

Teach a Student to Spell: Level 5

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Morpheme Glossary

A

a-: (1) on, in, into, at, engaged in; (2) off, from; (3) to, toward, for; (4) reduced form of Old English ge-; (5) away, off, of, away from; (6) negating prefix

-a: (1) plural noun suffix of Latin -um and -on; (2) forms nouns in Romantic, Latin, and Greek words

ab-: away, from, from off, down, off, away from (denotes disjunction, separation, departure)

abs-: away, from, from off, down, off, away from (denotes disjunction, separation, departure)
(form of ab- before <c>, <q>, <t>)

-ability: inclination or suitability for a specified function or condition (suffixal construction, forms a noun, a + B + (i)l(e) + i + ty, not related to <ability> base)

-able: capable, liable, allowed, worthy, requiring, full of, causing, bound to be (suffixal construction, forms an adjective, a + B + (i)l(e), not related to base <Able>)

-ably: forms adverbs that correspond to -able adjectives (suffixal construction, forms an adverb, a + B + ly)

ac-: to, toward, in addition to (assimilated form of ad-)

-ac: forms an adjective denoting "one affected with, of, belonging to" (often preceded by -i-)

-ace: (1) adjective suffix denoting "resembling"; (2) pejorative noun suffix

Ache: suffer, pain

-acious: adjective suffix denoting "resembling, full of, abounding in, having, possession of"

-acity: noun suffix

Act: do, perform (see also Age)

ad-: to, toward, with regard to, in relation to; sometimes merely emphatic

-ade: denotes an action or product of an action

-ae: Latin plural

Aer: air, atmosphere, gases

After: behind, later in time, more away, farther off

ag-: to, toward, with regard to, in relation to; sometimes merely emphatic (assimilated form of ad- before <g>)

Age: do, perform (see also Act)

-age: forms a noun of act, process, function, condition

Agr: field

-al: (1) forms an adjective meaning "of, like, related to, pertaining to"; (2) forms a noun of action; (3) chemical suffix

All: each other, other, different

Alt: high

Amb: both, on both sides; around, round about (often followed by -i-)

-an: (1) forms an adjective denoting "pertaining to"; (2) agent suffix

ana-: up, on, upon, up to, toward, throughout, back, backwards, again, anew

-ance: forms a noun (see also -ence)

Ang: bend

Angi: case, capsule, vessel, jar, vat, vase (often followed by -o-)

anti-: against, opposed to, opposite of, instead (see also ant-)

ant-: against, opposed to, opposite of, instead (shortened form of anti- before vowels and <h>)

-ant: forms an agent noun, or a noun denoting someone or something that performs the action of
a verb -ar: forms an adjective meaning "pertaining to, of the nature of"

-ar: (1) forms an adjective meaning "pertaining to, of the nature of"; (2) agent suffix

Arbor: (1) grass, herb, garden; (2) tree

-areous: adjective suffix denoting "resembling, full of, abounding in, having, possession of"

Artery: blood vessel, windpipe

as-: to, toward, with regard to, in relation to; sometimes merely emphatic (assimilated form of ad-
before <s>)

-ase: chemical suffix for enzymes

Ast(e)r: star (often followed by -o-)

at-: to, toward, with regard to, in relation to; sometimes merely emphatic (assimilated form of ad-
)

-at: French suffix denoting an action or a result of an action (see also -ate)

-ate: (1) forms a noun; (2) forms a verb; (3) forms an adjective; (4) chemical suffix

Aut: self, one's own, by oneself, of oneself (often followed by -o-)

B

Back: not front, at or near the rear

Ball: round object, compact spherical body

Bar(e): weight (often followed by -o-)

be-: (1) forms a verb; (2) forms a noun; (3) intensive prefix

Beat: strike

Belly: stomach, pouch

Ben(e): well, in the right way, honorably, properly

Bi: life (often followed by -o-)

bi-: two, having two, twice, double, doubly, twofold, once every two (see also di-)

Bibli: book, paper, scroll
Big: not small, large, of great size
Bitter: sharp, acrid
Board: piece of timber sawn flat and thin, table
Book: writing, written document, grant or assign by charter
Box: rectangular container
Boy: male child
Brachy: short
Brady: slow, delayed, tardy
Break: divide solid matter violently into parts or fragments, injure, destroy, curtail, rush into, burst forth, spring out, subdue, tame
Broke: simple past of break
Brush: (1) shrubbery; (2) sweep, rub
Brute: heavy, dull, stupid, insensible, unreasonable
Burn: consume with fire, roast, broil, toast
Bush: many-stemmed woody plant

C

caco-: bad, ill, poor
Calc: (1) limestone, chalk; (2) heel
Calli: beautiful, beauteous, noble, good
Candy: crystallized sugar
Cardi: heart (often followed by -o-)
Cart: leaf of paper, writing, charter, tablet (often followed by -o-)
Cast(e): cut, separate, cut off
Cent: one hundred
Chicken: domesticated species of fowl
Chromate: color, complexion, character
Chrono: time
Chuck: water
Cide: kill, cut, slay
Cinemat: movement (often followed by -o-)
Circ: round, ring
Cit(e): arouse, shake, excite, set in motion
Citizen: inhabitant
City: town

Cive: townsman

Clause: close, shut, end (see also Close, Cloist(e)r, Claustr, Clude, Cluse)

Claustr: shut, confine (see also Close, Clause, Cloist(e)r, Clude, Cluse)

Clere: clear, light, lighted

Cloist(e)r: confine (see also Close, Clause, Claustr, Clude, Cluse)

Close: shut, confine (see also Clause, Cloist(e)r, Claustr, Clude, Cluse)

Clude: shut, confine (see also Close, Clause, Cloist(e)r, Claustr, Cluse)

Cluse: shut, confine (see also Close, Clause, Cloist(e)r, Claustr, Clude)

co-: together, with (form of com- before vowels, <h>, <gn>)

Cold: not warm, having a low temperature

Cole: cultivation, habitat

com-: together, with

con-: together, with (assimilated form of com- before <c>, <d>, <j>, <n>, <q>, <s>, <t>, <v>)

cor-: together, with (assimilated form of com- before <r>)

Cord: heart

Cosm: order, good order, orderly arrangement (often followed by -o-)

Count: (1) add up, tell a story; (2) title of nobility

Counter: against, in opposition, contrary, in return, corresponding

Crowd: press, crush, shove, oppress

Crypt: hidden, concealed, secret (often followed by -o-)

-cy: forms a noun of quality or rank

Cyte: cell

D

Dactyl: finger

Day: period during which the sun is above the horizon

de-: (1) down, down from, from, off, off, away, from among; (2) completely, totally; (3) negating prefix

Deca: ten, multiplied by ten

Dece: ten

Deme: common people (often followed by -o-)

Dendr: tree

Deny: say no

Dermate: skin

Di: two, double, twice, twofold (see also bi-)

di-: (1) negating prefix (lack of, not, opposite of, apart, away, asunder) (assimilated form of dis- before <g, l, r, s, v>); (2) through, throughout, in different directions, between, also often merely intensive, thoroughly, entirely (form of dia-)

dia-: through, throughout, in different directions, between, also often merely intensive, thoroughly, entirely (see also di-)

Dict: say, state, proclaim, make known, allege, declare positively

dis-: negating prefix (lack of, not, opposite of, apart, away, asunder) (see also di-)

Disc: thin circular plate

Dorm: sleep

Down: not up, conclusion, opposite side

Dry: not wet

E

e-: (1) up, out of; (2) out of, from, from within, from which time, since, according to, in regard to, upwards, completely, deprive of, without, former (reduced form of ex- before consonants); (3) alternate form of Old English ge-

