Morphology Plus

THE INSTITUTE FOR MULTI-SENSORY EDUCATION

morph + ology —> morphology study of shapes (structures or forms in language)

PRE-TEST - HOW MANY MORPHEMES?

WORD	NUMBER OF MORPHEMES
kind	
kindly	
unkind	
unkindness	

COURSE OVERVIEW

- 5 day hands-on, interactive, and personalized virtual class that provides understanding of morphology, fluency, vocabulary, and comprehension.
- Intended audience:
 - General and special education teachers grades 3-5
 - Teachers whose students can read and spell but continue to struggle with language comprehension
 - Educators who want to learn more about instruction in morphology, fluency, vocabulary, and comprehension.
- Learning outcomes:
 - Implement structured literacy strategies for affixes, Greek and Latin bases, fluency, vocabulary, and comprehension with instruction adapted and differentiated based on assessments and student need
 - Scope and sequence structured lesson plans

SCIENCE OF READING

"SCIENTIFICALLY-BASED RESEARCH ABOUT READING AND ISSUES RELATED TO READING AND WRITING...
THAT HAS INFORMED HOW WE CAN MOST EFFECTIVELY ASSESS AND TEACH, AND, THEREFORE IMPROVE STUDENT OUTCOMES THROUGH PREVENTION AND INTERVENTION FOR READING DIFFICULTIES" (The Reading League).



ISME's Morphology Plus course and the link to middle school literacy

- IMSE's structured literacy Morphology Plus Course and Materials is direct instruction that is systematic, sequential, and cumulative with instruction beginning with common morphemes progressing to more complex concepts using visual, auditory, and kinesthetic learning pathways.
- The focus of instruction for most students in third grade and beyond shifts from phonology and letter-sound correspondence to word study, fluency, vocabulary, and morphology.

Morphology Plus = Multi-Sensory

- Multi-sensory instruction involves the sensory input of language through the:
 - ear (listening to the language)
 - eye (reading and seeing the letters)
 - mouth (saying the sounds and words)
 - hand (writing the letters)

Morpheme examples

Common morphemes	Complex morphemes
un → not or opposite; undo or reverse re → back or again pre → before or earlier -ing → action or process (verb) materials (noun) -est → most (superlative) (adjective or adverb) s → more than one, third person singular rupt → to burst or break form → to shape port → to carry bio → life	ad \rightarrow to, toward, in, near (ac-, af-, ag-, al-, an-, ap-, ar-, as-, at-) -ant/ance \rightarrow one who (noun) or inclined to (adjective)/action or state (noun) -ee \rightarrow one who receives the action (noun) -age \rightarrow collection, mass, or relationship (noun) frater \rightarrow brother quer/ques(t)/quir(e)/quis \rightarrow to ask or seek arch \rightarrow chief or ruler poli \rightarrow city; method of government voc \rightarrow to call

Backbone of IMSE's training

- Gough and Tunmer's Simple View of Reading
- Hollis Scarborough's The Reading Rope
- Linnea Ehri's The Four Phases of Word Reading
- Seidenberg and McClelland's The Four-Part Processing Model of Word Recognition
- International Dyslexia Association's The Knowledge and Practice Standards for Teachers of Reading

The Simple View of Reading

Decoding

Ability to apply soundsymbol relationships to read words



Language Comprehension

Ability to understand spoken language

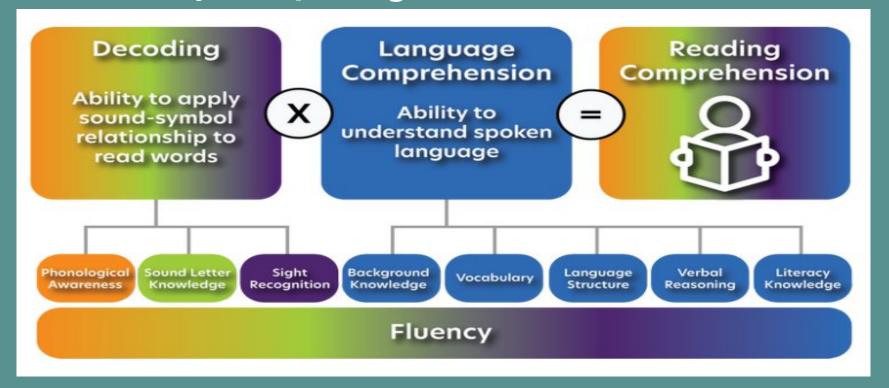




(Gough & Tunmer, 1986; Hoover & Gough, 1990)

The Simple View formula makes it clear that strong reading comprehension cannot occur unless both decoding skills and language comprehension abilities are strong.

