Oral Language Development in English-language Learners: Research Findings and Promising Practices

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Overview of Presentation

• Findings from the National Literacy Panel on Language Minority Children and Youth related to oral language development

• Promising practices for building the oral language proficiency of English-language learners in the context of content area instruction
  – Primary grades reading/language arts
  – Primary grades ESOL
  – Primary grades math
  – Middle grades science
Context for Literacy Development

- A large proportion of English-Learners in the US are from poor families
  - In 2000, 68% of ELLs in pre-k though 5th grade were poor; 60% of ELLs in grades 6-12 were poor which is twice the rate for English proficient students in these grade levels (Capps, et al., 2005)

- SES has a large impact on oral proficiency which is implicated in text-level literacy skills
  - Oral proficiency of middle and high SES ELLs is 7.2 points or half a standard deviation higher than low SES ELLs (Cobo-Lewis, et al., 2002)

- A large proportion of English-language Learners—64%—were born in the US (Migration Policy Institute, 2006)
Definition of Terms

• Oral language proficiency: phonology (ability to recognize and produce sounds and sound sequences that make up language), vocabulary, morphology, grammar, and discourse features

• Phonological processing: the ability to use the sounds of the language to process oral and written language
  – Phonological awareness: the ability to consciously attend to the sounds of language as distinct from meaning
  – Phonological recoding: processes required when a non-phonological stimulus, such as a written word or picture, is converted to phonological output (rapid naming of letters or pictures)
  – Phonological memory: coding information phonologically for temporary storage in short term memory (digit span or pseudo-word repetition tasks)
• Word-level reading: word reading, spelling
• Text-level reading: comprehension, writing
• Working memory (WM)
  – Active manipulation of the information presented while simultaneously holding the information in memory (repeating letters or numbers in reverse order)
• Short-term memory (STM)
  – Direct recall of information
Development of Literacy

• The word-level literacy skills of English-language learners (e.g. decoding, spelling) are much more likely to be at levels equal to monolingual English speakers.

• However, this is not the case for text level skills (e.g., reading comprehension, writing). These skills rarely reach levels equal to monolingual English speakers.

• A crucial area of investigation is how to build the English proficiency skills of second-language learners because these skills impede students’ ability to achieve to high levels in text level skills.
Relationship Between L1 Oral Proficiency and L2 Oral Proficiency

• Consistent evidence for cross-language relationships:
  – Working memory
  – Phonological awareness
  – Phonology (errors in L2 caused by L1)
  – Vocabulary (for higher level skills such as interpretation of metaphors and quality of formal definitions and for cognates)

• Inconsistent evidence for cross-language relationships:
  – Phonological recoding
  – Phonological short-term memory
  – Grammar (little overlap in focus of studies)
• Measures of oral language proficiency in English (L2) correlate positively with word and pseudo-word reading skills in English, but are not strong predictors of these skills. However, various measures of phonological processing skills in English (e.g., phonological awareness) are much more robust predictors of English word and pseudo-word reading skills.

• In contrast, well developed oral proficiency in English is associated with well-developed reading comprehension skills and writing skills in English.
L2 Literacy Instruction

• Studies suggest that overall, the types of instruction that help monolingual English-speaking students are advantageous for second-language learners as well.

• Effect sizes are lower indicating that successful interventions don’t improve the literacy skills of second-language learners as much as they do for children learning in their first language.

• Adjustments that take into consideration students’ level of English oral language proficiency are beneficial.

• Adjustments that build students’ English oral language proficiency in the context of content area instruction are beneficial.
Adjustments to Develop L2 Literacy

• Capitalizing on Students First Language Strengths
  Previewing and reviewing story book reading in students’ first language (Ulanoff & Pucci, 1999; Liang et al., 2005); Instruction in the transfer of cognate knowledge from a first language to a second (Carlo et al., 2004).

• Scaffolding
  Using videos to build background, illustrations and realia to make word meanings clear, and engaging children in motions and gestures (Roberts & Neal, 2004; Silverman, 2007)

• Reinforcement
  Creating opportunities for teacher-student interaction around books to make them comprehensible during reading (Saunders & Goldenberg, 1999)
Overview of Primary Grades Work

- Four year study to examine the development of literacy in students in two program types in
  - Transitional Bilingual
  - English Only
- Collaborative work with the school district to improve the literacy skills of students
- Project located in South Texas where most students are language minority and Spanish is their first language
- District in which there are high levels of poverty
Overview of Primary Grades Work (cont.)

- 90 Minute Reading Block
  - Supplemental materials to build language proficiency in Spanish and English

- ESOL Block
  - Development of language proficiency through read-alouds of narrative and expository texts aligned with the curriculum, and related activities

- Math
  - Supplemental materials to build academic language in math
Ninety Minute Reading Block
English
Instructional Plan

• Designed to complement the ninety minute reading/language arts block

• Days 1 and 2:
  – 30 minutes of instruction that supports the weekly basal reading selection
    • Vocabulary instruction
    • Pre-reading of weekly selection from the basal reader

• Days 3, 4, and 5:
  – Supplemental materials designed to develop reading comprehension and other designated skills
Basal Selections

- **Great Adventures**
  - Grandfather’s Journey
  - Phoebe and the Spelling Bee
  - Opt: An Illusionary Tale
  - Max Malone
  - Champions of the World

- **Nature Links**
  - City Green
  - The Sun, the Wind, and the Rain
  - Dream Wolf
  - Spiders at Work
  - Web Wonders

- **Be Creative!**
  - Moses Goes to a Concert
  - The Little Painter of Sabana Grande
  - The Patchwork Quilt
  - Pecos Bill
  - A Very Cool Place to Visit

- **Tell Me More**
  - The Terrible Eek
  - In My Family
  - Cactus Hotel
  - Big Blue Whale
  - J.J.’s Big Day

- **Turning Points**
  - The Bat Boy and His Violin
  - Two Bad Ants
  - Do Animals Think?
  - Wilbur’s Boast
  - The Koala Catchers

- **Think It Through**
  - Lon Po Po
  - Animal Fact/Animal Fable
  - The Many Lives of Benjamin Franklin
  - Cloudy with a Chance of Meatballs
  - Pure Power
Instructional Schedule for Days 1 and 2

- Vocabulary instruction
  - Introduction of 3 Dolch words and 3 key words each day
  - Use of picture cards and glossaries
- Interactive reading of basal selection (half is done each day)
- Skills practice
RIBS

Ribs are curved bones that enclose your chest and protect your heart and lungs.

