Nine Week Insect Unit

An Honors Creative Project (HONRS 499)

By

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Acknowledgements

-I would like to thank Margot Williams for being enthusiastically willing to advise me through this project. She was very patient and understanding when I completely changed what I was doing for my project. I appreciate that she was open to the changes and continued to guide me through the planning of this unit.

-I would also like to thank Chris Flook for helping me with the technology part of this unit. He helped me to put all of the files that I created onto a CD in a professional format so that other educators could easily use this unit. I appreciate the time and effort that he put into helping me do this.

-I would also like to thank Michelle Rumfelt and Lynn Turner who allowed me to actually put some of these insect lessons into practice in their classrooms. This allowed me to see what worked and what didn’t and make changes accordingly so that other educators could realistically teach this unit.


**Teacher Resources**

http://animal.discovery.com/beyond/index.html?playerId=203719213&categoryId=210013723&lineupId=37069107&titleId=33714633


There will be a bulletin board with a table in front of it. The bulletin board will be titled "Digging Deep for Dirt on Insects." It will be a brown background with black letters. There will be a shovel and colorful Ellison cutouts of different insects. On the table in front of the bulletin board, there will be a variety of insect habitats. There will be a cage with Madagascar hissing cockroaches, an ant farm, a ladybird beetle habitat, and crickets to feed to the lizards that will also be on the table.

I will also have up insect sticker charts and ladybug stickers as a motivational tool. Students will randomly get stickers for their chart for good behavior and good work.
Week 1 Day 1

Topic: Insect Vocabulary

Subject: Science/Language Arts

Objective:
Students will match the vocabulary word to the correct definition.

Materials:
Tiny paper squares, vocabulary index cards, bucket, assessment worksheet, PowerPoint

Motivation:
Students will play a game similar to Balderdash using insect vocabulary words. Each student will get 3 tiny paper squares. I will say one of our vocabulary words. Then, they will write a definition. If they do not know the true definition, they should try to make a fake one that sounds as realistic as possible. Give some examples of this for them using words that you will not be giving them. After they write their definition, they turn in the cards to you. Then, everyone closes their eyes and lays their heads down. You read off their definitions and they vote for the one that they think is correct. They get 2 points if they wrote the correct definition, 2 points if they vote for the correct definition and 1 point for every person that voted for their definition. (Choose 3 words from the following vocabulary list: observe, nocturnal, diurnal, entomology, head, thorax, abdomen, compare, proboscis, chrysalis) If this is too difficult for your students, there are 2 ways that you could adapt it. The first way would be to let the students draw a picture instead of writing a definition. Another way to adapt it would be letting students go around and say their definition. You may only want to do 1 or 2 words if you choose this option because of the time it takes for students to do this. Some students also may be too shy to participate if you do it this way, but they can still benefit and get excited by listening.

Goal for Learner:
We are starting a 2 week unit on insects. Today, you will learn words that will help you talk like a kind of scientist called an entomologist. Entomologists study insects.

New Information:
Show the PowerPoint presentation as you go over the definitions with the students. This will allow them to hear the definition, read the definition, and see a picture that they can relate to the definition.

Guided Practice:
Students will pull an index card out of a bucket. Some of the cards will have a vocabulary word on them and others will have a vocabulary definition on them. You will probably have to read the students’ cards to them. Students will then go around the room and find their match. Next, each pair will read aloud their word and definition to the class.

Check for Understanding:
Who can tell me what observation means? Which word means that something is awake during the night and sleeps during the day? Etc.

**Practice Application:**
Students will complete an assessment worksheet.

**Closure:**
We will go over the correct answers on the assessment worksheet.

**Evaluation:**
Each question will be worth 1 point.

**Bibliography:**


INSECT VOCABULARY

- observe
- compare
- diurnal
- nocturnal
- head
- thorax
- abdomen
- entomology
- proboscis
- chrysalis

The word *diurnal* describes an animal that is awake during the day and sleeps at night.

Humans like you and I are diurnal because we are awake now, while the sun is shining, and we will go to bed tonight, when it is dark.