The Simple View of Reading by Philip Gough and William Tunmer



Scarborough's Rope by Dr. Hollis Scarborough

Skilled reading requires that the processes involved in word recognition become so well practiced that they can proceed extremely quickly and almost effortlessly freeing up the reader's cognitive resources for comprehension processes.

Once students are fluent, skilled readers, they can focus on comprehending the text.

Language Comprehension

Background Knowledge

Vocabulary Knowledge

Language Structures

Verbal Reasoning

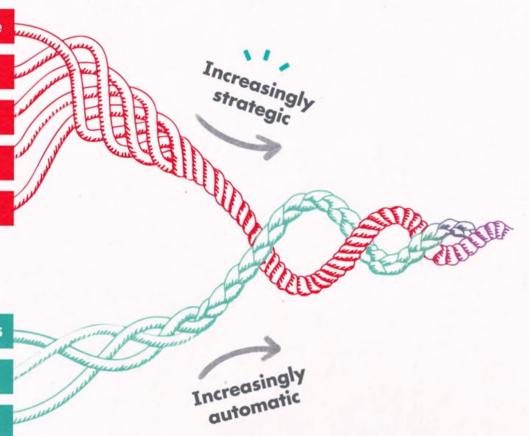
Literacy Knowledge

Phonological Awareness

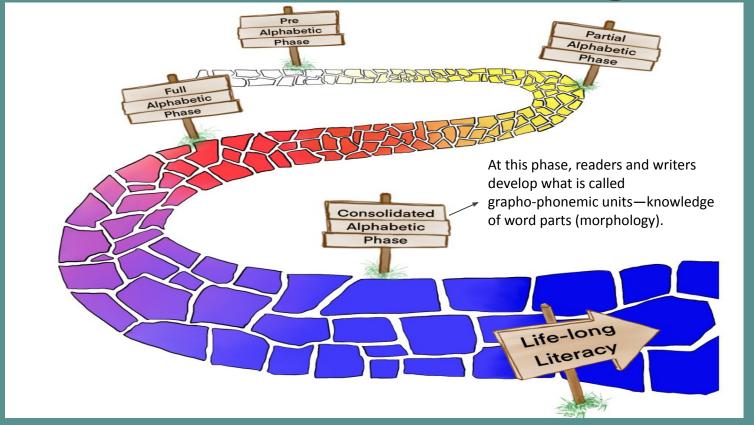
Decoding (and Spelling)

Sight Recognition

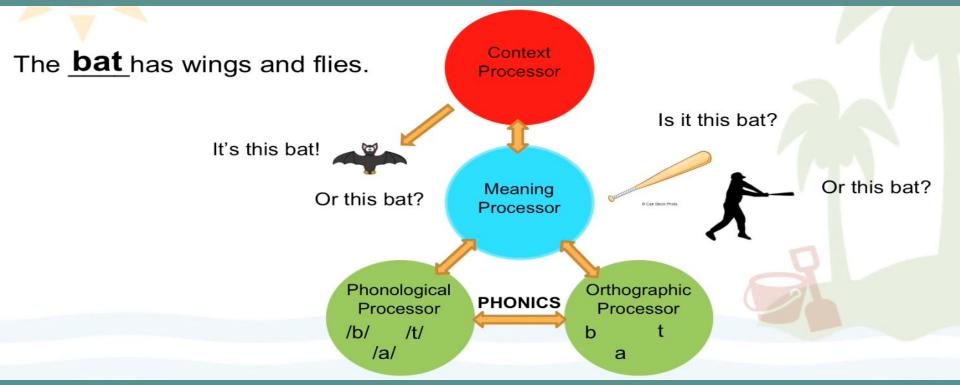
Decoding(word recognition)



Linnea Ehri's 4 Phases of Reading



Seidenberg and McClelland's The Four-Part Processing Model for Word Recognition





FACTS ABOUT UPPER-GRADE INSTRUCTION

- Secondary students with reading disabilities can be five or more grade levels below their grade-level peers in reading.
- Decoding and spelling should be taught explicitly, at least through 8th grade.
- Knowledge of morphemes (smallest unit of meaning in language) assists with spelling, reading and expanding vocabulary.



