, 2001, p. 67).

The Education and the Environment Initiative is currently being implemented in California by the California Environmental Protection Agency and the California Waste Management Board. The initiative was developed to increase environmental literacy in elementary and secondary schools. The environmental principles, developed through the initiative, define what students should know to be considered environmentally literate and "...mandate the development of a unified strategy to bring education about the environment into California's primary and secondary schools" (California Environmental

Protection Agency, 2003). These environmental principles were developed to be used in conjunction with content standards. The principles focus on educating students about ecosystems and the relationship with human societies, natural system cycles, the exchange of matter between natural systems and human societies, and decisions affecting resources and natural systems (California Environmental Protection Agency, 2003).

CHAPTER THREE

Methodology

Wildlife All Around Us: A Second Grade Curriculum Guide to Local Wildlife was developed for second grade students. Whether these students live in affluent or lower-socioeconomic areas, these lessons could be adaptable to reach a wide array of student populations. The objectives in the lessons are aimed at students learning about the habitat and wildlife in their local community, based on science and environmental principles. Lessons include vocabulary, introductions to concepts, and background knowledge as well as exploration and problem-solving activities. The activities will help engage students by accessing prior knowledge and personal experiences and providing an understanding of new vocabulary and concepts through exploration and place-based experiences.

Development

The lessons are based on California State Content Standards for Language Arts (California Department of Education, 1998) and California State Content Standards for Science (California Department of Education, 1998) for second grade. Also included are environmental principles

(California Environmental Protection Agency, 2003) so that elementary educators are able to integrate environmental concepts into the core curriculum (see Appendix D). Thus the lessons meet state standards in language arts and science and the new environmental principles while providing valuable environmental learning experiences inside and outside of the classroom. Children's literature and music are also incorporated to access all learning modalities and provide a well-rounded, easily integrated, cross-curricular approach to environmental education.

Design

Many of the lessons focus on exploration activities and are place-based in the local community. The intent is to bring students outside where learning can be experienced first-hand. The goal is for second grade students to be able to experience, explore, and develop a clear understanding of the relationship between humans and wildlife as it pertains to their local community. Students should gain an understanding of local habitats and wildlife in the city. Through place-based activities, students should also develop a sense of environmental responsibility and an increased interest in improving the community for local wildlife.

This guide was written with the intention of providing a curriculum or lesson ideas for teachers in Southern California city schools to use in and around their schoolyard environments, eliminating the need to take a costly and time-consuming field trips elsewhere. Often field trips require fund-raising or budget approval as well as efficient planning and preparation on part of the classroom teacher. There is much wildlife and habitat education that can occur at school, but teachers need to be aware of the possibilities.

Lesson ideas for this guide were based primarily on current local environmental concerns such as solid waste pollution, limited recycling practices in schools, and disturbed local habitats. Some activities in environmental curriculum guides such as *Project Learning Tree* (American Forest Foundation, 2002) and *Project WILD* (Council for Environmental Education, 2002) were also examined for ideas. The lessons and activities were created through personal teaching experience as an elementary educator teaching environmental concepts to second-graders through language arts, science, and math for several years. All of the lessons in this guide were field tested with my own students and are a compilation of environmental learning activities I have developed over the years.

This guide is divided into two categories of environmental education: local habitat and local wildlife. The first, local habitat, explores the local natural habitat found in and around a schoolyard setting (see Appendix A). Lessons focus on defining habitat, exploring these habitats, and identifying pollution affecting these areas. Problem solving activities aim to provide opportunities for students to apply their knowledge of habitats and are included by having them analyze, synthesize, and evaluate ways to combat pollution of solid waste in local habitats.

The second category, local wildlife, focuses on defining wildlife in urban settings and exploring for signs of wildlife that depend on the habitats in and around the schoolyard setting (see Appendix B). Students are provided with opportunities to problem solve and think critically about the coexistence of wildlife and humans in urban areas. The lessons provided can be adapted to the local setting and are not limited to a select group of wildlife.

Summary

The lessons in this guide were developed to help students understand the importance of being

environmentally responsible and realize the power they can have as citizens of the Earth to make a difference. The idea of sustainability and conservation of local wildlife is explored as a means of solving current problems identified by the students.

CHAPTER FOUR
IMPLICATIONS FOR EDUCATORS

Wildlife All Around Us: A Second Grade Curriculum Guide to Local Wildlife presents lessons by which teachers will be able to incorporate the outdoors as a means of teaching and providing opportunities for inquiry. The guide was developed with the goal that teachers would be able to expand on lessons provided as needed and choose appropriate lessons to integrate across the curriculum. The intention of this guide was not to provide a comprehensive science or environmental education program. It was intended to give teachers a foundation upon which they could begin to incorporate environmental education into the core subjects. The lessons were also designed to provide teachers a starting point or general ideas on how to teach about habitat and local wildlife.

There is also a concern with the likelihood that this curriculum guide would be used by teachers in the current curriculum-mandated era of education, where standards and single-adoption programs are the norm. It is unlikely that a guide such as this would be used in schools or districts where mandated, fully-implemented language arts based programs take precedence. Especially concerning is the

current trend of science being eliminated altogether in elementary classrooms as a result of a complete focus on language arts and math.

Environmental education has been recognized by many environmentalists and educators as an important and much needed component of our education goals. With current environmental threats on the rise, it is becoming more evident that our children need to gain the knowledge and understanding of how human actions affect our natural environments. Research supports the effectiveness of place-based education increasing students' ability to succeed in the classroom. (Loveland, 2003, p. 6)

This guide provides local wildlife lessons that can be easily integrated and require limited resources and preparation by the classroom teacher. By basing the lessons on state standards for core subjects, these lessons can meet the ever growing demands placed on teachers to ensure all educational experiences are aligned with the state expectations for that grade level.

APPENDIX A
HABITAT LESSONS

Background Information: What is a Habitat?

Habitat refers to the natural home or environment of an organism. This would include any natural space used by wildlife as a home and the surroundings depended upon for survival. Examples of habitat in or around the schoolyard would include trees, shrubs, grass areas, parks, and any space that is inhabited by some form of wildlife (i.e., insects, birds, reptiles, and mammals). A habitat serves as a means of living for these organisms. A habitat provides food, water, and shelter to wildlife.

Organisms need to survive in habitats often intruded upon by human activity, including schoolyards and community parks. Trees or shrubs are sometimes removed and human activity and traffic may disrupt a habitat. Although human activity can devastate a habitat and negatively affect the wildlife which depend on it, there are many action steps humans, including children, can take in order to ensure that this interaction is positive.

The lessons in this section are aimed at teaching second grade children about the ways in which they can help to protect habitats in local communities. The lessons are intended to allow students to obtain background knowledge about habitats in local communities, explore local habitats and record findings, and develop an environmentally responsible attitude toward taking care of local habitats.

Materials for lessons:

Activity Sheets 1-8 (duplicate for students), journals, index cards,
pencils, markers

Suggested Literature:

1. Flemming, Denise (1996). Where Once There Was a Wood. Henry Holt and Company.
2. Baylor, Byrd (1987). The Desert is Theirs. Aladdin Paperbacks.
3. Dowden, Ann O (1972). Wild Green Things in the City: A Book of Weeds. Crowell Publishing.
4. Baker, Jeannie (1991). Window. Harper Collin's Children's Books.
5. Baker, Jeannie (2004). Belonging. Walker Books, LTD.
6. Madden, Don (1986). The Wartville Wizard. Aladdin Paperbacks.