- The cat is observing the fish.

**Observe** means to watch closely.

**Compare** is to see how 2 or more things are the same or different.

Let's compare these 2 shapes.

**Nocturnal** describes an animal that is awake at night and asleep during the day.

What animals can you think of that are awake at night?

**Head** is the first or beginning part of an insect.
**Thorax**

Thorax is the second or middle part of an insect.

**Abdomen**

Abdomen is the third or last part of an insect.

**Entomology**

Entomology is the study of insects.

**Proboscis**

A proboscis is a long tube-like tongue on a bee that is used for sucking.

**Chrysalis**

Chrysalis is another word for a cocoon, a hard covering that protects the larva as it changes into a butterfly.
1. This word describes an animal that is awake during the day and asleep at night.

2. This word means to watch carefully.

3. This word describes an animal that is awake during the night and sleeps during the day.

4. This means to look at how 2 or more things are alike or different.

5. This is the study of insects.
6. Label the head, thorax, and abdomen on the diagram below.
Week 1 Days 2, 3, and 4

Subject: Science/Language Arts (3 Day Plan)

Topic: Introduction to Centers

Science Standard 1
The Nature of Science and Technology

Students are actively engaged in exploring how the world works. They explore, observe, count, collect, measure, compare, and ask questions. They discuss observations and use tools to seek answers and solve problems. They share their findings.

1.1.1 Observe, describe, draw, and sort objects carefully to learn about them.

1.1.3 Recognize that and demonstrate how people can learn much about plants and animals by observing them closely over a period of time. Recognize also that care must be taken to know the needs of living things and how to provide for them.

Science Standard 2
Scientific Thinking

Students begin to find answers to their questions about the world by using measurements, estimation, and observation as well as working with materials. They communicate with others through numbers, words, and drawings.

1.2.6 Describe and compare objects in terms of number, shape, texture, size, weight, color, and motion.

1.2.7 Write brief informational descriptions of a real object, person, place, or event using information from observations.

Science Standard 4
The Living Environment

Students ask questions about a variety of living things and everyday events that can be answered through observations. They become aware of plant and animal interaction. They consider things and processes that plants and animals need to stay alive.

1.4.4 Explain that most living things need water, food, and air.

1.4.3 Observe and explain that animals eat plants or other animals for food.
Objective:
Students will be introduced to the new unit and centers. They will write in their new double entry science journals.

Continued Objectives (as students visit the centers mentioned in this lesson, the following objectives will be met):
- Students will learn about insects through observation.
- Students will write and illustrate what they observe.
- Students will learn that most living things need food and water to survive.
- Students will learn that some insects and animals eat plants and others eat living things.

Materials:
Display area, variety of live insect specimens (recommendations: Madagascar hissing cockroaches, ladybugs, ants, and crickets; I have also had green anole lizards in this center. Although they are not insects, they eat crickets and this allows students to observe and discover that some animals eat other animals to survive. I have done this in two different first grade classrooms and have not had any problems with the students being upset over the lizards eating the crickets.), centers with necessary materials (books, letter tiles, insect of the day word sheets), science journals for each student, world map

Day 1

Motivation:
Have all of the students come and sit around the display area. Ask the students what they see. Today, we are going to start a 2 week unit on insects. I have many live insects back here for us to watch and study. I am going to introduce you to our new classroom pets. First of all, we have 3 Madagascar hissing cockroaches. Have a world map available to show students the cockroaches’ native land. These insects are nocturnal. This means that they like to sleep during the day and be awake at night. What other animals do you know that are nocturnal? You may get out a cockroach and pass it around for the students to take a closer look. If the cockroach hisses you can talk about where the Madagascar Hissing Cockroach gets its name. Everything back here has things that they need to stay alive. These cockroaches can go a long time without food, but they get dehydrated very easily. This means that we always have to make sure that they have something to drink. We can’t just put water in their cage though or they will drown. We have to wet this sponge and they will suck water from it. Next, we have 2 green anole lizards. They are diurnal. This means that they are awake during the day and they sleep at night. The lizards are back here because they eat insects! That is why I have this cage of crickets. Each day the lizards will eat 1 or 2 crickets each. I also have an ant farm and a ladybug habitat that has ladybug larva in it. In the next habitat, I have a variety of insects and insect relatives for you to watch. What you say in this motivation will vary based on what you have at your observation table.