FACTS ABOUT UPPER-GRADE INSTRUCTION continued

- Proficient readers and spellers use morphological knowledge as they read and spell.
- Poor readers "lack awareness of the presence of base forms within derived counterparts, and they lack specific knowledge about how to spell suffixes and attach suffixes to base words correctly."
- Morphological awareness increases comprehension and spelling of complex words.
- Greek and Latin bases are found within multisyllabic words and make up 60% of the English language.

Morphology Plus classroom outcomes

Participants of this live-virtual class (30 hours total) will be able to evaluate and teach students the following:

- Morphology
- Fluency
- Vocabulary
- Comprehension
- Grammar and Writing

Morphology

- Morphology is the study of word structure and meaning.
 - jump jumped (the addition of suffix -ed changes the tense)
 - car car (the addition of the suffix -s changes amount)
- Morphemes are the smallest unit of a word that contains meaning.
- Morphemes are consistent and regular for spelling and meaning.
- Pronunciation of morphemes can sometimes change.
 - Example: "polit" means city or method of government"
 - It is contained in words that have similar spellings and meanings but different pronunciations and syllable stress patterns.
 - o politics v.s. political v.s. politician

Morphology Plus program overview

- History of the English Language
 - Greek
 - Science and math words
 - Found in scholarly and scientific books
 - Ex. mathematics, binomial, polygon, diameter, spectrum, photosynthesis, hypothesis
 - Latin
 - Longer, technical words
 - Found in literature and content area texts
 - Ex. project, combine, success
 - Anglo-Saxon
 - Short, everyday words
 - Found frequently in primary books (high-frequency words)
 - Ex. bag, track, ship, bake, harm, salt, day, cheese, butter, mother, love, chicken
 - Norman French
 - Words of nobility and feudalism
 - Ex. palace, throne, enemy, army, soldier, castle, fashion, beauty

Morphemes - Affixes: Prefixes/Suffixes

- Prefixes: morphemes added to the beginning of a base
 - Can alter the meaning of the base to which it is attached
 - un + happy → unhappy
 - re + turn → return
- Suffixes: morphemes added to the end of a base
 - Inflectional change the form of the base word
 - Make a word plural
 - cat + s \rightarrow cats
 - Change verb tense
 - walk + ed → walked
 - Make word comparative or superlative
 - fast + est → fastest
 - Derivational changes the meaning of the base word and word's part of speech
 - \blacksquare friend + less \rightarrow friendless



- Over 55% of English words are Latin based and these bases provide the main meaning of the word.
- Latin bases are studied to strengthen decoding skills in addition to improving vocabulary which, in turn, improves comprehension.
- Latin bases rarely stand alone for meaning; they are almost always attached to an affix thus Latin-derived words are multisyllabic.
- Greek-based words are technical words used in the areas of mathematics and science.
- Greek-derived words usually consist of two Greek bases.

Instructional components

- Three-Part Drill Review previously taught morphemes
 - Provides repeated exposure to assist with mastery
 - Opportunity to review morphemes using an explicit, sequential, multimodal approach
 - Multimodal Visual, Auditory/Kinesthetic, and Morphemic Analysis
- Teaching a New Concept Introduce new morphemes
 - Direct instruction on morphemes origin, meaning, and pronunciation
 - Morpheme cards
 - Connect the new morphemes to print (etc. passages, poems, articles, content area books)
- Application of words and sentences using a new concept
 - Students practice writing and reading words and sentences for each morpheme
 - Fluency, Vocabulary, and Comprehension

Data

- Benchmark assessments to guide determine baseline, prior knowledge, where to begin instruction, and to guide instruction:
 - Prefix Assessment
 - Suffix Assessment
 - Latin Base Assessment
 - Greek Base Assessment
- Benchmarking Morphemes Forms for Beginning, Midyear, and End-of-Year Benchmark
- Individual Progress Monitoring Chart for prefixes, suffixes, and Latin and Greek Bases

