

# MORPHEME MATRICES

Sequential or Standalone Lessons  
for Assembling Common Prefixes,  
Latin Roots, Greek Forms, and Suffixes

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## Introduction

**Phonemes are single units of sound (consonants and vowels) that combine into short, meaningful words.** Beginning readers at GE K-3 typically need to learn the 44 English sounds and their many letter spellings, how to blend or segment them for reading or spelling, and recognize sight or high frequency words.

**Morphemes are small, pronounceable units (prefixes, bases, roots, and suffixes) that combine into longer, meaningful words.** Intermediate and Advanced readers at GE 4-8 are usually ready to learn morphemes and their meanings, how to blend or segment them for reading or spelling, and identify changes in word number, tense, meaning, part of speech, and usage.

In the COABE article, *Morphological Awareness Intervention: Improving Spelling, Vocabulary, and Reading Comprehension for Adult Learners* (Bangs & Binder, 2016), the authors report on a pilot study with ABE students at Basic to GED levels. They conclude that instruction of morphemes and use of word sums or matrices to build words can produce reciprocal gains in phoneme awareness and related increases in spelling, vocabulary, and even comprehension skills (pages 52-53).

In the book, *Unlocking Literacy, Effective Decoding & Spelling Instruction, 2<sup>nd</sup> Edition* (Henry, 2010), the author recommends introducing morphemes sooner rather than later. She says students do not need to have complete mastery of all English letter-sound patterns to begin combining high frequency bases or roots with common prefixes and suffixes. She believes teaching morphemes gives advancing readers “the power of word expansion” (page 97).

In the report, *College and Career Readiness Standards for Adult Education* (Pimentel, 2013), Reading Foundational Skill or RF.3. states that students at Level C (GE 4-5) should be able to “use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context” (page 42).

*Morpheme Matrices* considers this evidence and responds to a number of Minnesota STAR/EBRI teacher requests for standalone alphabetic lessons or “something different” when teaching multi-syllable decoding or higher-level alphabetic skills. It includes:

1. 10 key terms for understanding short and longer word assembly (page 2)
2. 4 charts of high-frequency prefixes, suffixes, Latin roots, and Greek forms (pages 3-4)
3. 8 explicit instruction steps and 25 matrices for assembling Latin roots and Greek forms with prefixes and suffixes (pages 5-23, 24-31)
4. a blank morpheme matrix for creating even more lessons (page 32)
5. a Word Key of over 700 assembled and spell-checked words (pages 33-36)
6. a Reference and Resource list (page 37)

## Ten Key Terms

**Note:** The following key terms, their simple meanings, and some examples are for teachers to know and understand before using *Morpheme Matrices*. Their use with students is a teacher option or decision.

1. **Phoneme:** a single unit of sound (consonant or vowel) that does not carry meaning -- but can change meaning (examples: bat to cat, hit to hot)
2. **Grapheme:** the letter (or pair/trio of letters) that represent a single phoneme or sound in print (examples: m, u, sh, ea, tch, dge)
3. **Morpheme:** a small, pronounceable unit or part of a word (prefix, suffix, Anglo Saxon base, Latin root, Greek form) that does carry meaning
4. **Free root:** the main part of a word that can stand on its own and be combined with prefixes or suffixes to form new words (examples: form, port, tract, script)
5. **Bound root:** the main part of a word that must be combined or 'bound' with affixes to form new words (examples: rupt, spect, struct, flect)
6. **Affix:** a prefix or suffix added to the beginning or end of a word or word part that forms new words and can change meaning, part of speech, and usage
7. **Inflectional morpheme:** a suffix added to a word that changes noun number, verb tense, or makes a comparison (examples: -s/es, -ed, -ing, -er, -est)
8. **Derivational morpheme:** a prefix or suffix added to a word or word part that forms new words and can change meaning, part of speech, and usage (examples: in-, un-, mis-, -ly, -er/or, -tion)
9. **Blend:** an important reading foundational skill that involves combining phonemes into short words or assembling morphemes into longer words (examples: s + i + t = sit, im + port + ed = imported, auto + graph = autograph)
10. **Segment:** another important reading foundational skill that involves separating short words into phonemes or disassembling longer words into morphemes (examples: sat = s + a + t, important = im + port + ant, biology = bio + logy)

