

# photos

## light

photograph - (graph - write, draw) - picture drawn by light

telephoto - (tele - distant) - light from far away

photometer - (metron - measure) - a device which measures light

phototropic - (tropos - turn) - turning toward light

photophilia - (philia - love) - love of light

photophobia - (phobos - fear) - fear or dislike of light

photosynthesis - (syn - together, thesis - putting) - a process of putting things together by using light

### Teaching Notes:

**Photograph** - Discuss the process of photography and have a child present a report to the class on how it works. With smaller children it would make a good research job to be done as homework with parents. **Telephoto** - Discuss the purpose of a telephoto lens. If possible, show a sports video which illustrates the zoom effect. **Photometer** - Ask if anyone can bring one from home to show the class. (Maybe a parent will come and do a presentation for the class!) **Phototropic** - Grow some beans on the window sill and watch the leaves turn to face the light. **Photosynthesis** - Put some of the bean plants in a dark closet so the children can see what happens when they are deprived of light.

### Extra Words:

**Photokinesis** (kinesis - movement) light making something move. Science museum shops have photovoltaic devices that look like light bulbs, with little windmill-like panels inside. The panels spin when exposed to light. **Phosphorous** - (phos - light; photos is another form of this word; + pherein - to bear or produce) - producing light. The Romans took this Greek word, Phos, and made Phosphorus - their name for the bright morning star, Venus.

# graph

## to write or draw

photograph - (photo - light) - picture drawn by light

phonograph - (phono - sound) - machine for writing (or recording) sound

telegraph - (tele - distant) - writing from far away

graph - pictured information

lithograph - (lithos - stone) - drawing made on a stone

graphite - black carbon used for drawing or writing

autograph - (autos - self) - to write one's own name

phonogram - (phono - sound) - written symbol for a sound

hologram - (holos - complete) - a three-dimensional photograph of a whole object

### Teaching Notes:

**Phonograph** - Discuss the early process of sound recording, before magnetic tape and cassettes, in which a needle cut a recording on a wax plate. **Telegraph** - Let someone present a research report on Thomas Edison's early days as a telegrapher. Let someone do a report on Morse code and give a demonstration of it. **Graph** - Introduce various kinds of graphs in math class. **Lithograph** - Discuss the process of lithography and talk about Currier and Ives. Their lithographs are still used every year as Christmas cards. Make potato or linoleum block prints. **Graphite** - Have someone research how it is used today. **Hologram** - Show students a hologram (on a *National Geographic* cover or on your credit card). **Autograph** - Have the class write to famous people, requesting an autograph. **Phonogram** - The Greek word gramma, meaning "letter" or "something written down", comes from graphein. Discuss the invention of the alphabet as an early system of written-down sound.

### Extra Words:

**Pictograph** (pictura (L.) painting) - A writing form in which there is a picture for each word. You might find pictures of Egyptian hieroglyphics and Chinese characters to show the children.

# tele

## far away, distant

television - (video, visum (L.) - see) - seeing distant things

telephone - (phone - sound) - sound from far away

telegraph - (graph - write) - writing from a distance

telephoto - (photo - light) - light from far away

telescope - (skopeo - look at) - device for looking at distant objects

telepathy - (pathos - feeling) - knowing how someone far away is feeling

telethon - (Marathon - a battlefield in ancient Greece) a telephone fund raiser which runs on non-stop, as Pheidippides ran after the battle of Marathon.

### Teaching Notes:

Telethon - The great battle between the Athenians and the Persians in 490 BC took place on the plain of Marathon. When the Greeks won, they sent a runner, Pheidippides, to Athens, 26 miles away, with the news. As the runner arrived, he delivered the message - and died. Modern 26-mile races are called "Marathons", and so any long, grueling session or fund-raising campaign may be called a marathon - and if it happens on television, it's a telethon.

### Extra Words:

Telekinesis - (kinesis - movement) the movement of an object which is far away from the power (spiritual or magical) which is moving it. Telex - A recently-coined technological word for a communication service using "tele-typewriters" connected by wire. We are very fond of such "high tech" sounding words. We tend to mine the ancient Greek vocabulary whenever we want to coin a "new" word.

# metron

## measure

- ✓ meter - unit of measure - 39.47 inches long
- ✓ geometry - (geo - earth) - measurement of the earth
- optometry - (opsis - sight) - measure eyesight
- ✓ symmetry - (sym - same, equal) - measuring the same
- barometer - (baros - weight, pressure) - device to measure air pressure
- ✓ thermometer - (thermos - heat) - measure heat
- ✓ diameter - (dia - through, across) - measuring across
- centimeter - (centum - hundred) - one hundredth of a meter
- anemometer - (anemos - wind) - measures wind speed

### Teaching Notes:

**Meter** - The definition given above is just one of many. If it's appropriate for your children, you can discuss the meter as the basis for the metric system. A meter is supposed to be one ten-millionth of the distance around the world measuring through the equator and the poles. What we call "meter" in poetry is very enjoyable to learn for some classes. Why not learn a bit of Shakespeare's iambic pentameter!

Explain to the children that we will make separate cards for as many of the partner words, such as geo, sym, thermos, etc. as possible. Mixing and matching new combinations - even coining new words, then seeing whether classmates can figure out the meaning - is a good way to help children begin to play with words and become comfortable with them.

### Extra Words:

**Metronome** (nomos - law): An instrument for measuring the exact time so a musician knows how fast to play a piece of music. Would the school music department have a metronome which the children could see in operation?



# tropos

## turning

- ✓ tropics - the area of the earth from the equator north to the Tropic of Cancer and south to the Tropic of Capricorn
- ✓ tropical - the climate of the earth in the tropics
- ✓ phototropic - (photo - light) - turning toward light as leaves and flowers do
- ✓ heliotrope - (helios - sun) - a flower named for its tendency to turn toward the sun
- trophilous - (philia - love) - plants or trees which like a change or turning of seasons - hot and cold, wet and dry
- thermotropism - (thermos - heat) - turning toward heat (as cats do!)

