



GR. 2 BUGOLOGY

TEACHERS PACKAGE

**An Outdoor Exploration of the
Needs of Plants and Animals**

Table of Contents

Introduction.....	1
Program at a Glance.....	1
Program Outlines.....	2
Grade 1 Curriculum Topics.....	3
Specific Learner Expectations.....	3
Cross-Curricular Connections.....	4
Facilities and Services.....	5
Planning Checklist.....	6
What to Bring.....	7
Parent Volunteer Information.....	8
Pre-Fieldtrip Activities.....	9
Extension Activities.....	10
Other Resources.....	10
Bug Biodiversity Word Search.....	11
Bugging Insects.....	12
Camouflage Creatures.....	13



INTRODUCTION

Welcome to the teacher's planning and activity package for **BUGS AND BIODIVERSITY**. This outdoor program provides a hands-on look at the amazing variety of insects and spiders found in and around the Peace Region. Students will examine different types of bugs, discover where they live, what they eat and how they avoid predators. They will also get to consider the role that parks play in protecting biodiversity.



PROGRAM AT A GLANCE

Pre-Visit Activities: 60-90 minutes depending on activities selected

Time Required: 1.5 hours outdoors

Best season to book program: September, May, June

Suggested Locations: Saskatoon Island Provincial Park, Moonshine Lake Provincial Park, Young's Point Provincial Park or a natural area near you.

ADULT REQUIREMENTS:

We ask that you provide one adult supervisor for every 4-5 students. The adults will assist students with activities and help them remain on task with the group.

PROGRAM OUTLINES

This program explores the diversity of insects and spiders found in the Peace Parkland eco-region of Northwestern Alberta. Students will compare the bodies of insects and spiders, experience metamorphosis, avoid predation and search for insect homes and their owners. They will also consider the role that protected areas play in protecting habitat for local species.



This program package will give you details on how this program fits with the Alberta Curriculum for Grade 2 Science, a planning checklist, information on what to bring and parent volunteer information.

In addition, a variety of supplementary pre-fieldtrip classroom activities, extension activities and resource materials are included to help you prepare your class for the fieldtrip and build on the topics covered in the **BUGS AND BIODIVERSITY** program.

GRADE 2 CURRICULUM TOPICS

Life Science:

- E: Small Crawling and Flying Animals: (2-10) Describe the general structure and life habits of small crawling and flying animals and apply this knowledge to interpret local species that have been observed.

(This program also meets the requirements for Grade 3 Animal Life Cycles)



SPECIFIC LEARNER EXPECTATIONS

- Recognize that there are many different kinds of small crawling and flying animals and identify a range of examples that are found locally.
- Compare and contrast small animals that are found in the local environment.
- Recognize that small animals, like humans, have homes where they meet their basic needs of air, food, water, shelter and space and describe any special characteristics that help the animals survive in its home.
- Identify each animal's role within the food chain.
- Identify and give examples of ways that small animals avoid predators, including camouflage, taking cover in burrows, use of keen senses and flight.

CROSS-CURRICULAR CONNECTIONS

This program had been designed to meet specific curriculum requirements for the Grade 2 Science Program but there are also many curriculum connections within the Language Arts, Social Studies, Mathematics, Physical Education and Art programs of studies.



This program is also designed to reflect the goals of Parks and Protected Areas:

- Preservation & Protection: to preserve the province's natural heritage, associated cultural heritage, ecological functions and biodiversity for current and future generations.
- Tourism & Community: to contribute to communities and the economy by fostering sustainable tourism experiences and ecosystem services such as clean air, land and water.
- Heritage Appreciation & Education: to instill pride and encourage stewardship by developing appreciation and understanding of Alberta's significant natural and cultural heritage.
- Outdoor Recreation & Healthy Living: to provide inclusive nature-based outdoor recreation opportunities that contribute to societal health and well being.

FACILITIES AND SERVICES

1. A professional interpreter will guide you on your fieldtrip and be there to answer any questions about the topics discussed .
2. All equipment needed for the fieldtrip will be included. There will be a break during lunch time which your class may want to bring balls, Frisbees or any other supplies for students to use during free time.
3. If your program is at a Provincial Park washrooms are located throughout the area.



NOTE: If you are spending the day in the Provincial Park, we ask that you bring any supplies that you may need for that day. If you are interested in booking the **GROUP USE** or **DAY USE** for use before or after you interpretive program, please contact the Alberta Parks office to see if there is availability.

ALBERTA PARKS OFFICE:

780-538-5350



PLANNING CHECKLIST

- Arrange transportation to and from the Park.
- Know the meeting location (Staff will let you know prior to fieldtrip).
- Supply name tags for the students.
- Check student health forms for Allergies that might be of concern. (Ensure that the Parks Staff is aware of any issues prior to the program. It is still the teachers responsibility to be prepared and administer any drugs associated with an allergy or illness).



- Arrange for and prepare adult volunteers (**A ratio of 1 adult per 5 students is recommended**).
- Ensure that students have a lunch and filled water bottle if necessary.
- Ensure students are dressed appropriately for the weather. All our programs are run in rain, snow or shine unless contacted. (See next page)
- Have a class discussion that reviews the role of Provincial Parks, Park Rules and behavior expectations.



