2ND GRADE
SOILS
SCIENCE UNIT

2012 Christopher Columbus Family Academy’s
Training for All Teacher’s Summer Curriculum Institute

Team Leader: Leslie López, 2nd Grade Bilingual Teacher
Team Member: Carmen Conyer, 2nd Grade Spanish Component Teacher
Team Member: Kristin Mariano, 2nd Grade English Component Teacher

A modification to the New Haven Public Schools’ Science Curriculum to promote academic success for all English Language Learners.
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2012 TAT Summer Curriculum Institute Proposal

**Date:**
Friday, July 13, 2012

**Team Leader:**
Leslie A. López, 2nd Grade Bilingual Teacher

**Team Members:**
- Carmen Conyer, 2nd Grade Spanish Component Teacher
- Kristin Mariano, 2nd Grade English Component Teacher

**Curriculum:**
New Haven Public Schools 2nd Grade Science Curriculum

**Goal:**
Our goal for the TAT Summer Curriculum Unit will be to incorporate the literacy portion of the 2nd Grade New Haven Public Schools' Soils Unit.

Currently, the curriculum unit uses three (3) reading selections with no focus on comprehension learning:
1. *Have You Seen Sand or Clay Today?* (Lesson 5)
3. *Anita's Amazing Compost Pile* (Lesson 13)

These stories are rich in content, but there is no emphasis on literacy comprehension.

**Objective:**
As a team, we will be modifying these three (3) reading selections by incorporating three (3) specific areas of comprehension development:
1. Main idea/message of the story
2. Synthesizing/Inferring
3. Reflection/Interpretation of specific information in the text

In addition, we plan on reinforcing vocabulary development with additional activities and differentiated worksheets.

We will be meeting as a team starting on Friday, July 13, 2012 from 7:45 p.m. – 11:00 p.m., and Monday, July 16th through Friday, July 20th from 4:00 p.m. – 7:00 p.m. During these times, we will also be meeting at night from 8:30 p.m. to 10:30 p.m.

If you have any questions, please feel free to contact the Team Leader, Leslie López, at:

Email: leslie.lopez@new-haven.k12.ct.us
Phone: 203-804-4369
<table>
<thead>
<tr>
<th><strong>Lesson</strong></th>
<th>Day 1: Main Idea – Determine the author’s message/theme/lesson within a written reading selection.</th>
</tr>
</thead>
</table>
| **Title** | Have You Seen Sand or Clay Today?  
Pages 51-52 up to paragraph 1 |
| **Objective** | Students will be able to identify the author’s message/theme of the text upon completion of reading a section of the text. |
| **Essential Understanding** | By identifying the main idea of the story, the students will have a better grasp and understanding of the author’s intention for writing the reading selection. |
| **CT Standards** | **CC.2.R.I.2:** Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.  
**CT.2.R.36:** Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text.  
**Science GLE 2.3:** Earth materials have varied physical properties which make them useful in different ways. Soils can be described by their color, texture and capacity to retain water. Soils support the growth of many kinds of plants, including those in our food supply. |
| **Essential Questions** | 1. What is the message/theme of this reading section?  
2. Which words can help us identify the main idea?  
3. What steps can we follow to identify the message/theme of the section?  
4. Which statement tells what this section is about?  
5. What is the author mostly talking about? |
| **Materials** | 1. Have You Seen Sand or Clay Today? reading selection  
2. Chart paper  
3. Writing journals  
4. Overhead projector  
5. Sticky notes  
6. Highlighters  
7. Main Idea graphic organizer |
| **Vocabulary** | 1. clay (pg.51): a type of soil material that is plastic when wet, used for making bricks, pottery, etc.  
2. curious (pg. 51): very interesting in knowing and learning  
3. adobe (pg.51): a sun-dried brick made of clay and straw, used for building houses  
4. straw (pg. 51): a single stalk or stem, especially of certain types of grain, mainly wheat, rye, oats, and barley. |
### Before Reading
1. The teacher will ask the students to take a seat on the rug. Here, the teacher will review the reading selection with the students and the lesson’s objective for today.
2. Students will turn-and-talk regarding what they know about soils. (1-2 minutes). Ask students to share the comments they made to their friends. The teacher will create a list on chart paper.

### During Reading
1. The teacher will review the students’ responses with the entire class.
2. Next, the teacher will explain the objective for today’s lesson.
3. In a whole group setting, the teacher will ask the students what they think the main idea of the reading section is.
4. The teacher will allow 1-2 minutes for the students to turn-and-talk and brainstorm about what they think is the main topic of this section. The teacher will write the students’ answers on chart paper.
5. Students will choose words that they think are important to identify the main idea of the section, and revise the list by eliminating the words that do not make sense.
6. Next, the teacher will ask the students to take their seats.

### After Reading
1. The teacher will review today’s objective with the class.
2. Students will write about the common topic throughout the selection and what they think the main idea is in this reading selection.
3. When finished with their worksheets, students will use their writing journals to reflect on what the main idea means to them and what can they learn about the message.
4. After all students have finished the assignment, teacher and class will reconvene to recap and share some of the student’s responses in a whole group discussion.

### Closure
Several students will share their thoughts about the main idea with the class.

Remind students that everything they read has a main idea or theme. Good readers can identify the main idea by observing carefully what happens in the text from beginning to end. The idea is to focus also on what information is not presented (implied) that will aid in further understanding of the story.

### Activity
Working in pairs, students will brainstorm and write down what they believe is the main idea of the text. Afterwards, each student will record their response in their writing journals.

### Homework
Students will look around their home to see if there are things made from clay or sand, and write a 2-3 sentences describing the object or objects they find.
<table>
<thead>
<tr>
<th>Extension Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Working in pairs, students can review and practice the vocabulary words learned in today's lesson.</td>
</tr>
<tr>
<td>2. Working in pairs, students can reread the section by taking turns.</td>
</tr>
<tr>
<td>3. Students can discuss the different soils mentioned in the reading.</td>
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<tr>
<td>4. Make a list of the facts shown in the story.</td>
</tr>
<tr>
<td>5. Analyze and discuss the way bricks are made and which step(s) is essential to making them.</td>
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<tr>
<td>6. Discuss what they learned about brick making.</td>
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</tbody>
</table>
# 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 2: Main Idea – Determine the author's message/theme/lesson within a written reading selection.</th>
</tr>
</thead>
</table>
| Title  | Have You Seen Sand or Clay Today?  
Pages: 52, Paragraph 2 – Page 53                                                                  |
| Objective | Students will be able to identify the author's message/theme of the text upon completion of reading a section of the text. |
| Essential Understanding | By identifying the main idea of the story, the students will have a better grasp and understanding of the author's intention for writing the reading selection. |
| CT Standards | **CC.2.R.1.2**: Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.  
**CT.2.R.36**: Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text.  
**Science GLE 2.3**: Earth materials have varied physical properties which make them useful in different ways. Soils can be described by their color, texture and capacity to retain water. Soils support the growth of many kinds of plants, including those in our food supply. |
| Essential Questions | 1. What is the message/theme of this reading section?  
2. Which sentences support the main the main idea?  
3. What steps can we follow to identify the message/theme of the section?  
4. Which statement or sentences tell what this section is about?  
5. Overall, what is the author trying to tell us? |
| Materials | 1. Have You Seen Sand or Clay Today? reading selection  
2. Chart paper  
3. Writing journals  
4. Overhead projector  
5. Sticky notes  
6. Highlighters  
7. Main Idea graphic organizer |
| Vocabulary | 1. *clay* (pg.51): a type of soil material that is plastic when wet, used for making bricks and pottery  
2. *adobe* (pg.51): a sun-dried brick made of clay and straw, used for building houses |
| Before Reading | 1. The teacher will ask the students to take a seat on the rug. Here, the teacher will review the reading selection with the students and |
the lesson objective for today.
2. Students will turn-and-talk regarding what they learned about soils in yesterday’s reading section. (1-2 minutes). Ask students to share the comments they made to their friends. The teacher will create a list on chart paper.
3. The teacher will create a list on chart paper.

### During Reading
1. The teacher will review the student responses with the entire class.
2. Next, the teacher will explain the objective for today’s lesson.
3. In a whole group setting, the teacher will ask the students what they think the main idea of the reading selection is.
4. The teacher will allow 1-2 minutes for the students to turn-and-talk and highlight the words they think will help them identify the main idea. The teacher will write the words the students chose on chart paper.
5. Students will decide which words support the lesson’s objective and the ones that do not make sense. Then, as a whole class those words that do not make sense will be eliminated.
6. Next, the teacher will ask the students to take their seats.

### After Reading
1. The teacher will review today’s objective with the class.
2. Students will write about what they think the main idea is in this reading selection.
3. When finished with worksheets, students will use their writing journals to reflect on what does the author’s message means to them and what can they learn about the message.
4. After all students have finished the assignment, teacher and class will reconvene to recap and share some of the student’s responses in a whole group discussion.

### Closure
Several students will share the steps they follow to determine the main idea of this section with the class.

Remind students that everything they read has a main idea or theme. Good readers can identify the main idea by observing carefully what happens in the text from beginning to end. The idea is to focus also on what information is not presented (implied) that will aid in further understanding of the story.