### Teaching Notes:

**Tropics** - A little geography lesson would help on this one. The Tropics are the two circles on the globe at 23 degrees, 27 minutes latitude called Tropic of Cancer (north of the equator) and Tropic of Capricorn (south of the equator). These are the farthest latitudes from the equator on which the sun shines STRAIGHT DOWN. The two tropic lines are the latitudes at which the sun seems to "turn" and go back the other way (you need a globe to explain this!). In the Northern Hemisphere the turning time is called the summer solstice. In the Southern Hemisphere, it is called the winter solstice. The solstices are, for us, the longest and shortest days of the year.

### Extra Words:

Tropometer (metron - measure) - An instrument which measures the amount of turning of eyeballs or bones in their sockets. Chromotropism (chroma - color) - Turning or changing color. It is really a chemical term, but why couldn't we say that chameleons or autumn leaves are "chromotropic"?

# philia

## love, friendship

- φ ✓ philosopher - (sophia - wisdom) - one who loves wisdom
- φ ✓ Philadelphia - (adelphos - brother) - city of brotherly love
- φ ✓ philanthropist - (anthropos - man) - one who cares about his fellow man
- phillumenist - (lumen - light) - one who collects match covers
- philogynist - (gyne - woman) - one who loves women
- philologist - (logos - word) - one who loves words
- philtre - love potion
- Anglophile - (Angli - English) - one who loves England
- φ ✓ Francophile - (Francus - France) - one who loves France

### Teaching Notes:

**Phillumenist** - We have to be sure to remember two "l's" in this word. One for the phil- part and one for the -lumen part. In spelling it has always been a stumbling block to remember double letters. When we know the Latin and Greek parts which have been put together, it's much easier to remember how to spell the English derivatives.

### Extra Words:

**Bibliophile** (biblos - book) - A book lover. **Philharmonic** (harmonia - harmony or concord) - Lovers of harmony or sounds which agree well together. **Philip** - A man's name which, in Greek, was **Philippos** (philos - loving, hippos - horse) and so Philip means a man who loves horses. **Philodendron** (dendron - tree) - "Loving trees" perhaps because they are climbing, clinging, vine-like.

# phobos

## fear

- ♀ ✓ phobia - irrational fear
- agoraphobia - (agora - field) - fear of open space
- ♀ ✓ claustrophobia - (claustrum (L.) - lock or bolt) - fear of closed (locked or bolted) places
- hydrophobia - (hydro - water) - disease which makes it difficult to swallow, thought to be fear of water
- phobophobia - fear of fear itself
- ♀ ✓ zoophobia - (zoon - animal) - fear of animals
- toxikophobia - (toxikos - poison) - fear of poison
- ♀ ✓ Phobos - a moon of the planet Mars

### Teaching Notes:

Agoraphobia - In ancient Greece, an agora was the large open space in a city kept as a market and meeting place. It served much the same purpose as the Roman Forum. It's interesting that the astronomer who discovered the two satellites of the planet Mars named them Phobos and Deimos - the Greek words for fear and terror. Perhaps he thought they should be afraid to be so close to Mars (The Roman god of war) or perhaps that fear and terror were the servants or constant companions of war. Hydrophobia is the name of a sickness which makes it hard for people to swallow. Ancient folks thought the sick people were afraid of water so they said they had "hydrophobia".

### Extra Words:

Bacteriophobia - Fear of germs. In 1676, a Dutchman from Delft named Anton van Leeuwenhoek (LAY-vun-hook), who was called the father of microbiology, was the first to observe bacteria with his primitive microscopes. He called them "animalcules" (tiny animals). He, or someone after him, described them as rod-shaped and named them "bacteria". The Greek word bakterion means a staff, rod, or walking stick, so if you haven't got a microscope to look at them yourself, you can imagine what they looked like to Anton! Pyrophobia (pyro - fire) - Fear of fire.

# syn

## with, together

- ✓ sympathy - (pathos - feeling) - to feel with someone else
- ✓ symphony - (phone - sound) - sounds that go together
- ✓ synthesis - (thesis - put, place) - putting together
- ✓ synthetic - material made by putting chemicals together
- ✓ photosynthesis - (photo - light) - process by which light puts plant nutrients together to make green <sup>sugar</sup> chlorophyll
- ✓ synonym - (onoma - name) - two words with same meaning
- ✓ synagogue - (ago - bring) - place to bring people together
- ✓ synchronize - (chronos - time) - to do things at the same time. "Synchronize your watches!"

### Teaching Notes:

Since syn is the actual word and sym is the assimilated form, it's a good idea to talk about the process of assimilation of prefixes. The "n" or "m" is used, depending on what sounds best with the letters following. In (meaning "not") assimilates as il in illiterate, as im in impossible, as ir in irresponsible, but they all are really in and they all mean "not". This helps in remembering where letters must be doubled in spelling.

### Extra Words:

Syncopation (koptein - to strike or cut) - A rhythm in music in which an accent is put on an unexpected note, or a rest is substituted for an accented note. Perhaps the music teacher could suggest some syncopated music to play. George Gershwin used it and so did Leroy Anderson, the composer of "Syncopated Clock".

# thesis

## put, place, position

- ✓ thesis - a position taken in an argument supported by a set of reasons
- ✓ theme - an essay or composition on a certain subject with a statement and supporting reasons
- ✓ parenthesis - (para - beside) - statement beside (or inside) a main sentence
- ✓ synthetic - (syn - together) - elements put together to make a material like a natural one (synthetic rubber)
- synthesizer - (syn - together) - instrument which puts sounds together like real musical instruments

### Teaching Notes:

Thesis is a good word to use to begin a discussion of the kind of writing which will need to be done all through school. The ability to state a theme or position and then to present persuasive arguments, examples, and authorities as proof of the theme's truth or validity is a skill which can hardly be introduced too soon. A formal debate took place in the 2nd grade at one school, on the subject of the return of the Panama Canal to Panama. The students on each team, pro and con, conferred with the school librarian and their parents and came up with an impressive array of information. They gained considerable insight into the art of political persuasion and debate.

### Extra Words:

Antithesis (anti - against) - A position or point of view about a subject against the position under consideration.