California Principles and Standards for Second Grade met
by Lessons:

California Environmental Principles:

Principles Ic., IIc., IIIc., IVa., IVb., Va.

California Language Arts Standards:

Reading Comprehension 2.2, 2.3, 2.4, 2.5, 2.6

Literary Response and Analysis 3.2

Writing Strategies 1.1, 1.2

Writing Applications 2.1, 2.2

Written and Oral English Language Conventions 1.1-1.8

Listening and Speaking Strategies 1.1, 1.2, 1.3, 1.5, 1.6, 1.8, 1.9

Speaking Applications 2.2

California Science Standards:

Investigation and Experimentation 4a, 4c, 4d, 4g

Lesson 1: Introduction to Local Habitat

Objectives:

1. Students will be able to define habitat.
2. Students will be able to identify the characteristics of a habitat.

Instruction:

1. Complete a graphic organizer called a KWL chart. First have students brainstorm what they know about habitat. Write down all responses, correct or not. Pass around books or pictures of different kinds of habitat (trees, rivers, forests, deserts, fields, etc.). Record students' questions of what they want to know about habitats. As you continue with the lessons and activity ideas, chart answers to students' questions as they come up under what we have learned about habitats.

Example KWL chart:

What we KNOW about habitats	What we WANT to know about habitats	What we have LEARNED about habitats
(student responses)	(student questions)	(facts about habitats that answer questions)

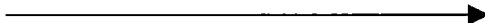
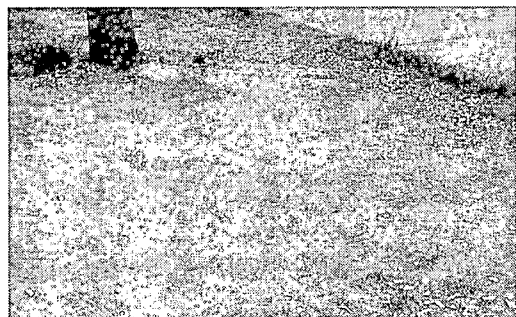
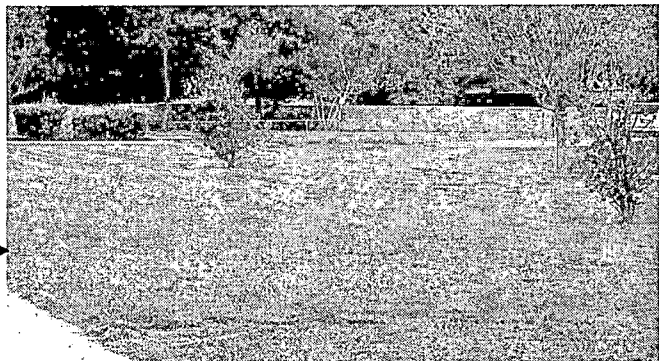
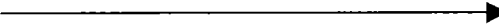
2. Use "What is Habitat?" Worksheet (Activity 1) to complete chart with students. The teacher copy can be used as an overhead transparency or copied on a large chart paper. Fill

in ideas on the transparency or chart as students fill in their own paper copies. Discuss and examine what makes a natural space a habitat. Predict possible habitats in and around the schoolyard setting.

Activities:

1. Write habitat poems (acrostic, diamonte, haiku) using features discussed and charted in Lesson 1.
2. Sing Habitat Songs (Activity 2).
Make copies for students or rewrite on large chart paper.
Teach the song and use this as an opportunity to introduce/review vocabulary and concepts related to habitats.

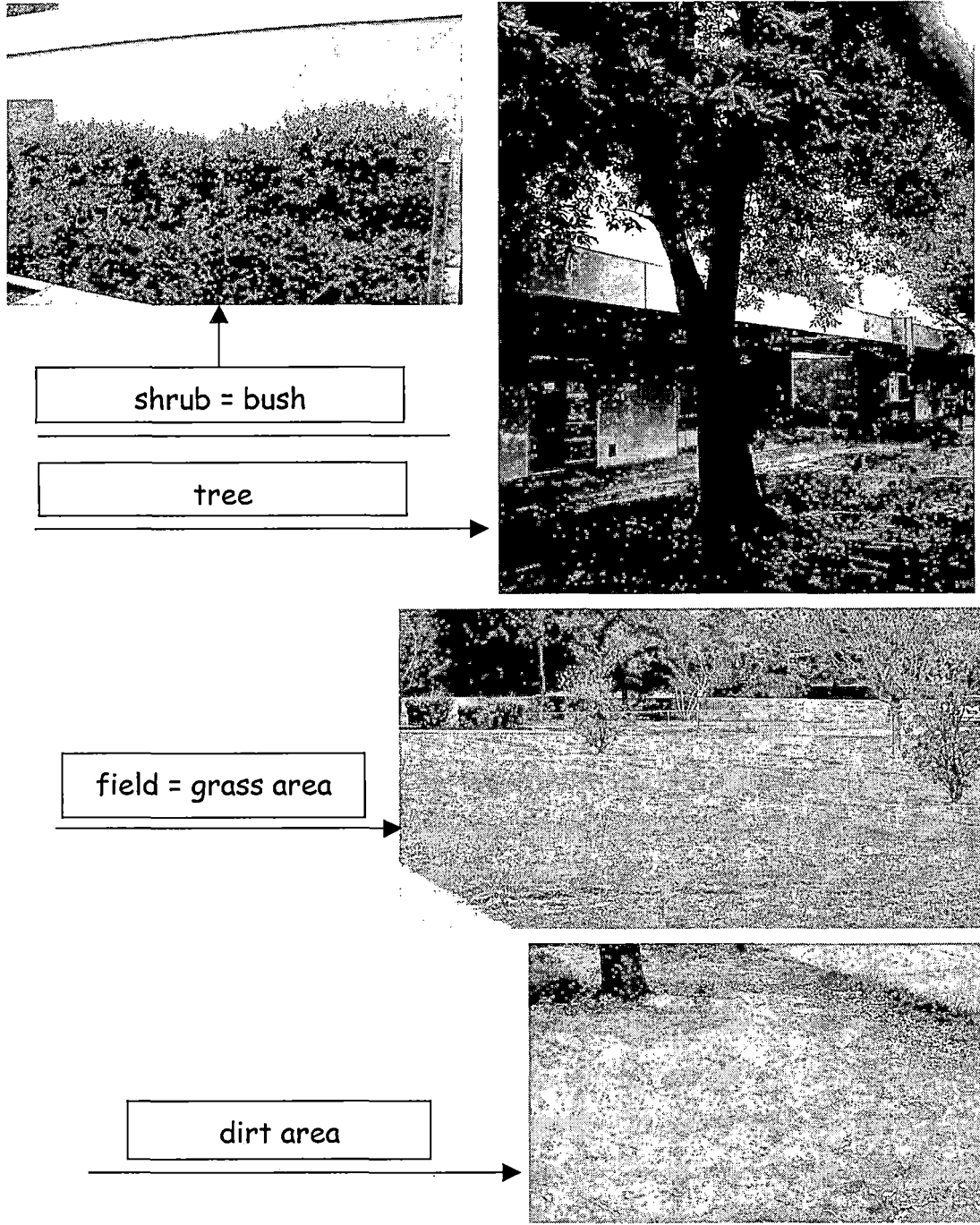
Activity 1
What Is Habitat?
Student Page



Activity 1

What Is Habitat?

Teacher Page



Activity 2:

Habitat Songs

Tune: Mary Had a Little Lamb

Nature is so beautiful, beautiful, beautiful;
Nature is so beautiful, all throughout the year.