### Activity
Working in pairs, students will brainstorm and write down what they believe is the main idea of the text. Each student will record their response in the graphic organizer.

### Homework
Students will write about why clay or sand is important in our lives, using complete sentences.

### Extension Activities
1. Working in pairs, students can review and practice the vocabulary words learned in today’s lesson.
2. Working in pairs, students can reread the section by taking turns.
3. Students can discuss the different soils mentioned in the reading.
4. Make a list of the facts shown in the story.
5. Analyze the recipe and discuss which step(s) is essential to making empanadas.
6. Discuss what they learned about brick making.
### 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 3: Synthesizing/Inferring</th>
</tr>
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<tbody>
<tr>
<td>Title</td>
<td>Have You Seen Sand or Clay Today? Page 52, Paragraphs 1-3</td>
</tr>
<tr>
<td>Objective</td>
<td>By analyzing the most important ideas from the text, students will be able to infer the author’s purpose for writing the selection.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>Students will learn that soils such as clay and sand are important and essential in our daily lives.</td>
</tr>
<tr>
<td>CT Standards</td>
<td>CC.2.R.I.1: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</td>
</tr>
<tr>
<td></td>
<td>CT.2.R.27: Reading Comprehension: During Reading: Apply comprehension strategies, such as connecting, predicting, questioning, inferring and visualizing to above grade-level stories read aloud by the teacher and to own reading at independent level.</td>
</tr>
<tr>
<td></td>
<td>Science GLE 2.3: Earth materials have varied physical properties which make them useful in different ways. Soils can be described by their color, texture and capacity to retain water.</td>
</tr>
</tbody>
</table>
| Essential Questions | 1. How does inferring help us to better understand the text?  
2. What can I do to help me figure out why the text was written?  
3. Can we infer that clay is essential in our lives by looking for important facts while reading this section?  
4. What else can we do with clay?  
5. How does reading between the lines of the text help us to become better readers? |
| Materials    | 1. Have You Seen Sand or Clay Today? reading selection  
2. Chart paper  
3. Vocabulary journals  
4. Overhead projector  
5. O.W.I. Chart  
6. Sticky notes  
7. Markers |
| Vocabulary   | 1. clay (pg.51-52): a type of soil material that is plastic when wet, used for making bricks and pottery  
2. emperor (pg. 52): the male sovereign or supreme ruler of an empire  
3. vase (pg. 52): a glass, or porcelain, or earthenware (pottery of baked or hardened clay), or metal container used mainly to hold cut flowers or for decoration |
<table>
<thead>
<tr>
<th>Before Reading</th>
<th>During Reading</th>
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<tbody>
<tr>
<td>1. Students will be seated at their desks while the teacher explains the lesson's objective.</td>
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<tr>
<td>2. Activate prior knowledge: The teacher will ask students what they learned in yesterday’s reading. What were some important details?</td>
<td></td>
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<tr>
<td>3. “Turn- and-talk” activity: (1-2 minutes) Students will share their thoughts and what they have learned from reading this selection.</td>
<td></td>
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<tr>
<td>4. Teacher will inform the students about the reading purpose of inferring and the concept of inference as follows: “As we read today, we will practice making inferences.” Does anyone know what making inferences mean? (Pause for answers.) Using what the information from the text is telling us, or what the author is telling us, together with what we already know to fill in the information that is missing; that is inferring. This is also known as “reading between the lines.”</td>
<td></td>
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<tr>
<td>5. Teacher will give a real life example: planting a garden “I am preparing a sunny corner in my backyard, and then I am going to buy tomato seeds and green pepper seeds. Also, I am going to need a water hose because I do not have one.”</td>
<td></td>
</tr>
<tr>
<td>6. Teacher will ask students what can they infer about that story, and accept their responses. When she hears the right answer she will comment to the class: “That is correct, I am going to plant a garden! See how easy that was? That is how we infer.”</td>
<td></td>
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<tr>
<td>7. In order to help us make inferences, we are going to write down the important information on an OWI chart.</td>
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<tr>
<td>8. The teacher uses an OWI chart on chart paper, explains and models how the students will use the chart during the reading.</td>
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<tr>
<td>- What I Observe</td>
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<tr>
<td>- What I Wonder</td>
<td></td>
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<tr>
<td>- What I Infer</td>
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</table>

| 1. The teacher will think aloud as the teacher reads the day’s assigned section of the text, and records information on the OWI chart. |
| 2. The teacher will start the reading of paragraph 1, pauses and thinks aloud: “I notice that the author starts the paragraph by mentioning that people like bricks because they are strong and last a long time. That fact I know, and I am going to write it down on the first column of my OWI chart, because it is ‘what I observed’. Now, I am wondering how long bricks last. I will write that down on my “What I Wonder” column of my chart, and then I will make an inference. On the last column I will write hundreds of years, so that will be what I infer. Can you make another inference?” |
| 3. The teacher will continue the reading, inviting and encouraging the students to share their comments as to what they observe, what they wonder and what they can infer. Teacher will write down on chart. |
| 4. After modeling the second time, the teacher will invite the
students to write what they think on their own copy of the chart.
5. The teacher will remind students that asking questions can aid them in making inferences.
6. The teacher will work closely with those students who need extra help and guidance during this class exercise.

<table>
<thead>
<tr>
<th>After Reading</th>
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<tbody>
<tr>
<td>1. As students finish, they will hand in their papers and take out their vocabulary journals. Students will review the vocabulary words from the lesson and add any new details that can help them remember the vocabulary words’ meanings.</td>
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<tr>
<th>Closure</th>
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<tr>
<td>Students will be invited to share what they wrote on their OWI charts. If at all possible, some students can explain what helped them to make their inferences.</td>
</tr>
</tbody>
</table>

Remind students that making inferences will help them understand the reading, which will make them better readers.

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>The students will view a short power point presentation on the history of the building of the Great Wall of China, based on the book “The Great Wall of China”, written by Fiona Reynolds and Jane Shuter.</td>
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</tbody>
</table>

The viewing of the power point presentation is to emphasize the strength of the bricks used on the building of the wall, which is mentioned on page 52 of the reading selection.

<table>
<thead>
<tr>
<th>Homework</th>
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<tbody>
<tr>
<td>Students will look for a picture of something that is made out of clay and or sand. If a picture is not available, the student can draw a picture of the object or thing they have selected. Write 2-3 sentences about their picture or drawing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extension Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Working in groups, students can review their OWI charts.</td>
</tr>
<tr>
<td>2. Students can share what they learned in today’s lesson.</td>
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<tr>
<td>3. Working in pairs, students can reread the section by taking turns.</td>
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<tr>
<td>4. Students can make a list of things made out of clay and or sand.</td>
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<tr>
<td>What I Observe</td>
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</table>
The Great Wall of China