# kinesis

## movement

kinetic - relating to movement of bodies

kinesiology - (logos - word or study) - study of human movement

kinescope - (skopeo - look at) - a machine which shows pictures of movement (old term for TV movies)

cinema - motion pictures (Greeks had no "c". They used "k".)

cinematographer - motion picture photographer

### Teaching Notes:

**Kinetic** - If you feel it is appropriate, you might broach the concepts, to be studied in physics, of kinetic energy vs. potential energy. **Cinema** - (The Greek alphabet had no letter "c". They used "k" - kappa.) When the British were looking for a new word for the new motion pictures, they thought "cinema" would be perfect! There is an Oscar awarded every year for the best cinematographer. Cinema is the abbreviated form of cinematograph. Note, too, that switching from "k" to "c" changed the first sound to "s" because, in English, "c" before "e", "i", or "y" says /s/.

### Extra Words:

**Kinetophone** (phone - sound) - An early movie machine which was synchronized (see syn) with a phonograph to produce sound motion pictures or "talkies"! **Kinetogenesis** (genos - race, origin) - A biological theory which says that animal structures evolved as a result of animal's movements (e.g. if a horse runs, his legs will get bigger and stronger).

# phone

## sound

phonograph - (graph - write, draw) - writing with sound

telephone - (tele - far away) - sound from far away

phonogram - (gramma - letter) - written sound

euphony - (eu - well, good) - good or pleasant sound

symphony - (sym - together) - sounds that go together

megaphone - (mega - big) - device to make sounds BIG

microphone - (mikros - small) - device to transmit or record small sounds

### Teaching Notes:

**Phonograph** - The original sound recording machines had needles which "wrote" (scratched or cut) sounds on a wax surface, so **phonograph** was a good word to describe the process. **Phonogram** - The Greek word, **gramma**, meaning "letter" was made from **graph** - write or draw. A phonogram is the written symbol for a spoken sound. It might be a single letter of the alphabet, or a combination of letters, such as "oo", "ou", "ai", "ay", etc. **Euphony** - We probably use the adjective, "euphonious" more often when we speak of a person's voice which is pleasant to listen to. A **symphony** orchestra makes sounds together and they may be euphonious and sound well, or they may be cacophonous (from the Greek word **kakos** meaning "bad") and sound awful

### Extra Words:

Someone always brings up the word **phony** in this discussion and we have searched for a connection but haven't found one. Even *The Oxford English Dictionary* says it is of "uncertain American origin". We can speculate that the meaning of **phony** (false or fake) implies something which "sounds good and isn't" but we would be just speculating.

# SONUS

## sound

- sound - vibrations perceived by our ears
- sonic - relating to what we can hear
- sonnet - a form of rhyming Italian poetry
- sonovox - a machine that makes sound effect voices
- sonar - device that hears sound under water
- sonata - an instrumental (not vocal) musical composition with three or four movements
- consonant - (con - with) - speech sounds made with lips, tongue or teeth

### Teaching Notes:

Sound - A discussion about how the human ear receives vibration and allows us to perceive sound would be an interesting class discussion. A diagram of the human ear would help make the meaning of this word clear. Sonnet - This Italian poetic form of 14 lines is very entertaining for students and was, at one time, as popular as "raps" are today. The Italian sonnet has eight lines (the "octave") with a rhyme scheme, abbaabba, followed by six lines (the "sestet") which rhyme cdecde. The English sonnet has three 4-line verses followed by a couplet. The rhyme scheme is abab cdcd efef gg. The students might have a great time composing some sonnets! Sonovox - This is a device which is held against the throat and makes sound effects like that of a talking train or a whispering wind. Sounds like FUN! Sonar - A student may enjoy presenting a report on sonar technology to the class. Sonata - How about playing a recording of Beethoven's Moonlight Sonata for the children? Consonant - The consonants in the alphabet don't really make sounds of their own. They go "with the sound" of the voice. The voice by itself is just the general sound of the air coming from the lungs and passing through the larynx. Consonant letters indicate changing positions of the lips, tongue and teeth which shape the sound of the voice into the words we speak.

# skopeo

## look at, inspect, consider, examine

scope - all that the eye can see

microscope - (mikros - small) - device to look at small objects

telescope - (tele - distant) - device for seeing distant objects

periscope - (peri - around) - device for seeing around obstacles

kaleidoscope - (kalos - beautiful; eidōs - form) - device for seeing changing beautiful forms or arrangements of small fragments of glass, etc.

episcopal - (epi - on, over) - overseen by bishops or "overseers"

bishop - a church overseer

### Teaching Notes:

The Greek alphabet had no letter "c". They had "kappa" which made the same hard "e" or "k" sound we have in our alphabet. The Romans did not use "k" very much. It was usually replaced by "c". Greek words which came into English through Latin usually have long since traded in the kappa for a "c", as in scope. The word kaleidoscope gives examples of both practices. This instrument was invented in 1817 by Sir David Brewster, who gave it its name. He took kalos directly from the Greek language. Scope, however, began in Greek as skopeo, but the Romans had gotten their hands on it years before and changed the kappa to "c". A scope originally meant a mark for shooting at, but it has widened its meaning considerably to include the whole reach or range of one's idea. We hope studying Latin and Greek root words will enlarge the scope of all our students! Oliver Wendell Holmes said, "A mind once stretched by a new idea never regains its original dimension." Bishop comes from the Greek through the Anglo-Saxon "biscop", the A-S way of saying episkopos (overseer). We all do our best!

# video visum

## see

television - (tele [Gr.] - far away) - machine for seeing things that are far away

videophone - (phone [Gr.] - sound) - TV screen for seeing the person you are talking to on the telephone

Montevideo - (mons, montis - mountain) - "Mountain-view" - a city in Uruguay

video - picture portion of television

evidence - (e, ex - out) - out of what one can see

advise - (ad - to, toward) - look and tell your view

invisible - (in - not) - not to be seen

### Teaching Notes:

The two "principal parts" of a Latin verb which we ask children to learn in this book are the first (first person nominative singular of the Present Indicative - video - translated "I see") and the fourth (supine accusative - visum - translated "to see"). These two forms are usually different enough in their spelling that learning them will allow a student to recognize many more English derivatives than if only the first were learned! Video and evidence both come from the first principal part, video. Vision and advise both come from the fourth principal part, visum. We will give these two forms for all the Latin verbs and the children should learn them together: video, visum, see. They should be expected to give only the generic meaning "see" in English rather than the specific translation of the verb form, "I see" and "to see". We are not learning grammatical technicalities here but just the two most valuable roots for recognizing derivatives in English. Don't forget - "v" in Latin sounds like "w" in English.