Day 2

Word 3 – Ribs

Ribs are curved bones that enclose your chest and protect your heart and lungs. There are 24 ribs on a human body [point to the picture].

Think about where ribs are located in the human body [point to the picture]. In addition to heart and lungs, what other body parts are close to ribs in the human body?
[possible answers: arms, shoulders, neck, stomach]
### English MacMillan Reading, Grade 3 – Teacher Lesson, Week 18

#### Example: Glossary

<table>
<thead>
<tr>
<th>MacMillan Words</th>
<th>Student Glossary</th>
<th>Day 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many people build houses out of brick because brick is <strong>tough</strong> and strong.</td>
<td><strong>tough</strong></td>
<td></td>
</tr>
<tr>
<td>Ants are interesting <strong>insects</strong> to watch because they are so small.</td>
<td><strong>insects</strong></td>
<td></td>
</tr>
<tr>
<td>In the year 1848, many people got rich because gold was <strong>discovered</strong> or found in the state of California.</td>
<td><strong>discovered</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Dolch Words:

| Andrea likes to **bring** her father breakfast in bed on the weekends. Bring means to take something to someone. | **bring** | |
| One day this puppy will **grow** into a big dog. Grow means to get bigger. | **grow** | |
| The woman is giving the horse a **drink** of water. When you take a drink of water, you sip it. | **drink** | |
### Example: Interactive Reading

<table>
<thead>
<tr>
<th>Page no.</th>
<th>Teacher script</th>
</tr>
</thead>
</table>
| Pages 58 and 59 | **BEFORE READING:** This story is called “Cactus Hotel”. It was written by Valerie Flourney.  
Who can tell us what a hotel is? [Anticipated response: A hotel is a place where people stay when they are away from home, etc.]  
**AFTER READING:** Look at the picture of the fruit on page 59. Where did the fruit come from? [Anticipated response: It came from the saguaro cactus.] What is inside the fruit? [Anticipated response: Thousands of black seeds.] |
| Page 60 | **AFTER READING:** How does the cactus seed end up under the paloverde tree? [Anticipated response: It gets stuck to the rat’s whiskers while it is eating the fruit, and then it falls off when the rat is under the tree.] |
| Page 61 | **AFTER READING:** Why was it a good place for the seed to drop when it landed under the tree? [Anticipated response: Because none of the animals saw it there; they did not eat it.] What do you think will happen to the seed if the animals do not eat it? [Anticipated response: It could grow into a cactus.] |
| Page 62 | **AFTER READING:** Is the cactus growing quickly? [Anticipated response: No, it is growing very slowly.] How do we know? [Anticipated response: We know because it took the cactus 10 years to grow only four inches.]  
Now, look at your student chart. We are going to talk about cause and effect. Paying attention to cause and effect will help us understand why things happen in the story. We know that the rat caused the cactus seed to drop in a safe spot. What was the effect? [Anticipated response: A cactus grew.] Great! Let’s write this cause and effect in our chart. |
<table>
<thead>
<tr>
<th>Page</th>
<th>Question</th>
<th>Anticipated Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td><strong>AFTER READING:</strong> Why does the cactus look fat after the rainstorm? [Anticipated response: It looks fat because it is full of water – its roots have pulled in the water from the rainstorm.]</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td><strong>AFTER READING:</strong> Why does the cactus look thin when there is no rain? [Anticipated response: Because it uses up the water that it has stored inside.] Now, let’s think about cause and effect. If the cause is that there is no rain, what is the effect? [Anticipated response: The cactus uses its stored water, and looks thin.] This cause and effect has already been added to your chart for you.</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td><strong>AFTER READING:</strong> Why do the different animals come to the cactus when its flowers are blooming? [Anticipated response: They come to drink the nectar that is inside of the flowers.] Cause and effect time: If the cactus’ flowers blooming is the cause, what would the effect be? [Anticipated response: The effect would be that the animals come to drink the nectar that is inside the flowers.] Let’s write this cause and effect in our chart.</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td><strong>AFTER READING:</strong> What happens to the cactus after the flowers dry up? [Anticipated response: It grows fruit.]</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td><strong>AFTER READING:</strong> Why does the cactus form a <strong>tough</strong> or strong scab around the hole that the woodpecker makes? [Anticipated response: The scab helps to keep the cactus from drying out.] How can <strong>insects</strong> or bugs, harm the cactus? [Anticipated response: Insects can bring disease to the cactus.] How does the woodpecker help the cactus? [Anticipated response: It eats the insects.]</td>
<td></td>
</tr>
</tbody>
</table>
### STUDENT SKILL CHART: Cause and Effect

