

Morphological Awareness Intervention



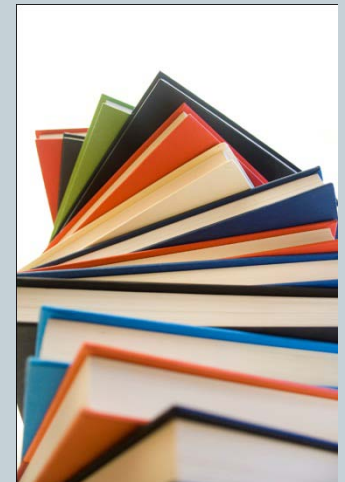
TECHNIQUES FOR PROMOTING LANGUAGE AND LITERACY SUCCESS

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Compounding



side
fire
lawn
book
space
cow

walk
fighter
mower
shelf
suit
boy

Word Part Combining



(in blue)

anti- (against)

micro- (small)

un- (not)

re- (repeat)

(in green)

-ped (to walk)

-act- (to do)

-dict- (to say)

-mot- (to move)

(in red)

-ology (study of)

-ion (state of being)

-ness (state of being)

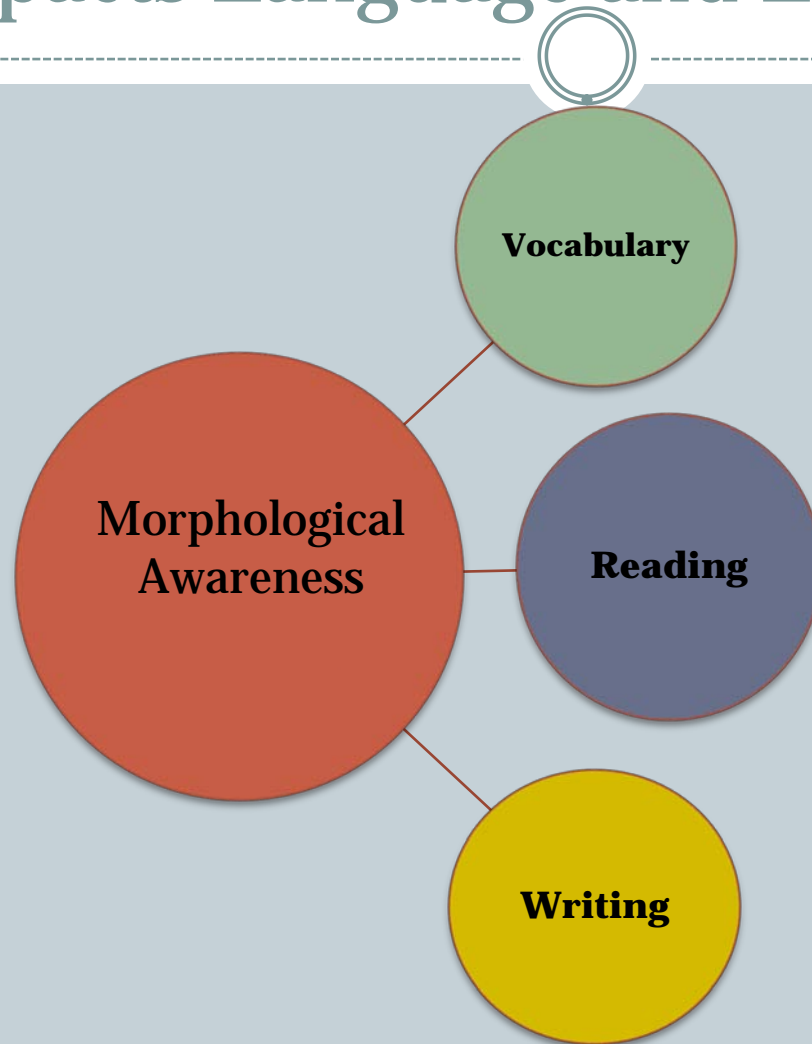
-or (doer)

Morphological Awareness



- Morphological awareness can most simply be defined as “the study of word structure” (Carlisle, 2004)
 - Involves the ability to manipulate and combine morphemes
 - Adding suffixes to base words -> readers learn to see words as the sum of these component parts -> able to infer the meaning and pronunciation of unfamiliar words (Green, 2009).