### Extra Words:

Provide (pro - for, before) - To foresee; to look out for in advance.  
Visit - To go to see someone in person. (A phone call doesn't technically qualify as a "visit" unless, perhaps, you are using a "videophone"!)  
visit - unless, perhaps, you are using a "videophone"!



# logos

## word, study

logic - reasoning to gain knowledge and wisdom

geology - (geo - earth) - study of the earth

astrology - (astron - star) - knowledge from the stars

biology - (bios - life) - study of physical life

zoology - (zoon - animal) - study of animals

technology - (techne - art, skill) - study of how to improve  
an art or a skill

anthropology - (anthropos - man) - study of mankind

psychology - (psyche - soul, life) - study of the soul or  
mental life of man

legend - a story to be read

### Teaching Notes:

This root word, logos, meaning word or study, more than any other, shows the importance of a good vocabulary in the process of acquiring knowledge. To the Greeks, study meant talking or discoursing on a subject and, sometimes, writing down the conclusions of one's study. This meant understanding the meaning of the words. It still does. The fact that the names of most of the academic disciplines today, particularly the sciences, end in "-ology" ought to tell us that an understanding of the root words will take us a long way in our comprehension of the classic literature of each of the sciences, as well as the publications about new discoveries which are coming out every day. This intense search for knowledge and truth is what education is all about.

### Extra Words:

Etymology - Etymological dictionaries (etymon - true source) tell us that logos comes from legein - to speak. This whole book is all about etymology and about how students can be prepared to join the great dialogue (dia - across, through) of human knowledge; the great TALKING across time, or distance, or the table, which represents the great pleasure and fascination of LOGOS - study.

# verbum

## word

verb - the action word in a sentence

proverb - (pro - forward) - a wise or profound saying

verbal - of, or pertaining to, words

verbiage - use of too many words; chatter

verbose - (-osus - full of) - wordy, full of words

verbatim - word-for-word copy or record

verbalize - to express in words

verberium - game in which a word is changed into others by rearranging its letters

### Teaching Notes:

**Verb** - We don't often stop to realize that the verb is the chief word in a sentence. A verb, in its imperative form, can be the complete sentence, e.g., "Go!" The verb tells what is happening, and therefore is the reason for uttering sentences at all. "What's going on?" is what we mean when we ask, "What's the word?" **Proverb** - A wise or profound saying or maxim, held up before people for their guidance or improvement is a proverb. It is terse, pithy and easy to remember. The GOLDEN RULE, "Do unto others as you would have them do unto you" is a good example. Benjamin Franklin wrote a lot of proverbs in his book, *Poor Richard's Almanac*. People loved them and tried to live by them. We would be wise to think about them even today. "Early to bed and early to rise, makes a man healthy, wealthy, and wise." "God helps them that help themselves." "Little strokes fell great oaks." "He's a fool that makes his doctor his heir." "He that falls in love with himself will have no rivals."

### Extra Words:

**Proverbs** is a book of the Old Testament in the Bible which contains a great variety of wise sayings written before 250 B.C. Some of them are "Pride goeth before destruction." "A soft answer turneth away wrath." It's a great project to collect these and print them out in calligraphy as gifts. Some children may enjoy composing some new proverbs which, if they are wise, may catch on!

# nomen nominis

## name

**nominate** - suggest someone's name for office

**nomination** - act of naming a candidate for office

**nominal** - in name only; not real or actual

**nomenclature** - (calo, calatum - call) - system of names used to classify knowledge; what we call things

**nom de plume** - (French) - pen name of an author

**denomination** - (de - down from) - names of classes or categories, e.g., religions, money

**denominator** - part of a fraction below the line

### Teaching Notes:

**Nominal** - We speak of the nominal head of a government if he is only a figurehead and someone else has the real power. **Nomenclature** - In the sciences, the system of names by which things are classified. Biology, Botany, and many others have Latin or Greek nomenclature. **Nom de plume** - People who write and publish under a different name are using a "pen name" or "nom de plume". Samuel Clemens called himself "Mark Twain" after the sounding calls used on Mississippi riverboats. Mary Ann Evans called herself "George Eliot" because women were not supposed to write books and publish them. The Brontë sisters, Emily, Charlotte and Anne, called themselves "Ellis, Currer and Acton Bell", using their own initials, but hiding behind men's names. **Denomination** - We usually speak of different religions as various "denominations" meaning the names groups have chosen for themselves when they share the same religious beliefs, e.g., Catholics, Episcopalians, Methodists, Presbyterians. **Denominator** - The bottom half of a fraction tells into how many parts the whole has been divided. 2 - halves, 3 - thirds, 4 - fourths, etc.

### Extra Words:

**Nomen** is one of the few root words which is spelled exactly the same as the ancient Indo-European root word. The Greek word, onyma - name, comes from this ancient source. (Think of synonym - same name, antonym - opposite name, and pseudonym - false name.)

# pro

## for, before, forward, in place of

profess - (fateor, fassus sum - admit, reveal) - to admit that one is an expert

professional - one who claims to be an expert

problem - (ballein [Gr.] - throw) - anything thrown forward to be worked on, or solved

proboscis - (boskein [Gr.] - feed, graze) - trunk or snout for grazing

prologue - (logos [Gr.] - word, study) - words before beginning a play or book

proclaim - (clamo, clamatum - shout) - announce, cry out, publish

proceed - (cedo, cessorus - move, yield) - move forward

pronoun - (nomen - name) - word that stands for a noun (I, you, he, she, it, we, they, etc.)

### Teaching Notes:

Pro is both a Latin and a Greek word. It was used as a preposition as well as a prefix. In English, we use the word "pro" when we mean "professional" in referring to "pro athletes" or those who earn money in sports. We also use pro to mean "in favor of" with con meaning "against". Mostly pro is used as a prefix, attached almost entirely to Latin or Greek root words. It's a good idea for the children to learn all of the meanings given for pro so that they can figure out the meanings of the many English derivatives. (They may want two cards to fit in all the great derivatives they will want to collect.) Proboscis is great fun! It refers to animals which have elongated noses or trunks which allow them to reach down or up to eat. A large nose on a person is humorously called a proboscis. (Remember Jimmy Durante? Cyrano de Bergerac?)

### Extra Words:

Project (jacio, jactum - throw) throw forward. Projectile - anything thrown forward; balls, bullets, arrows, javelins, etc. Promise (mitto, missum - send) send one's word forward as pledge to do (or not do) something.