Data continued

- Teacher made assessments based on review of previously taught morphemes (affixes-prefixes and suffixes and bases) and new target morphemes
 - Have students:
 - Write definition of given morpheme
 - Write vocabulary words containing given base
 - Sorting words by common base
 - Fill in blank within a sentence with correct morpheme (word bank or multiple choice
 - Use vocabulary word containing a base in a sentence
 - Identify morphemes of bold words that contain targeted morphemes within a sentence
 - Give students a base to create a word and use it in a sentence.
 - Using a sentence that contains bolded words with targeted morphemes, write definition of the bolded words.

Morpheme Sequence Chart

- Teaching options
 - o Option 1
 - Starting point determined by pre-assessment (optional)
 - Teach four lessons on affixes
 - Teach four lessons on Latin bases.
 - Teach two lessons on Greek bases*.
 - Option 2
 - Entry point determined by pre-assessment (optional)
 - Each lesson, teach:
 - One prefix
 - One suffix
 - One Latin Base
 - Ex. trans, port, and -ion

^{*}Teachers do not need to teach all of the affixes before moving on to Latin and Greek bases.

		IMS	E Morpheme	Sequence	e Chart		
Prefix	Meaning	Suffix	Meaning	Latin	Meaning	Greek	Meaning
£	Not or opposite of;	1s/-es	More than one (noun)	1. rupt	To burst or break	1. graph/gram phon photo tele	Write or draw Sound Light
6. un-	To undo or reverse	15/-e5	Third-person, singular (verb)	2. tract	To pull or draw		
7 i= (il i== i=)	in-, il-, im-, ir-: not or	2ed (past tense)	Past tense (verb or adjective)	3. form	To shape		Distant or far
7. in- (il-, im-, ir-)	opposite of; in-, il-, im-: in or on	2 1	Action, process, or materials (verb, noun, or adjective)	4. port	To carry; gate or entryway	2. aut(o) micro (o)logy scope	Self Small or minute The science or study of To watch or see
8. mis-	Bad or wrong	3ing		5. struct	To build		
9. dis- (dif-)	Not, opposite, or apart	4er	One who or that which (noun)	6. dic(t)	To say or tell		
10.fore-	Before or in front of	-or	More (comparative) (adjective or adverb)	7. cred	To believe	3. biblio	Book
11. re-	Back or again	5 1/ 1)	Most (superlative)	8. scrib/script	To write	bio hvdr(o)	Life Water
12. de-	Down or away from	5est (most)	(adjective or adverb)	9. flex/flect	To bend or curve	phobia	Irrational fear or hatred of
13. pre-	Before or earlier			10. aud	To hear or listen	4. crat/cracy	Rule, strength, or power
14. a-	a-: on or in; to		Like or manner of (adverb	11. spec(t)/spic	To see, watch, or observe	geo meter/metr	Earth Measure
ab- an-	a-, ab-: From or away a-, an-: Not or without	15 ly	- ly or adjective)	12. miss/mit	To send	therm(o)	Heat or hot
			Act of, state of, or result of (noun) 13. sci 14. jec(t) 15. pend/pe	13. sci	To know	5. chron(o) ortho path psych 6. aero	Time Straight or correct Feeling, suffering, or disease Mind or soul
	To cause or put into;	16ion		14. jec(t)	To throw or lie		
19. en- (em-)	within	17able		15. pend/pens/pond	To hang or weigh		
20. non-	Not or negative	-ible	Able, can do (adjective)	16. vis/vid	To see		
21. over-	Too much	18y	Inclined to (adjective)	17. fer	To bear, yield, or carry	ast(ro) cycl(o)	Star Wheel, circle, or ring
22.sub- (suc-, suf-, sug-,				18. vers/vert	To turn	sphere	Ball
sup-, sus-)	Below or under	23ful	Full of or full (adjective)	19. duc(t)	To lead		Chief or ruler
		24less	Without (adjective)	20.mob/mot/mov	To move	7. arch	City; method of
27. inter-	Between or among		Causing or making	21. ven(t)/ven(i)	To come	poli	government
28.trans-	Across or beyond	25ive	(adjective)	22.pli(c)/ply	To fold	8. ped	Child
29. super-	Over or above	26ness	State of (noun)	23.cap (ceit, ceive, cep[t],	To take, catch, seize, hold,	pod	Foot
30.semi-	Half or partial			cip)	or receive	9. mono	One
31. anti-	Against or opposite	1	Act of, state of, or result of	24.voc/vok(e)	To call	di	Two
32.mid-	Middle	34ment	an action (noun)	25. pel/puls	To push or drive	tri tetra	Three Four
33.under-	Below or less	35al		26.ped	Foot	pent(a)	Five Six
		-ial	by (adjective or noun)	27. vit(a)/viv(i)	To live		
41. mal-	Bad or abnormal	36ty -ity		28. claus (clois, clos,		hept(a)	Seven
42. multi-	Many or much		State or quality of (noun)	clud, clus)	To close or shut	oct(a) ennea	Eight Nine
43. ob- (oc-, of-, op-)	Down, against, or facing	37ous (-ious, -eous)	Full of or having (adjective)	29. sec(t)	To cut	dec(a)	Ten