Trees and plants give us oxygen, oxygen, oxygen;
Trees and plants give us oxygen, all throughout the year.

Busy animals make their homes, find their food, raise their young;
Busy animals need their homes, all throughout the year.

We have many habitats, habitats, habitats;
We can see many habitats, all throughout the year.

Tune: Take Me Out to the Ball Game!

Nature and all the habitats,
Are great places to explore;
Looking at all of the plants and trees,
Beautiful animals, spiders, and bees.
Protect the things all around you,
Pollution like trash will destroy...
Our great, grand, beautiful earth,
It's the land we adore!

Lesson 2: Habitat Explorations

Objectives:

1. Students will be able to identify habitats in their local communities.
2. Students will be able to write or draw descriptions of observations of local habitats.
3. Students will be able to make predictions based on observed patterns in local habitats.
4. Students will be able to compare and sort common leaves with two or more physical attributes.
5. Students will be able to follow oral instructions for a scientific investigation on habitat.

Instruction:

1. Use "Schoolyard Habitats" Worksheet (Activity 3) and take a "field" trip around the school. Visit each of the listed habitats to look for food and shelter for wildlife. Ask,
 - Does this area provide food and shelter for wildlife? (knowledge, comprehension)
 - Why is this area a habitat for wildlife? (analysis)
 - How will this area look in 10 years? (synthesis)
 - Should we take care of this habitat? (evaluation)

As you are visiting each possible habitat area, have students record answers to these questions.

2. "Leaf Me Alone!"(Activity Sheet 4).

Students will compare two leaves using physical attributes such as color, texture, shape, and size. Take class outside and have students (solo, partners, or teams) collect an assortment of leaves. Then have them draw or attach their leaf samples to the activity sheet. They should compare each leaf according to its physical attributes.

3. Habitat Habits

Read Window and Belonging by Jeannie Baker. Discuss the changes that occurred in both stories. Make a list of the positive and negative affects of these changes to the local habitat.

Example chart:

	Positive Changes	Negative Changes
<u>Window</u>		
<u>Belonging</u>		

Explore the changes in a habitat over time. Each student chooses a specific schoolyard habitat to study. Using a journal or log book, students record daily or weekly

characteristics of that habitat. This activity is meant to be a long-term exploration to allow students to see the natural changes in an environment as related to weather and human disturbances. They should be able to understand the relationship between human activity and wildlife in the habitat they are studying. Ask:

- Has your habitat changed in appearance?
- Are there any new signs of wildlife you have discovered?
- Did wildlife seem to go away?
- Did anything disrupt your habitat?
- Is there evidence that people were here?

3. "A Few Of My Favorite Things (Activity 5).

Students will explore schoolyard habitats and connect with this environment by identifying and listing their favorites related to the natural environment. Take students outside or to a local community park to complete the sentence starters. They should record their favorites with words (nouns), pictures and adjectives to describe what they experience.


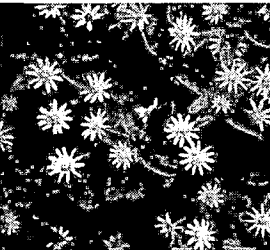

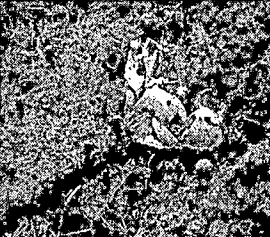
Activities:

1. Go outside and have students choose a quiet place to sit. Ask students to record on an index card all of the characteristics about being outside they like (i.e., trees, birds, sounds of wind, the feel of the grass, smells, flowers, watching insects,

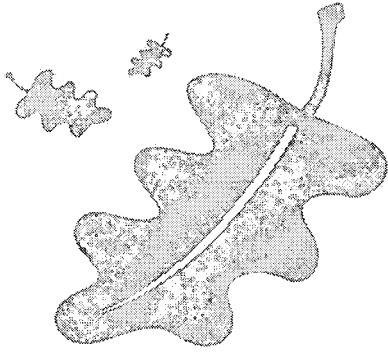
etc.) After 5-10 minutes, regroup and ask students to share their thoughts. Connect the idea of nature and habitat to the schoolyard setting. Point out that even in urban or city environments, there are many natural habitats to explore.

2. **Habitat Poster.** Students create a poster illustrating the different habitats explored and discovered in the schoolyard. Have them label these areas and the wildlife that depends on this habitat. You may chose to have students share their posters with others or even post them around the school for others to see.

Activity 3:

Habitat	Food for Wildlife	Shelter for Wildlife	Problems With Area
<p>tree</p> 			
<p>bush or shrub</p> 			
<p>grass area or field</p> 			
<p>dirt</p> 			

Activity 4:
Leaf Me Alone!



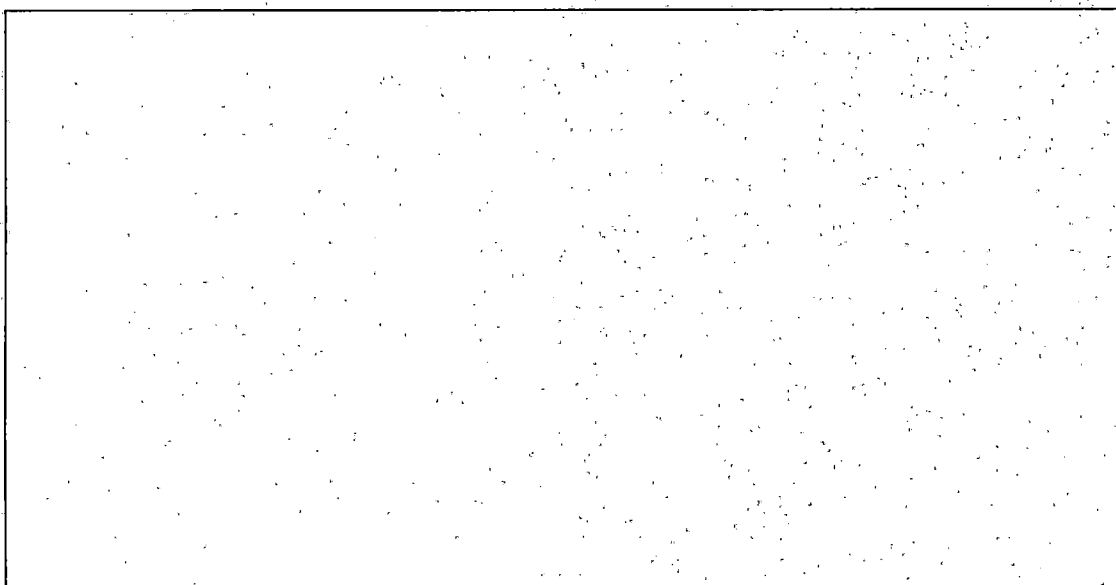
LEAF	color	texture	size	shape

Activity 5:

A Few of My Favorite Things

1. My favorite color in nature is _____
2. My favorite shape in nature is _____
3. My favorite sound in nature is _____
4. My favorite thing to touch is _____
5. My favorite thing to look at is _____
6. My favorite place to sit is _____
7. My favorite smell is _____
8. My favorite place to go is _____

Draw one of your favorite things:



Lesson 3: Habitat Protection

Objectives:

1. Students will be able to make predictions based on observed patterns in and around schoolyard habitats.
2. Students will be able to predict and generalize the effects of human activity on local habitats.
3. Students will be able to problem-solve and think critically about an environmental issue related to habitat.