By Fiona Reynolds and Jane Shuter
Illustrated by Malcolm Stokes
The Great Wall of China was built over 2,000 years ago to protect the people of China.
When it was finished, the wall was almost 4,000 miles long.
It was built over mountains.
It was built through deserts.
The wall kept China secure for many years.
The Great Wall of China still exists today. Maybe one day you will be able to visit it!
The Great Wall China Photographs
# 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 4: Reflection/Interpretation</th>
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<tbody>
<tr>
<td>Title</td>
<td>Have You Seen Sand or Clay Today? Pages: All</td>
</tr>
<tr>
<td>Objective</td>
<td>Students will be able to interpret specific information and illustrations presented in text.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>Students will learn that soils such as clay and sand are important and essential in our daily lives.</td>
</tr>
<tr>
<td>CT Standards</td>
<td>CC.2.R.I.7: Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.</td>
</tr>
<tr>
<td></td>
<td>CT.2.R.34: Reading Comprehension: During Reading: Interpret information from simple graphs and charts.</td>
</tr>
<tr>
<td></td>
<td>Science GLE 2.3: Earth materials have varied physical properties which make them useful in different ways. Soils can be described by their color, texture and capacity to retain water.</td>
</tr>
</tbody>
</table>
| Essential Questions | 1. What are some important facts of the text?  
2. Why do you think they are important?  
3. What do you think the author is trying to say in the text?  
4. Can you describe what’s going on in the illustrations?  
5. How do the illustrations help us to understand the reading selection? |
| Materials | 1. Have You Seen Sand or Clay Today?  
2. Chart paper  
3. Vocabulary journals  
4. Overhead projector  
5. Illustrations worksheet  
6. Sticky notes  
7. Highlighters |
| Vocabulary | 1. clay (pg.51): a type of soil material that is plastic when wet, used for making bricks, pottery, etc.  
2. curious (pg.?): very interesting in knowing and learning  
3. adobe (pg.51): a sun-dried brick made of clay and straw, used for building houses  
4. straw (pg. 51): a single stalk or stem, especially of certain types of grain, mainly wheat, rye, oats, and barley.  
5. emperor (pg. 52): the male sovereign or supreme ruler of an empire  
6. vase (pg. 52): a glass, or porcelain, or earthenware (pottery of baked or hardened clay), or metal container used mainly to hold cut flowers or for decoration |
| Before Reading                                                                 | 1. The students will be asked to take a seat on the rug.  
2. The teacher will explain the lesson’s objective.  
3. Activate prior knowledge by inviting students to share what they know or ask questions such as: Can someone share with the class what they have learned so far in our reading selection? Does anyone remember the main idea of this reading selection? (Refer to previous lesson). Have anyone made a sand castle at the beach or at the park where there’s sand?  
4. The teacher will show illustrations on first page, and have students choose one to discuss with a buddy.  
5. Turn and talk: Ask the students to share their comments about the illustrations. Allow 1-2 minutes for discussion.  
6. After the allotted amount of time, the teacher will ask the students to discuss their comments with the class. Teacher will make notations on chart paper.  
7. Reading purpose: As we read today, we are going to observe the illustrations from the text. This will help us to interpret their meaning as well as to better understand what the author is trying to tell us on this reading selection.  
8. Students are asked to return to their seats. This will allow them to highlight words that can help them interpret the illustrations. |
| During Reading                                                                | 1. The students are instructed to observe the illustration on the last page, while the teacher puts emphasis on the question from the paragraph: What if our world did not have sand? What would it mean to you?  
2. Teacher will invite the students to pretend they are part of the illustration and how would they feel if there was no sidewalks, or windows, etc.  
3. How does pretending to be part of the illustration help you understand the text? Do you think the author made a good choice by including the illustration on this reading selection?  
4. Teacher welcomes brief comments from students at this time.  
5. Students’ comments will be written on chart paper. |
| After Reading                                                                 | Students will be able to (SWBAT):  
1. Write about their personal interpretation of the text and how the illustration/s helped them to better understand the reading.  
2. The teacher will get the students motivated by working with them on an example of the exercise, i.e.: I think that the author is trying to tell me that….; People use bricks because….; The illustration of the boy making a sand castle tells me that…..  
3. Students will help the teacher to finish the sample sentences in order to get an idea of what they are expected to do.  
4. The students should finish the exercise independently. When finished with their writing, students will use their writing journals to reflect on what they learned in today’s lesson and review the vocabulary words. |
| **Closure** | Recap and share some of their responses in a whole group discussion. Good readers should be able to reflect on the reading by thinking of what the author is trying to say in the text. They also benefit by closely observing the illustrations and interpreting them to better develop their reading understanding. |
| **Activity** | Student will create their own illustration to go with the text, and explain why they think it is appropriate to the text theme. |
| **Homework** | Students will use all words in the reading selection vocabulary to write complete sentences. |
| **Extension Activities** | 1. Students can choose to work in pairs, in groups or individually to complete their illustrations worksheets.  
2. Working in pairs, students can reread the whole selection or sections of the text by taking turns.  
3. Students can make a list of things that are made out of clay and or sand and explain or discuss why they are important to them. |
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 1: Main Idea – Determine the author’s message/theme/lesson within a written reading selection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Anita’s Amazing Compost Pile Pages: 132-134 Paragraph 2</td>
</tr>
<tr>
<td>Objective</td>
<td>Students will be able to identify the author’s message/theme of the text upon completion of reading a section of the text.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>By identifying the main idea of the story, the students will have a better grasp and understanding of the author’s intention for writing the reading selection.</td>
</tr>
</tbody>
</table>
| CT Standards | CC.2.R.I.2: Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.  
CT.2.R.36: Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text.  
Science GLE 2.4 To support the growth of different plants, people can change the properties of soils by adding nutrients (fertilizing), water (irrigating) or air (tilling). |
| Essential Questions | 1. What is a compost pile?  
2. What are the benefits of having a compost pile?  
3. How do you make a compost pile?  
4. Can you have a compost pile all year long?  
5. What types of animals or creatures help with a compost pile?  
6. If your compost pile does not change after one week, what do you think has happened?  
7. What could you do to make “fix” it? |
| Materials | 1. Anita’s Amazing Compost Pile reading selection  
2. Board  
3. Dry erase marker  
4. Projector  
5. Projector screen  
6. Picture of compost pile  
7. Vocabulary journals  
8. Writing journals  
9. Vocabulary Homework worksheet |
| Vocabulary | 1. recycle (pg. 132): to return to an original condition, reuse  
2. compost (pg. 132): a mixture that contains decayed organic matter used for fertilizing  
3. heap (pg. 132): a mound, pile |
4. scraps (pg. 134): pieces of discarded or leftover food

**Before Reading**

1. Students will be asked to sit on the rug in a circle.
2. The teacher will activate the students' prior knowledge by asking them if they know or have ever heard of a compost pile. *Who knows what “compost” is? Some people have them outside their homes for gardening.* The teacher may need to pose the question in both English and Spanish.
3. Next, the teacher will show a picture of a compost pile. *Now, look at this picture. What do you see? I would like you to turn and talk to your neighbor and talk about the things you notice in the picture.*
4. Finally, the teacher will review today's objective: *Today, we are going to read a story about Anita and her compost pile. I want you to pay very close attention to the story and its details as we will be finding the main idea.*
5. Students will be asked to return to their seats to write down today's vocabulary words and their meanings in their vocabulary journals.

**During Reading**

1. The teacher will quickly remind the students of today's objective.
2. The teacher will encourage students to highlight the vocabulary words in the story.
3. The teacher will call on students to provide the definition of each vocabulary word during reading. *Do you recycle? Anita does. I see a vocabulary word in the first sentence. Who can tell me what the vocabulary word is?* After the students respond, the teacher will then ask: *Who can tell me what recycle means?*
4. At the end of the second paragraph on page 134, the teacher will ask the students to recall some of the important events in the story. This will allow them to focus on the lesson's objective and possibly what the main idea of the story is. In a whole group discussion, the teacher will ask and record the students' responses to today's objective on the board.

**After Reading**

1. The teacher will review the students' responses of what they think the main idea of the story is.
2. The teacher will write on the board: *What is the main idea of the story?* The teacher will model how student responses should begin by writing down a sentence starter: *The main idea of the story is ___________________. Today, we will be working on finding the main idea. Let us review what we discussed earlier about our thoughts for the main idea. Who can tell me what was the story mainly about?*
3. The teacher will ask the students to open up their writing journals and write down the date and today's objective: Finding the main idea. Students will write down the sentence starter to begin their response provided by the teacher on the board.
4. The teacher will have the students work in pairs to discuss the assignment for 1-2 minutes.
5. Students will go back to their individual desks and complete the
| **Closure** | Several students will share their ideas about the author’s message with the class. Remind students that everything they read has a message. Good readers can identify the author’s message by observing carefully what happens in the story from beginning to end. The idea is to focus also on what information is not presented (implied) that will aid in further understanding of the story. |
| **Activity** | Students will write down the main idea of the story in their writing journals. |
| **Homework** | Students will write complete sentences using today’s vocabulary words. The teacher will provide the students with their appropriate worksheet. |
| **Extension Activities** | 1. What is the process in making a compost pile? Turn and talk with a partner and discuss process.  
3. Students create a list of the items needed to create a compost pile.  
4. Students create an alphabetized list of all the ingredients mentioned in the book.  
5. If you were the author and wanted to change one part of the story from the book, which part would it be and why? |
Vocabulary Homework

Directions: Write one (1) sentence using the vocabulary words below.

1. recycle: to return to an original condition, to reuse something

2. compost: a mixture that contains decayed organic matter

3. heap: a mound or a pile

4. scraps: pieces of discarded or leftover food
Vocabulary Homework

Directions: Write one (1) sentence using the vocabulary words below.

1. recycle: to return to an original condition, to reuse something

2. compost: a mixture that contains decayed organic matter

3. heap: a mound or a pile

4. scraps: pieces of discarded or leftover food
Vocabulary Homework

Directions: Write the correct vocabulary word with its definition.

<table>
<thead>
<tr>
<th>recycle</th>
<th>compost</th>
<th>heap</th>
<th>scraps</th>
</tr>
</thead>
</table>

1.  

2.  

3.  

4.  

---

2012 TAT Summer Curriculum Institute – Soils Unit | Conyer, López & Mariano
### Lesson
Day 2: Main Idea – Determine the author’s message/theme/lesson within a written reading selection.

### Title
Anita’s Amazing Compost Pile
Pages:134, Paragraph 2 – 135

### Objective
Students will be able to identify the author’s message/theme of the text upon completion of reading a section of the text.

### Essential Understanding
By identifying the main idea of the story, the students will have a better grasp and understanding of the author’s intention for writing the reading selection.

### CT Standards
**CC.2.R.1.2:** Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.

**CT.2.R.36:** Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text.

**Science GLE 2.4** To support the growth of different plants, people can change the properties of soils by adding nutrients (fertilizing), water (irrigating) or air (tilling).

### Essential Questions
1. What is a compost pile?
2. What are the benefits of having a compost pile?
3. How do you make a compost pile?
4. Can you have a compost pile all year long?
5. What types of animals or creatures help with a compost pile?
6. If your compost pile does not change after one week, what do you think has happened?
7. What could you do to make “fix” it?