# prae

## before, in front of

predict - (dico, dictum - say) - say beforehand, foretell

preamble - (ambulo, ambulatum - walk) - that which goes before

precaution - (caveo, cautum - be on guard) - being on guard beforehand

precursor - (curro, cursum - run) - one who runs ahead

prefer - (fero, latum - bear, carry) - carry to a forward position or rank

pregnant - (gigno, genitum - bring forth) - condition before birth

prejudice - (judicium - judgment) - make judgment beforehand

### Teaching Notes:

**Prae** - A number of Latin words which use the ae spelling (ae is pronounced like a long i, or "ah-ay") drop the a when they come into English and so aequalitas becomes "equality", aether, "ether", and prae becomes "pre". While prae was used as a separate word, a preposition (pono, positum - put) - a word put before another word, it was also used as a prefix (figo, fixum - fix, attach) - a word attached to another word. *Webster's Dictionary* has more than 17 pages of words beginning with pre! Preamble is a word children meet when they study the Constitution of the United States. The Constitution states the principles and ideas on which we as a nation "stand together". The preamble "walks ahead" of the Constitution and tells why we established it. "We the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America."



# ad

## to, toward; near, next to

adequate - (aequus - level, even, flat) - even with or equal to

adhere - (haereō, haesum - stick to, stay) - stick to

adjective - (jacio, jactum - throw) - word "thrown at" a noun to modify it

admire - (miror, miratum - be amazed, wonder) - look at with wonder or amazement

admonish - (moneo, monitum - warn) - give warning to

admit - (mitto, missum - send) - send to; allow entrance to a place or to the mind

advertise - (verto, versum - turn) - turn people to what you are offering

### Teaching Notes:

In adequate and adhere, the Latin root words aequus and haereō are spelled with ae, which changes to e in English derivatives. The noun form of the verb adhere is adhesion, which comes from the fourth principal part, haesum.

AD was used both as a preposition in Latin and as a prefix to other words. In English it is used only as a prefix. When the meaning is "to" or "toward", it tends to change the d to a letter which agrees best with the first letter of the word to which it is prefixed. It assimilates. It becomes ac- before c, k, or q (e.g., accommodate; acknowledge; acquaintance). Almost "anything goes" with ad, and so it obligingly becomes af- in affirm; ag- in aggrandizement; al- in alliteration; ap- in appointment; as- in assimilate; and at- in attune.

When the meaning is "near" or "next to", it tends to remain simply ad-, as you can see in adjacent, adjust, and adhere.

There are pages and pages of ad- words in the dictionary. A search for useful ones will be rewarding!

jacio  
jactum

## throw

eject - (e, ex - out) - throw out

interject - (inter - between) - throw between

object - (ob - against) - throw against

objection - arguments "thrown against" a situation

project - (pro - forward) - throw forward

projectile - a thing thrown forward (arrow, bullet, rock)

reject - (re - back, again) - throw back

### Teaching Notes:

There are several interesting things to discuss when teaching this root word, jacio, jactum. Remember that in Latin, "j" is pronounced as though it were a "y". Actually, the ancient Romans didn't use "j" at all. They spelled this word, "iacio, iactum". When you remember to pronounce "i" with a long "ee" sound, and say this word out loud, you can see where the "y" sound came from. Julius Caesar's name was spelled "Iulius Caesar". Medieval scribes who made those beautifully illuminated handwritten manuscripts started adding a decorative "tail" to the letter "i" when it came at the beginning of a word. Also, a word (such as the Latin word, huius) which had three vowels in a row was confusing to read. (Try writing it in cursive!) They dotted the "i", of course, but drawing it down into a "tail" made it much easier to read.

You notice that all the derivatives above have a -ject spelling. The Romans tended to shift the vowel to a short sound when they added a prefix to the word. So iacio became conicio, coniectum. The medieval scribes wrote it conjectum and we have our word conjecture which means literally, "throw together". When we are trying to figure out something, we throw together the clues we have and come up with a conjecture, a supposition, a guess. The root idea "throw" is so easy for children to understand, they can readily understand the derivatives we have from JACIO, JACTUM when we explain how these "throw" words are used metaphorically for various mental actions such as "rejecting" and "objecting".

pono  
positum

### lay, put, place

pose - position or attitude

post - fixed or established place; military post

postage - payment for messages sent from post to post

position - established place

deposit - (de - down, away from) - lay away; put aside

repose - (re - again, back) - lie back, pause, rest

depose - (de - down, away from) - put down from a throne or high office

impose - (in - in, on, upon) - to put upon

component - (con - together) - put together

### Teaching Notes:

Post first meant a stake driven into the ground. It then meant something firmly fixed in place. It came to mean a military station where soldiers had established a position. Then, it was also a station along a road where travelers could rest and feed their horses. Then, it was a place where riders, carrying messages in stages along the road could stop and change horses, or hand the messages (letters) over to a fresh rider. (The Pony Express was an example.) We began calling this the "postal service". Those who wanted to send messages paid for the service by buying "postage stamps". Repose - Prof. William C. Grummel of the University of Washington tells us that etymologists are confused about pose words such as repose, depose, propose, etc. There was a Late Latin word, pausare, pausatum which means "stop, rest", which the Romans took from the Greek word, pauein - to stop (from which we get "pause"). This came into French as "poser" and from French into English as pose. Some dictionaries trace repose to pono, positum, and others to pausatum. The general idea is that repose means to lay oneself back and take a rest. Let's let it rest there . . . .

### Extra Words:

Postpone (post - after) - to put after or delay. This is a good word to bring up since post as a preposition or prefix means "after" or "behind" and pone is from pono - put. You have to be careful which post you mean.