Instruction:

1. Read The Wartville Wizard by Don Madden.
 - a. Stop half way through the story (before the problem is solved) and allow students to come up with solutions of their own for the townspeople and the problem of solid waste pollution.
 - b. Continue reading story and discuss the outcome. Do they think it was a good solution? What do they think the town will look like in 10 years? Will people forget the lesson they learned?
 - c. Students create posters to post around the school reminding students to place their trash in its proper place.

2. "School Ground Survey" (Activity 6).

Students should take a survey of schoolyard waste by completing the activity sheet. Students brainstorm ways to recycle solid waste in school. Have them design a plan for implementing a recycling program: (i.e., aluminum cans, paper, and plastic bottles). Allow students the opportunity to introduce the recycling program to the entire school and manage the program as well. They may wish to buddy up with older students. Extend the recycling by involving parents and community members. A plan should be made on how the funds earned from recycling materials will be used (i.e., books for the library, field trips).

3. "Habitat Helpers" (Activity 7).

Students read about possible habitat problems in urban settings and brainstorm possible solutions:

- a. Have teams role play how these habitat problems might be solved.
- b. Create solution posters campaigning to the school or community what steps should be taken to solve the habitat problem
- c. Write letters to local community leaders expressing concern and plausible solutions to the habitat problems.

4. "Do You Need Me? I'm a Tree" (Activity 8).

Students identify the need for trees in urban areas.

Brainstorm together or allow groups of students to brainstorm four benefits a tree provides, using the graphic organizer. Share ideas and write them on sentence strips.

Have students put their ideas in order of importance according to what they value. Values can be categorized and may include beauty (aesthetic), money (economic), wildlife (environmental), or play (recreational) importance.

Aesthetically valuing trees means students find trees visually appealing and enjoy their beauty. Economic value focuses on what we gain from trees financially (i.e., wood and paper).

Environmental values are based on what trees provide for the environment (i.e., oxygen and shelter for animals).

Recreational values focus on what we gain from trees for play or fun (i.e., climbing).

Lead students in a discussion about these values and have them organize their ideas or number on their graphic organizer the order of importance for each value. Allow different student opinions to be expressed as this will encourage them to listen and consider varying viewpoints. Conclude with the idea that we need trees for all of these reasons and each value is important.

5. A Look into the Future:

Reread Window and Belonging to students discussing the changes that happen over time:

- a. Review chart created in Lesson 2, part 3 (Habitat Habits). Discuss with students what actions can be taken to solve some of the negative effects of urbanization on local habitats. Ideas might include keeping areas clean, recycling, maintaining natural areas (i.e., gardens, landscaping), and respecting habitats by leaving them alone.
- b. Have students create a picture of their schoolyard or community habitat as it is now on one side of the paper and a vision of what they think it will look like in the future on the other side. Illustrations should parallel the discussions, explorations, and problem-solving experiences thus far in order for students to predict the level of change human activity may have on that habitat.

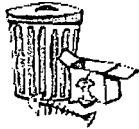
Activity 6:

School Ground Survey

1. What kind of trash do you see?

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

2. What did you find in these areas?









3. Where is most trash located? _____

4. Where is most trash coming from? _____

Activity 7:

Habitat Helpers

Habitat Helpers #1:

You and your friends are walking home from school and notice some trash on the ground. The trash is near a storm drain and could eventually end up in the ocean. What do you do?

Habitat Helpers #2:

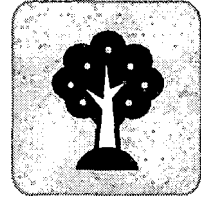
You and your friends go to a park and notice some other kids your age stomping on some flowers and writing on trees. What do you do?

Habitat Helpers #3:

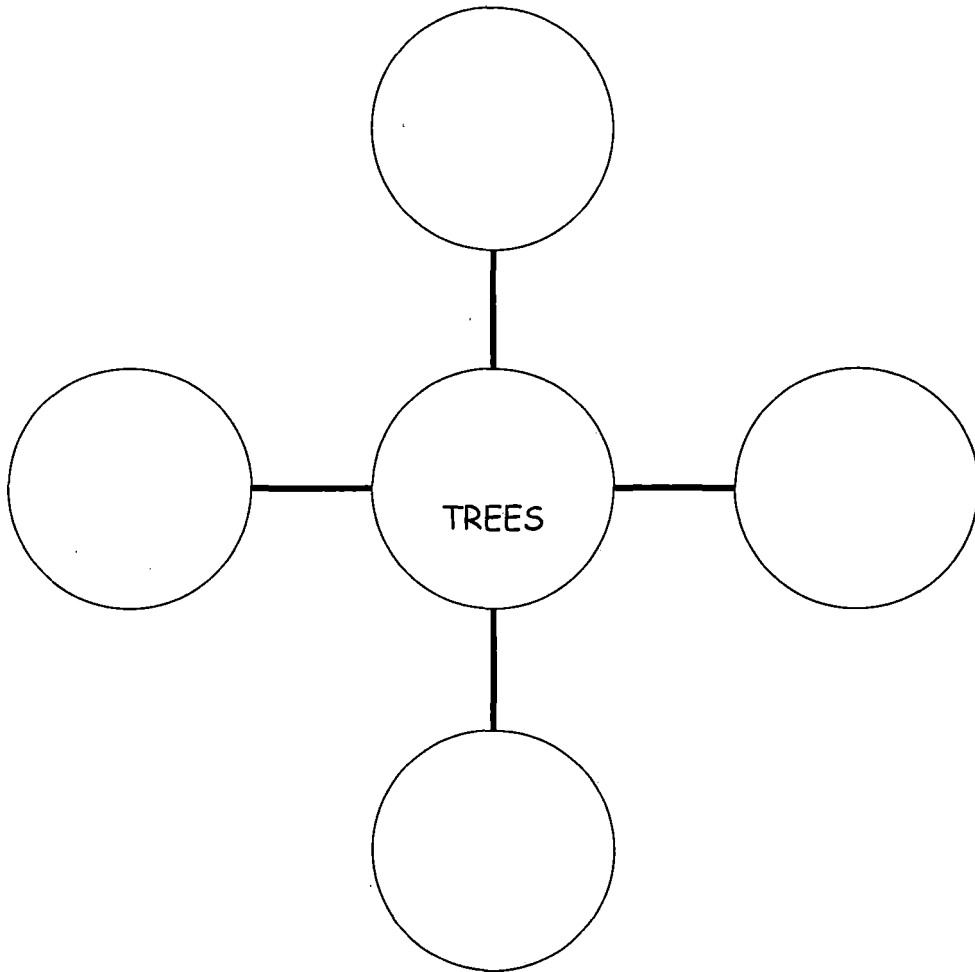
Your family decides to take a walk around your neighborhood. During your walk, someone in your family throws a piece of trash on the ground. What do you do?

Activity 8:

Do You Need Me? I'm A Tree.



What good comes from trees in our community?



APPENDIX B
WILDLIFE LESSONS

Background Information: What is Wildlife?

Wildlife refers to any organism that lives in a natural space without the reliance of humans for survival. Wildlife includes plants, trees, insects, spiders, birds, reptiles, and mammals. Wildlife, as referred to in this guide, does not attempt to exclude organisms, but rather provide an umbrella under which those organisms found in natural settings can be categorized. For student understanding, wildlife does not refer solely to wild animals in nature because as much wildlife exists in urban settings. Some possible urban wildlife includes ants, spiders, worms, hummingbirds, lizards, squirrels, opossums, bats, and raccoons.