## Common Morphemes in Frequency Order

Based on *Unlocking Literacy, Effective Decoding & Spelling, 2<sup>nd</sup> Edition, 2010*  
By Marcia K. Henry, Ph.D., Paul H. Brookes Publishing, Baltimore, MD

### Ten Prefixes and Meanings

Prefix Spellings	Meanings
in*, im	in, into, or toward
un	not or opposite of
mis	bad or wrong
dis*	not or apart
re*	again or back
de	down or away from
pre	before or earlier
en, em	put into or onto
sub	below or under
inter	between

\*occur in more than 58% of 3000 words in textbooks at GE 3-9

### Ten Suffixes and Meanings

Suffix Spellings	Meanings
s/es*	plural noun or singular verb
ed*	past-tense verb
ing*	present-past-future tense verb
ly**	like or in the manner of (adverb)
er, or**	someone who (noun)
ion (sion, tion, ation)**	act or state of (noun)
able, ible	able or can be done (adjective)
al, ial	relating to (adjective)
y	marked by (adjective)
ive	causing or making (adjective)

\*found in 65% of more than 2000 common suffixed words

\*\*found in another 17% of more than 2000 common suffixed words

### Eighteen Latin Roots and Meanings

Root Spellings	Meanings
form	to shape
port	to carry
rupt	to break or burst
tract	to draw or pull
scrib, script	to write
spect	to see, watch, or observe
struct	to build
flect, flex	to bend or curve
dict	to say or tell
fer	to bear or yield
mit, miss	to send
duce, duct	to lead
vers, vert	to turn
fact, fect, fict	to make or do
tend, tens, tent	to stretch or strain
ceipt, ceive, cept	to take or catch
tain, ten, tin	to hold
pos, pound	to put in place or set

### Twenty Greek Forms and Meanings

Form Spellings	Meanings	Form Spellings	Meanings
phon, phono	sound	scope	watch or see
photo	light	metro	city or measure
gram, graph	written or drawn	dem, demo	people
meter, metr	measure	geo	earth
tele	distant	techn	skill or art
bio	life	chron, chrono	time
micro	small	psych	mind or soul
hydra, hydro	water	auto	self
therm, thermo	heat or hot	logy, ology	study of
cracy, crat	rule	sphere	circle

## Assembling Latin Roots

The eighteen matrices for assembling Latin roots use the organization below and follow the frequency order from page 4. Teachers are encouraged to: (1) select the number of morphemes or new words to assemble, (2) change the order of matrices, (3) use the explicit instruction steps, (4) offer short lessons during the week or a longer lesson once a week (or month), and (5) integrate new students into continuing or standalone lessons.

<b>Common prefixes</b> form new words and change meaning or part of speech (2-4/matrix)	<b>Latin root</b> simple meaning  free or bound	<b>Most common inflectional suffixes</b> change noun number or verb tense (-s/es, -ed, -ing)
<b>Less common prefixes</b> form new words and change meaning or part of speech (0-3/matrix)		<b>Common derivational suffixes</b> form new words and may change part of speech (3-5/matrix)

### Explicit Instruction Steps

1. Explain the purpose: "There are many big or long words in newspapers, magazines, books, job ads, and on the internet. They often include word parts (or morphemes) called prefixes, roots, and suffixes. We will learn how to combine (or assemble) them and figure out their meanings and use."
2. Model the pronunciation of the Latin root and read its simple meaning. *Optional:* Discuss whether it is free or bound (most are bound).