Morphological Awareness: Impacts Language and Literacy

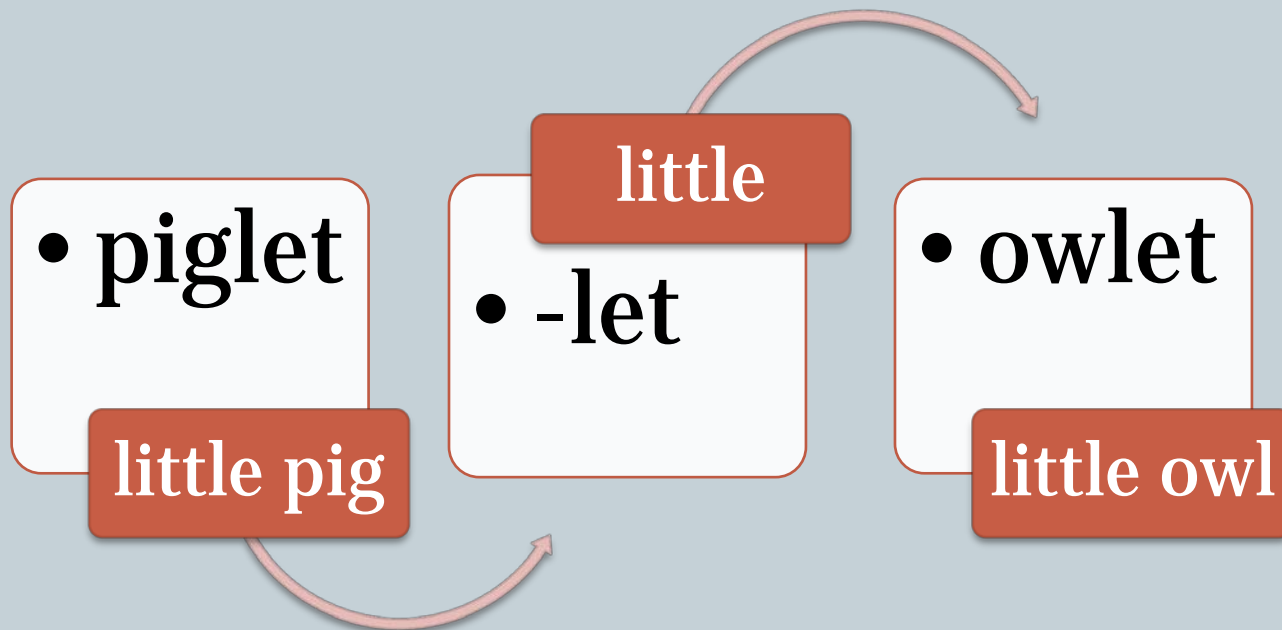


(Bowers, Kirby, & Deacon, 2010; Carlisle, 1996; 2000; Carlisle 2004; Elbro & Arnback, 1996; Fowler & Liberman, 1995; Goodwin & Ahn, 2010; Reed, 2008; Singson, Mahoney, & Mann, 2000; Windsor, 2000)

Morphology and Vocabulary: The Connection



- Children increase vocabulary by using the meanings of familiar base words and suffixes to infer the meanings of unfamiliar derivatives.



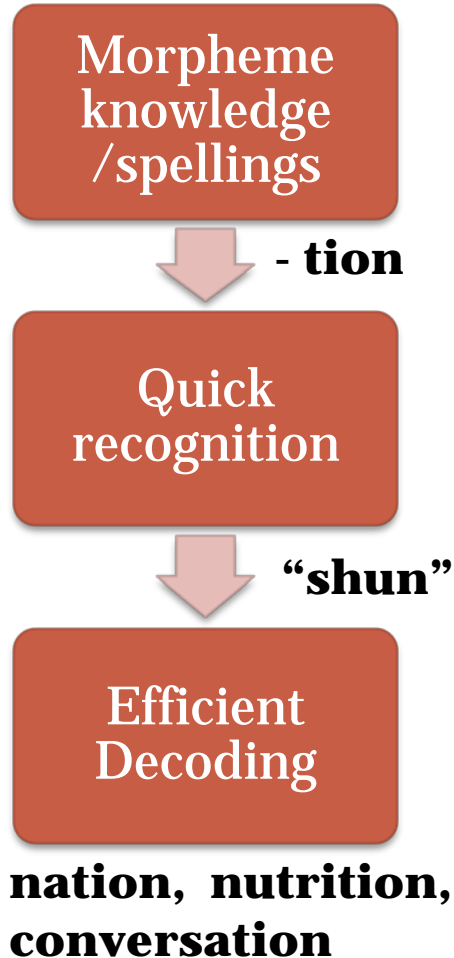
Morphology and Vocabulary: Research



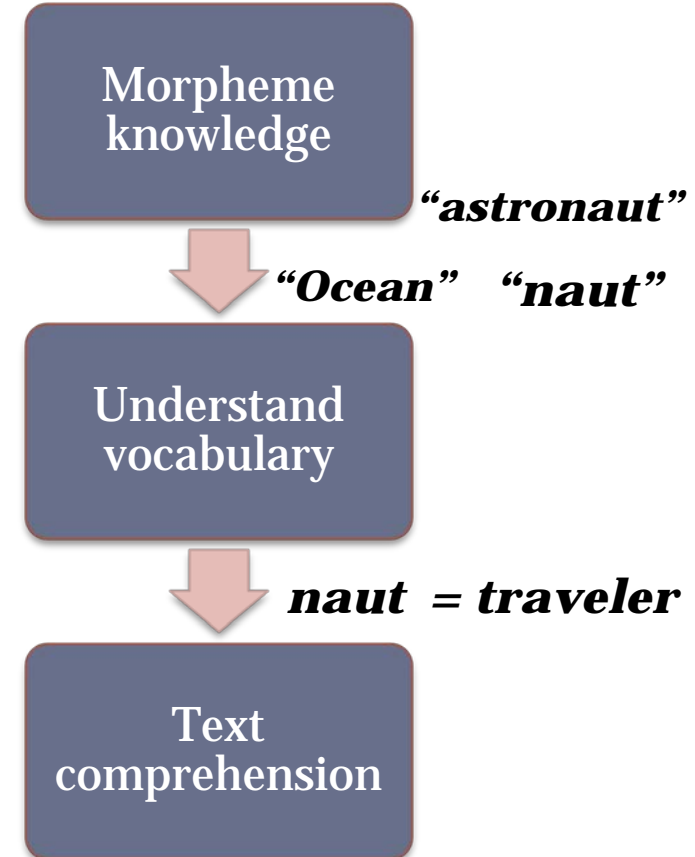
- **Approximately 60% of new words acquired by school-age children are morphologically complex (Anglin, 1993).**
- **Morphological awareness treatment resulted in ability to generalize this strategy to infer meaning in unknown words (Bauman, Edwards, & Kameenui, 2003; Baumann, Edwards, Kameenui, & Olejnik, 2002).**

Morphology and Reading: The Connection

• Decoding



• Reading Comprehension



The oceanaut was interested in knowing more about fish habitats.