It is important that students understand that wildlife and nature are not exclusively found in ecosystems such as forests and deserts. Schoolyards and community parks contain an abundance of wildlife, with their natural habitats to be explored, appreciated, and cared-for. The lessons in this section aim to build background knowledge of what wildlife is, how to identify signs of wildlife, and how human interactions with wildlife affect their survival.

Materials for wildlife lessons: Activity Sheets 9-15 (duplicate for students), pencils, markers, magnifying glasses, camera (optional), index cards

Suggested Literature:

1. Farber, Norma (1979). Never Say Ugh to a Bug. Greenwillow.
2. Peet, Bill (1969). Fly Homer Fly. Houghton Mifflin Publishing.
3. Wildsmith, Brian (1975). Squirrels. Franklin Watts.
4. Bash, Barbara (1990). Urban Roosts: Where Birds Nest in the City. Sierra Book Clubs.
5. Fredericks, Anthony D (2001). Under One Rock: Bugs, Slugs, and Other Ughs. A Sharing Nature with Children Book.
6. Davies, Nicola (2001). Bat Loves the Night. Candlewick Press.
7. Bishop, Nic (2002). Backyard Detective: Critters Up Close. Kazoo Books.
8. Sweeney, Linda B (2001). When a Butterfly Sneezes: A Guide for Helping Kids Explore Interconnections in Our World Through Favorite Stories. Pegasus Communications.

California Principles and Standards for Second Grade met
by Lessons:

California Environmental Principles:

Principles IIa., IIc., IIIc., IVa., IVc., Va.

California Language Arts Standards:

Reading Comprehension 2.2, 2.3, 2.4, 2.5, 2.6

Literary Response and Analysis 3.2

Writing Strategies 1.1, 1.2

Writing Applications 2.1, 2.2

Written and Oral English Language Conventions 1.1-1.8

Listening and Speaking Strategies 1.1, 1.2, 1.3, 1.5, 1.6, 1.8, 1.9

Speaking Applications 2.2

California Science Standards:

Investigation and Experimentation 4a, 4d, 4f, 4g

Lesson 4: Introduction to Local Wildlife

Objectives:

1. Students will be able to define wildlife as it pertains to urban communities.
2. Students will be able to identify wildlife in their local community.

Instruction:

1. Read selected literature about local or urban wildlife, such as the books listed at the beginning of this section. Discuss wildlife as it pertains to your students' local community.

Ask:

- a. What do you think is wildlife?
- b. Have you seen or heard wildlife near school or your home?
- c. What do you do when you spot wildlife?

Chart different forms of wildlife students discussed. List different animals they are familiar with and have seen or heard in and around their community. This will serve as a brainstorming activity to demonstrate your student's background knowledge of local wildlife.

2. "Wildlife All Around Us" (Activity 9).

Complete picture chart with students by identifying and labeling signs of wildlife commonly found in urban settings.

Discuss how students can be good detectives by looking for these signs when exploring local habitats.

Activities:

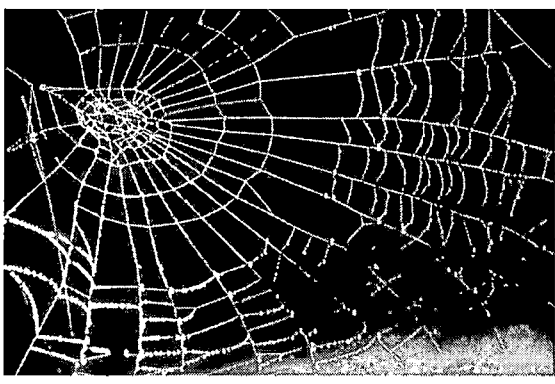
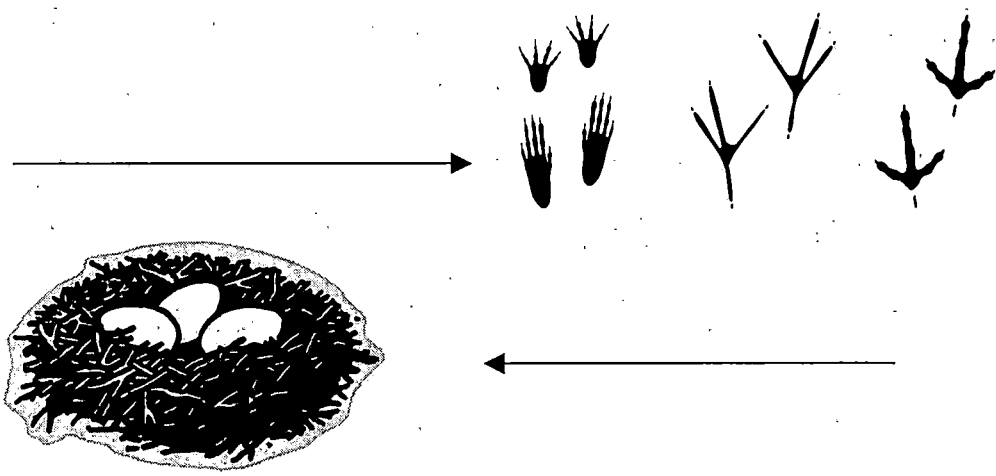
Sing "Wildlife Songs" (Activity 10).

Make copies for students or rewrite on large chart paper. Teach the song and use this as an opportunity to introduce/review vocabulary and concepts related to wildlife.

Activity 9

Wildlife All Around Us

Student Page

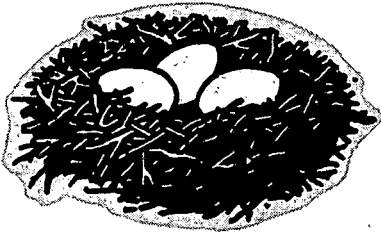


Activity 9

Wildlife All Around Us

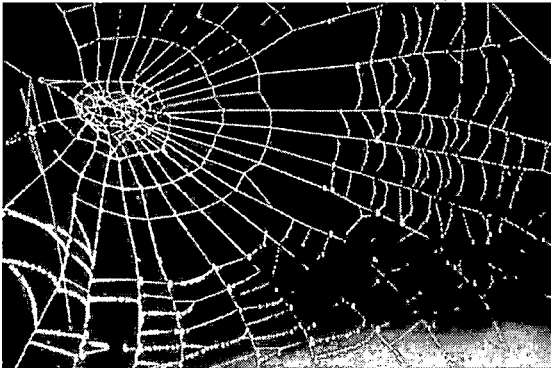
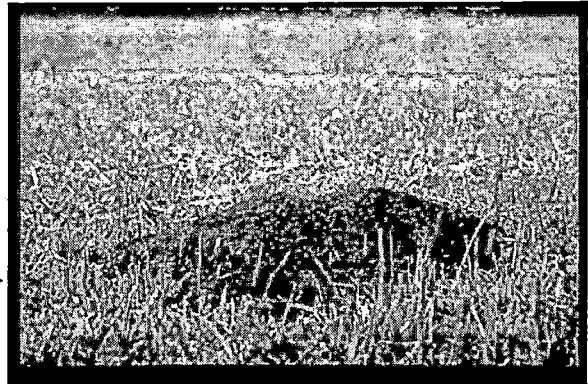
Teacher Page

animal tracks



nest

ant hill



web

Activity 10:
Wildlife Songs

Wildlife Chant

Tune: military cadence

Wildlife is all around, (students repeat)

From way up high down to the ground (students repeat)

Many species we can see (students repeat)

Insects, reptiles, birds in trees (students repeat)

Mammals, rodents, arachnids too (students repeat)

All these species depend on you (students repeat)

To keep things clean and mind your place

(students repeat)

So wildlife has a natural space (students repeat)

Sound off... wildlife!