-e-: Latin connecting vowel

-e: French past participle suffix

Ear: organ of hearing

Ece: house, dwelling place, habitation

Echo: sound repeated by reflection

-ed: forms simple past verbs and past participles

-ee: (1) agent suffix denoting a recipient of an action; (2) diminutive suffix

-el: (1) suffix denoting appliance or tool (see also -le); (2) diminutive suffix; (3) repetitive or intensive suffix; (4) Latin suffix

Electr: amber, pale gold, resembling amber (often followed by -o-)

Eme: blood (see also Heme)

-eme: unit

en-: near, at, in, into on, within

-ence: forms a noun (see also -ance)

-end: forms a noun denoting a patient or recipient of an action

endo-: in, inside, within, internal

Ent: be (see also Es, Est, S)

-ent: (1) forms a noun; (2) forms a verb (see also -ant)

epi-: on, upon, above, in addition to, toward, among

-er: (1) comparative suffix; (2) agent suffix; (3) forms jocular or familiar words; (4) Germanic derivational suffix of verbs indicating repeated or diminutive action

Ern: house, place for storing

Es: be (see also Ent, Est, S)

-es: (1) forms plural nouns; (2) forms third person singular present tense verbs

-ess: feminine suffix

-esque: resembling or suggesting the style of, like, in the manner of

Est: be (see also Ent, Es, S)

-est: superlative suffix

-et: diminutive suffix

Ethe: character; habit, custom, disposition

-ette: diminutive suffix

-eur: agent suffix (adopted from French)

ex-: out of, from, from within, from which time, since, according to, in regard to, upwards, completely, deprive of, without, former (see also e-)

F

Face: (1) do, make (see also Fic(e), Fy); (2) appearance, form, figure, visage, countenance

Faint: grow weak, become enfeebled

Feel: touch, have a sensory experience of, perceive, sense

Felt: simple past and past participle of feel

Fer(e): bear, carry, produce

Fic(e): make (see also Face, Fy)

Film: membrane, thin skin

Fish: vertebrate with gills and fins adapted for living in the water

Fist: clenched hand

Force: strength, power, might

Fore: in front of, in presence of, because of, for the sake of, earlier in time, instead of, previously, formerly, once

Form: (1) shape, figure, appearance; (2) first

Free: exempt from

Fri: love

Fuge: flee, running away, act of fleeing

-ful: full of, having, characterized by, amount or volume contained

Fum(e): vapor, odorous vapor, exhalation, smoke, steam, dust

Fun(e): rope, line, cord

Fy: make (see also Face, Fic(e))

G

Ge: earth, land, country (often followed by -o-)

Gen(e): bear, produce, make, beget

Giga: giant

Girl: female child

Globe: sphere

Gluc(e): sweet

Glyph: cut, engrave, carve (see also Gyp)

Glypt: cut, engrave, carve (see also Glyph)

Grade: degree, series, walk, step, go

Gram: draw, write, letter

Graph: write, draw

Grave: (1) heavy; (2) carve

Gravit: heaviness

Grease: oil, fat

Great: big, tall, thick, stout, massive, coarse

Guilt: put, place, halt

H

Hale: breath

Half: side, part

Head: top of the body, upper end

Heart: organ that pumps blood; soul, spirit, will, desire; courage

Heave: lift, raise, exalt

Hect: a hundred

Heme: blood (see also Eme)

Hepta: seven

hetero-: other, different, another

Hexa: six

Hier: sacred

Hist: tissue, web, mast, anything set upright

Histor: witness, know

Hobo: migratory laborer, wandering homeless person

Hole: whole (often followed by -o)

homo-: same, the same, equal, like

House: dwelling, shelter, building designed to be used as a residence

Hydr: water (often followed by -o)

Hygr: wet, moist, fluid, weak, soft, flexible (often followed by -o)

hyper-: over, above, beyond, exceedingly, to excess

hypo-: under, beneath, less, less than

I

-i-: Latin connecting vowel

-ia: (1) feminine noun suffix, abstract, and taxonomic noun; (2) Latin plural ending of -e

-ible: capable, liable, allowed, worthy, requiring, full of, causing, bound to be (see also -able)

-ic: forms an adjective meaning "having to do with, having the nature of, being, made of, caused by, similar to"

-ice: forms abstract nouns

-id: forms an adjective meaning "belonging to, connected with, member of a group or class" (often preceded by -o-)

Ideo: form, the look of a thing, kind, sort, nature, mode, fashion, class, species

Ige: to go (see also Act and Age)

Igloo: dome-shaped hut of ice and snow

-il: suffix denoting ability or capacity (see also -ile)

-ile: suffix denoting ability or capacity (see also -il)

im-: negating prefix (assimilated form of in- before labials , <m>, <p>)

In: not out, into, upon, on, at, among, about, during

in-: (1) negating prefix; (2) into, in, on, upon

-in: (1) forms an adjective (see also -ine); (2) chemical suffix

-ine: forms an adjective (see also -in); (2) chemical suffix

-ing: forms present participles

-ino: scientific particle suffix

inter-: between, among, during, betwixt, in the midst of

intra-: within, inside, on the inside, in, into, during, in the course of

-ion: forms a noun indicating a state, condition, or action

ir-: (1) negating prefix; (2) into, in, on, upon (assimilated form of in- before <r>)

-ise: forms a verb (see also -ize)

-ish: (1) forms an adjective meaning "of the nature or character of" or "of the nativity or country of"; (2) forms a verb

-ism: forms a noun denoting a practice, system, doctrine, belief

iso-: equal, similar, identical, even, level

-ist: forms a noun denoting one who does or makes

-it: frequentive and intensive verb suffix

-itate: verb suffix (suffixal construction from -i- + -ty + -ate)

-it(e): noun, adjective, and verb suffix

-iton: scientific suffix denoting a subatomic particle (suffixal construction from -i- + -ty + -on)

-itino: scientific suffix denoting a supersymmetric partner (suffixal construction from -iton + -ino, from -i- + -ty + -on)

-ium: (1) chemical suffix; (2) denotes a structure, category, mass, place

-ive: forms adjectives denoting "pertaining to, tending to, doing, serving to do"

-ize: forms a verb (preferred American spelling) (also -ise)

J

K

Kill: deprive of life, put to death, murder, execute, end

Kilo: one thousand

Kin: family, race, kind, sort, rank, nature

Kind: class, sort, variety, family, doing good for others, friendly (both meanings derive from Kin)

L

Lact: milk

Lamp: light, shine

Land: ground, soil, home region, territory marked by political boundaries

Large: great, bountiful, broad, wide, generous, abundant, copious, plentiful

-less: lacking, lacking, cannot be, does not

Lex: word, phrase, reason, way of speech

Light: (1) brightness, radiant energy, that which makes things visible; (2) not heavy, having little actual weight, go down or descend

Like: having the same characteristics or qualities, with, together, body, form, same

Line: string, mark, bound, limit, goal

Lion: a big cat

Lipe: leave, lacking, having no

Lit(e): suit, lawsuit, dispute, quarrel, strife

Lith: stone

Loge: speak, tell, collect, gather (often preceded by -o-)

-ly: (1) forms an adjective meaning "having qualities of, of the form of, or nature of"; (2) forms an adverb meaning "in a manner denoted by"

M

Macr: long, large

Magn: variety of magnetite characterized by its power of attracting iron and steel, lodestone, region in Thessaly where magnetized ore was obtained, sense of "something which attracts"

Mal(e): bad, badly, ill, poorly, wrong, wrongly, evil, imperfection, deficiency

Mamm: breast

Mane: passion, madness, frenzy, enthusiasm, fury

Mega: great, large, mighty

Mene: month, moon

-ment: forms a noun indicating the result or product of the action of the verb or the means or instrument of the action

Micr: small, little, petty, trivial, slight

Migr: move, change location

Mill: a thousand

mis-: (1) bad, wrong, divergent, astray, difference, change; (2) negating prefix

Mit(e): gentle, soft

Mitten: half-glove

Mone: one, single, alone (often followed by -o-)