As we read the story, think about what caused some of the important events in the story. Next, consider the effect of these events. Finally, write the cause and effect on your chart. Some examples have been done for you.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1: Page 62</td>
<td></td>
</tr>
<tr>
<td>Day 1: Page 64</td>
<td></td>
</tr>
<tr>
<td>There is no rain.</td>
<td>The cactus uses up the water it has stored inside, and it looks thin.</td>
</tr>
<tr>
<td>Day 1: Page 65</td>
<td></td>
</tr>
<tr>
<td>Day 2: Pages 68</td>
<td></td>
</tr>
<tr>
<td>The cactus is tall and prickly.</td>
<td>The birds feel safe living in the cactus.</td>
</tr>
<tr>
<td>Day 2: Pages 74 and 75</td>
<td></td>
</tr>
</tbody>
</table>
Supplemental Materials for Days 3-5

- Reading Review
- Test Prep Questions
- Word Study
7. How long was Tomás at the library? How do you know? [Page 296]

8. What did the library lady say every time Tomás went to the library? [Page 297]

9. What did Tomás teach the library lady? [Page 298]
   a. Tomás taught the library lady some Spanish words.
   b. Tomás taught the library lady how to ride bike.
   c. Tomás taught the library lady how to pick vegetables.

10. What main event happens on page 300?

11. Why do you think Papá Grande now calls Tomás the "new storyteller"? [Page 302]

12. Put T for true if the sentence happened in the story. Put F for false if the sentence did not happen in the story. The first one has been done for you.

   __T___ Tomás's parents work in the farm fields.

   ___ Papá Grande loves to hear Tomás read stories in English.

   ___ Tomás does not like the library lady. She is not very friendly.

   ___ The librarian shows him books that bring his imagination to life.

   ___ Papá Grande is known to be the worst storyteller in the family.
A Pet for My Pet

1. The child in the story borrowed a cage for the lizard because –
   - the lizard liked to climb into the closet
   - the lizard was sad
   - the family was going on vacation
   - the lizard liked cages

2. In this story, the word cool means –
   - good
   - calm
   - a little cold
   - exciting

3. Which of these is a FACT in this story?
   - The lizard had a long, thin tail.
   - The lizard ate lots of insects.
   - The lizard liked his pet.
   - The lizard fell asleep on the way to the beach.

4. What is this story mostly about?
   - It is about the weather in the desert.
   - It is about the food that lizards like to eat.
   - It is about a pet lizard and its owner.
   - It is about a long drive.

5. Which of these happened first in the story?
   - The family drove to the beach.
   - The lizard seemed sad.
   - The child borrowed a cage for the lizard.
   - The dad left the hotel.
Word Study Activity: Compound words

Compound words are bigger words that are made up of two smaller, separate words. Look at the compound words in the word bank. First, draw a line between the two smaller words within each compound word. Then use the compound words to complete the sentences below.

The first one has been done for you.

**WORD BANK**

<table>
<thead>
<tr>
<th>patch/work</th>
<th>backyard</th>
<th>upstairs</th>
<th>grandchild</th>
<th>masterpiece</th>
</tr>
</thead>
<tbody>
<tr>
<td>sunlight</td>
<td>afternoon</td>
<td>earrings</td>
<td>everything</td>
<td>something</td>
</tr>
</tbody>
</table>

1. Grandma, Mama, and Tanya were working together to make a _________________ quilt.

2. Tanya worked in the quilt in the _________________ when she got home from school.

3. Tanya was Grandma’s _________________.

4. Tanya used old bracelets and _________________ that she found in the attic for her Halloween costume.

5. When Grandma was sick, she stayed _________________ in her bedroom.

6. Grandma called the quilt her _________________.

7. Ted, Jim and Papa were building a new fence in the _________________.

8. Grandma sat by the window because she needed the _________________ to see what she was doing.

9. Tanya learned _________________ she knew about making quilts from Grandma.

10. Tanya stopped working on the quilt because she knew that _________________ was missing.
Grade 1 and 2 Resources

- Grammar
- Writing
Grammar Resources

• Introduce Concept
  – The skill is introduced in a mini-lesson.

• Group Practice
  – With direct instruction, the teacher guides students to complete one or two example questions.

• Individual Practice
  – On-level students practice the skill independently and teachers work with struggling students.

• Review Individual Practice
  – Teacher reviews individual practice with students, correcting any misconceptions.
**Week 26 DAY 1**

**Materials:**  
*McGraw-Hill Grammar Practice Book:* page 163  
McGraw-Hill Grammar ELMO Chart 26

**Grammar: Adjectives**

1. **Introduce Concept [10 minutes]**

Draw a concept map on the board and write the word apple in the middle. Remind students that the word apple is a noun. Ask the students to close their eyes and think of words that describe an apple, like how it looks, smells and tastes. Select volunteers to describe their apple. Write the descriptions in the concept map.

Sketch an apple to match the adjectives given by students. Explain that they have just listed adjectives, or describing words. We use adjectives to describe a noun. Then describe an apple in contrast to the students’ descriptions. For example- if students used words such as red, juicy, big, sweet – your description would be green, little, sour, etc. Explain that using adjectives can tell us exactly what kind of apple we want or see. They are important because they paint a picture so we can visualize what the noun is like.

Write the following sentences on the board:  
- *The funny man gave a speech.*  
- *That is a big dog.*

Tell students that some adjectives tell what kind. Ask students to tell what kind of man gave a speech. What noun does funny describe? Ask, What kind of dog is it? What does the word big describe? [dog].

Write the following sentences on the board:  
- *The dog did three tricks.*  
- *The man had many friends.*

Say **some adjectives do not tell what kind. Some adjectives describe numbers of things.** Have students identify the adjectives that tell how many and the nouns they describe. [three tricks; many friends].

Review the following rules. Use the information chart in the book. Have students place their finger on each bullet and read it with the class. Give further clarification as needed:
- An adjective is a word that describes a noun.  
- Some adjectives tell what kind.  
- Some adjectives tell how many.