Sound off... wildlife!

1,2,3,4... They're wild!

Lesson 5: Wildlife Explorations

Objectives:

1. Students will be able to identify signs of wildlife.
2. Students will be able to write or draw descriptions of observations of local wildlife.
3. Students will be able to use magnifiers to observe and draw descriptions of signs or features of local wildlife.

Instruction:

1. "Can You Spot Me?" (Activity 11).
Take students outside in the schoolyard or to a local community park to explore habitats for signs of wildlife. Allow students to explore using magnifying glasses and have them record what they found (i.e., animal tracks, chewed leaves, webs, holes in the ground, nests, trails). This activity is intended to develop an understanding of what kinds of wildlife exist in their local community.
2. "Wildlife In My Community" (Activity 12).
Read books about wildlife and complete the chart for each animal or insect chosen. Once several kinds of wildlife have been discussed, go out into the schoolyard, to a local park, or vacant lot to identify these animals. You may wish to bring binoculars and magnifying glasses. A less expensive option would be to have each student use a toilet paper roll as a

"looking tube." Using a "looking tube" allows students to focus in on specific areas. "Looking tubes" also allow students to search for their wildlife closely since they only view a small area at a time.

3. Read books about ants and spiders.

a. "Ants and Spiders" (Activity 13).

Complete this chart with students by labeling the parts of the ant and spider with them. Use the teacher copy for vocabulary and information to add to the chart. Students use the blank form to fill in labels and information as the teacher discusses it with them and writes the same information on an overhead transparency or larger chart for students to copy.

This chart will teach students about the features that separate ants as insects and spiders as arachnids.

Discuss the differences between the two (i.e., insects have three body parts and six legs; whereas spiders have two body parts and eight legs).

b. Explore in and around the schoolyard for signs of ants and spiders. Have students use magnifiers to observe them closer up without harming the ant or spider.

Prepare your students by reminding them that they

are nature detectives, not nature destroyers, so they should watch and observe without disrupting.

Activities:

1. Adopt a class insect (caterpillars, walking sticks, ant farm, etc.) to observe and take care of. Record daily patterns observed.
2. Keep a wildlife journal. Encourage students to record signs of wildlife they see around their homes and communities and human activity that might be disturbing this wildlife. They may write or draw their observations and should be encouraged to share their findings with others.
3. "Where's My Home?" (Activity 14).

In this activity, partners or teams of students create a habitat and wildlife scavenger hunt by giving clues for others to solve. One team of students will describe habitats and provide information about the food, shelter, and characteristics of that area. Students will need to explore the schoolyard for habitats in order to record information and create their scavenger hunt clues.

Once these clue sheets are created (Activity 14), other students (partners or teams) take that sheet and go outside to "hunt" for the habitat. Once they are able to locate the area, they will record the wildlife they think depends on that

habitat by answering the last to questions on the page.
Groups share back their findings with each other.

Activity 11:

Can You Spot Me?



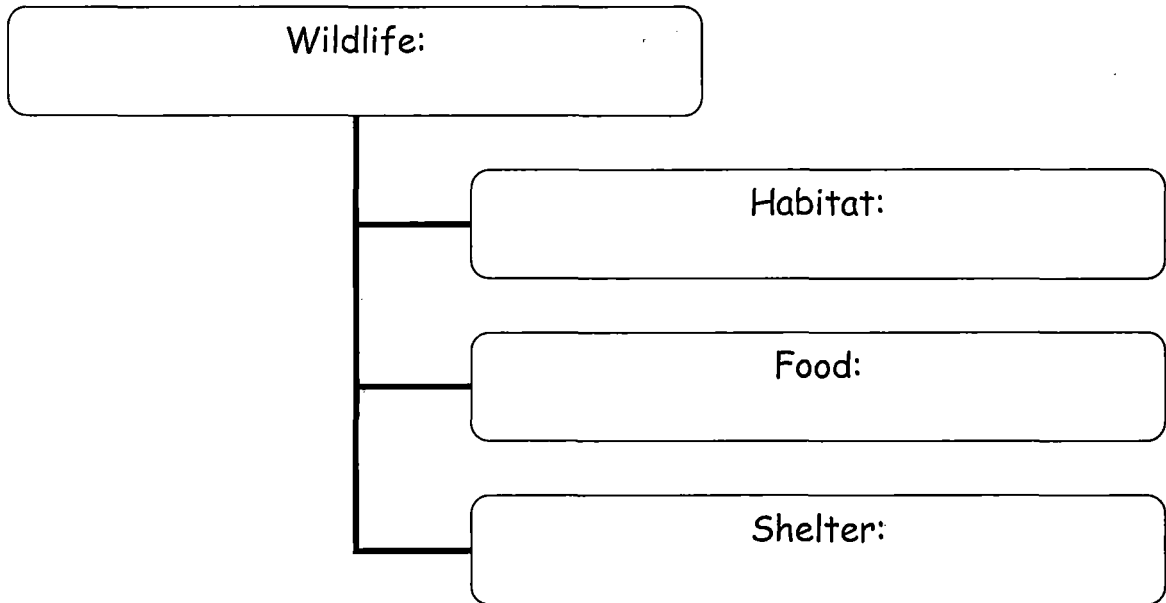
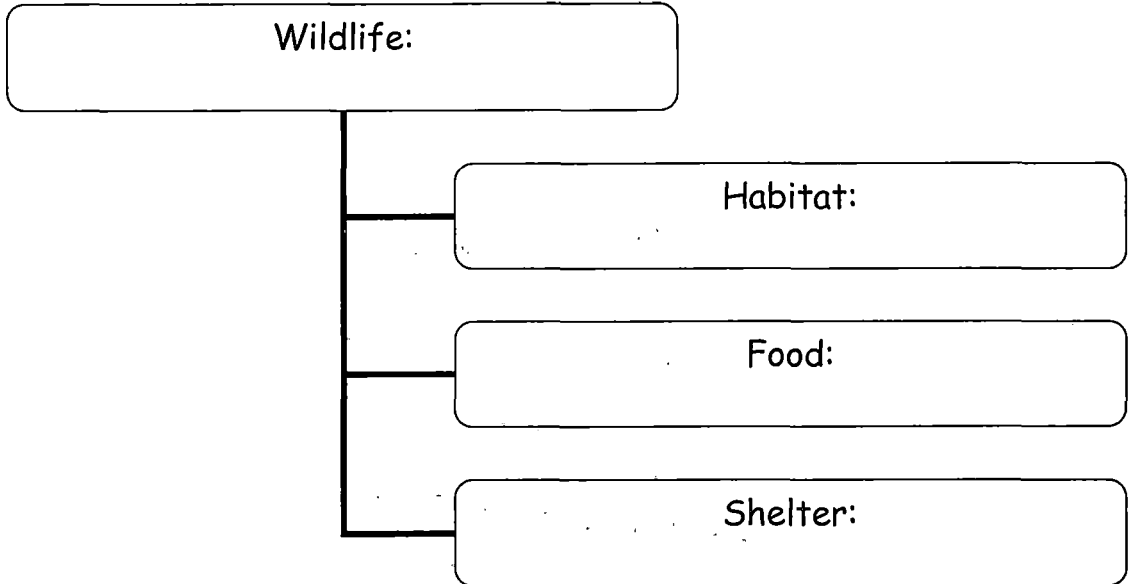
Signs of wildlife:

Record different signs of wildlife you spot in your schoolyard. Write and draw a picture of what you see.