Morrow: morn

Mouth: opening, door, gate

Mult: many, much

Mune: office, duty, public, service, gift

Muta: mutation (clip of mutation)

Mute: move, change, shift, alter

Mye: muscle

Myth: speech, thought, word, discourse, conversation, story, saga, tale, anything delivered by word of mouth

N

Nano: dwarf

Nav(e): ship, sail

Nege: deny, say not

-ness: forms a noun indicating an action, quality, or state

Neur: nerve

New: not old, made or established for the first time

Night: the dark part of a day

non-: negating prefix

Nona: nine

Null: no, none, not any, void, invalid

Nut: fruit of certain trees and shrubs that have the seed enclosed in a woody covering that remains closed when ripe

O

-o-: Greek connecting vowel

-o: (1) Latin adverb suffix; (2) Latin present tense suffix; (3) diminutive suffix

ob-: (1) toward, to, against, before, near, across, down, in the direction of, in front of, before, at, upon, about in the way of with regard to, because of; (2) intensive prefix

oc-: (1) toward, to, against, before, near, across, down, in the direction of, in front of, before, at, upon, about in the way of with regard to, because of; (2) intensive prefix (assimilated form of ob- before <c>)

Ocean: the vast body of water on the surface of the globe

Octa: eight

Ode: way, path, track, road

Odon: tooth

Office: service, work-doing

Omn: all, every, the whole, of every kind (often followed by -i-)

-on: (1) Latin suffix; (2) chemical and scientific suffix

op-: toward, against, before, near, across, down, in the direction of, in front of, before, toward, to, at, upon, about, in the way of; with regard to, because of; intensifying prefix (assimilated form of ob- before <p>)

Open: not closed, exposed, evident

-or: (1) forms a noun denoting a quality, state, or condition; (2) agent suffix

Orth: straight, true, correct, regular (often followed by -o-)

-ory: (1) adjective suffix denoting "of, pertaining to, serving for"; (2) noun suffix denoting "that which pertains to or serves for"

-ose: (1) forms an adjective meaning "having, full of, having to do with, doing, inclined to" (stressed) (see also -ous); (2) chemical suffix

-osis: state or condition, a state of disease

-ous: forms an adjective meaning "having, full of, having to do with, doing, inclined to" (unstressed) (see also -ose)

Out: not in, without, outside, beyond the bounds of, not within

Over: beyond, above, in place or position higher than, upon, in, across, past, more than, on high

-ow: Old English oblique suffix

Ox: large bovine animal

Oxy: sharp, pungent

P

Pain: suffering, retribution, penalty (see also Pene)

Paint: decorate, color (see also Pict)

pan-: all, every, whole, all-inclusive

par-: alongside, beside, near, beyond, altered, contrary, irregular, abnormal, issuing from, against (see also para-)

para-: alongside, beside, near, beyond, altered, contrary, irregular, abnormal, issuing from, against (see also par-)

Path: one suffering from, one versed in (agentive)

Pause: stop, cease, interrupt

Pene: fine, atone, punish, retribution (see also Pain)

Penta: five

per-: through, throughout, thoroughly, entirely, utterly

peri-: around, about, enclosing

Peter: rock, stone (see also Petr)

Petr: rock (see also Peter)

Phile: love, one that loves, likes, or is attracted to, loving, friendly, dear

Phobe: fear

Phone: sound, voice (often followed by -o-)

Phote: light, shine (often followed by -o-)

Phyte: plant, growth

Pict: color, paint (see also Paint)

poly-: many, much

Pope: people

Pose: put, place, halt

Post: beam, rod, pole

post-: behind, after, afterward

pre-: before

Prime: first, original, chief, principal

pro-: forward, forth, toward the front, beforehand, in advance, taking care of, in place of, on behalf of, before, for, in exchange for, just as, in front of, sooner, in favor of, favoring

Prone: inclined

Prot(e): first, forward, chief

Pseud: false, lie, deceive, cheat (often followed by -o-)

Psych: soul, mind, spirit (often followed by -o-)

Publ: pertaining to the people

Pulmon: lung

Pune: correct, chastise, discipline

pur-: perfective prefix (an action viewed as a simple whole) (variant of pro-)

Q

Quer(e): seek, gain, ask (see also Quest, Quire, Quise)

Quest: seek, gain, ask (see also Quer(e), Quire, Quise)

Quint: five

Quire: seek, gain, ask (see also Quer(e), Quest, Quise)

Quise: seek, gain, ask (see also Quer(e), Quest, Quire)

R

Radi: ray, shaft, rod, spoke of a wheel, beam of light

Re: with reference to, in the matter of, property, goods, matter, thing, affair

re-: (1) back, back from, back to the original place, again, anew, once more; (2) intensive prefix

Rect: direct, guide, straight (see also Rege)

red-: back, back from, back to the original place, again, anew, once more (variation of the Latin prefix re- before vowels and <h>)

Rege: direct, guide, straight (see also Rect)

Rend: tear a hole in, slash from top to bottom, separate in parts with force or sudden violence

Rene: kidney

Ribbon: long, narrow strip of material

Root: underground part of a plant, base

-ry: forms a noun denoting "place for, art of, condition of, quantity of," modern use denoting "the collectivity of" or "an example of" (reduced form of -ery, also analyzable as -(e)r + -y)

S

S: be (see also Es, Est, Ent)

-s: (1) forms plural nouns; (2) forms third person singular present tense verbs

Salt: chemical compound consisting of sodium chloride and used as a condiment and preservative

Sand: fine particles of rocks

Scape: region, land, condition

se-: apart, away

Search: look

Secund: second, following, coming next

Seism: shaking, shock, earthquake

Semi: half, part, partly, partial, almost, imperfect, twice

Serve: be a slave

Shade: partial darkness

-ship: forms a noun denoting quality, condition, act, power, skill, office, position, relation between

Sick: ill, unwell, diseased, feeble, weak, corrupt, sad, troubled

Side: flank, edge, coast

Sign: identifying mark, token, indication, symbol; proof

Snow: frozen water that falls as precipitation

Soft: not hard, gentle, mild-natured, easeful, comfortable, calm, undisturbed, luxurious

Sol(e): sun

Sole: whole, entire

Somate: body, mass

Somn: sleep

Sone: sound

Sore: painful, grievous, aching, sad, wounding

Source: begin, rise up

Spect(e)r: appearance, image, apparition, observation

Stene: narrow, close, small, tight, slim

Stomach: gullet, internal pouch of the body into which food is digested

Stone: rock

Story: account, tale, picture

Stout: strong, valiant, brave

String: line, slender cord, thick thread

sub-: under, beneath; behind, from under, resulting from further division, beneath, at the foot of,
close to, up to, towards, within, during, subject to, in the power of, a little, somewhat

Sun: the star at the center of a solar system

Super: above, over, beyond

Sweet: pleasant, agreeable

T

Tachy: rapid, swift, fast

Take: grip, seize by force, lay hold of

-tas: Latin abstract noun suffix

Tele: far, far off, operating over distance, afar, at or to a distance

Tell: reckon, calculate, number, compute, consider, think, esteem, account

Tender: soft, delicate, young

Tera: monster

Terr: earth, land

Tetra: four

Therm: heat

Thorace: chest, breast

Throb: shudder, pulsate, pound

Thyre: oblong, door-shaped shield

Tine: hold, keep

To: in the direction of, as far as, for the purpose of, furthermore

Tome: cut, section, slice

Tone: sound

Tooth: sharp projection

Top: not bottom, highest point of something vertical, most elevated end or point, summit, crest