Morphological Awareness and Literacy



- Researchers have found strong correlations between morphological awareness and success in reading, writing and spelling (Apel & Lawrence, 2011; Carlisle, 2000; Binder & Borecki, 2007; Green, 2009; Jarmulowicz, Hay, Taran & Ethington, 2008; Kirby, Desrochers, Roth & Lai, 2008; McCutchen, Green & Abbott, 2008; Nagy et al., 2006; Schwiebert, Green & McCutchen, 2002; Wolter, Wood & D'zatko, 2009).
- Researchers have reported that knowledge of morphology is significantly related to reading and spelling abilities even in the elementary years (e.g., Carlisle, 1995; Carlisle & Nomanbhoy, 1993; Nunes, Bryant, & Bindman, 2006; Wolter, et al., 2009).

Morphology and Writing: The Connection



Our writing system is morphologically meaning-based:

- **Different morphemes with identical pronunciations *spelled* differently (bare/bear)**
- **Morphemes with different pronunciations in different contexts *maintain a constant spelling* (sign/signature).**

For example, consider the following spelling errors:

Esere for easier; Carlls for careless; Produstr for produced; Counten for counting

Morphology and Writing: Research



- Evidence suggests that children as early as kindergarten and first grade are incorporating their knowledge of base words into their spellings (e.g., Treiman, Cassar, & Zukowski, 1994; Treiman & Cassar, 1996; Wolter Wood, D'zatko, 2009) and exhibit an emerging knowledge of morphological endings in words (Carlisle, 1996; Carlisle & Nomanbhoy, 1993; Wolter et al., 2009).
- Accuracy of use of morphological forms in writing is predictive of reading and spelling performance in third and fourth graders (Green, McCutchen & Schwiebert, 2001).



Morphological Awareness Instruction



- Reed (2008) conducted a research synthesis on 7 research studies and found strong treatment effects for morphological awareness interventions that targeted reading development in an age of acquisition pattern.
- Two recent meta-analyses revealed morphological awareness instruction to be beneficial for school age children in the areas of reading, vocabulary, and spelling (Bowers et al., 2010; Goodwin & Ahn, 2010)

Morphological Awareness Instruction and Children with Disabilities



- Goodwin & Ahn (2010) conducted a meta-analysis of 17 studies and found that morphological awareness instruction was effective for children with reading, learning, or speech and language disabilities.
- Bowers et al. (2010) studied 22 research studies and found that morphological awareness instruction resulted in increased benefits for children with literacy deficits. Additionally, this instruction was more effective when combined with other literacy instruction.

Morphology, Phonology and Orthography: Connections for Readers and Writers



- Morphology-Phonology: Need to appreciate that some derivations involve sound changes (e.g., magic-magician).
- Morphology-Orthography: Need to know the orthographic patterns onto which meaning is mapped, also recognizing that some derivations involve spelling changes (e.g., five-fifth).
- Phonology-Orthography: Need to understand that sounds map onto letters (alphabetic principle) in order to decode and spell.

Morphological Development of Typical Students



Preschoolers:

Have some ability to use suffixes and compounding to coin new words.

Second Graders:

Can infer meanings of new words based on word structure.

Between Grades 3 and 5:


There is a massive increase in children's morphological knowledge.

Beginning in 4th Grade: Knowledge of syntactic function of derivational suffixes (i.e. –ness indicates a noun) begins (Tyler & Nagy, 1989) and continues to develop through the school years.

Morphological Development of At-Risk Students



In written narratives, of 2nd and 3rd graders with Learning Disabilities, there were significantly fewer morphologically complex words than their typical peers and their use of the forms is less accurate (Carlisle, 1996).



Children with Learning Disabilities and have difficulty learning morphological rules (Wiig, Semel, & Crouse, 1973).

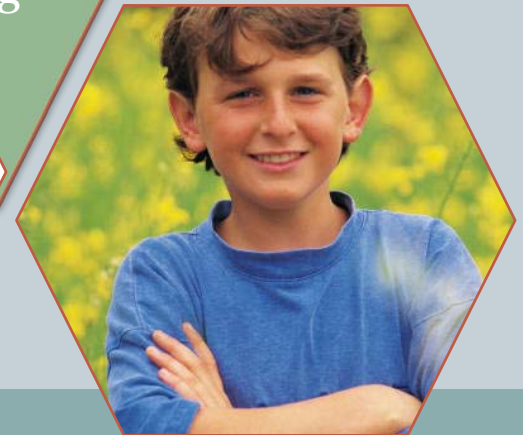
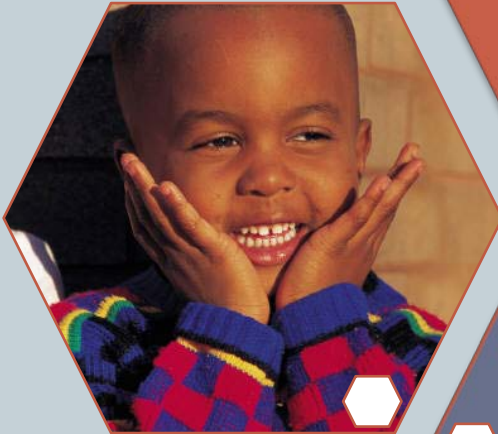
Children with Learning Disabilities tend to:



Continue to use less mature forms (Windsor, 2000; Curtis, Kutz, & Tallal, 1992).