- I. Three Part Drill
- II. Teaching a New Concept (Morpheme)
- III. Fluency
- IV. Vocabulary
- V. Comprehension

Teaching a New Concept (Morphemes)

- I. THREE-PART DRILL: Review previously learned morphemes.
- II. TEACHING A NEW CONCEPT: Choose 2-3 morphemes to introduce.
 - A. MULTI-SENSORY EXPERIENCE

□ Other: ___

- (T) Shows new morpheme(s); informs students of meaning, origin, and pronunciation when applicable.
- 2. (T) Shows object/pictures that represent the morpheme(s).
- 3. (T&S) Brainstorm words with the target morpheme(s).
- 4. (S) Make morpheme card(s) with meaning, examples, and picture.
- (T) States morpheme(s) and/or meaning.
 (S) Practice writing morpheme(s) on paddleboard or paper.
- 6. (T&S) Connect to literature (IMSE passage, poem, newspaper article, content area book, etc.).
- 7. (T&S) Mark morpheme chart. Add morpheme card to review deck.
- B. APPLICATION OF WORDS AND SENTENCES USING NEW CONCEPT

١	Word Dictation - Utilize IMSE's Morphology Plus Teacher's Guide.
((Choose one or more of the following.)
[☐ (T) Dictates word(s). (S) Write word(s).
[☐ Latin Base Activity
	☐ Word Sum Practice
	☐ Base Builder Application
[☐ Latin Base Building Ladder
	□ Solar System Base Diagram
	☐ Base Tree
	Other:
5	Sentences – Utilize IMSE's Morphology Plus Teacher's Guide.
((Choose one or more of the following.)
	□ (T) Dictates sentence(s).
	(S) Write sentence(s).
	☐ Latin/Greek Base Sentences
	☐ (T) Provides sentence(s) containing target morpheme(s).
	(S) Highlight target morpheme(s) within sentence(s), then state meaning(s).

THREE-PART DRILL PURPOSE: reinforcing learned morphemes

-explicit, sequential, multimodal approach administered multiple times a week

3 components of the drill:

- -Visual (see and state the meaning)
- -Auditory/Kinesthetic (hear and spell the morpheme)
- -Morphemic Analysis (students spell each morpheme, spell the word, and state the meaning)

Three Part Drill

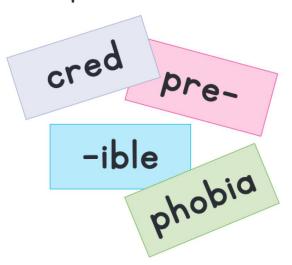
Three-Part Drill for Morpheme Concepts

T VISUAL

- (T) Shows morpheme card(s).
- (S) Read (or spell) and state the meaning. (e.g., Scope means to watch or see.)

II. AUDITORY

- (T) States the meaning of the morpheme. (e.g., This prefix means before.)
- (S) Spell the morpheme on the dry-erase board and state the meaning.
 (e.g., P-r-e means before.)