Write the following on the board:  
- *I saw a ________ dog.* What kind of dog?  
- ________ dogs were barking. How many dogs?

Select volunteers to complete the sentences. Work with additional examples of further practice is needed.

2. **Group Practice [5 minutes]**

Display ELMO Chart 26. Have students orally add adjectives to the sentences and tell if they are adjectives that tell what kind or how many.
3. Individual Practice [10 minutes]


Distribute page 163 from the McGraw-Hill Grammar Practice Book. Give directions to the entire class. Complete questions 1 and 2 with the class. Let the students work independently or in pairs to complete the activity. Pair students so stronger readers are paired with weaker readers.

If necessary, you can work with a group of students who may be struggling to complete this activity.

4. Review Individual Practice [5 minutes]

Review the individual practice with students. For incorrect responses, have students circle the number of the question that was answered incorrectly but also have them make the correction. In this way you can grade their work, but they will have corrected it.
Writing Resources

• Process
  – Present Genre
  – Explore Genre
  – Group Brainstorm
  – Group Drafting
  – Individual Brainstorm
  – Individual Drafting
    • Genre Elements Revision
    • Writing Mechanics Revision
    • Final copy
    • Sharing Final Copy
A Rescue in Fuzz and Fur

There's a town called Fuzz and Fur where only animals can live. Mother Cat and her Kitten Sammy live there. There are monkeys who work in the Monkey Fire Department. Mrs. Mouse is the baker and Mr. Mutt is the mayor of this friendly animal town. The animals always help each other.

One day Sammy Kitten gets stuck up a tree. He is very frightened. He thinks he may fall off the high branch. Mayor Mutt tries to reach him but he can't. Then, Mrs. Mouse calls the Monkey Fire Department. The monkeys climb up the tree and hold on to each other's tails and form a chain that reaches all the way down to the ground.

Sammy slides down the chain of Monkey Firefighters, all the way to the ground. "Thank you!" says Mother Cat. "I don't know what we'd do without the monkeys help!" "You're all heroes!" barks Mayor Mutt. Sammy agrees.

After this, Sammy Kitten is very careful whenever he climbs trees.
Example: Writing Resources (Explore Genre)

### Writing a Story

<table>
<thead>
<tr>
<th>Setting: Where does the story take place? How would you describe this place?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characters: Who are the people in the story (and sometimes animals)? What are they like?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem: What problem/dilemma do the character(s) have to solve?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Beginning</th>
<th>Middle</th>
<th>End</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Solution: How is the problem/dilemma resolved?</th>
</tr>
</thead>
</table>

### Characters and Setting

<table>
<thead>
<tr>
<th>Beginning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event 1:</td>
</tr>
<tr>
<td>Event 2:</td>
</tr>
<tr>
<td>Event 3:</td>
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</tbody>
</table>

<table>
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<tr>
<th>Middle</th>
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</thead>
<tbody>
<tr>
<td>Event 1:</td>
</tr>
<tr>
<td>Event 2:</td>
</tr>
<tr>
<td>Event 3:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event 1:</td>
</tr>
<tr>
<td>Event 2:</td>
</tr>
<tr>
<td>Event 3:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Solution</th>
</tr>
</thead>
</table>

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CREATE
ESOL Block
Each 8 week unit contains:

• 2 weeks that focus on narrative texts that are aligned with the social studies curriculum
  – 1 narrative per week

• 5 weeks that focus on building academic language in science
  – 1 review week
Vocabulary Instruction During Interactive Reading

Types of Words
- Key Words
- Discipline Specific Words
- Function words and phrases

Materials
- Vocabulary Cards
- Glossaries that include definitions and opportunities for practice

Techniques
- Instruction in context
- Rephrasing
- Choral Response
- Total Physical Response
- Partner Talk
Social Studies Themes

- Learning About Communities
  - Communities Are People
  - Communities Are Places
- Citizenship and Government
  - People and Their Local Government
  - Our Nation’s Government
- Communities Are Everywhere
  - A Community’s Geography
  - Thinking Like A Geographer
- Many Kinds of People
  - American Culture
  - The Many People of a Community
- Communities over Time
  - Learning About the Past
  - Our Nation’s History
- People Working in a Community
  - Making and Selling Products
  - Being a Thoughtful Consumer
Lesson Plan: Social Studies Themes

Each daily 30 minute lesson includes:

• Introduction of 2-3 vocabulary words each day
• Interactive reading for a portion of the selection to build additional word knowledge and comprehension
• Discussion questions with written responses
**Word Card: Social Studies Theme**

**SOAR**

Here is another picture of soar.
Partner talk: turn to your partner and talk about why this picture demonstrates the word soar.
Ask one or two pairs for their response.

[Anticipated possible response: the airplane is soaring in the sky; the airplane is flying high up into the air.]

Now, let's look at a picture that demonstrates the word soar. This eagle [point to the eagle in the picture] is soaring in the sky. It is flying quickly through the air toward the buildings in the background [point to the skyline in the back].
1. **INTRODUCE CONCEPT**

**Teacher Talk**
[Note: This story is aligned with Social Studies chapters 5 and 6 — “A Community’s Geography and Thinking Like a Geographer.” Please have a map of the United States and Europe ready, to show where the desert, Mississippi, France and England are.]

We have read stories that happen in different places, and saw that those places look different.

Annie lived in the desert.

[Show the map of the United States—point out the desert region of the southwestern United States.]

And Little Joe lived in Mississippi [point to Mississippi on the map].

Imagine that Little Joe in Mississippi wanted to visit Annie in the desert. What forms of transportation could she use to get there?