**For steps #3-6, refer to the Word Key for correctly assembled words.**

3. Model how to assemble only free Latin roots + suffixes = new words; discuss meanings and changes.
4. Model the pronunciation of the prefixes and read their simple meanings from the chart on page 3 - or pronounce, define, and assemble one at a time.
5. Model how to assemble prefixes + Latin roots = new words; discuss meanings and changes (see underlined words in the Word Key).
6. Model or guide how to assemble prefixes + Latin roots + suffixes = new words; discuss meanings and changes.
7. Guide students in rereading, spelling, and using the new words in oral sentences.
8. Have students write A Few Sentences and share them with the group or a partner.

### Morpheme Matrix 1

	in re de	<b>form</b> to shape	s ed ing
		free	er ation al

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
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21. \_\_\_\_\_
22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## Morpheme Matrix 2

	im re de	<b>port</b> to carry	s ed ing
		free	er ion, ation able al

### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



### Morpheme Matrix 3

dis inter	<b>rupt</b> to break or burst	s ed ing
e (out)	bound	er tion ible ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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21. \_\_\_\_\_
22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 4

dis re de sub	<b>tract</b> to draw or pull	s ed ing
		or ion able, ible

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
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22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 5

in de pre sub	scrib or script* to write	s ed ing
		er ion able

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
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20. \_\_\_\_\_
21. \_\_\_\_\_
22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 6

in re	<b>spect</b> to see, watch or observe	s ed ing
sus (under)	bound	er, or ion able ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 7

in de	<b>struct</b> to build	s ed ing
con (together)	bound	or ion ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
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19. \_\_\_\_\_
20. \_\_\_\_\_
21. \_\_\_\_\_
22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 8

in re de	<b>flex or flex*</b> to bend or curve	s/es ed ing
		or ion ive

#### New Words:

- |           |           |
|-----------|-----------|
| 1. _____  | 13. _____ |
| 2. _____  | 14. _____ |
| 3. _____  | 15. _____ |
| 4. _____  | 16. _____ |
| 5. _____  | 17. _____ |
| 6. _____  | 18. _____ |
| 7. _____  | 19. _____ |
| 8. _____  | 20. _____ |
| 9. _____  | 21. _____ |
| 10. _____ | 22. _____ |
| 11. _____ | 23. _____ |
| 12. _____ | 24. _____ |

#### A Few Sentences:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Morpheme Matrix 9

	in pre inter	<b>dict</b> to say or tell	s ed ing
			ion able ive

#### New Words:

- |           |           |
|-----------|-----------|
| 1. _____  | 13. _____ |
| 2. _____  | 14. _____ |
| 3. _____  | 15. _____ |
| 4. _____  | 16. _____ |
| 5. _____  | 17. _____ |
| 6. _____  | 18. _____ |
| 7. _____  | 19. _____ |
| 8. _____  | 20. _____ |
| 9. _____  | 21. _____ |
| 10. _____ | 22. _____ |
| 11. _____ | 23. _____ |
| 12. _____ | 24. _____ |

#### A Few Sentences:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Morpheme Matrix 10

in re de pre	<b>fer</b> to bear or yield	s ed ing
trans (across)	bound	able al

**New Words:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

**A Few Sentences:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



### Morpheme Matrix 11

dis re sub	<b>mit or miss</b> to send	s/es ed ing
trans (across)	bound	er ion ible al

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 12

in de re	<b>duce or duct*</b> to lead	s ed ing
con (together) pro (forward)	bound and free*	or ion ible ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 13

in re sub	<b>vers or vert</b> to turn	s ed ing
con (together)	bound	ion ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 14

in de	<b>fact*, fect, fict</b> to make or do	s ed ing
per (through)	bound and free*	or ion al ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 15

in dis pre	<b>tend, tent, tens,</b> to stretch or strain	s ed ing
con (together)	bound	er ion ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 16

de re inter	<b>ceit, ceive, cept</b> to take or catch	s ed ing
con (together) per (through) ex (out)	bound	er, or ion able ive