Tope: place, region, space

trans-: across, over, beyond, through, on the other side of, go beyond

Tri: three, having three, once every three

Tribe: group

Trot: go, a specific gait faster than a walk and slower than a run

True: faithful, trustworthy, honest, steady, real, genuine

-tude: forms abstract nouns

-ty: (1) forms a noun denoting a quality or condition; (2) ten

Type: figure, image, form, kind

U

-u-: Latin connecting vowel

-ue: Latin noun suffix

(U)le: go

-ule: (1) diminutive suffix, (2) Latin suffix

-um: Latin singular suffix

un-: negating prefix

Under: beneath, among, before, in the presence of, in subjection to, under the rule of, below, underneath, expressing position with reference to that which is above

Une: one

Up: not down, to or toward a point or place higher than another

-ure: forms an abstract noun of action

-us: Latin singular suffix

-ute: Latin stem suffix

V

Vasc: vessel, tube, pertaining to circulation (see also Vas(e))

Vas(e): tube, duct, conduit, vessel, vase (see also Vasc)

Vene: vein

Verge: turn, bend

Vide: see

Vis: deputy

W

-ward: suffix indicating direction

Warm: not cold, of a somewhat high temperature

Water: liquid of molecular formula H₂O

Weak: not strong, pliant, soft, yielding

Weed: plant not valued for use or beauty

Whole: entire

Wide: vast, broad, long, extending through the whole of

Work: something done

Worm: tubular invertebrate, serpent, snake, dragon, reptile

Wort: root, herb, vegetable, plant, spice

X

Xere: dry, withered

Xyle: wood

Y

-y: (1) forms a noun indicating a state, condition, or quality; (2) forms an adjective meaning "full of, characterized by, or inclined to"; (3) diminutive suffix

Yester: the other

Z

Question 4 Answers

List 1

<guilt>

What is the <u> doing in *guilt*?

The <u> is an etymological marker that distinguishes *guilt* from *gilt*.

<prone>

What is the <e> doing in *prone*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-ate*?

The replaceable <e> marks the <o> as spelling [ou]. The <e> is replaced.

List 2

<shade>

What spells [ʃ] in *shade*?

<sh>

What is the <e> doing in *shade*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-ed*?

The replaceable <e> marks the <a> as spelling [eɪ]. The <e> is replaced.

<verge>

What is the <e> doing in *verge*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-es*?

The replaceable <e> marks the <g> as spelling [dʒ]. The <e> is replaced.

List 3

<brute>

What is the <e> doing in *brute*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-ish*?

The replaceable <e> marks the <u> as spelling [u]. The <e> is replaced.

Why does *brutalizes* take an -es instead of -s?

Brutalize needs an extra syllable in the third person singular.

What is the -i- doing in *brutality*?

The <i> is a connecting vowel.

<globe>

What is the <e> doing in *globe*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as -a/?

The replaceable <e> marks the <o> as spelling [ou]. The <e> is replaced.

Why does *globalizes* take an -es instead of -s?

Globalize needs an extra syllable in the third person singular.

What is the -o- doing in *globoid*, *hemoglobin*, *myoglobin*, *neuroglobin*, *cytoglobin*, *immunoglobulin*, and *lactoglobulin*?

The <o> is a connecting vowel.

What is the difference between -ous and -ose?

The -ous suffix is unstressed. The -ose suffix is stressed.

List 4

<morrow>

Identify the graphemes in *morrow*. A grapheme is one, two, or three letters that spell a sound.

<m.o.rr.ow>

Why is *tomorrow* spelled with one <m>?

The morphemes are <To> and <Morrow>. Compound <To + Morrow> does not result in any doubling because both morphemes are bases. Only suffixes can cause doubling.

<office>

What is the <e> doing in *office*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as -i- or -er?

The replaceable <e> marks the <c> as spelling [s]. The <e> is replaced.

Why does *offices* take an -es instead of -s?

Offices needs an extra syllable in the plural.

What does the <c> spell in *Office*? What does the <c> spell in *official*, *officiant*, *officiate*, and *officious*?

[s] in *office*. [ʃ] in *official*, *officiant*, *officiate*, and *officious*.

What is the -i- doing in *official*, *officiant*, *officiate*, and *officious*?

The <i> is a connecting vowel that marks the phonology of the <c>.

List 5

<source>

Identify the graphemes in *source*. A grapheme is one, two, or three letters that spell a sound.

<s.ou.r.c.e>

What is the <e> doing in *source*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as -es?

The replaceable <e> marks the <c> as spelling [s]. The <e> is replaced.

Why does *sources* take an -es instead of -s?

Sources needs an extra syllable in the plural and third person singular.

<search>

Identify the graphemes in *search*. A grapheme is one, two, or three letters that spell a sound.

<s.ea.r.ch>

What phones do the graphemes in *search* spell?

<s.ɜ.ɹ.ʃ>

Why does *searches* take an -es instead of -s?

Searches needs an extra syllable in the plural and third person singular.

List 6

<serve>

Identify the graphemes in *serve*. A grapheme is one, two, or three letters that spell a sound. Do all the letters in *serve* spell a sound?

<s.e.r.v.e>. The <e> is a replaceable <e> that does not spell a sound.

What is the <e> doing in *serve*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-ed*?

The replaceable <e> keeps the word from ending in <v>. A complete, native, lexical English word cannot end in a <v>, <u>, or <i>. The <e> is replaced.

Why does *services* take an *-es* instead of *-s*?

Services needs an extra syllable in the plural and third person singular.

What is the *-i-* doing in *servient* and *serviette*?

The <i> is a connecting vowel.

What happens to the <y> in the plural of *server*: *serveries*?

The <y> toggles with <i>.

<tribe>

What is the <e> doing in *tribe*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-al*?

The replaceable <e> marks the <i> as spelling [aɪ]. The <e> is replaced.

What happens to the <y> in the plural of *tributary*: *tributaries*?

The <y> toggles with <i>.

In the suffix *-ion*, the <o> spells the unstressed [ə]. What is the function of the <i> in *-ion* in words such as *contribution*, *distribution*, and *retribution*?

The <i> marks the phonology of the preceding <t>. The change from [t] to [ʃ] is a result of palatalization. Palatalization is a sound change that results in a palatalized articulation of a consonant. Palatalization involves change in the place or manner of articulation of consonants. The vowel <i> can be a phonological marker that marks the palatalization of the preceding consonant.

Why is the prefix in *attribution* *at-* and not *ad-*? What is the process that results in *at-* from *ad-*? <at> is an assimilated form of the <ad> prefix before <t>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <tribe> word family, the [d] in <ad> becomes the [t] in <at> because of the following [t] in <tribe>. The voiced [d] becomes the unvoiced [t].

List 7

<pose>

Why does *poses* take an *-es* instead of *-s*?

Poses needs an extra syllable in the plural and third person singular.

Why is the prefix in *impose* *im-* and not *in-* and the prefix in *oppose* *op-* and not *ob-*? What is the process that results in *im-* from *in-* and *op-* from *ob-*?

<im> and <op> are the assimilated forms of <in> and <ob> before <p>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <pose> word family, the [n] in <in> and the [b] in <ob> become the [m] in <im> and the [p] in <op> because of the following [p] in <pose>. The alveolar [n] becomes the bilabial [m] and the voiced [b] becomes the voiceless [p] because of the voiceless bilabial [p].

What is the difference between the *-er* and *-eur* suffixes?

Both [er] and [eur] are agent suffixes. [er] is an English (Germanic) suffix. [eur] is a French suffix.

List 8

<pause>

Identify the graphemes in *pause*. A grapheme is one, two, or three letters that spell a sound. Do all the letters in *pause* spell a sound?

<p.au.s.e>. The <e> is a replaceable <e> that does not spell a sound.

What is the <e> doing in *pause*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as -es?

The <e> is a replaceable <e> that marks *pause* as a lexical word. The <e> is replaced.

Why does *pauses* take an -es instead of -s?

Pauses needs an extra syllable in the plural and third person singular.

What is the -o- doing in *magnetopause* and *menopause*?

The <o> is a connecting vowel.