**CALL ON ONE CHILD**

[Anticipated response: She could have someone drive her, take a bus, take a train, or take a plane.]

What would be the fastest way?

**CALL ON ONE CHILD**

[Anticipated response: It would be much faster to take a plane than any of the other options.]

**Teacher Talk**
A plane can take somebody from one state to another in just hours. We can fly over high mountains and enormous oceans in no time. But planes are a new invention. Many people who are still alive today were not able to take planes from one place to another, because they had not been invented yet.

[Show the map of England and France.]

**Teacher Talk**

Today we will read a story that takes place in a country called France [point to France on the map]. It is a story about a man who lived in France a long time ago, before airplanes were developed.

This man wanted to get to England [show England].
Just ahead, on the narrow street, is the wagon of Alphonse Juvet [point to the man driving the wagon].

full of pumpkins.

Also his son César [point to the boy].

and many cabbages.

Call on One Child

What do you think this man and his son are going to do with the pumpkins and cabbages?

CALL ON ONE CHILD

[Anticipated response: They have probably come from their farm to sell the pumpkins and cabbages at a market in the city.]

Page 10

“CRUMP!” goes the car. Into the cart of Alphonse Juvet.

The strange sound from the air is forgotten.

Call on One Child

Who remembers what the sound from the air was?

CALL ON ONE CHILD

[Anticipated response: Clackety ... clackety ... clackety ...]

Papa Blériot was driving very slowly, but even so the cart is on its side [point to the cart].

Page 11

Pumpkins all over!

No one is hurt, but there are bruised cabbages and angry faces.

Fists are raised.

Movement

Let’s pretend we are the angry people. Show me your angry faces! Let’s raise our fists too!

Call on One Child

Why is everybody so angry?

CALL ON ONE CHILD

[Anticipated response: Papa Blériot ran into the cart full of pumpkins and cabbages, and it overturned.]
Day 1: *GLORIOUS FLIGHT*

**DISCUSSION QUESTION**

Let's think about the question we asked at the beginning. What are some of the forms of transportation that people in France used in 1901?
Interactive Reading: Science

• In second grade, each 30 minute lesson included a read-aloud of a science text, using a similar format as narrative texts, with an overarching question and brief experiment.

• In third grade, each daily 20 minute lesson included a focus on academic and discipline-specific language in science.
Science Topics

- Measurement
- Magnetism and Electricity
- Structures of Life
- Earth Materials
Lesson Plan: Science Topics

- Introduce words using word strips
- Pre-teach general academic and science vocabulary
- Picture walk
- Interactive reading with questions
- Reinforcement with glossaries
- Assessment
Examples of General Academic and Science Vocabulary

- general academic vocabulary: average; assemble, acquire, core
- science vocabulary: monument, pyramid, rubble, obelisk, granite, outcropping, dome, magma, solid, hollow
EROSION

1. Another word in the text is erosion. Erosion occurs when rock or soil is worn down or moved by rivers, the sea or the wind.
2. En español “erosión” quiere decir erosión. La erosión ocurre cuando se produce un desgaste o un movimiento de las rocas o la tierra por efecto de los ríos, el mar o el viento.
3. Erosion in English and erosión in Spanish are cognates.
4. Now, let’s look at a picture that demonstrates the word erosion. These rocks have been eroded or worn down by the wind, which is why their shapes are unusual [point to the picture].
**EROSION**

5. Here is another picture of erosion.
   Partner talk: turn to your partner and talk about why this picture demonstrates the word erosion.
   [Anticipated possible response: the rock was eroded or worn down by the water and wind]

6. Say erosion with me three times – erosion, erosion, erosion.
DAY ONE: TREASURE UNDERFOOT

People have extracted or taken minerals from the ground for thousands of years. At first, people used shovels to move the layer of soil covering the minerals. They dug mines or underground holes where mineral are found using picks. It was a dirty and dangerous job. At times, children were forced to do the work.

Today mining is done in many ways. Excavating machines or machines that dig in the earth and backhoes are used to move earth. Mechanical shovels with spinning teeth cut through rock. Explosive charges break rock into pieces.

The minerals are turned into tools, pottery, and jewelry. But did you know the first iron used to make tools was not mined but came from meteorites.

1. In earlier times, what did people use to extract minerals from the ground?
2. What do people use now to take minerals from the ground?
3. What are some things that people make with minerals?
4. Where did the first iron for tools come from?
Math

Modules to build academic and discipline-specific language in math
Math

- Follows SIOP model
- Prior to the math lesson
  - State math and language objectives
  - Build academic vocabulary
    - Related to math concepts (e.g. compare, represent, difference)
    - Crucial to understanding word problems (e.g. receive, originally)
  - Develop knowledge of academic language structures (e.g. comparisons using the word than, such as shorter than, more than, etc.)
Example: Math Academic Language Card

1. Double
2. In English, *double* means to make two of something, or to make something twice as big.
3. *En español, doble significa doble.* Quiere decir hacer dos de algo, o hacerlo a algo dos veces más grande.
4. This picture demonstrates the word *double.* At first, there are 5 cookies on the plate. You can *double* the amount of cookies by adding 5 more. The second plate has 10 cookies, or *double* the amount.
5. If you had 10 cookies on a plate, how many would you have if you *doubled* the amount? [Anticipated response: You would have 20 cookies.]
6. What is the focus word? Say it with me three times: double, double, double.
7. What does *double* mean? Tell your partner.
8. Ask one or two pairs for their response. [Anticipated response: see definition above.]
Example: Math Academic Language Card