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 17

re de	<b>tain, ten, tin</b> to hold	s ed ing
con (together) per (through) sus (under)	bound	er able tion

#### New Words:

- |           |           |
|-----------|-----------|
| 1. _____  | 13. _____ |
| 2. _____  | 14. _____ |
| 3. _____  | 15. _____ |
| 4. _____  | 16. _____ |
| 5. _____  | 17. _____ |
| 6. _____  | 18. _____ |
| 7. _____  | 19. _____ |
| 8. _____  | 20. _____ |
| 9. _____  | 21. _____ |
| 10. _____ | 22. _____ |
| 11. _____ | 23. _____ |
| 12. _____ | 24. _____ |

#### A Few Sentences:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Morpheme Matrix 18

im dis de	<b>pos or pound*</b> to put in place or set	s ed ing
com (together) ex (out) pro (forward)		er, or tion al

#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



## Assembling Greek Forms

The seven matrices for assembling Greek forms use the organization below and follow the frequency order from page 4. Teachers are also encouraged to: (1) select the number of morphemes or new words to assemble, (2) change the order of matrices, (3) use the explicit instruction steps, (4) offer short lessons during the week or a longer lesson once a week (or month), and (5) integrate new students into continuing or standalone lessons.

<b>Greek forms and meanings</b> (3-11/matrix)	<b>Greek form and meaning</b> (1-2/matrix)	<b>Common derivational suffixes and meanings</b> er (one who; n.) ic, ical (relating to; adj.) ist (one who; n.) y (subject or science; n.)
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### Explicit Instruction Steps

1. Explain the purpose: "When we study subjects such as civics, geography, economics, history, life or earth science, physics, chemistry, algebra, or geometry (like on the GED), we need to know even bigger and longer words. They may include a combination of morphemes called Greek forms. We will learn how to assemble them, sometimes add suffixes, and figure out their meanings and use."
2. Introduce or review the common letter-sound patterns *exclusive* to Greek: ph = /f/, ch = /k/, and y = /short i or long i/
3. Model the pronunciation of the middle Greek form and its meaning.
4. Model the pronunciations of the left Greek forms and their meanings – or pronounce, define, and assemble one at a time.
5. Model how to combine left Greek forms with the middle Greek form to make subject-specific words; discuss meanings and changes. **(See the Word Key for correctly assembled words.)**
6. When students are ready, model and guide how to combine the new Greek-based words with the derivational suffixes; discuss meanings and changes.
7. Guide students in rereading, spelling, and using the new words in oral sentences.
8. Have students write A Few Sentences and share them with the group or a partner.

**Note:** The most common inflectional suffixes (-s/es, -ed, -ing) are not included because students should be familiar with them after completing a number of Latin root matrices.

### Morpheme Matrix 19

auto (self) bio (life) chrono (time) demo (people) geo (earth) hydro (water) phono (sound) photo (light) tele (distant) thermo (heat) autobio (self+life)	<b>gram</b> <b>graph</b> written or drawn	er (one who) ic (relating to) ical (relating to) y (subject or science)
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#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
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24. \_\_\_\_\_

## Morpheme Matrix 20

bio (life) chrono (time) geo (earth) hydro (water) graph (written) meter (measure) phono (sound) psych (mind) techn (skill) microbio (small+life)	<b>logy</b> <b>ology</b> study of	ic (relating to) ical (relating to) ist (one who)
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### New Words:

1. \_\_\_\_\_
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3. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_

### Morpheme Matrix 21

bio (life) chrono (time) geo (earth) grapho (written) hydro (water) micro (small) photo (light) sphero (circle) tele (distant) thermo (heat)	<b>meter</b> <b>metr</b> measure	ic (relating to) y (subject or science)
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#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
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7. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_