Tend to make morphemic errors in writing (Rubin et al., 1991).

Show poorer command of past tense inflections (Moran & Bryne, 1977)



Assessment



Morphological Awareness Assessment



- Likely will use non-standardized measures (Carlisle, 1996):
 - Generation task:
 - Observant: I need to _____ for my class.
 - Magic: David Copperfield is a good _____
 - Relational task:
 - moth – mother
 - Swim-swimming
- New Standardized
 - TOLD -4 (inflections and derivations)
 - New TOAL (derivations)

Examples from the Derivational Suffix Test (Green, 2004)



- Part A

Example: farm: My uncle is a _____.

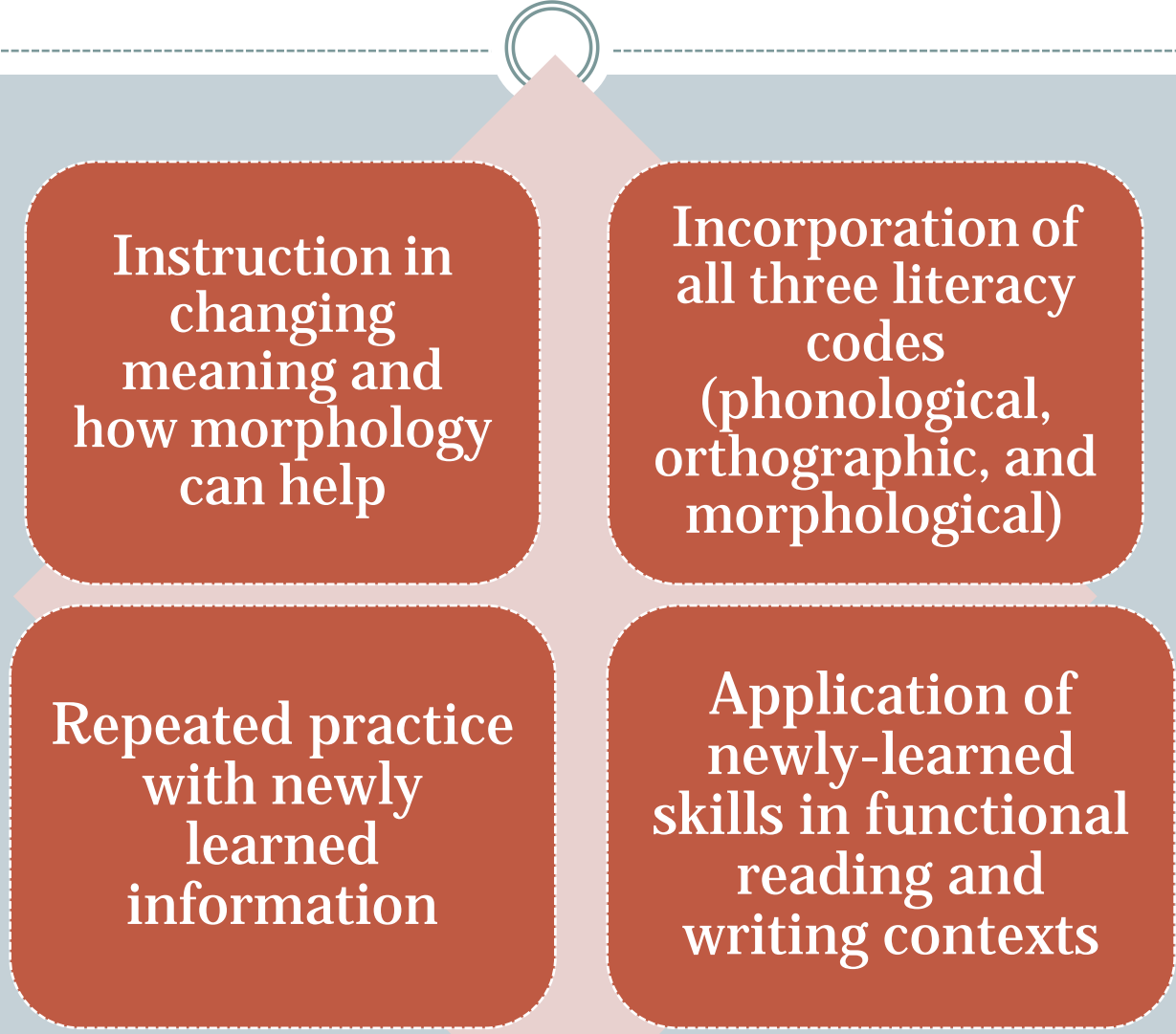
1. ill: Maria worried about her _____.
2. quick: Sheila had to work _____.
3. nerve: I got _____.
4. five: A line formed and Sue was _____.*
5. swim: Kim wanted to improve her _____.
6. victory: Marco's soccer team was _____.*

* shift words

Treatment: Links to the Classroom



Treatment Rationale



Instruction in
changing
meaning and
how morphology
can help

Incorporation of
all three literacy
codes
(phonological,
orthographic, and
morphological)

Repeated practice
with newly
learned
information

Application of
newly-learned
skills in functional
reading and
writing contexts

Treatment Linked to Standards



Treatment goals can be linked to national or state academic standards and benchmarks

These standards are in the areas of reading, writing, vocabulary and language

K-12 Standards



Speaking and Listening

- Inclusion of formal/informal talk

Language

- Using standard English in formal writing and speaking
- Determining word meanings and word nuances
- Acquiring general academic and domain-specific words and phrases

K-12 Standards continued...