MULTIPLE

5 10 15 20

1. Multiple
2. In English, **multiple** means more than one, or many.
3. En español, **múltiple** significa **múltiple**. Quiere decir más que uno o mucho.
4. These pictures demonstrate the word multiple. In the first picture, there are multiple, or many, people on a sled. In math, multiples are also the numbers you say as you are skip counting. When you are skip counting by fives, you will say 10, 15, and 20. Ten, 15, and 20 are multiples of 5.
5. Think of a time when you did something with multiple friends.
   [Anticipated response: responses will vary]
6. Skip count by 2. Then name some multiples of 2.
   [Anticipated response: Multiples of 2 can be 2, 4, 6, 8, 10, etc.]
7. What is the focus word? Say it with me three times: multiple, multiple, multiple.
8. What does multiple mean? Tell your partner.
   [Anticipated response: see definition above]
<table>
<thead>
<tr>
<th>Picture and sentence</th>
<th>Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organize</strong></td>
<td>Organize the numbers in the number box from least to greatest on the number line.</td>
</tr>
<tr>
<td>127 141 178 203 212</td>
<td>Number Box</td>
</tr>
<tr>
<td>We can organize the numbers, or put them in place, from least to greatest on the number line.</td>
<td>783 903 867 874 901</td>
</tr>
<tr>
<td></td>
<td>745 916 832 731</td>
</tr>
<tr>
<td></td>
<td>700 1000</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>What operation would you use to find the solution, addition or subtraction? Answer in a complete sentence. Use the word solution in your sentences. The first one is done for you.</td>
</tr>
<tr>
<td>1,090 − 30 = 1,060</td>
<td>1) The school has 98 students in first grade, 101 students in second grade and 107 students in third grade. How many students total are in grades one through three?</td>
</tr>
<tr>
<td>The solution, or answer, to the problem is 1,060.</td>
<td>I would use addition to find the solution</td>
</tr>
<tr>
<td></td>
<td>2) Chris earned $17 last week by babysitting his cousin. This week he spent $15 to buy his mom a birthday present. How much does he have left?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Project QuEST
Quality English and Science Teaching

Units to develop science knowledge and language proficiency in middle grades science classrooms
Overview

• QuEST integrates
  – Science
    • NSF model of science instruction that includes engagement, exploration, explanation, elaboration, and evaluation
  – Activities to build language and literacy development, including writing
    • Methods based on findings from the National Literacy Panel on Language Minority Children and Youth
  – Motivation
    • Methods based on work by John Guthrie
  – Ongoing assessment
  – Professional development and mentoring
Introduction: Teacher Guide

**Topic:** Inside Cells
TEKS 6.10b
Science Explorer pages 142-143

**Preparation**
- Copy student activity charts and make one teacher copy of each chart to use with the Elmo.
- Read and follow the preparation listed on page 148 of the teacher’s guide for A Magnified View of Life.
- Make sure you have fresh Elodea plants and prepared slides of animal cells

**Materials**
- Student activity charts and teacher copy for Elmo
- Plastic dropper
- Water
- Microscope slide
- Microscope
- Forceps
- Cover slips
- Elodea
- Colored pencils
- Prepared slides of animal cells
Introduction
1. Student Activity A: Show What You Know Quiz
2. Student Activity B: Warm-Up - have students respond to the question “Plant cells have a cell wall which supports and protects the plant cell. Why do you think animal cells don’t have a cell wall?” Discuss responses.

[Expected Response: students should say that most animals have something else that provides them with structure, like a skeleton (an internal or exoskeleton), or they may say that some animals or other non-plant cells are unicellular and do not need that type of support.]
Application
1. Student Activity C:
   Review the instructions for A Magnified View of Life with students. See student activity charts for lab procedure. The lab was adapted from Unit 2 Resources, page 28. Make sure students know what diagrams and questions to complete. Review the rules of microscope use and the techniques for using a microscope.

2. Have students complete the lab.

Wrap-Up
1. Student Activity D: Students respond to the question “What are the main differences between plant and animal cells?” Discuss as time permits. You may want to post the differences in a prominent place to refer to during the rest of the cell unit.

   [Expected Response: plant cells have chloroplasts and cell walls. Animal cells do not. Plant cells are usually rectangular in shape, while animal cells are often round.]

2. Student Activity E: Introduce Academic Words Glossary Part One homework.
Part Two: Observing Animal Cells
1. Put a prepared animal slide under the microscope.
2. Observe the animal cell under low power and high power.
3. In the space below, draw and label what you see under low power and high power. Make sure you remember to label the organelles that you see. Give your drawing a title and record the magnification. Make sure you include the power in your title as well.

Total Magnification: ________

Total Magnification: ________
Part Two: Observing Animal Cells

1. Put a prepared animal slide under the microscope.
2. Observe the animal cell under low power and high power.
3. In the space below, draw and label what you see under low power and high power. Make sure you remember to label the organelles that you see. Give your drawing a title and record the magnification. Make sure you include the power in your title as well.

Total Magnification: _________  
Total Magnification: _________
Part Three: Thinking About Observations.

Answer the questions below.

1. What natural color appeared in the plant cells? What structures give the plant cells this color?

2. Why is it important to record your observations while you are examining a specimen?

Student Activity D

WRAP UP

What are the main differences between plant and animal cells?

Student Activity E

GLOSSARY HOMEWORK

Complete Week 5 Academic Words Glossary, Part One. For each word, read the definition, and then write a sentence using that word.
Activities to Build Academic Language in the Context of Science Instruction

• Guided reading
• Writing
• Word-learning strategies
  – Cognates
  – Base words
  – Word roots
  – Nominalization
• Comprehension strategies
• Academic and technical vocabulary
  – Glossaries and assessments (note: there were weekly science assessments also)
• Review
A cell membrane is usually permeable to substances such as oxygen, water, and carbon dioxide. On the other hand, the cell membrane is usually not permeable to some large molecules and salts. Substances that can move into and out of a cell do so by one of three methods: diffusion, osmosis, or active transport.

