First Grade Unit on INSECTS
So you want to be an Entomologist?

Abstract
The purpose of this unit is to introduce students to the basics of insects. The class will explore vocabulary related to insects, what an insect is, needs of insects, and the life cycle of insects. Students will then become "experts" on an insect of choice. While technology will be used throughout this unit, students will spend the last part of the unit using computers to research insects, word processing to type reports, and iPads to create illustrations and a class video.

Grade
First Grade

Estimated Lesson Time- 4 weeks
This unit is set up in sessions. Some sessions will take 2 or more days. I do not teach science every day. However, we will work on our research reports during writing each day when we start session 8 or 9.

Standards
Maryland State Curriculum Standards

Science
1.A.1.b. - Seek information through reading, observation, exploration, and investigations.
1.B.1.a. - Provide reasons for accepting or rejecting ideas examined.
1.C.1.c. - Draw pictures that correctly portray at least some features of the thing being described and sequence events.
3.A.1.a. - Use the senses and magnifying instruments to examine a variety of plants and animals to describe external features and what they do.
3.A.1.b. - Compare similar features in some animals and plants and explain how each of these enables the organism to satisfy basic needs.
3.B.2.c. - Describe some parts of insects and describe what they do for the insect.

Maryland Technology Literacy Standards
1.A.1.c. - Use the keyboard to type letters and numbers and know how to use special key functions.
3.A.1.a. - Use technology tools, including software and hardware, from a range of teacher-selected options to learn new content or reinforce skills.
3.B.1.b. - Participate in a class lesson using technology tools to collect, display, and interpret data.
3.C.1.b. - Use templates provided by the teacher to complete learning assignments.
3.C.1.f. - Use teacher-identified resources to collect information using print and non-print resources as a class or in a small group.
4.B.1.a - Use multimedia tools to express original ideas with print, drawings, digital images, video, sounds, and/or personal recordings.
4.B.1.b. - Prepare writing and data for display with tools such as visual organizer, word processing, or multimedia software.
5.A.1.c. - Collect data using technology.

Overview

The purpose of this lesson is to expose students to the basics of the study of insects. Students will become junior entomologists as they study the parts of an insect, needs of an insect, and life cycle of an insect. The students will be exposed to the insect world through stories, songs, poems, videos, Internet sites, PowerPoint presentations, and hands on activities. Students will become “experts” on an insect of their choice, by researching and completing a typed final paper. They will illustrate their insect on iPads using the “Doodle Buddy” app. As a class we will create a video by recording facts from research reports to go along with Doodle Buddy illustrations. This unit will supplement our Foss Science lessons used in our county.

Student Objectives

Today in Science we will:

- Show what we know about insects
- Discuss what we know about insects
- Study vocabulary words to help us understand insects
- Describe what makes an insect an insect
- Discuss insects basic needs to live
- Observe and create the life cycle of an insect
- Research an insect of choice
- Create illustrations (Doodle Buddy) of insects
- Create class video
- Show what we learned about insects

Instructional Plan

Possible Resources

- Insect pre and post tests (attached)
- Science Notebooks
- Vocabulary Words for sort
- “Insect” song- Dr. Jean “Kiss your Brain” CD
- www.google.com for Research Purposes (computer lab useful)
- iPads: Doodle Buddy App
- iMovie app on one iPad
- Model Magic for 3D insects
- Yes/No Sorts
- Pasta for butterfly life cycle
Preparation

- Insect Pre-Test
- Science Notebook Questions - typed up on stickers to place in notebooks
- Safari Montage (computer/internet resource provided by Washington County Public Schools) - Bill Nye: Insects
- Vocabulary Power Point
- Insect Power Points 1 & 2
- Vocabulary Words run off
- Insects by Robin Bernard
- Sorts run off - Where do Insects Live?, Which are Insects?, How do Insects move?, What do Insects eat?, How do Insects protect themselves?
- Insect Post-Test: County Assessment

Instruction and Activities

Session 1 - Why are you Buggin’?

1. Review what we have observed in science
   - Rocks
   - Solids and Liquids

2. Today we begin our study of insects. Scientists who study insects are called Entomologists.
3. Administer Pre-Test - Read each question and let students mark their answer
   - After students are finished, check answers together and collect for data
4. Review what a scientist who studies insects is called
   - Sing Entomologists song
   - Turn and Talk - What kinds of insects would you like to study?