COMMON CORE
STATE STANDARDS INITIATIVE
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER

Reading

- **Foundational Skills**

- Print concepts (K–1)
- Phonological awareness (K–1)
- Phonics and word recognition (K–5)
- Fluency (K–5)

- **Reading Comprehension**

- Balance of literature and informational texts

Writing

- Writing informative/explanatory texts
- Writing narratives

Common Core Example: Language



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- **Vocabulary Acquisition and Use**
- **L.6.4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.**
 - Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *audience*, *auditory*, *audible*).

Common and STATE STANDARDS



- **Common Core Standards**
 - <http://www.corestandards.org/the-standards>
- **IPAD AP: *EZ Common Core* at the Ap. store**

Example IEP Goal



- The student will determine the meaning of targeted grade-level academic words by identifying their roots and affixes, explaining their meanings, and using them correctly in a sentence with 80% accuracy across 2 of 3 sessions.

Taken from

TEKS: Grade 5

- (2) Reading/Vocabulary Development. Students understand new vocabulary and use it when reading and writing. Students are expected to:
 - ✦ (A) determine the meaning of grade-level academic English words derived from Latin, Greek, or other linguistic roots and affixes

Treatment Implementation



Treatment



- Where do we begin?
- What elements of morphology should we include?
- What kinds of activities can we utilize?
- How do we gather data?



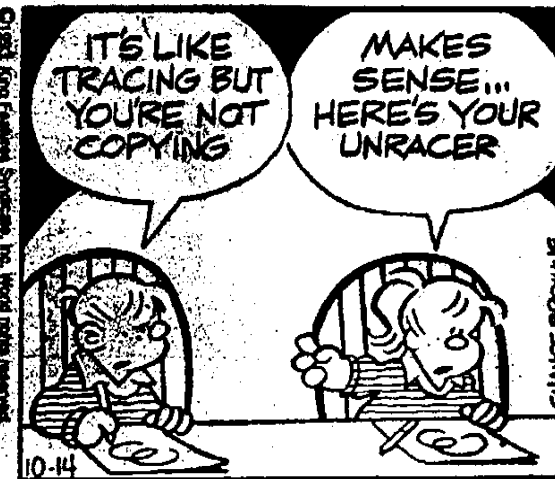
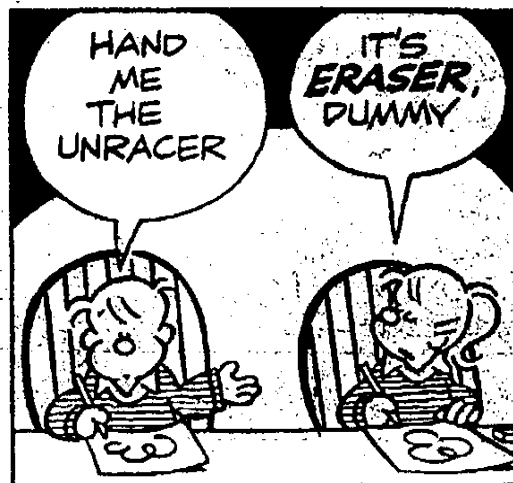
Concept Introduction



- Compounding activity: “firewalker”
- Harry Potter Words: “toothflossing stringmints”
- Decode “sleeplessness” by breaking it into morphemes
- Begin targeting a pattern (inflectional or derivational) and provide multiple examples.
 - “ed” means something happened in the past
 - “-ful” means you are “full of” the base word
 - “un-” means you are not it or not doing it



Hi & Lois



Concept Explanation: Inflection



We will learn about words and word parts to help you learn more words and become a better reader and speller.

Some suffixes change a word's number or tell when a verb happened or is happening (e.g., plural "s" means more than one, "ed" means the action happened in the past)

These endings are spelled the same each time you use them, even though they may sound different (e.g., cats, girls)

Concept Explanation: Derivation



Learning about words and word parts to help you learn more words and become a better reader and speller.

Words can be broken up into parts called morphemes. 'Morphing' words means changing them to change meaning.

A **base word** can stand all by itself. It's the **power of the word** and tells us what the word is about. A base word might be "***read***" or "***heat***".

We can add a **suffix** or **prefix** to **make a change**. So we can change "read" to "readable." Or, we can change "heat" to "preheat."

Treatment

- **Mission**



- **Activities**



Mission: Create/Find Meaning



Affixes change
word meaning, so:

Reasoning by
analogy can
increase word
comprehension if
affix is understood

Affix knowledge
can increase
development of
new words

Audience Activity: Reasoning by Analogy



What is the meaning of the following words?

- **centenarian**
- **definiendum**
- **fructuous**
- **pentarchy**
- **subjacent**

Create derivations of the following nonsense verb:

“ponk”

Meaning Activity: “Mystery Word”



See if you can use the clues to figure out the mystery words described below. All of the words have a suffix that we've learned and were somewhere in today's lesson.