### Materials
1. Anita’s Amazing Compost Pile reading selection
2. Board
3. Dry erase marker
4. Projector
5. Projector screen
6. Picture of compost pile
7. Vocabulary journals
8. Writing journals
9. Vocabulary Homework worksheet

### Vocabulary
1. branches (pg. 134): part of a tree that comes from the base or trunk
2. weeds (pg. 134): an unvalued plant, usually overgrown and can choke plants growing in a garden
1. humus (pg. 135): black or brown once living things that help make
### Before Reading
1. Students will be asked to sit on the rug in a circle.
2. The teacher will activate the students' prior knowledge by reviewing with them what was learned in the previous lesson. *Who can remind the class what we did last time? What did we learn from the beginning of this story? What was our objective/goal last class?* The teacher may need to pose these questions in both English and Spanish.
3. Next, the teacher will ask the students what they think might happen in the rest of the story. *Let's make a prediction.*
   *Remember a prediction is what we think might happen in the rest of the story.* The teacher calls on students and records their responses on the board. *It is important to think about what might happen next in the story as it will help us to recall the important events from the story.*
4. Finally, the teacher will review today's objective and ask the students to write down today's vocabulary words and their meanings in their vocabulary journals.

### During Reading
1. The teacher will remind the students of today's objective and how we will be finding the main idea of the story.
2. The teacher will also highlight the vocabulary words and ask the students to identify them on the page. Here, students can highlight the vocabulary words in their copies of the reading selection to reference for future use.
3. At the end of story, the teacher will ask the students to recall some of the important events in the story. This will allow them to focus on the lesson's objective and possibly what the main idea of the story is. In a whole group discussion, the teacher will ask and record the students' responses to today's objective on the board.

### After Reading
1. The teacher will review the students' responses about the main idea of the story.
2. The teacher will model and explain what a retell consists of by taking the important events list from the board and re-writing them into a paragraph using key transitional words for a correct retell (First, Next, Then, After that, In the end).
3. The teacher will then ask the students to write down in their writing journals the important events of the story in the order as they appeared in the text.

### Closure
Several students will share their ideas about the author's message with the class.

Remind students that everything they read has a message. Good readers can identify the author's message by observing carefully what happens in the story from beginning to end. The idea is to focus also on what information is not presented (implied) that will aid in further understanding.
<table>
<thead>
<tr>
<th><strong>Activity</strong></th>
<th>Students will retell the events in the story in their writing journals.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homework</strong></td>
<td>Students will write five (5) complete sentences using today’s vocabulary words. The teacher will provide the students with lined paper.</td>
</tr>
</tbody>
</table>
| **Extension Activities** | 1. What is the process in making a compost pile? Turn and talk with a partner and discuss process.  
3. Students create a list of the items needed to create a compost pile.  
4. Students create an alphabetized list of all the ingredients mentioned in the book.  
5. If you were the author and wanted to change one part of the story from the book, which part would it be and why? |
Vocabulary Homework

Directions: Write one (1) sentence using the vocabulary words below.

1. branches: part of a tree that comes from the base or trunk

2. weeds: an unvalued plant, usually overgrown and can choke plants growing in a garden

3. humus: black or brown once living things that help make up soil

4. recipe: step by step process to make something
Vocabulary Homework

Directions: Write one (1) sentence using the vocabulary words below.

1. branches: part of a tree that comes from the base or trunk

2. weeds: an unvalued plant, usually overgrown and can choke plants growing in a garden

3. humus: black or brown once living things that help make up soil.

4. recipe: step by step process to make something
Vocabulary Homework

Directions: Write the correct vocabulary word with its definition.

branches weeds humus recipe

1. 

2. 

3. 

4. 

# 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 3: Synthesizing/Inferring</th>
</tr>
</thead>
</table>
| **Title** | Anita's Amazing Compost Pile  
Page: 133 |
| **Objective** | Students will be able to make inferences in order to construct meaning and deepen understanding. |
| **Essential Understanding** | Students will learn that they too can change the properties of soils by creating a compost pile. |
| **CT Standards** | **CC.2.R.I.1**: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.  
**CT.2.R.27**: Reading Comprehension: During Reading: Apply comprehension strategies, such as connecting, predicting, questioning, inferring and visualizing to above grade-level stories read aloud by the teacher and to own reading at independent level.  
**Science GLE 2.4** To support the growth of different plants, people can change the properties of soils by adding nutrients (fertilizing), water (irrigating) or air (tilling). |
| **Essential Questions** | 1. What is a compost pile?  
2. What are the benefits of having a compost pile?  
3. How do you make a compost pile?  
4. Can you have a compost pile all year long?  
5. What types of animals or creatures help with a compost pile?  
6. If your compost pile does not change after one week, what do you think has happened?  
7. What could you do to make “fix” it? |
| **Materials** | 1. Anita’s Amazing Compost Pile reading selection  
2. Board  
3. Dry erase marker  
4. Projector  
5. Projector screen  
6. Vocabulary journals  
7. Writing journals |
| **Vocabulary** | Review: All |
| **Before Reading** | 1. The teacher will ask the students to sit on the rug.  
2. The teacher will review the entire story with the students to activate prior knowledge as well as use this information to complete today’s objective.  
3. The teacher will begin by asking the students to retell the important
4. The teacher will inform the students what the meaning of “synthesizing” and “inferring” entails. Today, we are going to think about the story and ask ourselves what are the benefits of having a compost pile. We learned how they are made, but why is important to have? As I was reading the story, I wondered about this. Is there anything else in the story that made you wonder or think about while reading the story?

5. The teacher will record student responses on the board.

<table>
<thead>
<tr>
<th>During Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teacher will review the responses of the students about what other things about the story made them wonder.</td>
</tr>
<tr>
<td>2. The teacher will inform the students about today’s objective and how we will be making inferences from the story. First, we need to think about the story. What made us scratch our heads? What made us want to know more? Why did the author include that information in the story? What does it mean? How will it help me to understand the story even more?</td>
</tr>
<tr>
<td>3. After the students have shared their thoughts and responses, the teacher will ask the students to take their seats.</td>
</tr>
<tr>
<td>4. If necessary, the teacher may need to reread the book for those students who may have been absent and only have heard/seen one part (or the students will be asked to follow along in their books as the teacher or classmate reads the story.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>After Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teacher will review today’s objective and the activity the students will be doing: Today, I want you to work look at the story again and think about what parts of the story made you wonder. I will give you 2 minutes to do so, and then you’ll share your thoughts with your neighbor.</td>
</tr>
<tr>
<td>2. The teacher will then ask the students to take their seats and begin to model the sentence structure for the response required (providing a sentence starter).</td>
</tr>
<tr>
<td>3. The teacher will have the students open their writing journals to write about one thing that made them wonder.</td>
</tr>
<tr>
<td>4. Advanced ELLs students are expected to write at least a paragraph (3-4 sentences) for their response. Intermediate ELLs are expected to write 2 sentences. Beginner ELLs are expected to highlight the one thing that made them wonder on their copy of the reading selection. The teacher will go around and work with the Beginner ELLs or pull them into a small group activity.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher will ask students to share what they learned about making inferences. What do you need to do in order to make an inference? How does making an inference help you as a reader?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students will write their main idea in their writing journals.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will write about another inference that made them wonder from</td>
</tr>
<tr>
<td>Extension Activities</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>1. What is the process in making a compost pile? Turn and talk with a partner and discuss process.</td>
</tr>
<tr>
<td>3. Students create a list of the items needed to create a compost pile.</td>
</tr>
<tr>
<td>4. Students create an alphabetized list of all the ingredients mentioned in the book.</td>
</tr>
<tr>
<td>5. If you were the author and wanted to change one part of the story from the book, which part would it be and why?</td>
</tr>
</tbody>
</table>
### 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 4: Reflection/Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Anita's Amazing Compost Pile</td>
</tr>
<tr>
<td></td>
<td>Pages: 132-135</td>
</tr>
<tr>
<td>Objective</td>
<td>Students will be able to interpret specific information and illustrations presented in text.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>Students will learn that soils such as clay and sand are important and essential in our daily lives.</td>
</tr>
<tr>
<td>CT Standards</td>
<td>CC.2.R.I.7: Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.</td>
</tr>
<tr>
<td></td>
<td>CT.2.R.34: Reading Comprehension: During Reading: Interpret information from simple graphs and charts.</td>
</tr>
<tr>
<td></td>
<td>Science GLE 2.4 To support the growth of different plants, people can change the properties of soils by adding nutrients (fertilizing), water (irrigating) or air (tilling).</td>
</tr>
</tbody>
</table>
| Essential Questions | 1. What is a compost pile?  
2. What are the benefits of having a compost pile?  
3. How do you make a compost pile?  
4. Can you have a compost pile all year long?  
5. What types of animals or creatures help with a compost pile?  
6. If your compost pile does not change after one week, what do you think has happened?  
7. What could you do to make “fix” it? |
| Materials | 1. Anita's Amazing Compost Pile reading selection  
2. Board  
3. Dry erase marker  
4. Projector  
5. Projector screen  
6. Picture of compost pile  
7. Vocabulary journals  
8. Writing journals |
| Vocabulary | Review: All |
| Before Reading | 1. The teacher will ask the students to sit on the rug.  
2. The teacher will review the entire story with the students to activate prior knowledge as well as use this information to complete today's objective.  
3. The teacher will begin by asking the students to retell the important events in the story. |
4. The teacher will say: *Today, we are going to look at the picture from the story. The author includes this picture or image in the story to help us, the readers, understand the story even better.*

5. Next, the teacher will ask the students to look at the picture on page 133. *Why do you think the author included this picture in the story? I want you to turn-and-talk with your neighbor and share your thoughts about the author’s intention to include this picture in the story with your friend.* The teacher will allow 1-2 minutes for this exercise.