WHAT TO BRING

The weather can be unpredictable. Please ensure that your students **DRESS FOR THE WEATHER!**

WHAT TO WEAR:

- Long pants
- Warm Sweater or Sweatshirt (Dress in layers)
- Waterproof Jacket and other Rain Gear
- Sturdy Walking Shoes
- Rubber Boots (Optional for pond dipping but highly recommended)
- Warm Socks (An extra pair of socks is helpful if other pair gets wet!)
- Toque, Gloves or Mittens
- Sunglasses or Hat

OPTIONAL ITEMS:

- Any Medications
- Binoculars
- Field Guides to Plants, Animals Bugs
- Snacks, Lunch, Water Bottle and Water to Drink!
- Bug Repellant
- Sunscreen



or

PARENT VOLUNTEER INFORMATION

ROLE: Parent volunteers are a wonderful addition to any education program. Their main role is to help the interpreter lead groups through various activities during the fieldtrip and help keep students focused. Parent volunteers do not have to have any previous knowledge of the park.



WHAT TO BRING FOR PARENT VOLUNTEERS:

All the activities are outdoors so please dress for the weather including protection from the sun, rain, snow or bugs. The program also involves a fair amount of walking so please wear comfortable, sturdy footwear.

PRE-FIELDTRIP ACTIVITIES

The preparatory activities described here will introduce the topic of insects, spiders and biodiversity to your students and will allow them to practice the skills to be used during the program.

- Have the students begin a journal and describe their feelings towards insects and spiders (journal making can be a great art project). Do they have a favorite insect? What would they like to know about insects and spiders? Have the students share stories about insects and spiders.
- What is biodiversity? Play the Jelly Bean Game. Put jelly beans in a jar—one for each kind of animal from our region that kids can think of. Use a different color for each group of animals (ie. Red—mammals, orange—birds, yellow—amphibians, black—spiders, etc.). Talk about how boring it would be if there was only one color of jelly bean or if there were only a few of each color.
- Test observation skills with the “What is Missing” game. Lay out, or mount on a display board, a selection of objects or pictures. Give the students a short time to study the objects and then cover the area. While eyes are closed, remove an object and lift the cover. Can they identify what is missing?
- Hand out the Bug Biodiversity Word Search to students



EXTENSION ACTIVITIES

There are many other activities that can be used to expand on topics covered during this field study.

- Have the students write in their journal after the program and see if they can answer their own questions about insects and spiders.
- Have the students write a story or conduct research on an insect or spider that lives in the Grande Prairie Region.
- Try “Bugging Insects” (attached) From Science is...
- Play “Camouflage Creatures” (attached) From Science is...



OTHER RESOURCES

Additional environmental education activities can be found in the teacher resources available through the environmental education program at Kananaskis Country. http://www.cd.gov.ab.ca/enjoying_alberta/parks/featured/kananaskis/ed_materials.asp

- Knee-High Nature: Spring in Alberta by Dianne Hayley and Pat Wishart. 1991.
- Science Is...a source book of fascinating facts, projects and activities by Susan V. Bosak. Scolastics Canada. 1991.
- Bugs of Alberta by John Acorn. Lone Pine Publishing. 2001.



BUG BIODIVERSITY WORD SEARCH

B A V V A N T V W Q H I V E D O
E Q S T Z A A X Z F G K E X A I
H M E T A M O R P H O S I S B D
P J O V A U G E B Y P Y X L C B
M O N N Y C G K V I I G Y A T V
Y O K D L O O A D R L A L D R U
N P K Y F A X E B N A L F Y E J
V F W J N P R D A G R L R B P D
E U R F O H W U F H V M E E P P
S Q E O G I A H C L A S T E O C
J G O V A D S R W K V S T T H P
G Y R T R J P P K R S D U L S O
B L W D D O C A A P U P B E S Q
B E W K Z R O T A D E R P R A H
T C E S N I H T S E N U M I R I
U Y R A K N E C T A R O G V G U

ANT
APHID
BUTTERFLY
DRAGONFLY
EGG
GALL
GRASSHOPPER

HIVE
INSECT
LADYBEETLE
METAMOR-
PHOSIS
NECTAR
NEST

PREDA-
TOR
PUPA
SPIDER
WASP
WEB

BUGGING INSECTS

Instead of insects bugging you, why don't you "bug" an insect? Listen to insects using a simple chamber that amplifies the sounds they make.

Materials: paper or foam cup, waxed paper, elastic band.

Doing It:

- Use a cup to capture the insect to which you want to listen.
- Stretch a piece of waxed paper over the top of the cup and secure the paper in place with an elastic band. The waxed paper should be pulled tight across the cup.
- Hold the cup next to your ear and listen to the beat of the insect's wings. Can you hum along to the beat? When you have finished listening to the insect, **carefully** release it.
- Do different insects sound different? In what ways do they sound different? Can you imitate the sounds you hear?

The insect amplifier increases the volume of the sound of an insect's wings beating. The beating wings cause the air in the amplifier chamber to vibrate; in turn, the air moves the waxed paper covering the cup. An insect which works especially well in the chamber - and is easy to catch - is the mosquito. A mosquito's wings flap 300 times/sec. A honeybee's wings flap about 250 times/sec and fly's flap 190 times/sec.



CAMOUFLAGE CREATURES

Materials: Approximately 100 coloured toothpicks, pipe cleaners, or pieces of wool, made up of about 25 of each of four colours (one colour should blend into the game area Ex. Green objects on a green lawn.)

Doing It:

- Scatter coloured objects throughout an area of about 20 square meters
- Children play the role of birds looking for “insects” (coloured objects) to “eat.” Each child has a “nest” (a place to collect coloured objects) about 25 m from the feeding area.
- One at a time, birds run to the feeding area to find food. Each bird takes its turn and makes several flights. The rules: only one insect can be caught per flight; birds don’t care what colour insects they eat, so they grab the first food they see; birds can’t run their hands over the ground, so they pick up insects only after spotting them; birds keep moving while they look for food.
- After several flights, how many of each colour of insects has each bird collected? What colour of food is hardest to find? Why? What colour would the children want to be if they were an insect?