### Morpheme Matrix 22

geo (earth) gramo (written) hydro (water) micro (small) tele (distant)	<b>phone</b> <b>phon</b> sound	eme (unit; n.) ic (relating to)
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#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
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24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

### Morpheme Matrix 23

astro (star) bio (life) eco (house) geo (earth) hemi (half) hydro (water) micro (small) photo (light) thermo (heat)	<b>sphere</b> circle	ic (relating to)
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#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
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7. \_\_\_\_\_
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19. \_\_\_\_\_
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22. \_\_\_\_\_
23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_

### Morpheme Matrix 24

auto (self) demo (people) techno (skill)	<b>cracy</b> <b>crat</b> rule	ic (relating to)
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#### New Words:

- |           |           |
|-----------|-----------|
| 1. _____  | 13. _____ |
| 2. _____  | 14. _____ |
| 3. _____  | 15. _____ |
| 4. _____  | 16. _____ |
| 5. _____  | 17. _____ |
| 6. _____  | 18. _____ |
| 7. _____  | 19. _____ |
| 8. _____  | 20. _____ |
| 9. _____  | 21. _____ |
| 10. _____ | 22. _____ |
| 11. _____ | 23. _____ |
| 12. _____ | 24. _____ |

#### A Few Sentences:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Morpheme Matrix 25

bio (life) chrono (time) hydro (water) micro (small) phono (sound) photo (light) tele (distant) thermo (heat)	<b>scope</b> watch or see	ic (relating to)
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#### New Words:

1. \_\_\_\_\_
2. \_\_\_\_\_
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23. \_\_\_\_\_
24. \_\_\_\_\_

#### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_



## Morpheme Matrix

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### New Words:

1. \_\_\_\_\_
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24. \_\_\_\_\_

### A Few Sentences:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## Word Key

\*note vowel or consonant changes in spelling or pronunciation

**Matrix 1:** forms, formed, forming, former, formation\*, formal, inform, reform, deform, informs, informed, informing, informer, information\*, informal, reforms, reformed, reforming, reformer, reformation\*, deforms, deformed, deforming, deformer, deformation\*

**Matrix 2:** ports, ported, porting, porter, portion, portable, portal, import, report, deport, imports, imported, importing, importer, importation\*, importable, reports, reported, reporting, reporter, reportable, deports, deported, deporting, deportation\*, deportable

**Matrix 3:** disrupt, interrupt, erupt, disrupts, disrupted, disrupting, disrupter, disruption\*, disruptive, interrupts, interrupted, interrupting, interrupter, interruption\*, interruptible, interruptive, erupts, erupted, erupting, eruption\*, eruptible, eruptive

**Matrix 4:** tracts, tractor, traction\*, tractable, distract, retract, detract, subtract, distracts, distracted, distracting, distractor, distraction\*, distractible, retracts, retracted, retracting, retractor, retraction\*, retractable, detracts, detracted, detracting, detractor, detraction\*, subtracts, subtracted, subtraction\*

**Matrix 5:** scripts, scripted, scripting, scripter, inscribe\*, describe\*, prescribe\*, subscribe\*, inscribes, inscribed, inscribing\*, inscriber, inscribable\*, describes, described, describing\*, describer, describable\*, prescribes, prescribed, prescribing\*, prescriber, subscribes, subscribed, subscribing\*, subscriber, descript, prescript, subscript, descripts, descripted, descripting, description\*, prescripts, prescription\*, subscripts, subscripted, subscripting, subscription\*, inscription\*

**Matrix 6:** inspect, respect, suspect, inspects, inspected, inspecting, inspector, inspection\*, respects, respected, respecting, respector, respectable, respective, suspects, suspected, suspecting, suspicion\*

**Matrix 7:** instruct, destruct, construct, instructs, instructed, instructing, instructor, instruction\*, instructive, destructs, destructed, destructing, destructor, destruction\*, destructive, constructs, constructed, constructing, constructor, construction\*, constructive