### During Reading

1. The teacher will review the responses of the students about their thoughts of the picture.
2. The teacher will write the students’ responses on the board.
3. The teacher will now ask the students to take their seats.
4. If necessary, the teacher may need to reread the book for those students who may have been absent and only have heard/seen one part (or the students will be asked to follow along in their books as the teacher or classmate reads the story.)

### After Reading

1. The teacher will ask the students to take their seats.
2. The teacher will review the teacher example provided to show the proper sentence structure required for each student response (capitalization and punctuation).
3. The teacher will inform the class that they will be writing their own responses to how the picture helped them understand the story even better.
4. Each student will record their responses in their writing journals.

### Closure

The teacher will recap with the class some of the students’ personal connections in a whole group discussion. The teacher will remind students that good readers think about how text connects to their own lives when they read.

### Activity

Students will respond to how the picture on page 133 helped them to further understand the story.

### Homework

Students will draw their own picture of a compost pile to include specific details from the story. For the Advanced ELLs, these details should be labeled.

### Extension Activities

1. What is the process in making a compost pile? Turn and talk with a partner and discuss process.
3. Students create a list of the items needed to create a compost pile.
4. Students create an alphabetized list of all the ingredients mentioned in the book.
5. If you were the author and wanted to change one part of the story from the book, which part would it be and why?
### 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 1: Main Idea – Determine the author’s message/theme/lesson within a written reading selection.</th>
</tr>
</thead>
</table>
| Title  | The Earthworm: Nature’s Plow  
Pages: 1-3                                                                                     |
| Objective | Students will be able to identify the main idea of a paragraph within an article.                                      |
| Essential Understanding | Earth worms are essential to soil and the growth of plants.                                               |
| CT Standards | CC.2.R.1.2: Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.  
CT.2.R.36: Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text. |
| Science GLE 2.2 | Soil is a habitat for many living things. Some organisms live in the soil and others live on the soil. Worms and other underground animals create spaces for air, water and plant roots to move through soil |
| Essential Questions | 1. What is this paragraph mainly about?  
2. Is there a sentence that tells the main idea (topic sentence)?  
3. How do you know?  
4. What sentences support that main idea? |
| Materials | 1. Copies of “The Earthworm: Nature’s Plow” (1 for each student)  
2. Transparency of “The Earthworm: Nature’s Plow”  
3. Overhead projector  
4. Wet erase marker  
5. Highlighters (1 for each student)  
6. Main Idea of Paragraphs worksheet |
| Vocabulary | 1. plow (pg. 1): a machine used to cut, lift, and turn over soil  
2. tunnels (pg. 2): underground passageways  
3. path (pg. 2): track through which something moves  
4. spread (pg. 3): to stretch or extend |
| Before Reading | 1. Students will be seated at desks.  
2. Teacher will state the objective of the lesson.  
3. Activate prior knowledge: The teacher will say: Today, we are going to read an article about worms. Where have we seen worms before? What do you know about worms? Help students recall the activity from science lesson 2 in which we placed earth worms in a compost bag. |
4. Predictions: The teacher will ask students: *What do you think we will learn about earthworms from this article?* The title is “The Earthworm: Nature’s Plow. Why do you think the author calls them nature’s plow?*

5. The teacher will inform the students that they will be finding the main idea of several paragraphs within the article.

6. The teacher will inform the students that a “paragraph” is a group of sentences about the same topic. The teacher will display the overhead and point out paragraphs.

7. The teacher will pass out student copies of “The Earthworm: Nature’s Plow.” The students will be asked to number the paragraphs in the margins to ensure that students are able to identify the different paragraphs.

8. The teacher will restate the purpose for reading: *Today, we will be finding the main idea of paragraphs 5, 7, and 8. Remember that the main idea is what the paragraph is mostly about. It is the big idea.*

### During Reading

| 1. The teacher will begin reading the article as students follow along with their copies. |
| 2. The teacher will think aloud, stopping after each paragraph to ask those essential questions. |
| 3. The teacher will model highlighting the sentence that states the main idea. |
| 4. **STOP after:** Paragraph 5: Main idea — “Worms mix the soil nicely.” Paragraph 7: “Main idea — Worm tunnels are very important” |
| 5. Students will follow along highlighting the sentence that states the main idea of each paragraph. |

### After Reading

| 1. The teacher will explain to students that they will be finding and writing about the main idea of paragraph 8 by putting the topic sentence into their own words. |
| 2. The teacher will model the exercise by writing about the main idea in paragraphs 5 and 7. The teacher will say: *Look at the first paragraph. I thought to myself, “What is the main idea or BIG idea of this paragraph. I realized that the paragraph was talking about how worms mix the soil so I highlighted this sentence. I'm going to put that in my own words and write it here (on the overhead version of student activity or chart paper.)* |
| 3. Repeat with paragraph 7. The teacher will say: *Look at paragraph 7. I noticed that this paragraph was about how worm tunnels are important so I highlighted this sentence. I’m going to put that in my own words and write it here (on the overhead version of student activity or chart paper.)* |
| 4. Students will independently finish the activity by finding the main idea of paragraph 8. |
| 5. As students finish, they will hand in their papers and take out their vocabulary journals. Students will add the vocabulary words from
| **Closure** | Ask several students to share their sentences. Remind students that paragraphs have a main idea and that good readers notice them while reading. |
| **Activity** | Students will complete the main idea of a paragraph worksheet independently. |
| **Homework** | Students will write sentences using the vocabulary words from today’s lesson. |
| **Extension Activities** | 1. Written Response: Which part of this article is the most important? Use information from the article and your own life to explain why you chose that part.  
2. Students will read another paragraph about worms and soil and identify the main idea.  
3. Fluency practice: Students will read the poem Earthworms (attached) with a partner. |
The Earthworm: Nature’s Plow
Main Idea of a Paragraph

Directions: Read the paragraph below and answer the questions.

Some roots even use worm tunnels as a place to live! When plants grow big, so do their roots. The roots need to spread out in the soil. The worm has made a path for them. So the roots follow the worm’s path.

1. Notice the evidence.
   One important idea from the article is ________________________________
   ________________________________
   ________________________________
   ________________________________

   Another important idea from the article is ________________________________
   ________________________________
   ________________________________
   ________________________________

2. State the main idea.
   The main idea of this article is ________________________________
   ________________________________
   ________________________________
   ________________________________

   I know this is the main idea because ________________________________
   ________________________________
   ________________________________
   ________________________________
The Earthworm: Nature’s Plow
Main Idea of a Paragraph

Directions: Read the paragraph below. **Highlight** the sentence that states the main idea. **Underline** the important details. Then answer the questions.

(1) Some roots even use worm tunnels as a place to live! (2) When plants grow big, so do their roots. (3) The roots need to spread out in the soil. (4) The worm has made a path for them. (5) So the roots follow the worm’s path.

1. One important idea from the article is _____________________________

2. Another important idea from the article is _____________________________

2. State the main idea.
The main idea of this article is _____________________________

I know this is the main idea because _____________________________
The Earthworm: Nature’s Plow
Main Idea of a Paragraph

Part 1: Read

Directions: Read the paragraph below. Highlight the main idea. Underline two (2) important facts.

(1) Some roots even use worm tunnels as a place to live! (2) When plants grow big, so do their roots. (3) The roots need to spread out in the soil. (4) The worm has made a path for them. (5) So the roots follow the worm’s path.

Part 2: Notice the Evidence

Directions: Complete the sentences below. Use the word box to help you.

path spread out follow

1. Roots need to __________________________ in the soil.
2. The worm has made a __________________________ for them.
3. So the roots __________________________ the worm’s path.

Part 3: State the Main Idea

Directions: Complete the sentences below.