<sole>

What is the second <i> doing in *solidarity*, *solidity*, and *solidify*?

The <i> is a connecting vowel.

What happens to the <y> in the third person singular and simple past of *solidify*: *solidifies* and *solidified*?

The <y> toggles with <i>.

Why does the <y> not toggle with <i> in the present participle of *solidify*: *solidifying*?

A <y> does not toggle with <i> when followed by a suffix that starts with <i> like <ing>.

Why does *consolidation* not have a *-tion suffix? Why is *-tion not an English suffix?

<con + Sole + id + ate + ion>. The <t> is part of the <ate> suffix. In every word that ends in <t.i.o.n>, the <t> is part of a base (<Act + ion>) or is part of the <ate> suffix.

List 9

<count>

Identify the graphemes in *count*. A grapheme is one, two, or three letters that spell a sound.

What do the graphemes spell in *count*?

<c.ou.n.t> [k.ɑʊ.n.t]

Why is the prefix in *account* *ac-* and not *ad-*? What is the process that results in *ac-* from *ad-*?

<ac> is an assimilated form of the <ad> prefix before <c>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <count> word family, the [d] in <ad> becomes the [k] in <ac> because of the following [k] in <count>. The voiced alveolar [d] becomes the unvoiced velar [k].

<count>

Identify the graphemes in *count*. A grapheme is one, two, or three letters that spell a sound.

What do the graphemes spell in *count*?

<c.ou.n.t>

[k.ɑʊ.n.t]

What happens to the <y> in the plural of *county*: *counties*?

The <y> toggles with <i>.

Why does *countesses* take an -es instead of -s?

Countesses needs an extra syllable in the plural.

List 10

<act>

What does the <t> spell in *act* and *activate*? What does the <t> spell in *action* and *activation*?

[t] in *act* and *activate*. [ʃ] in *action* and *activation*.

What does the <t> spell in *act*? What does the <t> spell in *actual* and *actuate*?

[t] in *act*. [tʃ] in *actual* and *actuate*.

What is the -u- doing in *actual* and *actuary*?

The <u> is a connecting vowel.

Why is *actor* spelled with an <o> but *actress* is not?

One rule of English spelling is that every phonemic syllable must be written with at least one vowel letter. The <o> is a potential <o>. A potential <o> surfaces when needed like in *actor*: (1) to spell the unstressed [ə] and (2) to be the vowel letter in a syllable. The potential <o> does not surface when not needed like in *actress*: (3) when a suffix contains a vowel grapheme that becomes of the written vowel of the syllable.

Why does the -ly suffix in *actively* not replace the final <e> in *active*?

A suffix that begins with a consonant (except for <le>) does not replace a replaceable <e>.

List 11

<age>

What is the <e> in the bound base <age>?

The <e> is a replaceable <e> that prevents the <g> from doubling.

What does the <g> spell in words like *agile*, *agent*, and *agitate*?

[dʒ]

What does the <g> spell in words like *agony*, *coagulate*, and *glucagon*?

[g]

Why does *agonizes* take an -es instead of -s?

Agonizes needs an extra syllable in the third person singular.

What happens to the <y> in the plural of *agency*: *agencies*?

The <y> toggles with <i>.

<ige>

What is the <e> in the bound base <ige>?

The <e> is a replaceable <e> that prevents the <g> from doubling.

What does the <g> spell in words like *litigious* and *exigent*?

[dʒ]

What does the <g> spell in words like *ambiguous*, *navigate*, and *fumigate*?

[g]

Why is the prefix in *immitigable* *im-* and not *in-*? What is the process that results in *im-* from *in-*?

<im> is the assimilated form of <in> before <m>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <mit(e)> word family, the [n] in <in> becomes the [m] in <im> because of the following [m] in <mit(e)>. The alveolar [n] becomes the bilabial [m] because of the bilabial [m].

What is the <e> in the bases <Nav(e)>, <Cast(e)>, <Fum(e)>, <Lit(e)>, and <Mit(e)>?

Potential <e>.

List 12

<hale>

What does the <a> spell in *inhale* and *exhale*?

[eɪ]

What does the first <a> spell in *inhalation* and *exhalation*?

[ə]

What does the <a> spell in the etymological relative *halitosis*?

[æ]

What marks the <t> as spelling [ʃ] in *inhalation* and *exhalation*?

The <i> in the <ion> suffix.

<dorm>

What does the <t> spell in *dormitory*? What does the <t> spell in *dormition*? What is the sound change that results in the change?

[t] in *dormitory*. [ʃ] in *dormition*. Palatalization.

List 13

<histor>

What does the <h> spell in *history*? What can the <h> spell in *historic* and *historical*?
[h] in *history*. [h] or [Ø] in *historic* and *historical*.

Why does the <c> spell [k] in *historic* and *historical* but [s] in *historicize* and *historicism*?
<c> spells [k] at the end of a word. <c> spells [s] when followed by <e, i, y>.

What is the first <o> in *psychohistory* and *pseudohistory*?

The <o> is a connecting vowel.

<story>

What happens to the <y> in the plural of *story*?

The <y> toggles with <i>.

Why is the second <e> in *clere* not replaced by *story* in *clerestory*?

Clerestory is a compound of <Clere + Story>. A base does not replace a replaceable <e>.

Why does the <y> not toggle with <i> in *storybook*, *storyboard*, and *storyline*?

All three words are compounds. A base that compounds to another morpheme does not cause toggling.

What is the <i> in *multistory*?

The <i> is a connecting vowel.

List 14

<ache>

What does the <ch> spell in *ache*?

[k]

What is the <e> in *ache*?

The <e> is a replaceable <e>.

Why does the <y> not toggle with <i> in *bellyache*?

Bellyache is a compound of <Belly + Ache>. A base does not replace a replaceable <e>.

<tine>

What does the <u> spell in *continue* and *continual*?

[ju]

What does the final <e> do in *continue* and *retinue*?

The replaceable <e> keeps the word from ending in <v>. A complete, native, lexical English word cannot end in a <v>, <u>, or <i>.

What does the second <t> spell in *continuative*? What does the second <t> spell in *continuation*?

[t] in *continuative*. [ʔ] in *continuation*.

What marks the second <t> as spelling [ʔ] in *continuation*?

The <i> in the <ion> suffix.

What does the <c> spell in *pertinacity*?

[s]

What does the <c> spell in *pertinacious*?

[ʃ]

List 15

<sign>

List some relatives of *sign* in which the <g> is zeroed.

EXAMPLES: sign, signer, signee, ensign, assign, design

List some relatives of *sign* in which the <g> spells [g].

EXAMPLES: signal, signature, signet, signify, significant, significance

List some relatives of *sign* in which the <s> spells [s].

EXAMPLES: sign, signal, signature, assign

List some relatives of *sign* in which the <s> is spelled [z].

EXAMPLES: design, designation, resign

List some relatives of *sign* in which the <i> is spelled [aɪ].

EXAMPLES: sign, ensign, assign, design, resign

List some relatives of *sign* in which the <i> is spelled [ɪ].

EXAMPLES: signal, signature, signet, signify, significant, significance, designation, resignation

Why is *sign* spelled <s.i.g.n>? Consider the word family.

The <g> is zeroed in *sign* but spells [g] in some morphological relatives. The primary function of English spelling is to represent meaning. The base <sign> remains the same across the word family despite differences in pronunciation of specific related words.

List 16

<nege>

Why is the base <nege> and not <neg>? What would happen to the <g> if the base were <neg>: <*neg + ate>?

The replaceable <e> prevents the <g> from doubling. The <g> would double without the replaceable <e>: <*neg + ate -> neggating>.

What does the <g> spell in the relatives of <nege>?

[g]

What does the <t> spell in *negate*? What does the <t> spell in *negation*?

[t] in *negate*. [ʃ] in *negation*.

What marks the <t> as spelling [ʃ] in *negation*?