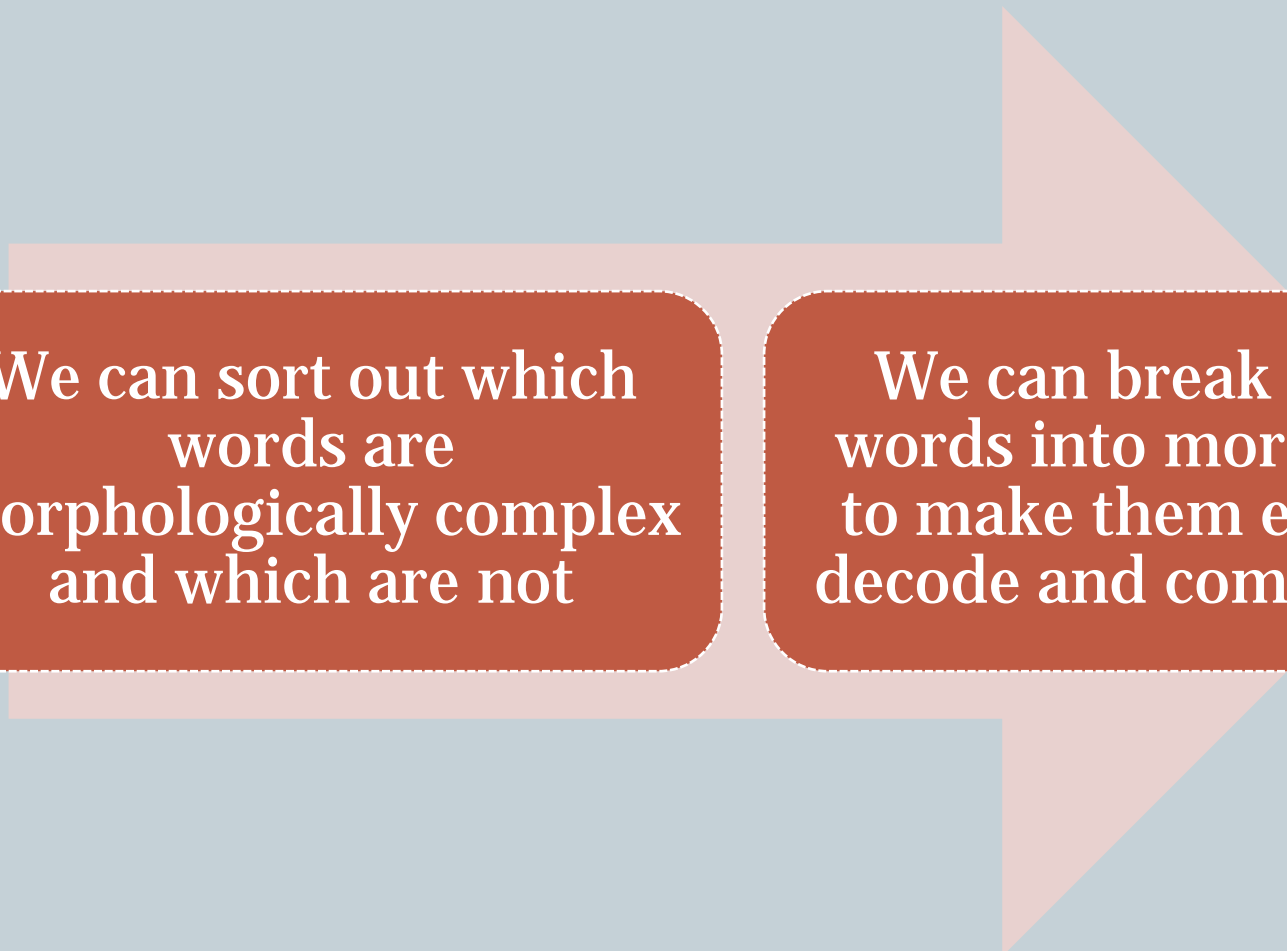
Who am I? I work at a place where people deposit their money and cash their checks. (banker)

What am I? You could describe me with this word because I always tell things the way they really happened. I don't lie. (truthful)

What am I? You could describe me with this word because I am good at creating things. (creative)

Who am I? I am someone who always loves a really good book. (reader)

Mission: Identify Base Word-Affix Relationships



We can sort out which words are morphologically complex and which are not

We can break up the words into morphemes to make them easier to decode and comprehend

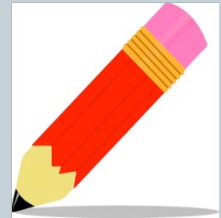
Relationship Activity: “Word Detective”



Find the base word and the suffix in the following words. Underline the base and circle the suffix. Then, read the word and talk about what it means.

singer
protective
hopeful
teacher
wishful
selective

painter
joyful
creative
careful
drummer
active



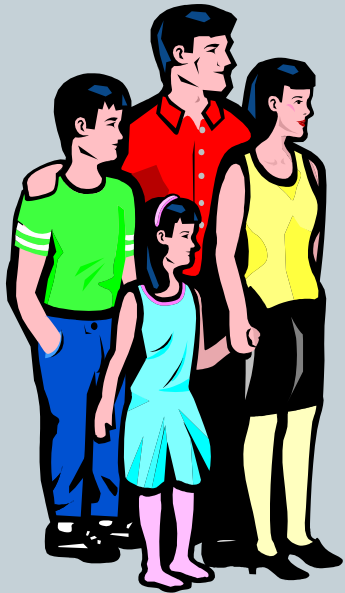
Relationship Activity: All in the Family

(Cunningham, 1998; adapted by Wolter, 2005, Wasowicz, Apel, Masterson & Whitney, 2004)



Family Members Can:

- Look or Sound Alike and Be Related
 - swim – swimming
 - slip – slipped
- Look or Sound Different and Be Related
 - divide – division
 - explode -explosion
 - magic – magician
- OR
- Look or Sound Alike but NOT Be Related (friends)
 - car-carrot
 - luck-cluck



Are teacher and teach related?
Are mother and moth related?
Are clinician and clinic related?
Are brother and broth related?