**A 3:** Name some things that can easily permeate the cell membrane. *(Oxygen, water, and carbon dioxide can permeate the cell membrane.)*

**O:** Name some things that cannot easily permeate the cell membrane. *(Large molecules and salts cannot permeate the cell membrane.)*

Have students answer **Key Question #1** in their student charts.

**Key Question 1:** How does the structure of the cell membrane relate to its function? *(The cell membrane is structured so that substances can only move into and out of a cell by either diffusion, osmosis, or active transport. The cell membrane’s structure does not allow all substances to pass through it.)*
### INSIDE CELLS, Part Two

**Day 3**

**Student Activity A**

**WARM UP**

Fill out the chart below to describe the characteristics of a plant, animal, and bacterial cell. During groupwork, you will use this information to help you write a compare/contrast paragraph.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Plant Cell</th>
<th>Animal Cell</th>
<th>Bacterial Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell Membrane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cell Wall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloroplast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cytoplasm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nucleus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Student Activity C
WRITING FOR SCIENCE!

In this assignment you will be comparing two kinds of cells. You have already brainstormed for your writing in Student Activity A from Day 3. You will be using that brainstorm for the next part. Follow the steps below to write a compare/contrast paragraph.

Step 1: Choose your topic
Use Student Activity A from Day 3 to choose your topic. Out of the three types of cells (plant, animal, and bacterial), which two are you going to compare? For example, you could compare plant and animal cells.

________________________ and __________________________

Step 2: Plan your writing
Use Student Activity A from Day 3 to help you plan your writing.

- Choose two different characteristics to compare. For example, you could compare the cell wall and the nucleus of both plant and animal cells.
  - Characteristic #1: __________________________
  - Characteristic #2: __________________________

- Examine the similarities and differences of the characteristics.
  - How is Characteristic #1 the same in both cells?
    __________________________
  - How is Characteristic #1 different in both cells?
    __________________________
  - How is Characteristic #2 the same in both cells?
    __________________________
  - How is Characteristic #2 different in both cells?
    __________________________
Writing: Student Guide

- Write a topic sentence. Explain what you are going to write about in your paragraph. Introduce the topic to the reader.

  Topic Sentence: ___________________________________________
  ___________________________________________

- Write a concluding sentence. End your paragraph by explaining what you wrote in your paragraph. End the paragraph well.

  Concluding Sentence: _______________________________________
  _______________________________________

**Step 3: Write!**
Use the space below to write your paragraph.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Student Chart 6.4A
Warm-Up

<table>
<thead>
<tr>
<th>English Word</th>
<th>English Meaning</th>
<th>Spanish Word</th>
<th>Spanish Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Necessary</td>
<td></td>
<td>Necesario</td>
<td></td>
</tr>
<tr>
<td>Flexible</td>
<td></td>
<td>Flexible</td>
<td></td>
</tr>
<tr>
<td>Pie</td>
<td></td>
<td>Pie</td>
<td></td>
</tr>
</tbody>
</table>

Student Chart 6.4B
Work with a partner to find all the cognates in the paragraph. There are nine more.

The Chemicals of Life
The cells of all living things are composed of chemical substances. The most abundant chemical substance in cells is water. Other chemical substances called carbohydrates (kar boh HY draytz) are a cell’s main energy source. Two other chemical substances, proteins (PRO teenz) and lipids (LIP idz), are the building materials of cells, much like wood and bricks are the building materials of houses. Finally, nucleic (noo KLEE ik) acids are the genetic material—the chemical instructions that direct the cell’s activities.
<table>
<thead>
<tr>
<th>Spanish</th>
<th>English Cognate</th>
<th>Letter(s) in Spanish, not in English</th>
</tr>
</thead>
<tbody>
<tr>
<td>sustancias</td>
<td>substances</td>
<td></td>
</tr>
<tr>
<td>químicas</td>
<td>[chemicals]</td>
<td></td>
</tr>
<tr>
<td>célula</td>
<td>[cells]</td>
<td></td>
</tr>
<tr>
<td>compuestas</td>
<td>[composed]</td>
<td></td>
</tr>
<tr>
<td>abundante</td>
<td>[abundant]</td>
<td></td>
</tr>
<tr>
<td>energía</td>
<td>[energy]</td>
<td></td>
</tr>
<tr>
<td>carbohidratos</td>
<td>[carbohydrates]</td>
<td></td>
</tr>
<tr>
<td>proteínas</td>
<td>[proteins]</td>
<td></td>
</tr>
<tr>
<td>lípidos</td>
<td>[lipids]</td>
<td></td>
</tr>
<tr>
<td>materiales</td>
<td>[materials]</td>
<td></td>
</tr>
<tr>
<td>finalmente</td>
<td>[finally]</td>
<td></td>
</tr>
<tr>
<td>ácidos</td>
<td>acids</td>
<td></td>
</tr>
<tr>
<td>nucleicos</td>
<td>[nucleic]</td>
<td></td>
</tr>
<tr>
<td>genético</td>
<td>[genetic]</td>
<td></td>
</tr>
<tr>
<td>instrucciones</td>
<td>[instructions]</td>
<td></td>
</tr>
<tr>
<td>dirigen</td>
<td>[direct]</td>
<td></td>
</tr>
<tr>
<td>actividades</td>
<td>[activities]</td>
<td></td>
</tr>
</tbody>
</table>
Student Chart 7.4C Identification of Sound Differences

Using the ELMO, show students the following Likert Scale. Explain to students that some of the cognates sound more alike than others. Direct students to identify how alike or not alike the sets of cognates sound on a scale of 1 to 4.