The <i> in the <ion> suffix.

Why does the first <e> in *renege* spell [ə] but [ɛ] in *renegade*? Consider stress.

In *renege*, the first syllable is unstressed and spells [ə]. In *renegade*, the second syllable is unstressed and spells [ə]; the first syllable in *renegade* spells the stressed [ɛ].

<deny>

What happens to the <y> of <deny> in *denies*, *denied*, and *denial*?

The <y> toggles with <i>.

Why does the <y> not toggle with <i> in the present participle *denying*?

A <y> does not toggle with <i> when followed by a suffix that starts with <i> like <ing>.

List 17

<amb> and <(u)le>

What happens to the <u> in <Amb + (U)le>? What happens to the <u> in <Amb + (U)le + ant>?

The potential <u> does not surface in *amble*. The potential <u> does surface in *ambulant*.

What does the <t> spell in *ambulate*? What does the <t> spell in *ambulation*?

[t] in *ambulate*. [ʃ] in *ambulation*.

What marks the <t> as spelling [ʃ] in *ambulation*?

The <i> in the <ion> suffix.

Why does the <n> in <Fun> not double in *funambulist*.

<Fun + Amb + (U)le + ist>. Compounding a base to another base does not cause doubling.

<fri>

What does the <i> spell in *Friday*? What does the <i> spell in *friend*?

[aɪ] in *Friday*. [Ø] in *friend*.

What happens to the <y> in *friendly* in the relatives *friendlier*, *friendliest*, and *friendliness*?

The <y> toggles with <i>.

List 18

<rect>

Why is the prefix in *correct* *cor-*, not *com-*? What is the process that results in *cor-* from *com-*?
<cor> is the assimilated form of <com> before <r>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <rect> word family, the [m] in <com> becomes the [ɹ] in <cor> because of the following [ɹ] in <rect>. The alveolar [n] becomes the palatal [ɲ] because of the palatal [ɹ].

What does the <t> spell in *correct* and *direct*? What does the <t> spell in *correction* and *direction*?

[t] in *correct* and *direct*. [ʃ] in *correction* and *direction*.

What marks the <t> as spelling [ʃ] in *correction* and *direction*?

The <i> in the <ion> suffix.

Why is *director* spelled with an <o> but *directress* is not?

One rule of English spelling is that every phonemic syllable must be written with at least one vowel letter. The <o> is a potential <o>. A potential <o> surfaces when needed like in *director*: (1) to spell the unstressed [ə] and (2) to be the vowel letter in a syllable. The potential <o> does not surface when not needed like in *directress*: (3) when a suffix contains a vowel grapheme that becomes the written vowel of the syllable.

Why is *porrect* spelled with two <r>'s?

<por + Rect>. The first <r> is part of the <por> prefix. The second <r> is part of the <Rect> base.

<rege>

What does the <g> spell in *region*, *regicide*, *regimen*, *regiment*, and *regent*?

[dʒ]

What does the <g> spell in *regular*, *regulate*, and *regal*?

[g]

What can the <g> spell in the etymological relative *regime*?

[ʒ]

What does the <i> spell in *regimen* and *regiment*? What does the <i> spell in *regime*?
[ɪ] in *regimen* and *regiment*. [i] in *regime*.

List 19

<heart>

Why is *heart* spelled with an <ea>?

The <ea> spelling reflects the earlier [i] pronunciation. The pronunciation shifted, but the spelling stayed the same.

What happens to the <y> in the comparative and superlative of *hearty*: *heartier* and *heartiest*?

The <y> toggles with <i>.

Why does the <t> in *heart* not double when adding a suffix such as -ed'?

Another consonant precedes the <t>. A consonant doubles only when preceded by a single vowel and when followed by a vowel-initial suffix or <le>.

List 20

<cord>

Why is the prefix in *accord* *ac-* and not *ad-*? What is the process that results in *ac-* from *ad-*?

<ac> is an assimilated form of the <ad> prefix before <c>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <cord> word family, the [d] in <ad> becomes the [k] in <ac> because of the following [k] in <cord>. The voiced alveolar [d] becomes the unvoiced velar [k].

The word *record* can be a noun or a verb. What does the <e> spell in the noun *record*? What does the <e> spell in the verb *record*?

Stressed [ɛ] in the noun. (The stress is on the first syllable in the noun.) Unstressed [ə] in the verb. (The stress is on the second syllable in the verb.)

What does the <d> spell in *cordial* and *cordially*?

[d̥]

What marks the <d> as spelling [d̥] in *cordial* and *cordially*?

The connecting vowel <i>.

<cardi>

What is the -o- in words such as *cardiology*, *cardiogram*, and *cardiovascular*?

The <o> is a connecting vowel.

What does the <o> spell in *cardiovascular*? What does the <o> spell in *cardiopathy*?

[oʊ] in *cardiovascular*. [ɑ] or [ɔ] in *cardiopathy*.

What spells [f] in *cardiograph*, *cardiography*, *cardiographic*, and *phonocardiogram*?

<ph>

What spells the first [k] in *echocardiogram*, *tachycardia*, and *brachycardia*?

<ch>

List 21

<graph>

Identify the graphemes in *graph*. A grapheme is one, two, or three letters that spell a sound.

<g.r.a.ph>

Consider the word family of *telegraph*, *telegraphy*, *telegrapher*, and *telegraphic*. Why does the spelling not change with the changes in stress?

The primary function of English spelling is to represent meaning. The base <tele> remains the same across the word family despite differences in pronunciation of specific related words.

What is the first <e> in *videographer*?

The <e> is a connecting vowel.

Why does the <r> not double in < Bar(e) + o + Graph -> barograph>?

The potential <e> surfaces to prevent the <r> from doubling.

List 22

<gram>

Identify the graphemes in *gram*. A grapheme is one, two, or three letters that spell a sound.

<g.r.a.m>

Why does the <m> double in words like *grammar*, *programmed*, and *diagramming*?

A consonant preceded by a single vowel doubles when followed by a vowel-initial suffix or *-le*.

Why does the <y> not toggle with <i> in *candygram*?

Candygram is a compound of <Candy + Gram>. A base does not replace a replaceable <e>.

<glyph>

Identify the graphemes in *glyph*. A grapheme is one, two, or three letters that spell a sound.

<g.l.y.ph>

What phones do the graphemes in *glyph* spell?

[g.l.i.f]

<glypt>

Identify the graphemes in *glyptic*. A grapheme is one, two, or three letters that spell a sound.

<g.l.y.p.t.i.c>

What phones do the graphemes in *glyptic* spell?

[[g.l.i.p.t.i.k]

Consider the word family of *glyptography*, *glyptographer*, and *glyptographic*. Why does the spelling not change with the changes in stress?

The primary function of English spelling is to represent meaning. The base <glypt> followed by the connecting vowel <o> remains the same across the word family despite differences in pronunciation of specific related words.

List 23

<quest>

Identify the graphemes in *quest*. A grapheme is one, two, or three letters that spell a sound.

<qu.e.s.t>

What phones do the graphemes in *quest* spell?

[kw.ɛ.s.t]

What does the <t> spell in *quest*? What does the <t> spell in *question*?
[t] in *quest*. [tʃ] in *question*.

What marks the <t> as spelling [tʃ] in *question*?
The <i> in the <ion> suffix.

What does the <s> spell in *quest*? What can the <s> spell in *question*?
[s] in *quest*. [s] or [ʃ] in *question*.

<quer(e)>

Identify the graphemes in <quer(e)>. A grapheme is one, two, or three letters that spell a sound.
<qu.e.r.(e)>

What does the potential <e> do in *query*, *querent*, *conquered*, and *conquerable*?
The <e> is replaced and prevents doubling of the <r>.

What does the <qu> digraph spell in *query*? What does the <qu> digraph spell in *conquer*?
[kw] in *query*. [k] in *conquer*.