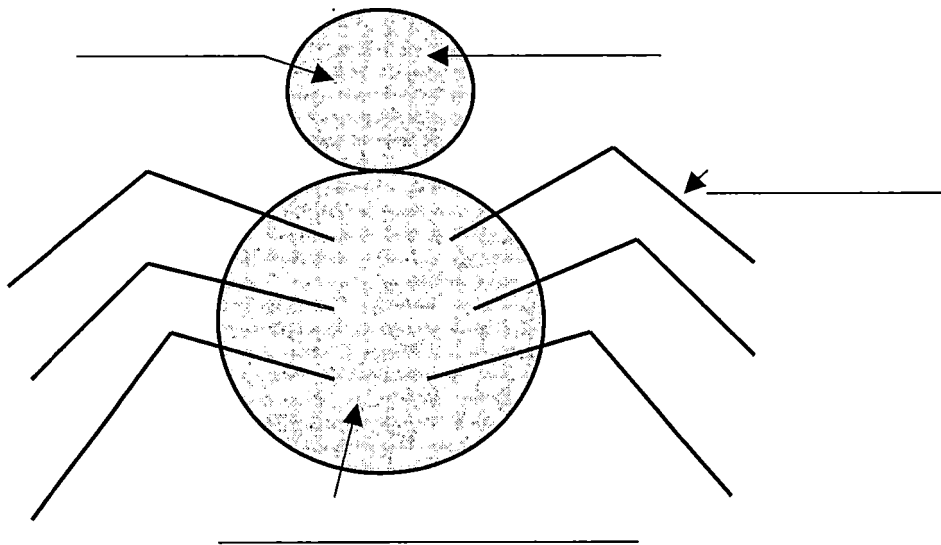
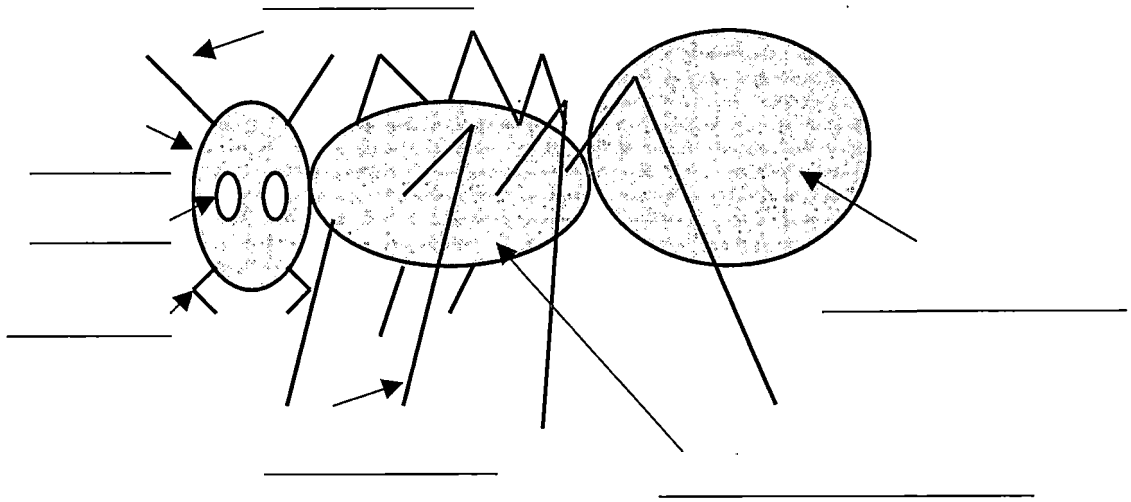
An empty oval shape with a horizontal line drawn across its center, intended for writing.An empty oval shape with a horizontal line drawn across its center, intended for writing.An empty oval shape with a horizontal line drawn across its center, intended for writing.An empty oval shape with a horizontal line drawn across its center, intended for writing.An empty oval shape with a horizontal line drawn across its center, intended for writing.An empty oval shape with a horizontal line drawn across its center, intended for writing.

Activity 12:

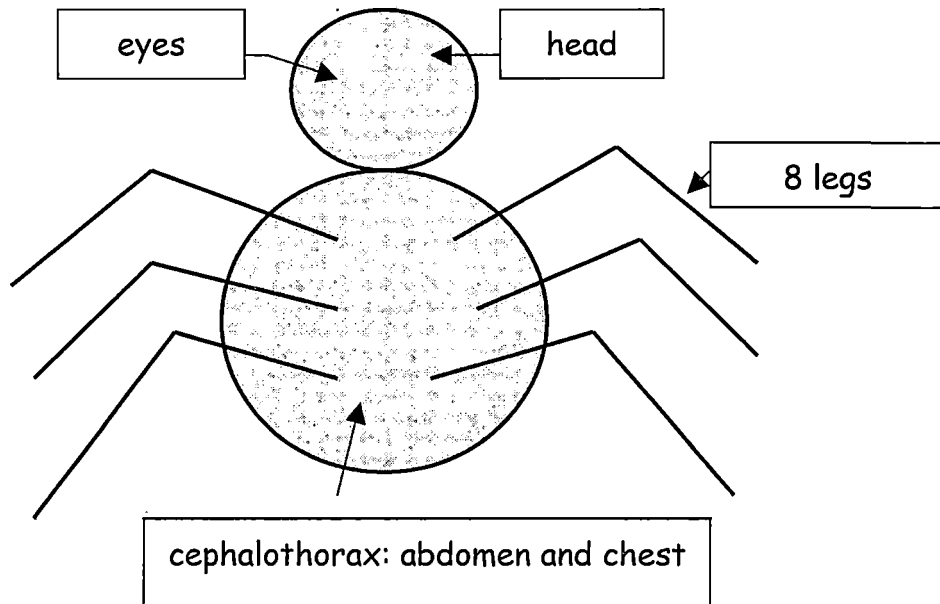
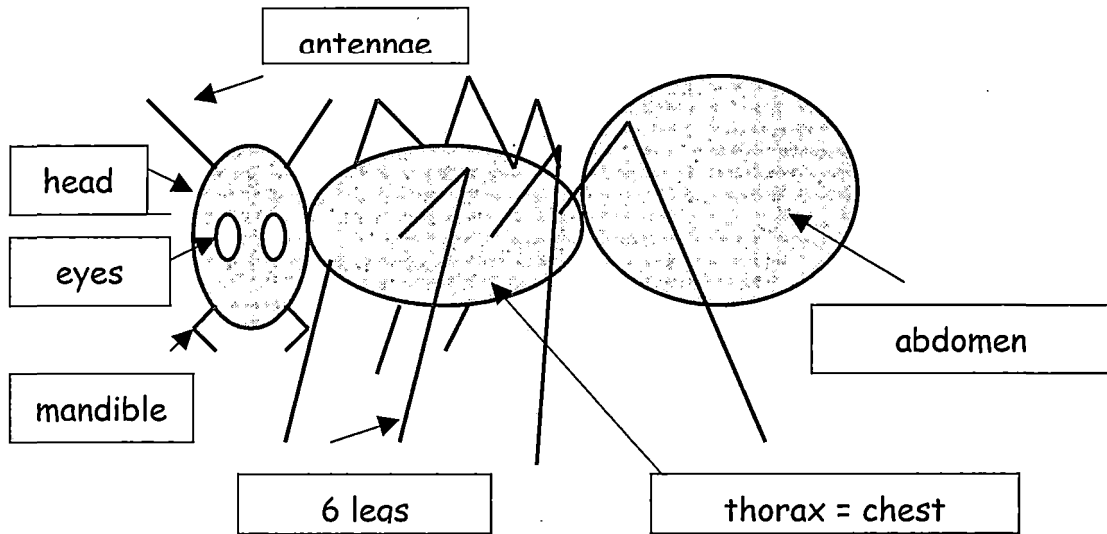
Wildlife In My Community



Activity 13:
Ants and Spiders
Student Page



Activity 13:
Ants and Spiders
Teacher Copy



Activity 14:
Where's My Home?
Scavenger Hunt



Describe the following about your habitat:

1. This habitat has the color _____ in it.

2. Something special about it:

3. This habitat is near: _____

4. You will find something _____ here.

5. You should be able to see _____

Searching Team's Response

We think the habitat described above is _____

Wildlife that lives in this habitat:

Lesson 6: Wildlife Protection

Objectives:

1. Students will be able to understand and explain the relationship between wildlife and humans.
2. Students will be able to predict the survivability of wildlife based on human activity in the community.
3. Students will be able to problem-solve and think critically about an issue related to wildlife in an urban setting.