# com

## with, together

- cooperate - (operor, operatum - work) - work with  
 cognate - (nascor, gnatus - be born) - born together,  
 having same ancestors or family  
 collaborate - (laboro, laboratum - work) - work with  
 collect - (lego, lectum - gather) - gather together  
 combat - (battuo - beat, fight) - fight with  
 commemorate - (memoro, memoratum - remember) -  
 remember something together  
 community - (munio, munitum - build, fortify) - group  
 which builds together  
 content - (teneo, tentum - hold) - held together  
 confection - (facio, factum - do, make) - made together

### Teaching Notes:

Cum is a Latin word with a bit of interesting history. An older form was com, sometimes spelled quom. It was used both as a conjunction and as a preposition. When it became a prefix, it tended to keep the old form, com. Like certain other prepositions such as ad and in, com will assimilate (ad - to, toward, + similis - like, similar). It makes itself similar to the beginning consonant of the word to which it is prefixed. "Assimilate" is a good example and so is "illegal" (in - not + lex, legis - law). Co- in cooperate is a shortened form of com. In collect and collaborate, com willingly changes to col-. In commemorate and community, it keeps its own form. It's important to remember WHY the "m" is doubled in words like these. BOTH are needed! In content and confection, com becomes con- because "n" is easier to pronounce when followed by "t" or "p".

### Extra Words:

Committee (mitto, missum - send) - A group sent together to do or accomplish something. No need to puzzle over whether to double "m" or "t" in committee when you know why they are there.

figo  
fixum

### fix, fasten, attach

fix - fasten or make firm; set in place

fixture - a thing fastened in place

crucifix - (crux, crucis - cross) - picture, medal or statue of Christ fastened on the cross

áffix (noun) - (ad - to) - thing fastened to something; syllable added to a word at either end

affíx (verb) - act of fastening or attaching

prefix - (prae - before) - letter or syllable added to the beginning of a word

suffix - (sub - under) - letter or syllable added to the end of a word

#### Teaching Notes:

Affix can be both a noun and a verb depending on which syllable is accented. With the accent on the first, it is a noun and refers to the thing that is fastened in place. It usually means a letter or syllable attached to the stem of a word which modifies the meaning somehow; e.g., deface, happily.

Prefixes are abstract and modify the root meaning of a word, e.g., unhappy, regain, transport, undervalue, forewarn, postpone, construct.

Suffixes are added at the end of a word and tell us what part of speech the word is, e.g., vacate (verb) - vacation (noun); happy (adjective) - happiness (noun). Suffixes tell us the time or "tense" of the word: want, wants, wanting (present tense); wanted (past tense).

After learning the roots of our English words (one hundred of which we have in this book), it is important to learn and understand the prefixes and suffixes so that the shades of meaning of the English derivatives are clear and easy to understand. The prefixes and suffixes are used over and over with different root words and greatly expand the vocabulary of anyone who learns them thoroughly. Some affixes are Greek or Latin and some are Anglo-Saxon.

#### Extra Words:

To transfix (trans - across, through) implies piercing through as with a sword, holding in place as though impaled with a pointed weapon and thus immobilized.



# jungo junctum

## join, unite, connect

- \* join - connect, fasten together
- \* joint - place where two parts are connected
- conjugal - relating to the joining of man and woman in marriage
- conjugation - a set of verb endings joined with the stem\*
- \* conjunction - word joining two parts of a sentence
- \* disjointed - (dis - separate) - separated at the joints
- \* junction - point of connection; railway crossing
- subjugate - (sub - under) - to connect under the yoke of power

### Teaching Notes:

Join - One of the most common derivatives from jungo has come into English through French. The French word joindre - to join or connect, accounts for our word, join. When Julius Caesar conquered Gaul (the territory of modern France) in the 50s B.C., the people there spoke Gaulish. The Gauls gradually learned Latin from the Roman soldiers. The rough soldiers didn't speak the cultivated language of the great Roman orator, Cicero, nor even of their literate general, Caesar. They spoke the vulgar or popular Latin which the Gauls learned by hearing and speaking, rather than by sitting in classes and memorizing declensions, conjugations and accurate spellings. Perhaps when a Roman soldier thanked a Gaul for his bonitatem (kindness), the Gaul related the incident to his wife and remembered "bonta". In a French dictionary today, you find "bonté", meaning "kindness". Thus evolved the French language from Latin. The World Book will give you a fascinating history of the evolution of each of the Romance languages: French, Spanish, Portuguese, Italian and Romanian.

\* Conjugating a verb means joining together different endings to the basic stem of the verb, much like changing bits on a drill! This conjugation of the verb amo, amatum - love, shows how verb endings tell who is loving:

amo - I love

amas - you (singular) love

amat - he, she, it loves

amamus - we love

amatis - you (plural) love

amant - they love

The underlined endings joined to the stem, ama-, take the place of the pronouns, I, you, he, she, it, etc., which we use in English. The Romans said in one word what we say in two!

# digitus

## finger, toe, inch

**digit** - finger, numerals from 0 to 9, unit of measure the width of a finger (3/4 of an inch)

**digital computer** - a computer which uses numerals to mean whole numbers and decimal fractions

**digitalis** - the "foxglove" plant from which heart medicine is made

**prestidigitation** - (praesto - at hand, prompt) - a fast-fingered or sleight-of-hand performance of magic or of card tricks

### Teaching Notes:

**Digit** - Since fingers were used for counting, it's no surprise that the Arabic numerals came to be called "digits". (See Appendix I: Roman Numerals.)

**Digital computer** - Digital computers use numerals to mean whole numbers and decimal fractions, as opposed to analog computers which use numerals to mean units of measurement (like voltage, resistance, or rotations - things which engineers work with).

**Digitalis** - The leaves of the foxglove are dried and used as part of a medicine for heart ailments. In 1542, a man named Fuchs gave the plant its Latin botanical name, digitalis, because he thought it a good translation of the German name "fingerhut", which means finger hat or thimble. The purple flowers are little bell- or thimble-shaped finger-size cylinders.

### Extra Words:

**Prestidigitator** - A trickster who knows "the hand is quicker than the eye." A prestidigital person is "light fingered" and may be an artist of "legerdemain" (French for "light of hand"); but may be a pickpocket or a petty thief!

caput  
capitis

## head

caput - "off with his head"

capital - top of a column; head, chief or foundation money

capitalism - system where the "head money" makes money

captain - head of a group of soldiers

capitulate - put headings on chapters or divisions in a piece of writing

recapitulate - (re - again) - to list again the "headings" in a piece of writing

cabbage - vegetable "head"

### Teaching Notes:

Now that the words for numbers have been introduced, we will turn to a set of human body words for two reasons. 1) The meaning of the root word is clear and accessible to children no matter how young. 2) Words for one's head, hands, feet, etc., must have been the sources for earliest metaphors. One uses metaphors to express one's understanding of something new or unfamiliar in terms of something well known and close. Cabbage is a good case in point. Cabbages growing look like heads. As the head governs what the body does, so does a captain govern or direct what his soldiers do; and the capital or "head money" sets a business or enterprise going and producing goods that people need and want. In various times in history when "beheading" was the execution of choice, poor Marie Antoinette and Anne Boleyn were "caput". In a less grisly vein, when we do something foolish, we speak of "losing our heads" but we are hardly "caput".

