

Investigating Invertebrates in Escondido

Rincon Middle
School

Science Journal

Student Name

Student Research Group Name

Teacher _____

Period _____

Lesson Dates

Schoolyard Safari

Lesson One (Day One)

Name: _____ Date: _____ Time: _____

Schoolyard Nature Observations

Nature can be found in many different places-underground, on the soil/ground surface, in the bushes, trees, sky, in the distance on your school field or on a hill far away. It can be plants or animals or weather patterns (wind, temperature, clouds.) Scientists learn about their environment and what they are studying by observing and using their senses.

What did you observe in your surroundings?

Record information below based on your observations in the field. Guesses are OK!

What sounds did you hear? List at least 3 sounds. If you are not sure of the sound of an animal you are heard, make a hypothesis.

What did you see? Describe 4-6 living things you observed.

- What did you observe up close?

- What did you observe in the distance?

What did you feel? Describe 2-3 things you felt in the air and environment around you. (wind, temperature, other weather conditions)

What did you smell? Check out the plants and sniff the air.

What are your experiences, as an observer? How did you feel for that minute when you were quietly observing nature and noticing your surroundings? Write as if are describing it to your best friend, who was not doing this activity with you.

Group Observations

Lesson One (Day Three)

Name:	My job:
Date: Period:	Time of day Start: End:
Weather:	Observation area:



Everyone is to look for specimens of invertebrates and make **5 minutes of quiet observations** before any collection is done. Look at living things and make a note of the environment they are in. Be careful where you step and put your hands. Do not hurt the creatures—they can be very delicate.

Then work together in your group to observe, discuss and record the following. All recorded observations must be documented by camera or illustration (sketch), written notes, labels, and the map locations. The job assignments are described in Appendix 3. *Make sure you have a total of at least 10 observations about the three topics below. (More for a better grade.) Use notebook paper for more space.*

Describe at least 3 invertebrates observed (include details for a better grade).

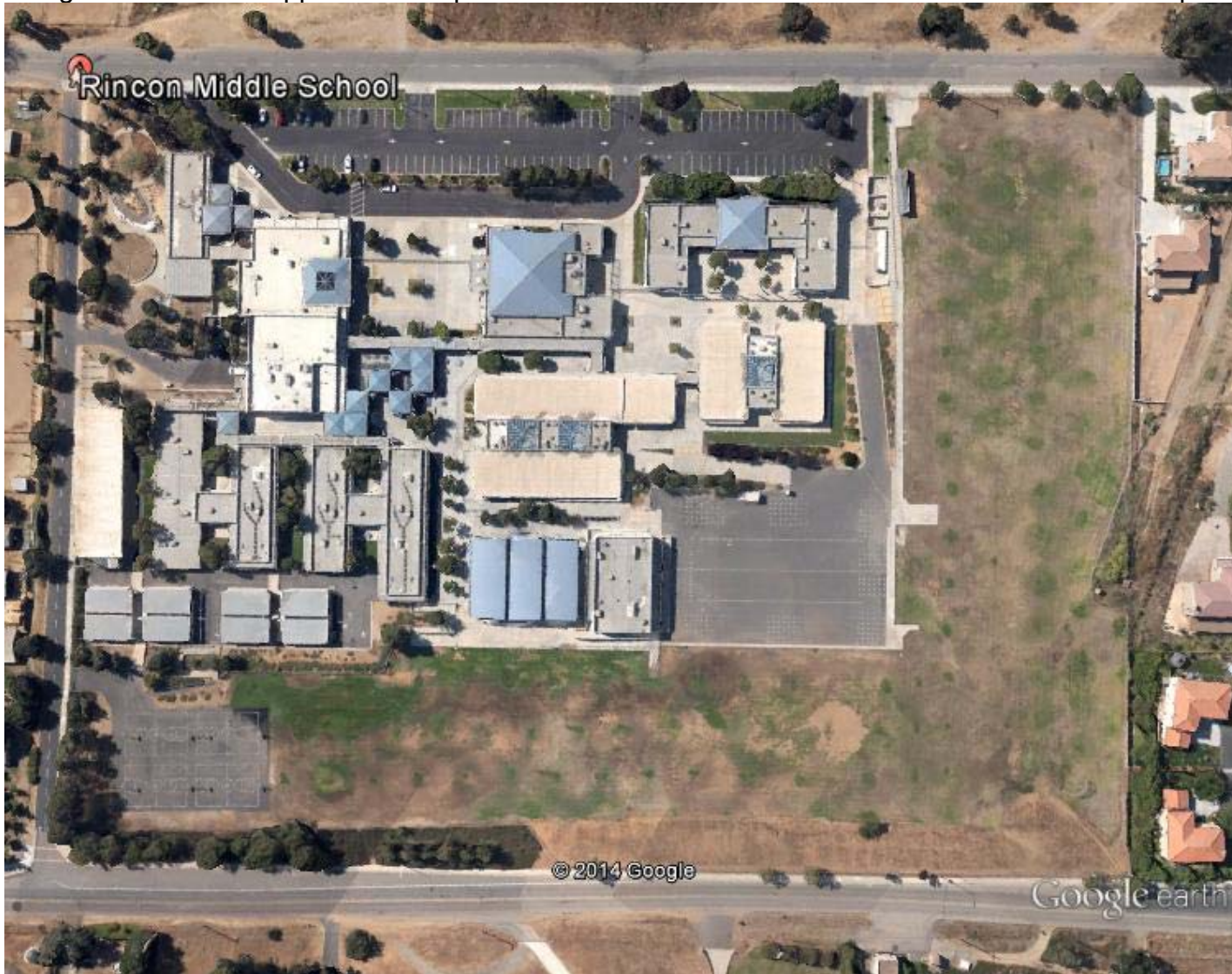
Describe the area where your invertebrates were found.