Instruction:

1. "Wildlife Wonders" (Activity 15)
Students read about possible problems for wildlife in urban settings and brainstorm possible solutions:
 - a. Have teams role play how humans and wildlife might coexist peacefully.
 - b. Create solution posters campaigning to the school or community what steps should be taken to solve the problems with wildlife.
 - c. Write letters to local community leaders expressing concern and plausible solutions to the problems between humans and local wildlife.

2. **Adopt a Species:**

Students choose one local wildlife species to adopt and educate others about.

- a. Create a poster or book about species by researching its characteristics and habitat. Students may focus on expressing why this species needs its habitat and why the species is beneficial to humans.
- b. "Save the _____" campaign. Students create news articles, plays, or commercials to educate the school or community about the importance of a specific species.

3. Students may create a wildlife museum by displaying their books, observation journals, news articles, commercials, and posters about wildlife in the classroom. Invite other classes to come learn about local wildlife!

Activity 15:

Wildlife Wonders

Wildlife Wonders #1:

You spot a hummingbird nest in a tree. A friend of yours wants to climb up and get the nest to take home. What do you do?

Wildlife Wonders #2

Your parents have been complaining that raccoons have been knocking the trashcans over and making a mess. They are thinking of using traps or poison to stop the raccoons. Do you have an idea of how they could solve the problem without hurting the raccoons?

Wildlife Wonders #3

In the field at school are many holes where gophers live. Some of the other kids have been stomping on the holes and sticking trash in the holes. How can you help the other kids become nature detectives instead of nature destroyers?

APPENDIX D
CALIFORNIA ENVIRONMENTAL PRINCIPLES,
ENGLISH-LANGUAGE ARTS STANDARDS,
AND SCIENCE STANDARDS
FOR GUIDE

California Environmental Principles:

Environmental Principles were developed in 2003 as part of the Education and the Environment Initiative (Environmental Protection Agency, 2003) and are aimed at developing an understanding of environmental concepts as they pertain to ecosystems and relationships with human societies, natural systems and their cycles, the exchange of matter between these natural systems and human societies, and decisions that affect natural systems and resources. The lessons in this guide attempt to provide a basis for developing a curriculum that helps students learn about the environment while mastering the academic content standards for second grade. The following is a list of the California Environmental Principles that are included in the lessons in this curriculum guide.

Principle Ic. Students need to know that the quality, quantity, and reliability of the goods and ecosystem services provided by natural systems are directly affected by the health of those systems.

Principle IIa. Students need to know that direct and indirect changes to natural systems due to the growth of human populations and their consumption rates influence the geographic extent, composition, biological diversity, and viability of natural systems.

Principle IIc. Students need to know that the expansion and operation of human communities influence the geographic extent, composition, biological diversity, and viability of natural systems.

Principle IIIc. Students need to know that human practices can alter the cycles and processes that operate within natural systems.

Principle IVa. Students need to know that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts.

Principle IVb. Students need to know that the byproducts of human activity are not readily prevented from entering natural system and may be beneficial, neutral, or detrimental in their effect.

Principle IVc. Students need to know that the capacity of natural systems to adjust to human-caused alterations depends on the nature of the system as well as the scope, scale, and duration of the activity and the nature of its byproducts.

Principle Va. Students need to know the spectrum of what is considered in making decisions about resources and natural systems and how those factors influence decisions.

California English-Language Arts Content Standards:

The California English-Language Arts Content Standards for California Public Schools (California Department of Education, 1998) focus on reading, writing, written and oral English language conventions, listening and speaking, and speaking applications. The following standards are included in the lessons and activities in this curriculum guide and will assist teachers in understanding which standards were focused on and integrated with the Environmental Principles.

Reading Comprehension

- 2.2- State the purpose in reading.
- 2.3- Use knowledge of the author's purpose(s) to comprehend informational text.
- 2.4- Ask clarifying questions about essential textual elements of exposition (e.g., why, what if, how).
- 2.5- Restate facts and details in the text to clarify and organize ideas.
- 2.6- Recognize cause-and-effect relationships in text.

Literary Response and Analysis

- 3.2- Generate alternative endings to plots and identify the reason or reasons for, and the impact of, the alternatives.

Writing Strategies

- 1.1- Group related ideas and maintain a consistent focus.
- 1.2 Create readable documents with legible handwriting.

Writing Applications

- 2.1- Write brief narratives based on their experiences
- 2.2- Write a friendly letter complete with the date, salutation, body, closing, and signature.

Written and Oral English Language Conventions

- 1.1- Distinguish between complete and incomplete sentences.
- 1.2- Recognize and use the correct word order in written sentences.
- 1.3- Identify and correctly use various parts of speech, including nouns and verbs, in writing and speaking.
- 1.4- Use commas in the greeting and closure of a letter and with dates and items in a series.
- 1.5- Use quotation marks correctly.
- 1.6- Capitalize all proper nouns, words at the beginning of sentences and greetings, months and days of the week, and titles and initials of people.
- 1.7- Spell frequently used, irregular words correctly (e.g., was, were, says, said, who, what, why).

- 1.8- Spell basic short-vowel, long-vowel, r-controlled, and consonant-blend patterns correctly.

Listening and Speaking

- 1.1- Determine the purpose or purposes of listening (e.g., to obtain information, to solve problems, for enjoyment).
- 1.2- Ask for clarification and explanation of stories and ideas.
- 1.3- Paraphrase information that has been shared orally by others.
- 1.4- Give and follow three- and four-step directions.
- 1.5- Organize presentations to maintain a clear focus.
- 1.6- Speak clearly and at an appropriate pace for the type of communication (e.g., informal discussion, report to class).
- 1.7- Recount experiences in a logical sequence.
- 1.8- Retell stories, including characters, setting, and plot.
- 1.9- Report on a topic with supportive facts and details.

Speaking Applications

- 2.2- Report on a topic with facts and details, drawing from several sources of information.

California Science Standards

The California Science Standards (California Department of Education, 1998) are broken down into categories of Physical Sciences (1), Life Sciences (2), Earth Sciences (3), and Investigation and Experimentation (4). The lessons in this guide focus mostly on investigation and experimentation as the other categories for second grade science standards were not applicable to the content of this guide.

- 4a. Make predictions based on observed patterns and not random guessing.
- 4c. Compare and sort common objects according to two or more physical attributes (e.g., color, shape, texture, size, weight).
- 4d. Write or draw descriptions of a sequence of steps, events, and observations.
- 4f. Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects.
- 4g. Follow oral instructions for a scientific investigation.

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