1. The main idea of this paragraph is that roots __________________________

2. I know this is the main idea because __________________________
Earthworms
(Sung to the tune of "The Adams Family")

They're slimy and they're squirmy.
They even may be germy.
But oh they are so helpful.
We're talking 'bout earthworms.
They make soil loose for plant roots
So they get air and water.
It travels down their burrows.
We're talking 'bout earthworms.
Their castings make the soil rich.
The plants grow healthily and big.
What would we do without them?
We're talking 'bout earthworms.
So next time that you see one,
Take time to stop and thank him.
They really are quite helpful.
We're talking 'bout earthworms.
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 2: Main Idea</th>
</tr>
</thead>
</table>
| Title        | The Earthworm: Nature’s Plow  
Pages: 1-3 |
| Objective    | Students will be able to identify the main idea of an article. |
| Essential Understanding | Earthworms are essential to soil and the growth of plants. |
| CT Standards | **CC.2.R.1.2:** Identify the main idea/topic of a multi-paragraph text as well as the focus of specific paragraphs within the text.  
**CT.2.R.36:** Reading Comprehension: After Reading: General Understanding: Respond to oral and written questions about the facts in nonfiction text. |
| **Science GLE 2.2** Soil is a habitat for many living things. Some organisms live in the soil and others live on the soil. Worms and other underground animals create spaces for air, water and plant roots to move through soil. |
| Essential Questions | 1. What important information did we learn about earthworms?  
2. Why do you think the author refers to earthworms as “nature’s plow”?  
3. What do all these ideas have in common?  
4. What do you think the main idea of this entire article is? |
| Materials    | 1. Copies of “The Earthworm: Nature’s Plow” (1 for each student)  
2. Chart paper  
3. Markers  
4. Projector  
5. Student response sheet (from previous lesson)  
6. Pencils |
| Vocabulary   | 2. humus (pg. 1): black or brown once living things that help make up soil.  
3. clumps (pg. 1): a group of something stuck together.  
4. minerals (pg. 1): non-living solids that have a crystal structure  
5. roots (pg. 3): the parts of plants that grow down and absorb nutrients |
| Before Reading | 1. Students will be asked to sit on the rug.  
2. Teacher will state the objective of the lesson.  
3. Activate prior knowledge: The teacher will say: Yesterday, we read this article about worms. What did we learn?  
4. The teacher will restate the purpose for reading: Today, we are going to think about what we read yesterday, and after we have
During Reading

1. The teacher will create a web on chart paper with the title of the article in the center.
2. The teacher will pass out student copies of “The Earthworm: Nature’s Plow” articles from the previous lesson to students.
3. The teacher will tell the students that we are going to add some of the important ideas we learned from the article to the web.
4. Next, the teacher will say, “What do all of these ideas have in common?” A proper response could be that they all have to do with worms helping the soil.
5. Next, the teacher will say: What do all of these ideas have in common? A proper response could be that they all have to do with worms helping the soil.
6. The teacher will ask the students, “What do you think the main idea of the whole article is?” The teacher will allow the students to turn-and-talk. After 1-2 minutes, the teacher will call on students to share their ideas.
7. The teacher will write a sentence stating the main idea of the article underneath the title of the article in the center of the web.
8. Students will return to their seats.

After Reading

1. The teacher will explain to students that they will be adding the main idea of the entire article to their papers from the previous lesson. The teacher will show students where to write the main idea.
2. The teacher will model writing a complete sentence and remind students to put the ideas from the paragraph into their own words.
3. Students will complete the task independently.
4. As students finish, they will hand in their papers and take out their vocabulary journals. Students will add the vocabulary words from today’s lesson to their vocabulary journals.

Closure

Ask several students to share their sentences. Remind students that articles have a main idea and that good readers notice them while reading.

Activity

Students will write about the main idea of the reading selection.

Homework

Students will write sentences using the vocabulary words from today’s lesson.

Extension Activities

1. Written Response: Do you think “The Earthworm: Nature’s Plow” is a good title for this article? Explain why or why not.
2. Students will create a main idea mobile using a paper plate, construction paper, and string. Students will write the main idea on the plate and hang the supporting details from the plate using the string.
3. Students create a main idea table.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Students will create a poster showing how worms are good for soil and planting.</td>
</tr>
</tbody>
</table>
The Earthworm: Nature's Plow
Main Idea Web

Directions: Use the web to keep track of the main idea and supporting details in the story.
The Earthworm: Nature's Plow
Main Idea of the Article

Directions: Read "The Earthworm: Nature's Plow." List four (4) important facts from the article. Next, write the main idea of the entire article.

1. Notice the Evidence
   One important idea from the article is
   
   Another important idea from the article is
   
   A third important fact from this article is
   
   A fourth important fact from this article is

2. Identify the Main Idea
   The main idea of this article is
   
   I know this is the main idea because
The Earthworm: Nature’s Plow
Main Idea of the Article

Directions: Use the web to help you find the main idea.

Main Idea

1. Earthworms mix up the soil.

2. Worm tunnels are very important.

Part 1: Notice the evidence. Four (4) important ideas from this article are:

1. Earthworms mix up the soil.

2. 

3. 

4. 

Part 2: Find the main idea. The main idea is the “big idea” or gist of the article.

1. The main idea of this article is

2. I know this because
The Earthworm: Nature’s Plow
Main Idea of the Article

Directions: Use the web to help you find the main idea.

Main Idea

1. Earthworms mix up the soil.
2. Worm tunnels are very important.
4. Worm tunnels bring water and oxygen to plants.

Part 1: Notice the evidence. Four (4) important ideas from this article are:

1. Earthworms mix up the soil.
2. Worm tunnels are very important.
3. 
4. 

Part 2: Find the main idea. The main idea is the “big idea” or gist of the article.

1. The main idea of this article is

2. 
3. 
4. 
5. 
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 3: Synthesizing/Inferring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The Earthworm: Nature’s Plow Pages: All</td>
</tr>
<tr>
<td>Objective</td>
<td>Students will be able to make inferences in order to construct meaning and deepen understanding.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>Earth worms are essential to soil and the growth of plants.</td>
</tr>
<tr>
<td>CT Standards</td>
<td>CC.2.R.I.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</td>
</tr>
<tr>
<td></td>
<td>CT.2.R.27 Reading Comprehension: During Reading: Apply comprehension strategies, such as connecting, predicting, questioning, inferring and visualizing to above grade-level stories read aloud by the teacher and to own reading at independent level.</td>
</tr>
<tr>
<td></td>
<td>Science GLE 2.2 Soil is a habitat for many living things. Some organisms live in the soil and others live on the soil. Worms and other underground animals create spaces for air, water and plant roots to move through soil.</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>1. compost pile (pg. 1): a pile of decayed once living things used to fertilize soil. 2. wiggling (pg. 3): moving from side to side or up and down. 3. bristles (pg. 3): short stiff hairs or something like a hair.</td>
</tr>
<tr>
<td>Before Reading</td>
<td>During Reading</td>
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</tbody>
</table>
| 9. Students will be seated at desks.  
10. Teacher will state the objective of the lesson.  
11. Activate prior knowledge: The teacher will ask the students what they learned from the article, “The earthworm: Nature’s Plow.”  
   What was the main idea? What were some important details?  
   Students will refer to the main idea web from Lesson 2 and review important information not mentioned by the students.  
12. The teacher will restate the purpose for reading: Today, we are going to reread some parts of the article and practice making inferences. When we infer, we use what the author tells us, and what we know from our own experience to fill in missing information or information that is not stated directly in the text. Sometimes we call this “reading between the lines.” To help us make inferences, we are going to keep track of information and our thinking on this chart.  
13. The teacher will present a chart divided into 3 columns titled as follows: Text says, I wonder, and Inference (on chart paper or overhead) | 1. The teacher will read paragraph 5 (Worms mix soil nicely…) and ask those essential questions as appropriate.  
2. The teacher will think aloud and model recording information on the chart paper. Students will record this information on their worksheets. The teacher will say: I notice the author says, “You can see why people like to call them ‘nature’s plow.’” This sentence makes me wonder, so I am going to write it in the first column of our chart under the word “Text.” I know a plow is a machine, but I wonder what it exactly does. I am going to write that question under the second column of my chart underneath the heading “I Wonder.” Now, I need to make an inference because the author does not tell me what a plow is. I’m going to reread the paragraph to help me (teacher rereads paragraph out loud). Before that sentence, it tells me that worms mix up the soil and bring minerals to the top of the soil. So, I think that a plow must be a machine that mixes up soil because that is what a worm does. The teacher will model writing that statement underneath the “Inference” column of the chart paper.  
3. The teacher will read paragraph 8 (Some roots even…) and ask those essential questions as appropriate. The teacher will think aloud and model recording information on the chart. Under the first column the teacher will write “Some roots even use worm tunnels as a place to live.” Students will fill in their individual charts/worksheets together with the teacher.  
4. The teacher will encourage students to share what they are wondering and add responses to the second column. Possible responses include: Where do the worms go if roots live in their tunnels? What would happen to the roots if there were no worms?  
5. The teacher will guide students to make inferences based on their questions and record them in the third column of the chart. |
| **After Reading** | As students finish, they will hand in their worksheets and take out their vocabulary journals. Students will add the vocabulary words from today’s lesson to their vocabulary journals. |
| **Closure** | The teacher will ask students to share what they learned about making inferences. The teacher will ask: *What do you need to do in order to make an inference? How does making an inference help you as a reader?* |
| **Activity** | Students will complete the Thinking About Inferences worksheet. |
| **Homework** | Students will write sentences with the vocabulary words from today’s lesson. |
| **Extension Activities** | 1. Written response: Why do you think the author chose to write about this topic?  
2. Students will use a Venn diagram to compare a plow and an earthworm.  
3. Students will read *The Good, the Bad, and the Ugly: Soil Residents* (attached) independently or with the teacher. Students can select 3 organisms write a paragraph, create a poster, or illustrations explaining how those organisms affect the soil.  
4. Students will read *The Good, the Bad, and the Ugly: Soil Residents* (attached) independently or with the teacher. Students will select one organism to compare to the earth worm using a Venn Diagram. |
<table>
<thead>
<tr>
<th>Text</th>
<th>I Wonder</th>
<th>Inference</th>
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The Good, the Bad, and the Ugly: Soil Residents

Ant

I am an insect with six legs. I am a decomposer because I break materials down into smaller particles. I create tunnels and move soil into clumps. Some people would rather not have me around their homes. I am black, brown, or red. Worms especially don’t like me because I eat them.