**Matrix 8:** flexes, flexed, flexing, flexor, flexion, inflect, reflect, deflect, inflects, inflected, inflecting, inflector, inflection\*, inflective, reflects, reflected, reflecting, reflector, reflection\*, reflective, deflects, deflected, deflector, deflection\*, deflective, reflex, reflexes, reflexed, reflexing, reflexive

**Matrix 9:** indict, predict, interdict, indicts, indicted, indicting, indictable, predicts, predicted, predicting, prediction\*, predictable, predictive, interdicts, interdicted, interdicting, interdiction\* (plus diction\*)

**Matrix 10:** infer, refer, defer, prefer, transfer, infers, inferred\*, inferring\*, inferable, refers, referred\*, referring\*, referable, referral\*, defers, deferred\*, deferring\*, deferrable\*, deferral, prefers, preferred\*, preferring\*, preferable, transfers, transferred\*, transferring\*, transferable, transferal

**Matrix 11:** remit, submit, transmit, remits, remitted\*, remitting\*, remitter\*, remittable\*, remittal\*, submits, submitted\*, submitting\*, submitter\*, submittal\*, transmits, transmitted\*, transmitting\*, transmitter\*, transmittal\*, dismiss, remiss, dismisses, dismissed, dismissing, dismissible, dismissal, remission\*, remissible, submission\*, transmission\*, transmissible

**Matrix 12:** induce, deduce, reduce, produce, induces, induced, inducing\*, inducible\*, deduces, deduced, deducing\*, deducible\*, reduces, reduced, reducing\*, reducible\*, produces, produced, producing\*, producible\*, induct, deduct, conduct, product, inducts, inducted, inducting, inductor, induction\*, inductive, deducts, deducted, deducting, deduction\*, deductive, reduction\*, reductive, conducts, conducted, conducting, conductor, conduction\*, conductive, products, production\*, productive (plus ducts, ducted, ducting)

**Matrix 13:** inverse\*, reverse\*, converse\*, inverses, inversed, inverting\*, inversion\*, reverses, reversed, reversing\*, reversion\*, subversion\*, subversive, converses, conversed, conversing\*, conversion\*, invert, revert, subvert, convert, inverts, inverted, inverting, reverts, reverted, reverting, subverts, subverted, subverting, converts, converted, converting

**Matrix 14:** facts, factor, faction, factual, infect, defect, perfect, infects, infected, infecting, infector, infection\*, infective, defects, defected, defecting, defector, defection\*, defective, perfects, perfected, perfecting, perfection\*, perfective (plus fiction\*, fictional\*, fictive)

**Matrix 15:** intend, distend, pretend, contend, intends, intended, intending, intender, distends, distended, distending, pretends, pretended, pretending, pretender, contends, contended, contending, contender, intent, content, intents, intention, intentions\*, contents, contention\*, contentions\*, pretentions\*, intense\*, pretense\*, intensive, pretenses, (plus tenses, tensed, tensing\*, tenser, tension\*)

**Matrix 16:** deceit, receipt, conceit, receipts, deceive, receive, conceive, perceive, deceives, deceived, deceiving\*, deceiver, deceivable\*, receives, received, receiving\*, receiver, receivable\*, conceives, conceived, conceiving\*, conceiver, conceivable\*, perceives, perceived, perceiving\*, perceiver, perceivable\*, intercept, concept, percept, except, intercepts, intercepted, intercepting, interceptor, interception\*, interceptive, concepts, conception\*, conceptive, percepts, perception\*, perceptive, excepts, excepted, excepting, exception\*, exceptive, deceptive, receptive

**Matrix 17:** retain, detain, contain, pertain, sustain, retains, retained, retaining, retainer, retainable, detains, detained, detaining, detainer, detainable, contains, contained, containing, container, containable, pertains, pertained, pertaining, sustains, sustained, sustaining, sustainer, sustainable, retention\*, detention\*, contention\*, retentions\*, detentions\*, contentions\*, continent, pertinent (plus tenable)