### Extra Words:

Capitol - From the Roman Capitoline Hill where the Emperors and government were located. Literally, it means a citadel or fortress on the head or top of a hill. Our state and national government legislative buildings are called capitols.

# manus

## hand

manufacture - (facio, factum - making) - make by hand

manifest - (festus - hit) - to hit by hand; easily perceived

manicotti - (manica - sleeve) - sleeve-like pasta

manuscript - (scribo, scriptum - write) - writing; written  
by hand

manumit - (mitto, missum - send) - to send forth or release  
from one's hand (grasp)

### Teaching Notes:

The Latin word for "hand" in English derivatives seems to be used more often literally than metaphorically. Metaphor itself is from the Greek words meta - over, beyond, and pherein - to carry, and refers to the use of a simple word or concrete term which is used to describe something else less familiar or more abstract in such a way that the latter is better understood by analogy to the simpler. For example, manifest is used to mean evident or clearly seen, but literally means it hits you like a hand. Picture someone who slaps his forehead as he says "Oh! I see! I get it!" Maybe someone could bring some manicotti to class so everyone could see how much like little sleeves they are (picture the tiny hands that could go through them!)

### Extra Words:

Manual refers to using one's hand to do something; to operate manual controls on a machine rather than using automatic ones. It also means a "handbook" of instructions for doing something.

pes  
pedis

### foot

pedestal - foot of a column

pedestrian - walker - on foot

pedal - foot lever

peddle, peddler - house-to-house salesman

pedicab - bicycle taxi

pedicure - (curo, curatum - care) - care for the feet

pedigree - ("pied de grue" - crane's foot) - genealogy charts

pedometer - measures distance walked

pawn - (in chess) - the foot soldiers

### Teaching Notes:

More metaphors! Pedestal, being that part of a column (the architectural support for the roof of a temple or house) which is like "my feet". Pedestrian, pedal, peddle, pedicab, pedicure, pedometer, and pawn all use "foot" literally. Pedigree is something else! It is an Anglicized pronunciation of the French words "pied de grue" which means foot of the crane (grus being Latin for "crane"). Ancestral charts - which give branching lines for listing one's parents and their parents, etc. looked like a crane's foot to some Frenchman. His whimsical description of a family chart was first used in English in 1410, according to our friends who wrote the OED (*Oxford English Dictionary*).

### Extra Words:

A word about words like pediatrician which do not come from pes, pedis but rather from the Greek paidos - child + iatros - physician. These two roots are easy to confuse in English derivatives unless this is pointed out. Since iatros - physician is Greek, the Greek word podos - foot is used in the derivative podiatrist - a foot doctor. No need to confuse these when you know the difference!



# bracchium

## arm

brace - two of a kind - (one for each arm?)

embrace - (em - in, into) - to take into one's arms

bracelet - ornament for the arm or wrist

brachiate - to swing by the arms on bars or tree branches

brachiopod - (podos [Gr.] - foot) - two-shelled creature  
with two "arms" inside with which to bring in food

bracero - Spanish word for day laborer (with two strong  
arms!)

### Teaching Notes:

Brachiopod is actually a Greek derivative. The Romans borrowed the Greek word brachion, arm, and for peculiar reasons of their own, added an extra "c" to the spelling. You will find bracchium in Latin dictionaries, but our English derivatives have all dropped the extra "c" so there is no reason to bring the children into this ancient argument. To make this word clear, someone had better look up brachiopod in the encyclopedia and draw a picture of one on the board! We seldom hear people speaking of a "brace", meaning a set of two, any more. We tend to say "a pair" instead. But 100 years ago, you might hear, "Father brought home a brace of pheasants for dinner." Embrace illustrates how flexible some Latin prefixes are. Em - is an alternate spelling of en, which means "in, into". Which one is used depends on the letter which comes next. Em is easier to say before "b" in brace.

### Extra Words:

There are several other kinds of braces to discuss: a set of suspenders for trousers; a support for a wall or anything that needs to be held up; a two-arm handle for rotating a drill bit; a drawing-up of one's muscles, nerves, and courage against an attack, "Brace yourself!"

# dens dentis

## tooth

dent - tooth-like notch in gears, locks, etc.; a small depression

dentist - tooth doctor

dentate - having a toothed edge (leaves)

dental - pertaining to teeth

dentifrice - (frico, fricatum - rub) - toothpaste

dentition - development of teeth; teething

denture - set of teeth (false)

dentiform - (forma - shape) - shaped like a tooth

indent - set a line of print in from the margin

dandelion - (French - dent de lion) - plant called "tooth of the lion" with dentate leaves

### Teaching Notes:

We refer to many things as having "teeth": keys, combs, saws, etc. As usual, we describe things around us in terms of ourselves, our bodies. We make metaphors (meta - beyond + pherein - to carry); that is, we make the names of personal or familiar objects carry a meaning beyond the original meaning.

Among the words in the box most children will associate only dentist with "tooth", but the other words may be new to them. They may not realize how that common flower/weed, dandelion (of which so many millions of "bouquets" have been picked and brought to mothers and teachers) got its name. If the season is right, ask the children to bring some dandelions to school so you can examine together the dentate (saw-toothed) leaves and the golden yellow "mane" of the floral lion's head.

Open some books, examine the left margin of the printed lines and find the indentations where someone "took a bite". Could it have been the "book worm"? It might be a good moment to discuss why we indent to begin new paragraphs.

### Extra Words:

A dentiphone (phone - sound) is a device to help the deaf to hear. It is held against the teeth and transmits sound vibrations to the inner ear. It doesn't work for everyone, but it has helped some to gain meaning from sounds they can't hear any other way.