Session 2 - What do you know about bugs?

1. Review what an entomologist is
   - Entomologists observe and record data on insects
2. Have students turn and talk about what they think they know about insects
   - Record information on chart
3. Tell students that scientists use their eyes to study insects
   - Explain that we will watch a video about insects
   - Your job as a junior entomologist is to record information you learn from the video in your science notebook - place sticker inside notebook “What did I learn about insects?”
   - Play Bill Nye video
4. After watching the video, call a “scientists meeting” in your common meeting place.
Turn and Talk to your neighbor about what you observed and recorded in the video

- Record any new information in science journal

6. You guys are off to a great start as junior entomologists. Think - What questions would you ask a scientist who studies insects?

- Turn and share your questions

**Session 3 - What does that word mean?**

1. Today we are going to look at some words that will help us in our study of insects

- Show students the Insect Vocabulary PowerPoint
- As you watch, notice words that you know and those you don't
- When finished - Turn and Talk to your neighbor - What words did you already know and which words are you still not sure of?

2. Vocabulary Sort

- Give students a copy of the vocabulary words on strips cut apart
- Working with a partner, your job today is to sort the words into categories
- This is a free sort, so observe students and how they are sorting asking questions about how they sorted

3. Record in your science notebook a new word or words learned and add a picture clue to help you remember them

- Pass out stickers - What new words have I learned to help me study insects?
- Share using a document camera or in a scientist meeting

**Session 4 - What is an Insect?**

INSECT POWER POINT #1

1. Begin lesson with Insect power point

2. Today I am going to read a non-fiction text about insects. Listen for how we know an insect is an insect.

- Read Insects by Robin Bernard
- Turn and Talk to your neighbor - How do we know an insect is an insect?

3. Every insect has three body parts - a head, thorax, and an abdomen and also all insects have six legs

- Teach Insect Song by Dr. Jean

4. Call a scientist meeting and allow students to share their insects and how they know it is an insect.

**Session 5 - What are the Needs of an Insect? (2 days)**

1. Begin today's lesson with Insect Power Point #2.

- Show students the section on the body and review the parts of an insect
- Next, show students - What do Insects need to live?
- Turn and Talk to your neighbor – What do insects need to live?

3. How do insects get these things?
- Different insects get food, space, water, and air in different ways
- Your job today as a junior entomologist is to research how the insects we are going to be observing this year get their needs.
- Assign partners an insect - mealworm, darkling beetle, milkweed bug, caterpillar, butterfly, cricket, or ant

4. How do I research?
- Model how to research using www.google.com
- Model with the insect cockroach – type in How do Cockroaches meet their need?
- Record in your science notebook the answer to your question – How do Mealworms meet their needs? How do Darkling Beetles meet their needs? How do Milkweed Bugs meet their needs? How do Caterpillars meet their needs? How do Butterflies meet their needs? How do Crickets meet their needs? How do Ants meet their needs?

5. Have students share their findings
6. After students are finished, call another scientist meeting to share what we have learned.

**Session 6** – The Great Insect Circle of Life (2 days)

1. Discuss Life-Cycle
   - An insect goes through changes as it grows up just like humans do
   - We start as a baby, then a kid, a teenager, an adult, and then an older person
   - Turn and Talk to your Neighbor – What insects do you know that change as they grow?
2. Share with students life cycle you tube video
   - Review what the stages are called – egg, larvae, pupa, and adult
3. Life-Cycle of a Butterfly
   - Explain the Project – You are going to create the stages of the Butterfly’s Life-Cycle using pasta.
4. Share projects and have students discuss what they did.

**Session 7 or 8** – So what have we learned about Insects?

1. Call a scientist meeting
2. Show students Insect PowerPoint #@
   - Read each slide and have students complete questions on dry erase boards or by turning and talking
3. Yes, No Sorts
   - We have learned a lot about insects, but what else can we learn? What about where insects live? How do they move? How do they protect themselves?
   - Today we are going to do sorts – There is a question and you will place the pictures under the correct answer “Yes” or “No”
Divide students into 5 groups - each group will get 3 minutes at each sort. All students need to participate. After 3 minutes, students mix up the pictures again for the next group and rotate to the next sort.