Morphology Instruction

(lesson adapted from Cunningham, 1998;
Wolter, 2005)

- **INS**

Morphology Instruction: Sample morphology word sort



1

teach
teacher
talk
talking
swim
swimming
bake
baker
care
careful
amaze
amazement

2

divide
division
sign
signature
ready
readily
magic
magician
invite
invitation
explode
explosion
happy
happily

3

cap
capitol
car
carrot
can
canvas
sing
missing
pill
pillow
cat
cattle

Relationship Activity: “Match-Up”



Read the base words in the left hand column. Then, draw a line from the base word in the left hand column to an appropriate suffix from the right hand column. Say the words out loud and talk about what they mean.”

bank

faith

defense

paint

ive

er

er

ful



Mission: Identify Spelling Patterns



Morphemes tend
to have
consistent
spellings

Rules govern the
addition of
suffixes

Derived forms
can help identify
silent letters in
base words

Spelling Activity: Sort It!



* Sort the following pairs of words into two groups:

Tape/taping

Hop/hopping

Tap/tapping

Hope/hoping

Slop/slopping

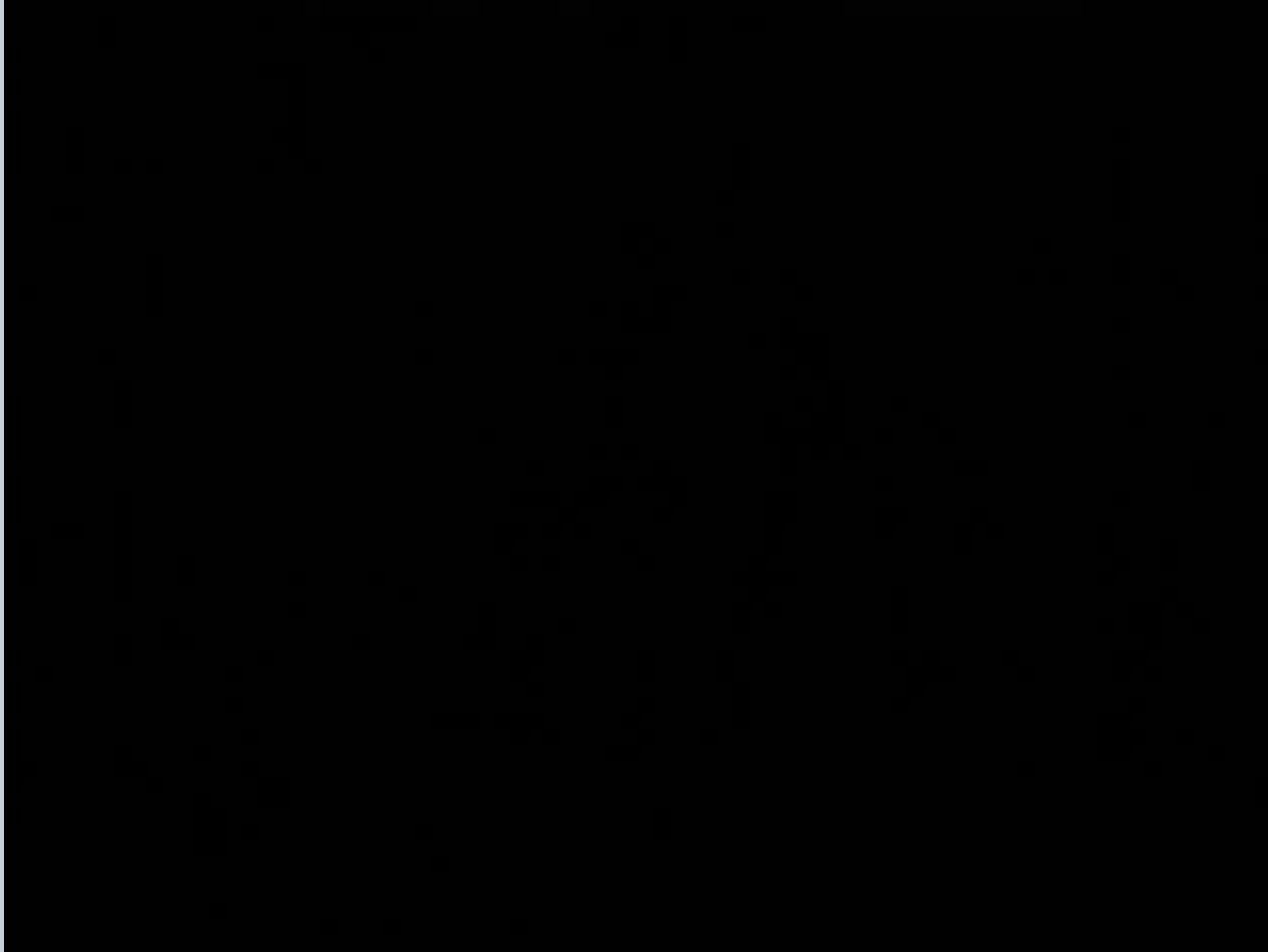
Slope/sloping

Group 1

Group 2

* What is the rule for Group 1? What is the rule for Group 2?

Sample Video – Small-Group Past-tense “ed”



Spelling Activity: Sort It and Spell It



- Sort it out: Given the following words, sort them into two groups

credible

acceptable

manageable

divisible

incredible

fashionable

reachable

edible

horrible



- Spelling Strategy for adding –able or –ible: If you can delete the ending and the remaining base word is a real word, then the suffix is most likely –able

Mission: Develop Syntactic Awareness



Derivational
affixes change
words' parts of
speech so:

- Can gain
- syntactic flexibility
 - increased sentence comprehension
 - increased written expression

Syntactic Activity : Sentence Completion



- Change the word to fill-in-the-blank and make grammatically correct sentences.

