**Wiggling Worms at Work – Day One**

Integrated Project Based Learning: Measurement, Science, and Research Unit

**Subject:** Reading, Writing, Math, Science

**Standards:**
- **RI.2.9.** Compare and contrast the most important points presented by two texts on the same topic.
- **SL.2.2** Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
- **W.2.2** Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
- **W 2.7** Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
- **2. MD.3** Estimate lengths using units of inches, feet, centimeters, and meters
- **2. MD.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
- **2. LS.2.1** Ecosystems: Interactions, energy and dynamics

**Materials:**
- “Diary of a Worm”
- KWL Chart
- “Inch By Inch”
- Inch worms
- Post-it notes
- Guided reading worm chapter books

**Procedure:**
1. Begin the “Wiggling Worms” unit by reading “Diary of a Worm” with the students. Stop periodically and ask the students what seems like a fact and what seems like fiction.
2. After reading the book, tell students that we will be doing science experiments and various activities with worms throughout the week. Begin a KWL chart together about what the students know and want to learn about worms.
3. When the students have completed their discussion, give the time to complete the first page of their worm journal (KWL Chart). Pull small group of struggling students to complete the KWL chart together.
4. After KWL have students write what they predict on the six given wonderings in their journal, and then create two of their own wonderings then predict what will happen.
5. Collect the worm journals and explain to the students that tomorrow we will be researching the worms. Discuss why we can’t start touching and working with the worms yet and why it’s important to learn about worms prior to beginning our investigations. Discuss safety procedures and what good scientists look like and how they act.
6. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be receiving leveled fiction worm books. Throughout the next weeks, students will be participating in guided
reading groups and literature circle discussions with students that are reading the same leveled book.

7. In math read “Inch By Inch” to continue the worm study in mathematics. Provide each student with a one inch paper worm and give them time to explore and investigate what in their world equals one inch. After exploring and writing one inch items on their post-it notes, students will come to the carpet and share one inch items in their world.

**Wiggling Worms at Work – Day Two**
Integrated Project Based Learning: Measurement, Science, and Research Unit

**Subject:** Reading, Writing, Math, Science

**Standards:**
RI.2.9. Compare and contrast the most important points presented by two texts on the same topic.
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
W 2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters
2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
2. LS.2.1 Ecosystems: Interactions, energy and dynamics

**Materials:**
- “Yucky Worms”
- KWL Chart
- Research graphic organizers
- Computers
- Science notebooks
- Guided reading worm chapter books

**Procedure:**
1. At the beginning of the day review with the students what they learned about worms in the previous day from the story “Diary of a Worm”
2. Read “Yucky Worms” to the students and discuss the worm facts they heard in the story
3. Explain to the students that we will be learning more about worms before we can start observing and touching them. Using research graphic organizer, computers, and I-pads, allow students to research worms- research will be guided with a few required questions but also open-ended as students will have the opportunity to look up information they want to learn about.
4. After researching worms, completing graphic organizers, students will work together to write a paragraph about worms with a partner.

5. Share paragraphs at the end of the lesson.

6. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be reading and reflecting on chapters from leveled fiction worm books.

7. In math, compare one inch worms to a ruler and discuss how many inch worms make up one foot. Using inch worms and rulers, measure objects in feet and yards.

**Wiggling Worms at Work – Day Three**

Integrated Project Based Learning: Measurement, Science, and Research Unit

**Subject:** Reading, Writing, Math, Science

**Standards:***

RI.2.9. Compare and contrast the most important points presented by two texts on the same topic.

SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.

W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

W.2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).

2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters

2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes

2. LS.2.1 Ecosystems: Interactions, energy and dynamics

**Materials:**

- “Garden Worms”
- KWL Chart
- Chart paper
- Earthworm habitat supplies
- Guided reading worm chapter books
- Worm journals

**Procedure:**

1. At the beginning of the day review with the students what they learned about worms in the previous two days from the story “Diary of a Worm” and researching.

2. Read “Garden Worms” to the students and discuss the worm facts they heard in the story and the habitat of a worm.

3. Tell the students they will begin their observations tomorrow, but before we can we need to make earthworm habitats. Go outside together and look for worms in their natural habitat.
environments. Make sure students are noticing the important elements of the worms environment
4. Create a class diagram of what is in an earthworms habitat and what we will need to create our own earthworm habitat
5. Using the necessary supplies, put the students into small groups and allow them to measure out materials and create earthworm habitats together in the jars provided
6. After habitats are created, set them in the back of the room to save for tomorrows worm
7. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be reading and reflecting on chapters from leveled fiction worm books and completing question packets with their group mates
8. For math, discuss the different tools used to measure and what would be the best measurement to measure our earthworms tomorrow. Use the different tools to measure the student’s world around them and complete “My Math” work.