<table>
<thead>
<tr>
<th>Sounds completely different</th>
<th>Sounds slightly different</th>
<th>Sounds similar</th>
<th>Sounds exactly alike</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>substances</strong> / <strong>substancias</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>chemical</strong> / <strong>químicas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>cell</strong> / <strong>célula</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>compose</strong> / <strong>compuestas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>abundant</strong> / <strong>abundante</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>energy</strong> / <strong>energía</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>proteins</strong> / <strong>proteínas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>carbohydrates</strong> / <strong>carbohidratos</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>lipids</strong> / <strong>lipidos</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>materiales</strong> / <strong>materials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Student Chart 11.4B**

Practice turning verbs and adjectives into nouns.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Verb</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>diffusion</td>
<td>diffuse</td>
<td>diffused</td>
</tr>
<tr>
<td></td>
<td>concentrate</td>
<td>required</td>
</tr>
<tr>
<td>removal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>engulfment</td>
<td>locate</td>
<td></td>
</tr>
</tbody>
</table>

Rules: If you take off the ending of a verb or adjective and add ‘ion’, ‘al’ or ‘ment’ it turns into a noun

Example: ‘diffuse’ minus ‘e’ plus ‘ion’ = diffusion; ‘diffused minus ‘ed’ plus ‘ion = diffusion.”
You have probably noticed that offspring tend to resemble their parents. Maybe you see that your cousin’s hair is the same color as his mother’s. If you save seeds from sunflowers in the fall and then plant them the next spring, the flowers that grow look like sunflowers. They don’t look like tulips or lilies. The new sunflowers resemble the flowers of the plants that produced the seeds.

**Partner Talk: Summarize the information in this paragraph (Call on several pairs.)**

Offspring resemble parents because organisms inherit characteristics from their parents. The physical characteristics that an organism can pass on to its offspring are called traits. Human traits include such characteristics as eye color and whether hair is straight or curly. Some traits of sunflowers are the color and shape of the petals, the shape of the leaves, and the way leaves are arranged on the stem.

**Ask: What are traits?** (Traits are the physical characteristics that an organism can pass on to its offspring)

**Partner Talk: Make up as many questions as you can about this paragraph.** (For each question posed, have other students answer it.)
Selection of Vocabulary

• Choose the highest frequency words indicated by the Academic Word List
## Glossary

### Week Seven

### Vocabulary Glossary

Read each word’s definition and write notes or a sentence of your own.

<table>
<thead>
<tr>
<th>word</th>
<th>definition</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>microscope</strong></td>
<td>A microscope is an instrument that makes small objects look larger.</td>
<td>Your notes:</td>
</tr>
<tr>
<td></td>
<td>Un microscopio es un instrumento que amplifica la imagen de objetos pequeños.</td>
<td></td>
</tr>
<tr>
<td><strong>concept</strong></td>
<td>A concept is a general idea or understanding of something.</td>
<td>Your notes:</td>
</tr>
<tr>
<td></td>
<td>En español “concept” quiere decir concepto, o idea general o entendimiento de algo.</td>
<td></td>
</tr>
<tr>
<td><strong>organ</strong></td>
<td>An organ is a group of tissues that perform a specific function.</td>
<td>Your notes:</td>
</tr>
<tr>
<td></td>
<td>En español “organ” quiere decir órgano, o estructura en el cuerpo que está compuesta de diferentes tipos de tejidos.</td>
<td></td>
</tr>
</tbody>
</table>

The boy had only a vague concept of what the answer might be.

The organ in the picture are lungs.
Student Activity A
SHOW WHAT YOU KNOW Vocabulary Quiz.

1. ________________ means happening all the time and never stopping.
2. A ________________ is a system of things that cross or connect.
3. ________________ means adult or fully grown.
4. ________________ means connected.
5. ________________ means to spread something out over a large area.
6. ________________ means exact or particular.
7. ________________ means to control or to manage. It also means to adjust or to keep at some standard.
8. To ________________ something means to meet or interact with it.
9. ________________ are smaller structures within the cell that carry out specific functions.
10. ________________ is a structure of the cell that is either located just inside the cell wall or is an outside boundary that separates the cell from its environment.
Teacher Chart 12.4C1
Concept Map Practice

Title: Cell processes
Word Bank: CHLOROPLASTS, OTHER ORGANISMS, PHOTOSYNTHESIS, OXYGEN, CARBON DIOXIDE, WATER

Use the word bank above to fill in Energy concept map below.
**Title:** Cell processes  
**Word Bank:** CHLORoplasts, OTHER ORGANISMS, PHOTOSYNTHESIS, OXYGEN, CARBON DIOXIDE, WATER

Use the word bank above to fill in Energy concept map below.
ENGULF

To engulf is to cover or swallow up or surround someone or something.

*En español* “engulf” quiere decir cubrir, envolver o rodear algo o a alguien.

Flood waters engulf the house.

Teacher: Can you think of a city where many houses were engulfed by a flood?

Student: A city where many houses were engulfed by a flood is: ____________.
Overarching Theme: Differentiation and Scaffolding

• Differentiation
  – Use of same activity in different ways (concept map example)
  – Partnering with high and low proficient students working together, while teacher pulls group of struggling learners
  – Use of on-level supplementary materials for students who are more advanced

• Scaffolding
  – Guided reading where teacher reads the text
  – Lots of teacher modeling (e.g., discussion then writing)
  – Clear written instructions; written examples of what students have to produce
  – Hands-on activities and visuals prior to reading the text
Questions? Comments?
Contact CREATE

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