III. MORPHEMIC ANALYSIS

- (T) Presents word(s) containing known morphemes (e.g., rejected, incredible).
- (S) Create a word sum for each word. Then verbalize the answer.

 (e.g., i-n plus c-r-e-d plus i-b-l-e is rewritten as i-n-c-r-e-d-i-b-l-e;
 Incredible means "not able to believe" or "unbelievable.")



Choose 1 to 4 morphemes to introduce for the week.

Teacher presents new morphemes informing students of origin and pronunciation.

Teacher shows object/visual that represents the morphemes and words containing targeted morphemes and have students predict the meaning of the morphemes.

Student and teachers make morpheme cards with confirmed meaning, examples and image.

Students practice spelling the new morphemes on dry erase boards, hold up their answer, spell the morpheme out loud and state its meaning.

Students connect the new morphemes to print using short passages or additional texts.

Teaching a New Concept card template

Target morpheme (prefix, suffix, base)

Meaning of morpheme

Words with target morpheme

Picture or visual

Teaching a New Concept card example Greek base : tele

tele



Teaching a New Concept Card option

			New Concept:
New Concept:	This morpheme is a:	Keyword(s):	
It means:	☐ Suffix ☐ Greek Base A picture that helps me re	emember the meaning:	tract
	tractor		It means:
		<u>(0)</u>	to

7	New Concept:	This morpheme is a:	Keyword(s):	
	tract	☐ Prefix ☐ Latin Base☐ Suffix ☐ Greek Base	tractor subtraction contractor	
	It means:	A picture that helps me remember the meaning:		
	to pull	tractor		



Teaching a New Concept - connecting to literature

Latin Lesson 2: tract

Farming

I think that farming is an attractive career. I was attracted to it because I love to be outside. I also enjoy running the tractor. When I'm on the tractor, I can distract my mind from the stresses of life.

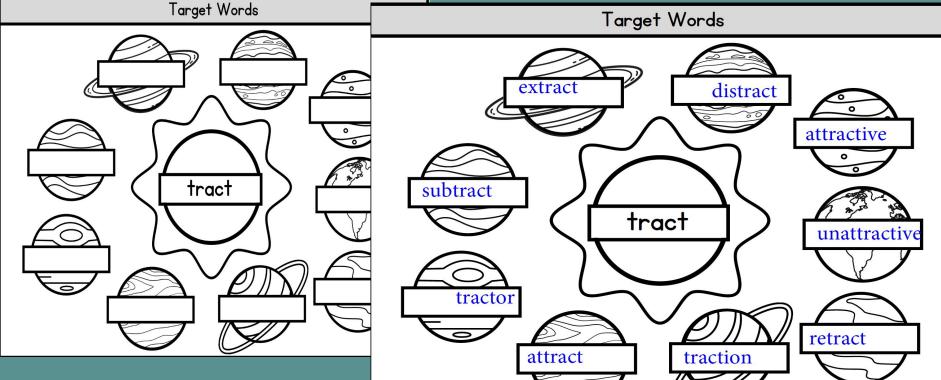
Although farming is hard work, it does not detract from the joy I feel when I extract vegetables from the ground. I have so much land that I subcontract part of it out so others can enjoy farming, too. Each subcontractor signs a contract to take good care of the land.

Maybe you will be attracted to farming as well!

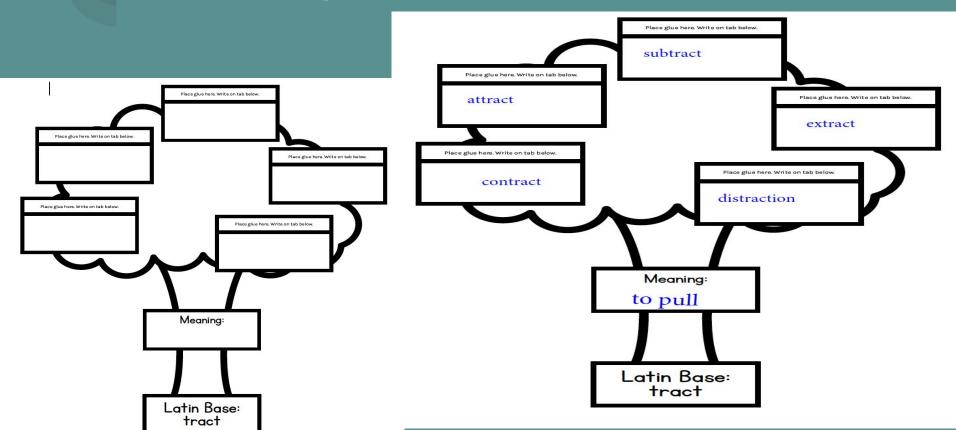
Directions: Add words from the passage that contain the new morpheme(s). Create word sums. Write the meanings.