The _____ was very talented. (paint)

That is a _____ book. (read)

He has a college _____. (educate)

The _____ sketched a picture. (art)

Syntactic Activity: Morphing Words



Given a base word, “morph” the word into as many word forms as possible using previously taught prefixes and suffixes. Label each word according to it’s part of speech.

<i>Word</i>	Noun:	Verb:	Adjective:	Adverb:
<i>Heat</i>	Heater	Preheat Reheat	Heated	Heatedly
<i>Apply</i>	Application Applicability	Apply Reapply	Applicable Inapplicable	

Audience Activity: Morphing Words



Given a base word, “morph” the word into as many word forms as possible using previously taught prefixes and suffixes. Label each word according to its part of speech.

<i>Word</i>	Noun:	Verb:	Adjective:	Adverb:
<i>Electric</i>				

Syntactic Activity: Build the Word/Use the Word



Add –y to the words below. Then put those words in complete sentences that make sense. The first one is done for you.

Base Word: New Word: Sentence:

1. powder: powdery: The new snow was very powdery
2. puff: _____: _____
3. grass: _____: _____
4. sweat: _____: _____

Mission: Increase Phonemic Awareness



Can be addressed by
examining derivational
changes in words

“Shift words” undergo a
phonemic change (and
sometimes a spelling
change) when a suffix is
added

Phonemic Awareness Activity: Change or No Change?



- act-actor
- flame-flammable
- attain-attainable
- tickle-ticklish
- magic-magician
- please-pleasant



Mission: Apply in Functional Contexts



Show applicability
in reading and
writing tasks

Use curricular
materials when
possible

Morphological Awareness Instruction integrated in vocabulary/writing class lesson

- INSE

Sample Writings

Vocabulary Word:

harmless

Category:

Science

Describe:

One day Joe heard a noise, he ran home, when he was home he saw a bird take his mother. He was motherless. So now he was

Draw:

So sad about his mom being eaten he was speechless. He was walking one day and he saw a rock he ate it and his teeth fell out. He was toothless. Now his mom was gone she could not pay the rent. He was homeless.

not hurt not injured

saw his pay

NOT to injure

toothless

homeless

speechless

harmless

~~Draw:~~ Write:

Joe the Lizard

one day Joe's mother got taken by a fast falcon. She was gone! Joe was motherless. he didn't remember where he lived. Now Joe is homeless. He was hungry so he went to find something to eat. He saw a fossil and bit it he became toothless. ^{there was now winter} Joe went into a cave with his ^{Joe's tongue got stuck} tail shaped like a bug.

He was speechless, he is ~~harmless~~ ^{harmless} he can't

This word makes me think of:

her + any one + all

My current understanding:

Application Activity: Morphology in 7th Grade Science



Find the morphed words in the paragraph. Talk about what they mean and how you could figure that out:

Continental Drift

In 1910, a young German scientist named Alfred Wegener (vay guh nur) became curious about the **relationship** of the continents. He **hypothesized** that Earth's continents had moved! Wegener's hypothesis was that all the continents were once joined together in a single **landmass** and have since drifted apart. Wegener's idea that the continents slowly moved over Earth's surface became known as **continental** drift.

Wegener attempted to explain how **continental** drift took place. He suggested that the continents plowed across the ocean floors. **Unfortunately**, Wegener could not provide a **satisfactory explanation** for the force that pushes or pulls the continents. Because Wegener could not identify the cause of **continental** drift, most **geologists** rejected his idea.

Application Example: Reading Comprehension



Look at the passage below and underline the words with the –or, able, and -ation suffixes. Then, answer the questions.

Sarah had a wild **imagination**. She liked to daydream. Sometimes she was a brave **warrior**. Other times she was a **sailor** on a boat in the ocean. There was always the **temptation** to daydream at school. Her teacher said this was not **acceptable**. He wanted Sarah to pay attention in class. Sarah did want to learn. She was **agreeable** and tried to listen carefully to class **information**. Her teacher helped her use her **imagination** in different ways. He let Sarah be the **illustrator** of class stories. He let her be a lead **actor** in the school play. Sarah had to do a lot of **preparation** for these jobs. But she thought it was fun. And, she had the **admiration** of her friends. So, she enjoyed daydreaming at home and trying new things at school.

Comprehension Questions



1. What did Sarah daydream about?
2. Why was it not acceptable to daydream at school?
3. How did Sarah use her imagination in different ways?
4. Why did she have to do a lot of preparation?

“Applicization”



- Think of a student on your caseload for whom this type of intervention would be appropriate.
 - How might you determine baseline performance?
 - How would you introduce the concept in therapy?
 - What type of activities would you include?
 - How would you measure progress?

Intervention Resources



- Ready, Set, Grammar, Scissors, Glue and Grammar Too, No Glamour Grammar, 100% Reading: Decoding and Word Recognition *Linguistics* 1-800-PRO-IDEA
- Words: Integrated Decoding and Spelling Instruction *Pro Ed* 1-800-897-3202
- Words Their Way: Word Study for Phonics, Vocabulary, and Spelling Instruction *Pearson Education*, 1-800-223-1360
- Language! *Sopris West* (Supplement: Roots!)
- Month by Month Phonics for the Upper Grades by Patricia Cunningham (available in teachers' supply stores)
- Vocabulary from Classical Roots *Educators Publishing Services*

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