Why does the <y> not toggle with <i> in the present participle of *query*: *querying*?
A <y> does not toggle with <i> when followed by a suffix that starts with <i> like <ing>.

List 24

<quire>

Identify the graphemes in <quire>. A grapheme is one, two, or three letters that spell a sound.
<qu.i.r.e>

What does the <qu> spell in *acquire*, *inquire*, *enquire*, and *require*?
[kw]

What is the <e> doing in <quire>? What happens to the <e> when you add a suffix that begins with a vowel such as *-ed* or *-ing*?

The replaceable <e> marks the <i> as spelling [aɪ] and prevents the <r> from doubling. The <e> is replaced.

Why is the prefix in *acquire* *ac-* and not *ad-*? What is the process that results in *ac-* from *ad-*? <ac> is an assimilated form of the <ad> prefix before <qu>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <quire> word family, the [d] in <ad> becomes the [k] in <ac> because of the following [k] in <quire>. The voiced alveolar [d] becomes the unvoiced velar [k].

<quise>

Identify the graphemes in <quise>. A grapheme is one, two, or three letters that spell a sound. <qu.i.s.e>

What does the <qu> spell in <quise>?
[kw]

What is the <e> doing in <quise>? What happens to the <e> when you add a suffix that begins with a vowel such as *-ite* and *-it*?

The replaceable <e> prevents the <s> from doubling. The <e> is replaced.

Why is the prefix in *acquisition* *ac-* and not *ad-*? What is the process that results in *ac-* from *ad-*? <ac> is an assimilated form of the <ad> prefix before <qu>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <quise> word family, the [d] in <ad> becomes the [k] in <ac> because of the following [k] in <quise>. The voiced alveolar [d] becomes the unvoiced velar [k].

What does the <t> spell in *exquisite* and *requisite*? What does the <t> spell in *acquisition*?
[t] in *exquisite* and *requisite*. [ʃ] in *acquisition*.

What marks the <t> as spelling [tʃ] in *acquisition*?
The <i> in the <ion> suffix.

List 25

<paint>

What does the <t> spell in *pictorial* and *depict*? What does the <t> spell in *picture*? What does the <t> spell in *depiction*?

[t] in *pictorial* and *depict*. [tʃ] in *picture*. [ʃ] in *depiction*.

What marks the <t> as spelling [tʃ] in *picture*? What marks the <t> as spelling [ʃ] in *depiction*?

The <u> in the <ure> suffix in *picture*. The <i> in the <ion> suffix in *depiction*.

What does the first <t> spell in *picturization*? What does the second <t> spell in *picturization*?

The first <t> spells [tʃ]. The second <t> spells [ʃ].

What marks the first <t> as spelling [tʃ] in *picturization*? What marks the second <t> as spelling [ʃ] in *picturization*?

<Pict + ure + ize + ate + ion>. The <u> in the <ure> suffix. The <i> in the <ion> suffix.

What is the second <i> in *pictorial*?

The <i> is a connecting vowel.

<paint>

Identify the graphemes in *paint*. A grapheme is one, two, or three letters that spell a sound.

<p.ai.n.t>

What phones do the graphemes in *paint* spell?

[p.ɑɪ.n.t]

List 26

<close>

Why does *closes* take an -es instead of -s?

Closes needs an extra syllable in the third person singular and plural.

What can the <s> spell in *close*? What does the <s> spell in *closure*?

[z] and [s] in *close*. [ʒ] in *closure*.

What is the first <o> in *autoclose*?

The <o> is a connecting vowel.

Why do <mouth>, <fist>, and <down> not replace the replaceable <e> in *closemouthed*, *closefisted*, and *closedown*?

Closemouthed, *closefisted*, and *closedown* are compounds: <Close + Mouth + ed>, <Close + Fist + ed>, <Close + Down>. A base does not replace a replaceable <e>.

<clause>

Identify the graphemes in *clause*. A grapheme is one, two, or three letters that spell a sound.

<c.l.au.s.e>

What phones do the graphemes in *clause* spell?

[k.l.ɑ.z.Ø] or [k.l.ɔ.z.Ø]

What is the <e> doing in *clause*? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-al*?

The <e> is a replaceable <e> that marks *pause* as a lexical word. The <e> is replaced.

<cloist(e)r>

Identify the graphemes in *cloister*. A grapheme is one, two, or three letters that spell a sound.

<c.l.oi.s.t.e.r>

What phones do the graphemes in *cloister* spell?

[k.l.ɔɪ.s.t.ə.ɹ]

Why is *cloister* spelled with an <e> but *cloistress* and *cloistral* are not?

One rule of English spelling is that every phonemic syllable must be written with at least one vowel letter. The <e> is a potential <e>. A potential <e> surfaces when needed like in *cloister*: (1) to spell the unstressed [ə] and (2) to be the vowel letter in a syllable. The potential <e> does not surface when not needed like in *cloistress* and *cloistral*: (3) when a suffix contains a vowel grapheme that becomes of the written vowel of the syllable.

List 27

<clastr>

Identify the graphemes in *clautrum*. A grapheme is one, two, or three letters that spell a sound.

<c.l.au.s.t.r.u.m>

What phones do the graphemes in *claustrum* spell?

[k.l.ɑ.s.t.r.u.m] or [k.l.ɔ.s.t.r.u.m]

What does the first <t> in *claustration* spell? What does the second <t> in *claustration* spell?

The first <t> spells [t]. The second <t> spells [ʃ].

What marks the second <t> as spelling [ʃ] in *claustration*?

The <i> in the <ion> suffix.

<clude>

Identify the graphemes in *include*. A grapheme is one, two, or three letters that spell a sound.

<i.n.c.l.u.d.e>

What phones do the graphemes in *include* spell?

[i.n.k.l.u.d.Ø]

What is the <e> doing in the morphological relatives of <clude>? What happens to the <e> when you add a connecting vowel or suffix that begins with a vowel such as *-ed* and *-ing*?

The replaceable <e> prevents the <d> from doubling. The <e> is replaced.

Why is the prefix in *occlude* *oc-* and not *ob-*? What is the process that results in *oc-* from *ob-*?

<oc> is an assimilated form of the <ob> prefix before <c>. Assimilation is a sound change in which one sound becomes more similar to a nearby sound. In the <clude> word family, the [b] in <ob> becomes the [k] in <oc> because of the following [k] in <clude>. The voiced bilabial [b] becomes the unvoiced velar [k].

<cluse>

What does the <s> spell in *recluse*? What can the <s> spell in *exclusion*, *conclusion*, *seclusion*, and *occlusion*?

[s] in *recluse*. [ʃ] in *exclusion*, *conclusion*, *seclusion*, and *occlusion*.

What marks the <s> as spelling [ʃ] in *exclusion*, *conclusion*, *seclusion*, and *occlusion*?

The <i> in the <ion> suffix.

List 28

<migr>

What does the <i> spell in *migrate*? What do the <i> in *emigrate* and second <i> in *immigrate* spell?

[aɪ] in *migrate*. [ɪ] in *emigrate* and *immigrate*.

What does the first <t> spell in *migrate*? What does the <t> spell in *migration*?

[t] in *migrate*. [ʃ] in *migration*.

What marks the <t> as spelling [ʃ] in *migration*?

The <i> in the <ion> suffix.

Are *emigrate* and *immigrate* homophones for you? Why or why not?

For speakers with the pin-pen merger, the initial vowel is the same in both words: [ɪmɪɡreɪt]. For speakers without the pin-pen merger, *emigrate* spells [ɛmɪɡreɪt] and *immigrate* spells [ɪmɪɡreɪt].

<mute>

What is the <e> in the bound base <mute>?

The <e> is a replaceable <e>.

What does the replaceable <e> do in words such as *commute*, *permute*, and *transmute*?

The <e> marks the <u> as spelling [ju] and prevents the <t> from doubling.