Goal for Learner:
After this unit, you will know what makes an insect an insect. You will also know how to care for insects.
New Information:
You can learn a lot about something by watching it. Sometimes people call this observing. When you observe something you are watching it closely and paying close attention to what it is doing. You are all going to be given a science journal. You will be divided into 3 groups. Each day one group will get time to come back here and observe. You will draw a picture of something that you observe and then write about it. Sometimes we will come back here as a whole class and make some observations together about specific things. What are some things that you might look for when you are back here observing? (What the insects or lizards eat, how they move, how many body parts they have, how many legs they have, their size, how they interact with each other, noises they make, color, etc.) Pay close attention to changes that are taking place in the ladybug habitat.

Closure:
We will learn about the other centers in the classroom over the next couple of days.

Day 2
Motivation:
Who remembers what we do at this center? (Point to the observation center.) Who knows what it is called? Now we are going to learn about another center that you will be visiting in the coming weeks.

New Information:
Since I am dividing you into 3 groups, you may be wondering what the other two groups will be doing while one group is back here observing. We are going to have 2 other centers or stations in the room and we will rotate each day. I am going to assign you to a group. Each day during center time, go to the station or center that has your group number displayed. Each week we will have centers at least 3 times. That means you will get to go to each center at least once a week.

Take the students to the Making Words: Insects center. Each time that group 2 gets back around to this center we will have a new insect of the day. Today, the insect of the day is Monarch Butterfly. On these mornings I will tell you an interesting fact about the insect of the day. The interesting fact about the Monarch Butterfly is that it can travel up to 80 miles in 1 day! That means that a small Monarch Butterfly might fly from here to Ohio in 1 day! Ohio is a different state! At this center, you will be given a paper that has the insect of the day written at the top. You are to take your letter tiles out of this envelope and spell that word with them. Next, you can move the tiles around and spell as many words as you can. As you make new words with your tiles, write them on the blanks on your paper. Make as many words as you can. You do not have to get completely finished and you do not have to fill in every blank. If you can’t think of anymore an words, move on to the next word family even if there are more blanks. If you find other words that there isn’t a place for, you can write them at the bottom of the paper if you would like.

Guided Practice:
Let’s do Monarch Butterfly together. Model moving the tiles to make new words. I see *an*. We have worked with words in the *an* family. Let’s put *an* together over here and make as many *an* words as we can. (man, ran, can, ban, tan, fan) What other word families do you see? I see the *at* family. Let’s see what *at* words we can find. (mat, rat, cat, hat, bat, fat, flat)

**Day 3**

**Motivation:**
Who remembers what we do at this center? (Point to the observation center.) Who remembers what we do at this center? (Point to the making words center.) Review the centers with the students.

**New Information:**
Take the students over to the Insect Book Center. Tell students that there are many books in the tubs about insects. Have one tub of fiction and another of nonfiction. (Look at the attached book list for ideas.) Review the difference between fiction and nonfiction. Tell students that they will be reading about insects and looking at pictures of insect at this center. They will have their science journals with them and if they read or see something interesting they can jot it down in their journal. Model by finding a picture of an insect and saying, “I really like this picture of this insect!” Then, I could draw a picture of that insect in my journal. Model an idea for writing picking up a book and stating something interesting. “I think it’s cool that ants are strong.” Now, I could write that in my journal. I could also write how strong the book says they are. I also have little blank foldable books back here. If you would like to choose an insect and create a book about it, you can do that in this center, too. Don’t worry about not being finished when center time is up. You can work on it the next time you are at this center.

**Practice Application:**
Students will all do a journal entry in their new science journals. The journals will be double entry journals that require a picture and words. Students can write about something they learned, something they are excited about, what they think of the unit, or questions they might have.