Words	Word Sums	Meanings

Application of Words and Sentences using New Concept Activities - words



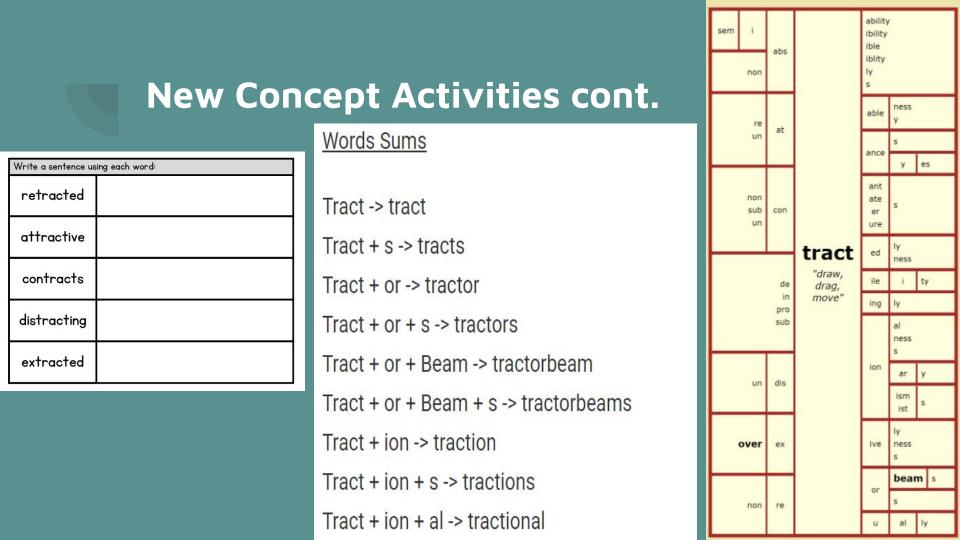
New Concept Activities continued-words



New Concept Activities continuedwords and sentences

contraction	Word Sum
Meaning	Sentence
subtracting	Word Sum
	Word Suri
Meaning	Sentence
distracts	Word Sum
Meaning	Sentence

100 0.420	Word Sum	
contraction	con + tract+ ion> contraction	
Meaning	Sentence	
the process of being smaller	Can't is a contraction for cannot.	
subtracting	Word Sum	
	sub+tract+ing>subtracting	
Meaning	Sentence	
taking away	After subtracting my rent, I had little spending money	
distracts	Word Sum	
	dis+tract+s> distracts	
Meaning	Sentence	





Fluency- reading with "speed, accuracy, and proper expression"

- Fluent readers:
 - Ability to decode and comprehend at the same time
 - Group words into units (clauses and phrases) as chunks of text and use those chunks of text to read and write more quickly.
 - Research suggests that with effective instruction in fluency leads to overall improvements in reading

Fluency continued

- Vocabulary is broken into three tiers:
 - Tier 1 Basic words, rarely require instruction time and do not need to be explicitly taught
 - Ex: bird, girl, cry, run
 - Tier 2 Used often by mature language users, can be located across content areas, can be used a variety of ways. Choose 3 to 5 words to explicitly teach.
 - Ex: magnify, integrate, manipulative, reflection, contradict
 - Tier 3 Infrequently used, pertain to specialized fields, specific to content area. Teach only when needed.
 - Ex.: calcium, botanical, chlorophyll, parallelogram

Fluency activities

- Oral Reading Fluency (ORF) fluency assessment
 - Measures number of words correct per minute (rate) and accuracy.
 - Passage should have a minimum of 200 words
 - IMSE passages
 - Acadience Reading K-6
 - DIBELS 8th Edition
 - AIMSweb
- Repeated readings (4 to 5 times within a given time frame)
- Practice reading with punctuation signaling proper expression
- Reader's Theatre

Vocabulary

- Students must learn ranging from 2,000 to 3,500 words per year after grade three.
- The number of words high school graduates need to know is estimated to be between 60,000 to 100,000.
- Vocabulary size predicts comprehension.
- The key to teaching vocabulary is direct instruction.
- Vocabulary lessons should be well-paced, brief, explicit, and interactive.