What happens to the replaceable <e> in words such as *mutate* and *mutase*?

The <e> is replaced.

<muta>

Explain the final <e> in the <Gen(e)> base. Consider *mutagen* versus *mutagenic*.

The final <e> is a potential <e>. The potential <e> does not surface at the end of a word. The potential <e> does surface when followed by a suffix to prevent the <n> from doubling.

Why does *mutagenizes* take an -es instead of -s?

Mutagenizes needs an extra syllable in the third person singular.

What is <i> in *mutafacient*?

The <i> is a connecting vowel.

List 29

<publ>

Identify the graphemes in <publ>. A grapheme is one, two, or three letters that spell a sound.

<p.u.b.l>

Why do *publishes* and *publicizes* take an -es instead of -s?

Publishes and *publicizes* need an extra syllable in the third person singular

<pope>

What does the <o> in *populate*, *populace*, and *popular* spell?

[ɑ]

Why does the base <pope> need a replaceable <e>?

The replaceable <e> prevents the second <p> from doubling.

Are *populace* and *populous* homophones for you? Why or why not?

The final syllable in both words can be unstressed. Both words can spell [pɑpjuləs]. For some speakers, *populace* spells [pɑpjulɛs].

List 30

<pune>

What is the <e> in <pune>?

The <e> is a replaceable <e>.

What does the <u> spell in *punish*? What does the <u> spell in *punitive* and *impunity*?
[ʌ] in *punish*. [ju] in *punitive* and *impunity*.

<pene>

What is the <e> in <pene>?

The <e> is a replaceable <e>.

What does the <e> spell in *penal*? What does the <e> spell in *penalty* and *penalize*?
[i] in *penal*. [ɛ] in *penalty* and *penalize*. (The <e> can also spell [i] in *penalize* for some speakers.)

<pain>

Identify the graphemes in *pain*. A grapheme is one, two, or three letters that spell a sound.

<p.ai.n>

What phones do the graphemes in *pain* spell?

[p.eɪ.n]

Why does the <n> not double when adding the suffix *-ed* that starts with a vowel?

The final <n> is preceded by a vowel digraph. A consonant doubles only when preceded by a single vowel and when followed by a vowel-initial suffix or <le>.

List 31

<city>

Identify the graphemes in *city*. A grapheme is one, two, or three letters that spell a sound.

<c.i.t.y>

What phones do the graphemes in *city* spell?

[sɪti] and [sɪri]

What does the <c> spell in *city*? Why?

[s]. <c> spells [s] when followed by <e, i, y>.

<citizen>

Identify the graphemes in *citizen*. A grapheme is one, two, or three letters that spell a sound.
<c.i.t.i.z.e.n>

What phones do the graphemes in *citizen* spell?

[sɪtɪzən] or [sɪtɪsən] or [sɪrɪzən] or [sɪrɪsən]

What does the <c> spell in *citizen*? Why?

[s]. <c> spells [s] when followed by <e, i, y>.

<cive>

Identify the graphemes in <cive>. A grapheme is one, two, or three letters that spell a sound.
<c.i.v.e>

Is the final <e> in the bound base <cive> a phonological marker?

No. The final <e> prevents the <v> from doubling.

What does the <c> spell in *civic* and *civil*? Why?

[s]. <c> spells [s] when followed by <e, i, y>.

List 32

<s>

The word *present* can be a noun or a verb. What does the first <e> spell in the noun *present*?

What does the first <e> spell in the verb *present*?

[ɛ] in the noun. [i] in the verb.

What does the <a> spell in *presentation* and *representation*? What does the <a> spell in *presentative* and *representative*?

[eɪ] in *presentation* and *representation*. [ə] in *presentative* and *representative*.

Why does *overrepresent* have two <r>'s?

<Over + re + pre + S + ent>. The first <r> is part of the <Over> base. The second <r> is part of the <re> prefix.

<es>

Why does the <s> in the <es> base double in *essential*, *essence*, and *essive*?

The <s> is preceded by one vowel. A consonant doubles when preceded by a single vowel and when followed by a vowel-initial suffix or <le>.

What does the <t> spell in *essential*? What marks the phonology of the <t>?

[j]. The connecting vowel <i>.

Why does the suffix *-less* not replace the final <e> in *essenceless*?

Only vowel-initial suffixes end <le> cause doubling. The suffix <less> begins with the consonant <l>.

<est>

Identify the graphemes in <interest>. What phones can the graphemes spell?

<i.n.t.e.r.e.s.t>

[ɪntəɹɛst] or [ɪntØɹɛst] or [ɪntəɹəst] or [ɪntØɹəst]. (The final vowel can vary. The first <e> can spell [ə] or be zeroed. The word can have three or two syllables.)

Does the first <e> in *interest* spell a phone? Can the first <e> be zeroed? Explain.

The first <e> can spell [ə] or be zeroed. The word can have three or two syllables.

<ent>

What is the <i> in *entity*?

The <i> is a connecting vowel.

What happens to the <y> in the plural of *entity*: *entities*?

The <y> toggles with <i>.

List 33

<salt>

Identify the graphemes in *salt*. What phones do the graphemes spell?

<s.a.l.t>

[salt] or [sɒlt] or [salʔ] or [sɒlʔ].

Why does the <t> in <salt> not double when adding a suffix that starts with a vowel such as *-ed* and *-ing*?

Another consonant precedes the <t>. A consonant doubles only when preceded by a single vowel and when followed by a vowel-initial suffix or <le>.

<grave>

What does the <a> spell in *grave*? What does the <a> spell in *gravity*? What does the second <a> spell in *aggravate*? What can the first <a> spell in *gravitas* and *gravamen*?

[eɪ] in *grave*. [æ] in *gravity*. [ə] in *aggravate*. [æ] in *gravitas* and *gravamen*.

Why does the spelling not change even though the <a> spells different phones in different related words? (Hint: What is the primary function of English spelling?)

The primary function of English spelling is to represent meaning. The base <grave> remains the same across the word family despite differences in pronunciation of specific related words.

List 34

<igloo>

Identify the graphemes in *igloo*. What phones do the graphemes spell?

<i.g.l.oo>

[ɪ.g.l.u]

A complete, native, lexical English word cannot end in an <o>. Why can *igloo* end in <o>?

<igloo> is not a native English word but is a borrowing from Inuktitut, one of the principal Inuit languages of Canada.

<form>

What are the graphemes in *form*? What phones do the graphemes spell?

<f.o.r.m>

[f.ɔ.ɹ.m]

List 35

<calc>

Identify the graphemes in <calc>.

<c.a.l.c>

What does the second <c> spell in *calculus*, *calculate*, and *calcareous*? Why?

[k] because <c> spells [k] when followed by <a, o, u> or a consonant or when word-final.

What does the second <c> spell in *calcite*, *calcium*, and *calcify*? Why?

<c> spells [s] when followed by <e, i, y>.

<force>

Why does the suffix *-ible* replace the replaceable <e> in *forcible*? Why does the suffix *-able* not replace the replaceable <e> in *forceable*?

The replaceable <e> marks the <c> as spelling [s]. The <i> also marks the <c> as spelling [s].

The <a> would mark the <c> as spelling [k].

List 36

<bitter>

Identify the graphemes in *bitter*. What phones do the graphemes spell?

<b.i.t.t.e.r>

[b.ɪ.t̬.ə.ɹ] or [b.ɪ.r̩.ə.ɹ].

<mitten>

Identify the graphemes in *mitten*. What phones can the graphemes spell?

<m.i.t.t.e.n>

[m.ɪ.t̬.ə.n] or [m.ɪ.r̩.ə.n].

What can the <tt> in *mitten* spell?

[t̬] or [r̩]

<ribbon>

Identify the graphemes in *ribbon*. What phones do the graphemes spell?

<r.i.bb.o.n>

[ɹ.ɪ.b̩.ə.n]