**Closure:**
Some of the students can share their journal entries and pictures with the class.

**Evaluation:**
Students will be evaluated on their ability to use their new science journal and their ability to follow directions.

**Bibliography:**
Book Center List

Nonfiction


**Fiction**


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Week 1 Day 5

Topic: Bugs Are Insects

Subject: Science/Reading

Standard 2
READING: Comprehension and Analysis of Nonfiction and Informational Text

Students read and understand grade-level-appropriate material. The selections in the Indiana Reading List (www.doe.state.in.us/standards/readinglist.html) illustrate the quality and complexity of the materials to be read by students. At Grade 1, in addition to regular classroom reading, students begin to read a variety of nonfiction, such as alphabet books, picture books, books in different subject areas, children's magazines and periodicals, and beginners' dictionaries.

Indiana Substandard:
1.2.3 Respond to who, what, when, where, why, and how questions and recognize the main idea of what is read.

Example: After reading or listening to the science book Gator or Croc by Allan Fowler, students answer questions about the reptiles and discuss the main ideas.

Objective:
Students will respond to questions/answer over the book Bugs Are Insects.

Materials:
Bugs Are Insects, PowerPoint game

Motivation:
Who has watched the game show Jeopardy? Do you ever play along at home? Do you sometimes think the questions are too hard? I do! We are going to play our own Jeopardy like game today, but I am going to give you the information beforehand, so you will know what the questions will be about. I am going to read you a book and you need to listen very carefully for the details so that you will be able to answer the questions in the game.

Goal for Learner:
Today you will learn more about insects.

New Information:
Read the book Bugs Are Insects by Anne Rockwell. The new information will come from this book.

Guided Practice:
Have a class discussion about the book. Who can retell this book for me? What is something that you learned from this book? Did anything surprise you? Did you know that a ladybug was not actually a bug?

**Practice Application:**

Divide the students into teams. The first person in the row will choose a category and point value and have the opportunity to answer the question. If he or she misses the question, the next person back has the opportunity to correctly answer the question for half the points. Play will continue to the next row over. When you get back to the beginning row, the next person back who has not answered a question chooses a category and point value and has the opportunity to answer the question. Play continues.

**Closure:**

Did you enjoy this book? This book will be available for you to look at. In the back it has some extra activities that you can do at home. I will read through those now. Read through the extra activities in the back of the book.

**Evaluation:**

The evaluation will just be teacher observation.

**Bibliography:**

A bug's head is shaped like a:

- Square
- Triangle
- Circle
- Diamond

Many bugs have a pair of wings.

Many bugs have:

- 1
- 2
- 3
- 4

True or False
A bug is an insect.

A bug in the bug world:

- Water bug
- Stinkbug
- Ladybug
- Bedbug

A bug in the bug world:

- Fish
- Cat
- Spoon
- Book
Week 2 Day 1

Subject: Science

Topic: Insects (6 legs and Observation)

Standard 1
The Nature of Science and Technology

Students are actively engaged in exploring how the world works. They explore, observe, count, collect, measure, compare, and ask questions. They discuss observations and use tools to seek answers and solve problems. They share their findings.

1.1.3 Recognize that and demonstrate how people can learn much about plants and animals by observing them closely over a period of time. Recognize also that care must be taken to know the needs of living things and how to provide for them.

Objectives:
Students will decide whether or not a picture shows an insect.
Students will draw an insect with 6 legs.

Materials:
Display area, variety of live insect specimens (recommendations: Madagascar hissing cockroaches, ladybugs, ants, and crickets), Is it an insect? PowerPoint, science journals for each student

Motivation:
Have all of the students come and sit around the display area. Tell all of the students that they are going to get to pet one of our new pets today! Take around the Madagascar hissing cockroach and let students pet it as you begin the goal for learner and new information.

Goal for Learner:
Today you will one of the things that all insects have in common.

New Information:
We are going to begin learning about what makes an insect an insect. As I bring the cockroach around, count how many legs you see. You will all have time to look at these a little closer when you come back for your small group observations. Take out a Madagascar hissing cockroach and move him around the group so that everyone can take a good look at him. All insects have six legs.