Wiggling Worms at Work – Day Four
Integrated Project Based Learning: Measurement, Science, and Research Unit

Subject: Reading, Writing, Math, Science

Standards:
RI.2.9. Compare and contrast the most important points presented by two texts on the same topic.
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
W 2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters
2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
2. LS.2.1 Ecosystems: Interactions, energy and dynamics

Materials:
- “Wonderful Worms”
- KWL Chart
- Worms
- Worm habitats
- Safety poster
- Guided reading worm chapter books
- Worm journals
Procedure:
1. Begin by reviewing previous learned information and discussing the earthworm habitats that were created the previous day. Read “Wonderful Worms” to the students and create an idea web of the information students have learned so far about worms.
2. Explain to the students that we will be starting our earthworm observations today. Review what good safety procedure looks like and how they should act. Have students model procedures to the class and create a safety procedure poster together.
3. After discussing scientist procedure, give each small group an earthworm. Give them time to explore the earthworm using the microscope and complete the earthworm observations page of the student worm journal.
4. When initial observations are completed, have the class come together and discuss what they saw and found the most interesting about the earthworm.
5. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be reading and reflecting on chapters from leveled fiction worm books and completing question packets with their group mates.
6. For math, allow students to measure the earthworms and compare and contrast measurements with the groups around them. Share measurement findings and complete “My Math” work.

Wiggling Worms at Work – Day Five
Integrated Project Based Learning: Measurement, Science, and Research Unit

Subject: Reading, Writing, Math, Science

Standards:
RL.2.9. Compare and contrast the most important points presented by two texts on the same topic.
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
W.2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters
2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
2. LS.2.1 Ecosystems: Interactions, energy and dynamics

Materials:
- “Wiggle and Waggle”
- KWL Chart
Procedure:
1. Review safety procedure poster made with the students from the previous day
2. Ask the students what they learned in the first day of their worm investigation – what did the worms do, how did they feel, what did they look like, how did the microscope help them see better, what did they observe?
3. Read the students “Wiggle and Waggle”
4. Begin damp or dry experiment and complete reflection in their worm journals
5. After observing and waiting for experiment to be complete, complete “a day in the life of an earthworm” writing assignment – what would it be like if you were an earthworm
6. When students have completed the “day in the life of an earthworm” writing assignment, allow them to share with the group what they wrote.
7. Check the worms and discuss what they see. Record their observations in their worm journal.
8. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be reading and reflecting on chapters from leveled fiction worm books and completing question packets with their group mates
9. For math, record earthworm lengths and compare them to other students. Use the different tools to measure the earthworms and complete “My Math” work.

Wigging Worms at Work – Day Six
Integrated Project Based Learning: Measurement, Science, and Research Unit

Subject: Reading, Writing, Math, Science

Standards:
RI.2.9. Compare and contrast the most important points presented by two texts on the same topic.
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
W 2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters
2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
2. LS.2.1 Ecosystems: Interactions, energy and dynamics
Materials:
- “Wiggling Worms at Work”
- Chart paper
- Poster paper for students
- KWL Chart
- Markers
- Guided reading worm chapter books

Procedure:
1. Read “Wiggling worms at work” to the students
2. Ask the students to describe what information they learned about worms and write this on a piece of chart paper labeled “Wiggling worms at work” on the top of the page. Ask the students to provide as much information as they can.
3. Ask the student that if we were going to create posters for the second grade classrooms about all the information they learned about earthworms, what information we should include to inform them about worms. List off ideas and write them on a poster.
4. Put students into small groups and allow students time to begin their worm posters.
5. Explain to the students that they need to list facts about worms that they learned from the book wiggling worms at work and the experiment. They need to list the facts in complete sentences and then illustrate their posters.
6. For reading, allow students to begin their self selected reading time while pulling small guided reading groups. During guided reading groups students will be reading and reflecting on chapters from leveled fiction worm books and completing question packets with their group mates.
7. For math, practice measuring with varied level activities and centers involved around worms and complete “My Math” work.

Wiggling Worms at Work – Day Seven
Integrated Project Based Learning: Measurement, Science, and Research Unit

Subject: Reading, Writing, Math, Science

Standards:
RI.2.9. Compare and contrast the most important points presented by two texts on the same topic.
SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally through other media.
W.2.2 Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
W 2.7 Participate in shared research and projects (e.g., read a number of books on a single topic to produce a report; record science observations).
2. MD.3 Estimate lengths using units of inches, feet, centimeters, and meters
2. MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
2. LS.2.1 Ecosystems: Interactions, energy and dynamics

Materials:
- Chart paper
- Poster paper for students
- KWL Chart
- Markers
- Guided reading worm chapter books
- Yummy worm habitats materials

Procedure:
1. Give the students time to complete their group posters
2. When all of the groups have completed their posters, gather on the carpet and have the students present their posters
3. Hang the worm posters in the room (this will be part of the post-assessment)
4. Have the students complete the KWL chart of what they learned – this will be their exit ticket as they leave the classroom.
5. Create “yummy worm habitats” as a treat at the end of the day. Give the students cups and have them put one scoop of chocolate pudding in it and a scoop of smashed up Oreos. Have the students mix the two together and ask the students what does this represent? (The dirt the worms live in), then add green sprinkles and ask the students what this represents (the grass). Finally add the worms and allow the students to eat them and watch diary of a worm.
6. For reading, complete guided reading. Students will continue to work in guided reading groups until their books are complete and then will write “Book Worm, Book Reviews” on their worm book.
7. For math, students will continue to practice measurement through a variety of leveled activities, centers, small group projects, all focused around measurement and worms.