What trees and plants were observed?

What was the soil like?

Why do you think the invertebrates are living in these locations?

The student assigned to be the Mapper/Timekeeper will record the locations of the observations on the campus map.



Scientific Illustration (Part 1)

Lesson Two (Day Five)

Name: _____ Date: _____ Time: _____

Part I: Each student chooses a different specimen to draw and label, with as many details as possible. Include body parts, number of legs, wings, where legs are attached, colors, antennae, etc. Use the extra blank pages at the back of the journal, if needed.

If you are the ant group and all specimens look alike, that is OK. Each of you will have a different drawing style and you can compare afterwards.

Scientific Illustration (Part 2)

Lesson Two (Day Five)

Name: _____ Date: _____ Time: _____

Part 2: Choose one specimen from your collection to sketch in your journal. Use magnification tools, dissecting scopes, scientific illustrations as examples, and reference books on how to draw insects. Include as many body parts and details as possible, incorporating a variety of lines, shapes and colors.

Name that Creature! Classification of Invertebrates

Lesson Three (Day Seven)

Name: _____ Date: _____ Time: _____

Use a dichotomous key for insects. A dichotomous key is a series of statements to choose between. "Di" means "two" in dichotomous key. The choices should be easy to observe. Each step is a pair of statements about the organism. There should be one less step than the total number of organisms to be identified in your key (if you have 6 organisms, you should have 5 paired statements to identify them all).

The figure on the next page shows the relationships between six different arthropods. Notice that the first difference is the number of legs. Other statements compare the wing structure, tail structure and body size. Start by writing statements that describe the choices for each of the boxes.

Some arthropods have six legs. Some arthropods have eight legs. (This will become #1 in the dichotomous key.)

Some arachnids have _____. Some arachnids have _____.

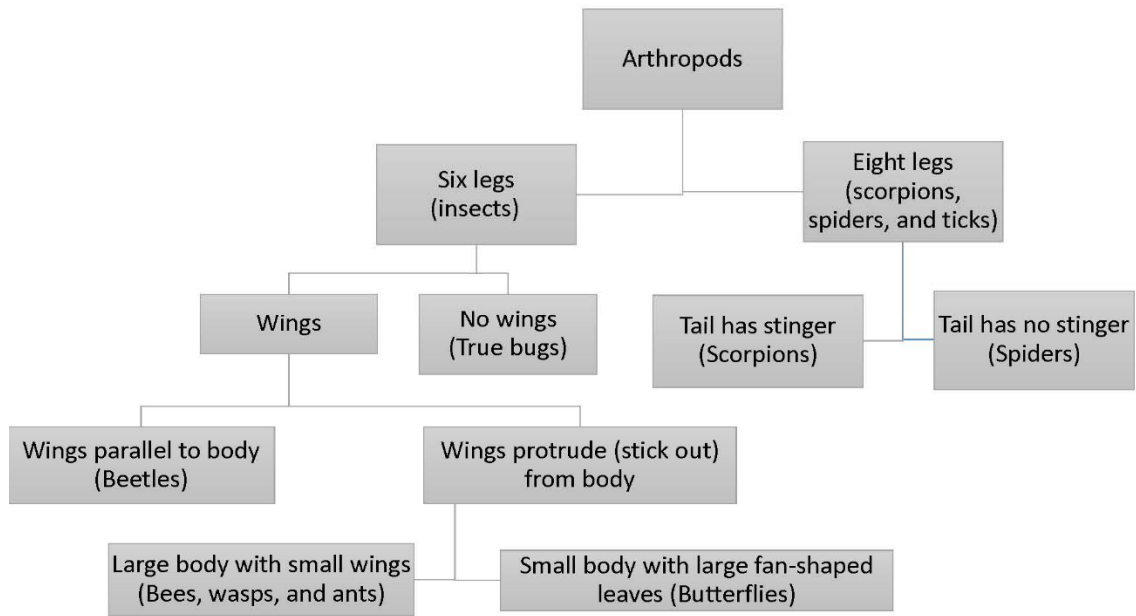
Some insects have _____. Some have no _____.

Some wings are _____

Some have _____. Some have _____.

Now use logic to write these sentences into a dichotomous key.

1. A. If animal has six legs, go to 3.
B. If animal has eight legs, go to 2.
2. A. If animal has _____, it is a _____.
B. If animal has _____, it is a _____.
3. A. If animal has _____, it is a TRUE BUG.
B. If animal has _____, go to 4.
4. A. If animal has _____, it is a BEETLE.
B. If animal has _____, go to 5.
5. A. If animal has _____, it is a BEE, WASP OR ANT.
B. If animal has _____, it is a BUTTERFLY.



The last assignment is to write the dichotomous key again, just looking at the figure above (and not the previous page). When you have finished, check your work with a classmate.

1. A.

B.

2. A.

B.

3. A.

B.

4. A.

B.

5. A.

B.