Guided Practice:
Now we are going to look at some pictures and decide whether the things shown in the pictures are insects or not. Show the Is it an insect? PowerPoint and discuss whether or not each picture is an insect and how they know.
Practice Application:

Students will do a quick draw of an insect. Their insect should have six legs. Keep these drawings for tomorrow’s lesson which will be over how all insects have 3 body parts. They will revisit their pictures and decide if their picture showed a true insect.

Closure:

What have you learned? Are some things that you thought were insects actually not insects? Did you used to think that a spider or a centipede were insects? Write at least one of the student responses in the L column of your K-W-L.

Evaluation:

Students will be evaluated using the following rubric:

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Week 2 Day 2

Topic: Ordinal Numbers

Subject: Math/Language Arts

Standard 1
Number Sense

Students understand symbols, objects, and pictures used to represent numbers up to 100 and show an understanding of fractions.

1.1.6 Match the number names (first, second, third, etc.) with an ordered set of up to 10 items.
Example: Point out the fifth child from the front of a line of children.

Standard 7
LISTENING AND SPEAKING: Skills, Strategies, and Applications

Students listen critically and respond appropriately to oral communication. They speak in a manner that guides the listener to understand important ideas by using proper phrasing, pitch, and modulation (raising and lowering voice). Students deliver brief oral presentations about familiar experiences or interests that are organized around a coherent thesis statement (a statement of topic). Students use the same Standard English conventions for oral speech that they use in their writing.

1.7.1 Listen attentively.

Objective:
Students will distinguish first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, and tenth by writing which insect is in which position.
Students will listen and follow oral directions. Example: Write the name of the fifth insect on the first line.

Materials:
Pictures of 10 different insects (ladybug, butterfly, cricket, cockroach, ant, stinkbug, bee, mosquito, beetle, grasshopper), recording sheet

Motivation:
Everyone is going to get to come to the front of the class and help me out today! First, I need ten of you to help me write the numbers 1 – 10 on the board from least to greatest. I need them nicely spread out with plenty of room between each one. Call up 10 students and have them write the numbers 1 – 10 on the board. Underneath each of their numbers, write the
corresponding ordinal number words (first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth).

Goal for Learner:
Today, you are going to learn the ORDINAL numbers! It sounds very technical, but I know you can handle it! It just means that we are going to learn order words like first, second, and third.

New Information:
Call up 10 different students to stand by the numbers written on the board. Who is standing by the number one? The word under this number one is first. This just means that ___ is standing in the FIRST position. Who is standing by the number 2? The word underneath the two is second. This means that ___ is standing in the second position. Continue this all the way through tenth. Thank the students for helping you out and have them go back to their seats. Have students say the ordinal numbers aloud with you. First, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth.

Guided Practice:
Have 10 more students come to the front of the room and stand by the numbers. Ask students who is in the fourth position? Seventh? First? Etc. Move students around. Now who is in the first position? Etc.

Check for Understanding:
Who can tell me what the fourth letter of the alphabet is? What is the sixth letter of the alphabet? First? Etc.

Practice Application:
Post the 10 pictures of the insects on the board large enough that everyone can see. Write the name of each insect largely underneath each picture. Go over each insect with the students. Read the name of each insect. You may want to briefly talk about each insect. Give students the recording form. Tell students to listen carefully to your directions. Write the name of the third insect on the line. Etc. You may want to do one example together.

Closure:
After students have turned in their papers, go over which position each insect was in. The cricket was first, the grasshopper was second, etc.

Evaluation:
Students will receive a grade on their paper. Each line will be worth one point.

Bibliography:

Insect Recording Sheet

Name ____________________________________________

1. ______________________________________________

2. ______________________________________________

3. ______________________________________________

4. ______________________________________________

5. ______________________________________________

6. ______________________________________________

7. ______________________________________________

8. ______________________________________________

9. ______________________________________________

10. ______________________________________________
Grasshopper
Ladybug
Stinkbug
Mosquito