**Matrix 18:** pounds, pounded, pounding, pounder, impose\*, dispose\*, depose\*, compose\*, expose\*, propose\*, imposes, imposed, imposing\*, imposer, imposition\*, disposes, disposed, disposing\*, disposer, disposition\*, disposal\*, deposes, deposed, depositing\*, deposer, deposition\*, composes, composed, composer, composition\*, compositional\*, exposes, exposed, exposing\*, exposor, exposition\*, expositional\*, proposes, proposed, proposing\*, proposer, proposition\*, propositional\*, impound, compound, expound, propound, impounds, impounded, impounding, impounder, compounds, compounded, compounding, compounder, expounds, expounder, expounding, expounder, propounds, propounded, propounding

**Matrix 19:** autograph, biograph, chronogram, chronograph, hydrograph, phonogram, phonograph, photogram, photograph, telegram, telegraph, thermograph, biographer, chronographer, demographer, geographer, hydrographer, photographer, telegrapher, autographic, biographic, chronographic, demographic, geographic, hydrographic, phonographic, photographic, telegraphic, autobiographic, autographical, biographical, hydrographical, photographic, autobiographical, biography, demography, geography, hydrography, phonography, photography, telegraphy, thermography, autobiography

**Matrix 20:** biology, chronology, geology, hydrology, graphology, meteorology, phonology, psychology, technology, microbiology, biologic, chronologic, geologic, hydrologic, meteorologic, phonologic, psychologic, technologic, microbiologic, biological, chronological, geological, hydrological, meteorological, phonological, psychological, technological, microbiological, biologist, chronologist, geologist, hydrologist, phonologist, psychologist, technologist, microbiologist

**Matrix 21:** chronometer, geometer, hydrometer, micrometer, photometer, telemeter, thermometer, biometric, chronometric, geometric, hydrometric, micrometric, photometric, telemetric, thermometric, biometry, chronometry, geometry, micrometry, photometry, telemetry, thermometry

**Matrix 22:** phoneme, phonemic, phonic, geophone, geophonic, gramophone, gramophonic, hydrophone, microphone, microphonic, telephone, telephonic (plus homophone, megaphone, vibraphone, xylophone)

**Matrix 23:** spherical, astrosphere, biosphere, ecosphere, geosphere, hemisphere, hydrosphere, microsphere, photosphere, thermosphere (plus atmosphere, atmospheric, stratosphere, stratospheric)

**Matrix 24:** autocracy, democracy, technocracy, autocrat, democrat, technocrat, autocratic, democratic, technocratic (plus aristocracy, aristocrat, aristocratic, bureaucracy, bureaucrat, bureaucratic, mediocracy)

**Matrix 25:** bioscope, chronoscope, hydroscope, microscope, phonoscope, telescope, chronoscopic, hydrosopic, microscopic, telescopic (plus endoscope, endoscopic, horoscope, kaleidoscope)

## References

- Bangs, K. E. & Binder, K. S. (2016) Morphological awareness intervention: improving spelling, vocabulary, and reading comprehension for adult learners. *Journal of Research and Practice for Adult Literacy, Secondary, and Basic Education*, Volume 5, pages 49-56.
- Henry, M. K. (2010). *Unlocking Literacy, Effective Decoding and Spelling Instruction, 2<sup>nd</sup> Edition*. Paul H. Brookes Publishing Company. Baltimore, MD.
- National Institute for Literacy (2008). *Key literacy component: Morphology*. Retrieved from all about Adolescent Literacy at adlit.org
- Tighe, E. & Schatschneider, C. (2016). Examining the relationships of component reading skills to reading comprehension in struggling adult readers: A meta-analysis. *Journal of Learning Disabilities*, Vol. 49 (4).