Vocabulary continued

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Word-Learning Strategies

- Dictionary use
- Morphemic analysis
- Contextual awareness
- Vocabulary Handbook
 - resource for vocabulary instruction

THE VOCABULARY STRATEGY

To figure out the meaning of an unfamiliar word that you come across while reading:

- Look for Context Clues in the Words, Phrases, and Sentences Surrounding the Unfamiliar Word
- 2. Look for Word-Part Clues Within the Unfamiliar Word
 - A. Try to Break the Word into Parts. (If you can't, skip to Step 3.)
 - B. Look at the Root Word. What does it mean?
 - C. Look at the Prefix. What does it mean?
 - D. Look at the Suffix. What does it mean?
 - E. Put the Meanings of the Word Parts Together. What is the meaning of the whole word?
- 3. Guess the Word's Meaning (Use Steps 1 and 2.)
- **4. Try Out Your Meaning in the Original Sentence** to Check Whether or Not It Makes Sense in Context
- 5. Use the Dictionary, if Necessary, to Confirm Your Meaning

Comprehension

- Paths to comprehension
 - First: Students must be able to get the words off the page (DECODING) before they can comprehend the text.
 - Second: If students can't understand the individual words (VOCABULARY), they will not be able to comprehend the passage.
 - Third: Prior knowledge (BACKGROUND KNOWLEDGE) gives the words of the text places to stick and make sense thus supporting comprehension.

Comprehension continued

- Drawing meaning from text requires understanding individual words as well as sentence comprehension
- Seeking meaning from sentences relies on:
 - Knowledge of grammatical structures
 - Linguistic frameworks (categories of words and phrases)
 - Basic sentence structure (simple, compound, and complex)
- Characteristics of major text genres and text structure



Comprehension Activities

- Comprehension Planning Checklist
- The Reading Comprehension Blueprint: Helping Students Make Meaning From Text (Hennessy, 2021)
 - Assists with organizing and scaffolding the teacher's preparation of varied texts for varied purposes
- Reciprocal Teaching 4 strategies good readers use to comprehend
 - Predicting
 - Questioning
 - Clarifying
 - Summarizing

Comprehension Planning Checklist

Before Reading	Page Numbers/Other Notes
Establish Purpose for Reading. Why read this text? What are the takeaways or enduring understandings students should gain from this text?	raye numusisyothel notes
Identify Text Structure. Is this informational or narrative text?	
Prepare Background Knowledge. What background or topic context is needed?	
Select Vocabulary. What words should be pretaught?	
Identify Challenging Language. What are difficult sentences/phrases/ academic language?	
During Reading	
Plan Questions. Anticipate Student Questions. Mark text for stopping to ask questions and queries.	
Use Text Structure to Organize Thinking. Use graphic organizer or outline to show structure.	
After Reading	
Was Purpose Met? Did Students' Thinking Change? Evaluate student understanding. Is rereading planned?	
Assessment: Can Students Express Takeaways? Use Text Evidence? Evaluate how students express the big ideas/enduring understandings from the reading. Can students support their ideas with text evidence?	

Used with permission from Voyager Sopris (LETRS, 2019)



- Written expression is the deepest level of literacy.
- Students must know how to express themselves and explain their opinions in writing:
 - o grammar
 - mechanics
 - composition
 - editing/revision process



Grammar and Writing continued

- Critical components of literacy programs
 - Proper grammar and conventions
 - all parts of speech should be directly and explicitly taught
 - teaching grammar equips students with fundamental skills to write proper, fluent sentences
 - provides tools they need to edit their own work to produce clear and correct writing

POST-TEST - HOW MANY MORPHEMES?

WORD	NUMBER OF MORPHEMES
kind	
kindly	
unkind	
unkindness	