Bacteria

I am so tiny that you can’t even see me. I can eat almost anything. Some of us live together in groups and others of us don’t.

Beetle

I am an insect with shiny, black, tough wings and am about 1/2 inch long. I am a predator and eat slugs, snails, and soft insects such as caterpillars. I live beneath stones, boards, and in other moist places.

Centipede

I move quickly on my many legs. I have 15 to 137 segments with a pair of legs on each. I am a fierce hunter and love to eat worms. I use my pair of poisonous claws to help keep my prey from getting away. I am about 1 to 2 inches long. I am usually reddish brown.

Collembola

I am a close relative of the springtail but can’t jump like they do. I am tiny, less than 1/16 of an inch long. I eat molds and decaying matter. I am white in color.
Earthworm
I am a long, thin soft-bodied annelid that has many little segments. I do not have legs or eyes. I sense light and I breathe through my skin. I eat bacteria, fungi, and decaying materials. I like dark, moist places.

Fruit Fly
I am a very small fly. When I fly around, I look heavy, as if weighted down by bricks. I don’t bite, sting, make buzzing sounds, or harm worms. I tend to be brownish in color with black stripes on my abdomen, and usually have red or white eyes. Sometimes you will see me around a worm bin if a person forgot to bury my favorite food, fruit. I prefer to lay my eggs in fruit where it’s moist and warm. I can lay thousands of eggs at a time.

Fungus Gnat
I am a small, dark gray or black fly. I fly around like a paper airplane. As a larva, I feed on soil fungi and plant roots and often hang out around houseplants. I can infect houseplants easily, so it is hard to get rid of me. Sometimes my friends and I will occupy a worm bin, but only in small numbers.

Mite
I am tiny. It would take 25 of us to cover an inch-long line. My body is round and fat, so it’s hard to see my eight legs. I eat plant materials such as mold and soft tissues of leaves. Some of us eat the manure of other organisms. I am usually white, red, or brown.

Millipede
I have so many legs you would have a hard time counting them. My name means "thousand legs," but I don’t have that many only two legs per segment. I am very shy and I roll up in a ball to avoid danger. I am a vegetarian and eat soft, moist, decaying plants. I am dark red to black in color and am 1 to 3 inches long.

**Pill Bug or Roly Poly**
I am an isopod, which means my pairs of legs look very similar to each other. I eat old leaves and other stuff like vegetable scraps. I am about a half inch long and I roll up in a ball if I am disturbed. Some people think I look like a little armadillo. I am a dark, greyish color.

**Slug**

I have muscular discs on my underside that are adapted for creeping and crawling. I lay egg masses that look like Jell-O. I eat living material but will make an appearance from time to time in your compost pile to eat fresh garbage and garden trimmings.

**Snail**

Like my friend the slug, I am a mollusk and creep around on my muscular belly. I, however, carry on my back a spirally curved shell. I also have a broad retractable hood and a distinct head. Like slugs, I prefer to eat living material, such as leaves, but I will also show up in your compost pile or worm bin.

**Sow Bug**
My pairs of legs look alike, and that makes me an isopod like my cousin Roly Poly. I eat vegetation and old leaves. My half-inch-long body is oval and flat with flattened plates, but I can’t roll up into a ball like Roly Poly. I am related to crayfish and lobsters. I breathe with gills, so I must live in a damp, moist place. I am a dark, greyish color.
Spider

I am related to mites and have eight nifty legs. I am one of the least appreciated animals in the garden and compost. I feed on other insects and work hard to help control pests that will hurt a garden.

White Worm

I look like a frayed piece of thread. I am a skinny, white worm, about an inch long. I like to eat rotting food after the other critters get to it. You might think of me as one who likes to finish off the job.

From The Worm Guide: A Teacher's Guide to Vermicomposting
# 2nd Grade Science – Soils Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Day 4: Reflection/Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>The Earthworm: Nature’s Plow</td>
</tr>
<tr>
<td></td>
<td>Page: 2</td>
</tr>
<tr>
<td>Objective</td>
<td>Students will be able to interpret information and illustrations presented in text.</td>
</tr>
<tr>
<td>Essential Understanding</td>
<td>Earth worms are essential to soil and the growth of plants.</td>
</tr>
<tr>
<td>CT Standards</td>
<td>CC.2.R.1.7: Explain how specific images (e.g., a diagram showing how a machine works) contribute to and clarify a text.</td>
</tr>
<tr>
<td></td>
<td>CT.2.R.34: Reading Comprehension: During Reading: Interpret information from simple graphs and charts.</td>
</tr>
<tr>
<td>Science GLE 2.2</td>
<td>Soil is a habitat for many living things. Some organisms live in the soil and others live on the soil. Worms and other underground animals create spaces for air, water and plant roots to move through soil.</td>
</tr>
<tr>
<td>Essential Questions</td>
<td>1. What does this illustration show?</td>
</tr>
<tr>
<td></td>
<td>2. How does it help us understand the rest of the article?</td>
</tr>
<tr>
<td></td>
<td>3. Why do you think the author chose to include this illustration as part of the article?</td>
</tr>
<tr>
<td>Materials</td>
<td>1. Copies of &quot;The Earthworm: Nature’s Plow&quot; (1 for each student)</td>
</tr>
<tr>
<td></td>
<td>2. Transparency of &quot;The Earthworm: Nature’s Plow&quot;</td>
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<td></td>
<td>3. Overhead projector</td>
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<td>4. Wet erase marker</td>
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<td></td>
<td>5. Markers</td>
</tr>
<tr>
<td></td>
<td>6. Interpreting Illustrations worksheets</td>
</tr>
<tr>
<td></td>
<td>7. Teacher example of Interpreting Illustrations worksheet (on chart paper or overhead transparency)</td>
</tr>
<tr>
<td></td>
<td>8. Pencils</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>1. compost pile (pg. 1): a pile of decayed once living things used to fertilize soil.</td>
</tr>
<tr>
<td></td>
<td>2. humus (pg. 1): black or brown once living things that help make up soil.</td>
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<td></td>
<td>3. clumps (pg. 1): a group of something stuck together.</td>
</tr>
<tr>
<td></td>
<td>4. minerals (pg. 1): non-living solids that have a crystal structure</td>
</tr>
<tr>
<td></td>
<td>5. plow (pg. 1): a machine used to cut, lift, and turn over soil.</td>
</tr>
<tr>
<td></td>
<td>6. tunnels (pg. 3): underground passageways</td>
</tr>
<tr>
<td></td>
<td>7. bristles (pg. 3): short stiff hairs or something like a hair</td>
</tr>
<tr>
<td></td>
<td>8. path (pg. 3): track through which something moves.</td>
</tr>
<tr>
<td>Before Reading</td>
<td>1. Students will be seated at desks.</td>
</tr>
</tbody>
</table>
2. The teacher will state the objective of the lesson.
3. Activate prior knowledge: The teacher will say: _We have been reading an article about worms and soil. Can someone summarize what we have read?_ Display main idea chart from lesson 2 for reference. The teacher will ask: _How is a worm like a plow? What would happen to plants and farmland if there were no worms?_ Students turn and talk.
4. The teacher will call on a couple of students and ask them to share their thoughts.
5. The teacher will explain that often stories include illustrations, diagrams, and other graphics in their writing in order to get their message across. Good readers pay attention to these parts of a text and interpret them in order to better understand what they are reading.