Monitor groups progress

4. After students are finished, call another scientist meeting.

Session 8 or 9- Individual Research Reports (5 days or more) Some of which will take place in the computer lab.

1. We have learned a lot of information about insects! We are on our way to becoming expert entomologists. But we aren’t finished yet! Soon, we will have actual live insects in our room for us to continue our observations. We will also be choosing an insect to become experts on!

Turn and Talk to your neighbor – What is something important you would share with someone who doesn’t know anything about insects?

2. Students will decide which insect they would like to research and find out more about.

Students will be given a research outline where they will record important facts about their insects.

Some students will be asked to work with a partner. Others will work together finding information if they are researching the same insect.

Students will use their outline to type their reports in Word. (teacher will go back and fix typing)

Session 9 or 10- Insect Report Illustrations: Doodle Buddy (several days)

1. Students will spend several time periods working with partners exploring the “Doodle Buddy” app on the iPads.

2. After students have explored the iPad app, we will view a video on how to use the “Doodle Buddy” app to illustrate our insects.

3. Students will complete individual illustrations to go along with their reports on the iPad using “Doodle Buddy”.

Session 10 or 11- iMovie recordings on the iPad (2 days for recordings)

1. Explain that together we will be creating a video using the insect illustrations created on the “Doodle Buddy” and facts they learned about their insect.

2. On your projector screen, show students how to place their insect illustrations (saved in photos) into the iMovie app on the iPad. This is quick and simple and will only take a few minutes.

3. Next, students will decide on 1-2 facts from their research reports that they will include with their illustrations.
4. Students will record their facts into the iPad iMovie app by reading them from their reports.

**Session 12 - Assessment**
1. Students will complete county assessment.

**Extensions**

**Insect Hunt**
- Students can access the FOSS website and go on a virtual insect hunt. Students use a magnifier to find insects in the picture


**Monster Bugs**
- Students can use this site to put the bug parts together to create an insect found in nature or create their own.


**Build Your Own Caterpillar**
- Students build a specialized caterpillar that fits its environment.

http://teacher.scholastic.com/activities/explorer/ecosystems/be_an_explorer/map/form_caterpillars.htm#

**Insect World**
- Learn about insects around the world in rainforests, ponds, gardens, and a desert


**Archibald’s Adventure**
- Students help the ant complete his mission by making it to the famed sugar bowl

http://www.pestworldforkids.org/games.html

**Name That Bug!**
- An interactive quiz that allows students to guess which insect is being described.


**Web Resources**
Safari Montage (computer/internet resource provided by Washington County Public Schools) – Bill Nye: Insects

- www.google.com
- www.fossweb.com
- www.orkin.com
- www.scholastic.com

Rubrics: In first grade I usually attach small individual rubrics to work.

County Assessment: Score out of 20 points

<table>
<thead>
<tr>
<th>Doodle Buddy Illustrations</th>
<th>Research Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: ______________</td>
<td>Name: ____________</td>
</tr>
<tr>
<td>Insect: ______________</td>
<td>Insect: __________</td>
</tr>
<tr>
<td>_____ Included all 3 body parts (3)</td>
<td>_____ Outline was complete. (5)</td>
</tr>
<tr>
<td>_____ Included 6 legs (3)</td>
<td>_____ Facts were accurate and made sense (5)</td>
</tr>
<tr>
<td>_____ Included antenna (2)</td>
<td>_____ Capital letters were used. (3)</td>
</tr>
<tr>
<td>_____ Creative overall insect/background (5)</td>
<td>_____ Correct Punctuation. (3)</td>
</tr>
<tr>
<td>_____ Typed Insect and Name in picture (2)</td>
<td>_____ Neatness (2)</td>
</tr>
<tr>
<td></td>
<td>_____ Typed (2)</td>
</tr>
<tr>
<td></td>
<td>__________ Final Score Out of 15</td>
</tr>
<tr>
<td></td>
<td>__________ Final Score Out of 20</td>
</tr>
</tbody>
</table>
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- Students can use this site to put the bug parts together to create an insect found in nature or create their own.

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