<table>
<thead>
<tr>
<th>During Reading</th>
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</thead>
<tbody>
<tr>
<td>1. The teacher will display the illustration from page 2 of the reading selection on the overhead.</td>
</tr>
<tr>
<td>2. The teacher will ask students what they notice happening in the picture. The teacher will give the students 5 minutes to talk to their groups about what is happening in the picture.</td>
</tr>
<tr>
<td>3. The teacher will call on each group to share at least one thing they noticed in the illustration.</td>
</tr>
<tr>
<td>4. The teacher will record student responses on chart paper.</td>
</tr>
<tr>
<td>5. The teacher will lead a class discussion. The teacher will ask: <em>How does the picture help us understand the rest of the article?</em>_ Students will turn and talk for 1-2 minutes. The teacher will call on two students to share their ideas.</td>
</tr>
<tr>
<td>6. The teacher will ask: <em>Why do you think the author included this illustration in the article?</em> Students will turn and talk for 1-2 minutes. The teacher will call on 2 students to share their ideas.</td>
</tr>
<tr>
<td>7. The teacher will help lead students to the conclusion that the illustration is included to help the reader to visualize and understand the information presented in the article.</td>
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</table>

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<thead>
<tr>
<th>After Reading</th>
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</thead>
<tbody>
<tr>
<td>1. The teacher will explain to students that they will be writing about their interpretation of the illustration.</td>
</tr>
<tr>
<td>2. The teacher will model the exercise. The teacher will say: <em>My first sentence will tell about the illustration. It says “This illustration shows...How can I finish that sentence?</em> Take ideas from students and model how to write them in a complete sentence on the overhead version of the student worksheet. The teacher will repeat with the second and third sentence stems.</td>
</tr>
<tr>
<td>3. Students will independently finish the activity. As students finish, they will hand in their papers and take out their vocabulary journals. Students will add the vocabulary words from today’s lesson to their vocabulary journals.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Closure</th>
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<tbody>
<tr>
<td>The teacher will ask the students to share their sentences. The teacher will review the lesson’s objective by asking the students: Why it is...</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td><strong>Homework</strong></td>
</tr>
</tbody>
</table>
| **Extension Activities** | 1. Students will write a caption for the illustration.  
2. Students draw an illustration to show the different stages of soil.  
3. Students will read another article about soils or worms and draw an illustration to go with it.  
4. Writing: Students will write to the following prompt: Your friend says that worms are gross and useless. She says we would be better off if there were no worms. Write a letter to your friend explaining why worms are important. |
Interpreting Illustrations

Directions: Look at the illustration on page 2 of The Earthworm: Nature's Plow. Complete the statements below using complete sentences and proper punctuation.

1. This illustration shows ____________________________
   ____________________________
   ____________________________
   ____________________________
   ____________________________

2. This helps me understand the rest of the article because ____________________________
   ____________________________
   ____________________________
   ____________________________

3. I think the author included this illustration because ____________________________
   ____________________________
   ____________________________
Interpreting Illustrations

Directions: Look at the illustration on page 2 of The Earthworm: Nature’s Plow. Complete the statements below using complete sentences and proper punctuation.

1. This illustration shows __________________, ___________________ and ___________________.

2. The worms are ____________________.

3. The plants’ roots are ____________________ in the _____________________.

4. The author used the illustration to show me:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Thinking about Inferences

Directions: An illustration is a picture. Look at the illustration on page 2 of The Earthworm: Nature’s Plow. Complete the statements below using the word bank below.

<table>
<thead>
<tr>
<th>Word Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>plants</td>
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</tbody>
</table>

1. This illustration shows ___________________, ___________________, and ___________________.

2. The plants’ roots are ___________________ in the worms’ tunnels.

3. The author included the illustration to help me ___________________ the article.

4. Draw a picture to show what you learned from the illustration:
Have You Seen Sand or Clay Today?

Have you ever played with sand? Have you made shapes with clay? Human beings have always been curious about soil. A long time ago, people thought about soil and got an idea. Maybe they could turn soil into something pretty or strong. So they experimented. They found many ways to use sand and clay.

Have you ever seen a brick house? That house is made of clay. Bricks are made by shaping wet clay. In the United States, most bricks are baked in a special oven. As the bricks are baking, the clay gets very hard.

Some American Indians make a different kind of brick. It is called adobe. Indians have used adobe for a very long time. To make adobe, the Indians mix clay with straw. Then they let the adobe bricks dry in the sun. The heat from the sun bakes the adobe and makes it very hard.
People like brick because it is strong. It can last a long time. Once a Chinese emperor wanted to protect his land. So he put a big wall around his country. His wall was made of stones and bricks. Some of his bricks were baked in an oven. Some were baked in the sun.

His wall was built more than two thousand years ago. It lasted for hundreds of years. When the bricks started to break, people in China made new bricks. The wall is still there today. We call it the Great Wall of China.

What else can you do with clay? Lots and lots of things! You can roll clay. You can press it flat. You can shape it any way you want. Artists love clay. They can turn clay into a mask or a plate or a vase. Has anyone ever let you hold a fine china cup? That cup used to be mushy white clay.
Clay is important in our lives. Sand is important, too. What if our world did not have sand? There would be no beaches. No concrete sidewalks or concrete bridges. And think of a world with no windows. We would have to say goodbye to glass because glass is made from sand!

Have you seen sand or clay today? Look around your room. How many things can you find that are made from sand or clay?
The Earthworm: Nature's Plow

When you go outside, look down. There is a world right under your feet! That is where earthworms live.

Earthworms, redworms, and other worms spend a lot of time in the ground. Sometimes they come up where we are. Do you know where to find them? Look under a pile of old leaves or in a compost pile. Worms go where they can find dead plants to eat.

A worm might seem small and plain. It might not seem important. But a great scientist named Charles Darwin wrote a whole book about worms. He thought they were one of the most interesting animals he had ever studied.

Farmers think worms are great! They know that worms make the soil better for planting. An earthworm eats old leaves and helps turn them into humus. It also eats big clumps of soil. It breaks up the big clumps.

Worms mix the soil nicely. They are like tiny elevators. They carry old plants deep down into the ground. They bring minerals up to the top. Up and down, up and down they go. They can even move small stones! You can see why people like to call them “nature’s plow.”
Can you dig tunnels without a shovel? Earthworms can! They eat their way through the soil. As they go through the soil, they leave a tunnel behind. Stroke a worm gently. Try to feel its tiny bristles. The bristles help the worm hold on to the walls of its tunnel.

Worm tunnels are very important. Each tunnel is an open space in the soil. The tunnels fill up with air or water. Roots and animals under the ground need air and water. They would die without the air and water in the tunnels.

Some roots even use worm tunnels as a place to live! When plants grow big, so do their roots. The roots need to spread out in the soil. The worm has made a path for them. So the roots follow the worm’s path.

Have you ever seen worms on the ground when it rains outside? Rain is filling up their tunnels, so the worms must come to the surface. You can see them wiggling and crawling on the ground.

Earthworms are our friends “downstairs.” Next time you jump rope or walk across the street, what do you think the worms will be doing way down under your feet?
Anita’s Amazing Compost Pile

Do you recycle? Anita does. She and her family recycle old cans and glass. They recycle lots of plastic and paper. One day Anita found out that nature recycles, too!

Anita was reading a book at school. The book was about taking good care of the earth. It said that a compost pile is very good for the earth. Anita had never heard of compost piles before. The book said that a compost pile is a heap of old food, plants, and leaves that people mix with soil. A compost pile lets nature recycle old plants and old food.

Worms, insects, and other little animals help. They eat the old things in the pile. They turn the old things into new soil. People can help, too. They help nature every time they make a compost pile.

Anita was excited. That night she told her family all about compost. Then she asked if they could make a pile in their backyard. Her father said, “It sounds like a lot of work.” Anita said, “Daddy, it’s easy as pie!” Her father smiled and rubbed his chin. Then he said, “Let’s try it. And you can be in charge.” You should have seen the smile on Anita’s face!
Anita saved things for her pile. She saved lots of dry things. She found twigs and straw and leaves. Anita knew that the little animals in the pile like to eat dry things. Dry things also keep air in the pile. The air helps the little animals. They need air to breathe.

Anita knew that the little animals in the pile like to eat fresh things, too. The day before she made her pile, she saved scraps of food in a covered pot.

It was a fine day in April. Anita and her family woke up early. They were ready to make their compost pile! Anita chose a place near the garden. Then she took a stick and drew a big square on the ground. The pile would go right there.

First her mother dug up the soil. Then the family covered the soil with lots of hay and straw. Anita added branches. Even her little brother helped. Joey carried one dry leaf in each hand. He let out a squeal each time he threw a leaf on the pile.

Anita got her pot of food from the house. The pot was full of apple peels, old salad, and other scraps of food. There was no meat or cheese. Anita knew that meat and cheese make the pile smell bad. Her mom added some weeds from the garden. Her father spread the food and weeds on the pile. “Hurray!” shouted Joey, who threw in some hair and a feather.

Anita covered the pile with soil. Then she watered it. She knew that the animals in the pile need water to stay alive.
Now the family waited. Worms and sow bugs and other animals went to work in the pile. On sunny days Anita and Joey sat on the grass near the pile. They could see the little animals. Anita loved to watch the ants hurrying this way and that. Joey liked the millipedes best. He pointed each time he saw one in the pile.

Anita helped the pile. Every week she and her father turned it over with a big fork. Anita watered the pile so it did not get dry. The family added scraps of food every day or two. They always covered the pile with soil.

Soon Anita saw amazing changes in the pile. The scraps of food were gone! So were the leaves and the weeds. Now there was rich dark compost with lots of humus in it! Anita’s mother and father mixed the compost in the garden. Soon the garden was growing even better than before.

Now Anita’s family makes compost all the time. They do not throw out food in the trash. They use most of it in their compost pile.

“Compost” is a very old word. It comes from an old English word for “stew.” Anita told her mother and father, “Every day we put new food in our compost stew. That is what I like about compost. We can make our own recipe. And it always works!”