# Corpus corporis

## body

corporeal - pertaining to the body

corps - military division organized as a body

incorporate - to make into a body

corporation - legally formed group - a body

corpse - dead body

corpulence - a lot of body - fatness

corpus - main body of a fund of wealth - estate

corpuscle - (diminutive of corpus) - small part of the body

### Teaching Notes:

Derivatives from this Latin word, corpus and the Anglo-Saxon word, bodig, have been used metaphorically to describe almost anything that works as a functioning organization. In anatomy it refers to the human trunk as distinguished from the head, arms and hands, legs and feet. When we refer to a "governing body" like Congress or to "the corpus of literature" on a subject, we generally mean "the whole works."

### Extra Words:

Habeas Corpus - This is the actual Latin, not a derivative. It means "(It is required) that you have the body" and is a well-known legal term which means you can't be held or imprisoned unless you are brought into court bodily so that the justification for the restraint can be determined. Otherwise, you can't be held against your will. Corporal punishment affects the body in some way. Whipping, etc.

# UNUS

## one

unit - one part of a series or of a whole

union - act of making one out of many

E pluribus unum - motto of U.S.A. "one out of many" states

united - together as one

universe - (verto, versum - turn) - star galaxy which turns as one entity (like a cosmic pinwheel)

university - (verto, versum - turn) - many colleges joined together to function as one body

unicorn - (cornu - horn) - mythical horse with one horn on its head

unison - (sonus - sound) - voices singing or musical instruments playing together the same notes at the same time

### Teaching Notes:

Before beginning on the Latin words for numbers, it is a good idea to introduce or review Roman numerals. Since these written numbers (I, II, III, IV, V) are partly pictographic (one finger, two fingers, etc.), it is a good idea to discuss pictographs and the difference between them and purely abstract or arbitrary symbols like the Arabic numerals (except for 1, of course!). Pictographs are stylized pictures which remind you of an object or action. Letters are symbols which stand for sounds and have no relation to the object, action, or idea which the set of sounds, or word, conveys.

### Extra Words:

Unique - A French word from unus meaning one of a kind; unequalled. Uniform (forma - form) - Having the same form, unchanging. Military dress is uniform and so is controlled indoor temperature. Unicycle (kyklos - (G.) ring or circle) - A vehicle with only one wheel. A bicycle has two wheels and a tricycle has three wheels. Unilateral (latus - side) - one-sided. (If you make a decision for the whole family, it is a unilateral decision.)

# duo

## two

duet - music played or sung by two people

duplicate - (plico, plicatum - fold) - make a second copy

dual - two (as in dual purpose)

dubious - "of two minds" - doubtful

duel - fight between two people

duplex - (plico, plicatum - fold) - two homes in one building

duplicity - two - "facedness"; a "double cross"

### Teaching Notes:

Make a special note of the difference in meaning between duel and dual. The -al ending simply makes an adjective from duo. Duel comes from a Latin word duellum, which was an old form of bellum, which means war. It originally meant a dividing in two or a falling out - a fight or combat fought with deadly weapons. Duplex - The word plico meaning "fold" is used here like the Anglo-Saxon suffix -fold, which goes with a numeral and implies multiplication in a geometric ratio, the doubling, tripling, etc. of anything. A duplex is a twofold house or a "double house". A fourplex should have four separate housing units in one building. Why not call it a "fourfold"? Probably because another meaning for fold is "a pen for sheep". Builders and real estate people probably don't want to suggest that associated meaning!

### Extra Words:

There are so many that your more avid students had better plunder the unabridged dictionary!



# tres

## three

- trio - three acting or performing together
- tricycle - (cycle - wheel) - a three-wheeled vehicle
- tripod - (podos [Gr.] - foot) - a three-legged stand for a camera or other instrument
- triangle - (angulus - corner angle) - a figure with three straight sides and three corner angles
- triennial - (annus - year) - every three years
- triceratops - (keras-horn; tops-face [Gr.]) - three-horned face
- trilobite - (lobus - a rounded division) - a prehistoric animal having three rounded divisions of the body
- tribe - early Rome was divided into three family social groups, or clans, called tribes

### Teaching Notes:

*Webster's Unabridged Dictionary, Second Edition*, as well as *The Oxford English Dictionary*, tells us that the prefix tri, meaning three, comes both from Latin and from Greek. The Latin tres is spelled treis in Greek. Tri can combine with either Greek or Latin root words.

Triceratops - Here is a prehistoric creature from the mesozoic period. Understanding its name can help crack open other polysyllabic scientific labels we've put on ancient animals like the dinosaurs. We discover that the labels have very simple meanings (deinos - terrible; saurus - lizard) (see page 99) - terrible lizard! *That is fun!*

Trilobite - Most museums of natural history have fossils or models of trilobites. It's an opportunity to introduce some of the earliest creatures and the Geologic time chart, which has many scientific terms of Greek and Latin derivation: paleozoic (paleo - old; zoon - animal) (see page 89) - the old animal period; mesozoic (meso - middle) - the middle animal period; cenozoic (kainos - recent) - the recent animal period. These meanings are so endearingly simple that most children can readily remember the scientific names for the periods and enjoy bandying them about.

Considering the word triennial, meaning "every three years", it's useful to know that the similar word triannual means "three times a year".

# quattuor

## four

quadruped - (pes, pedis - foot) - four-footed animal

quadricycle - (kyclos (G.) - wheel) - four-wheeled vehicle

quadrilateral - (latus - side) - having four sides

quadragenarian - (quadraginta - forty) - person in his 40s

quaternity - group of four people

quatrain - a stanza or verse of poetry four lines long

quadrille - square dance for four couples

quadri - prefix meaning four

### Teaching Notes:

These number prefixes lend themselves to the invention of new words, and this is a good one to keep in mind when children try making up their own. New words should stick to partners from the same language (Latin/Latin; Greek/Greek), although there are a number of hybrid exceptions: tele (Greek) vision (Latin). Children have always enjoyed learning to count in foreign languages, and Latin is particularly valuable to them since all the number words have many derivations. They might make one card with a list of the words to make them easy to memorize.

unus

duo

tres

quattuor

quinque

sex

septem

octo

novem

decem

(The card should, of course, have a RED border!)

# quinque

## five

quinquennial - (annus - year) - five-year period or celebration

quinquagenarian - (quinquageni - fifty each) - person who is 50 to 59 years old

quinquesyllable - (syllaba - several letters taken together to make one sound) - a word of five syllables (e.g., quin-que-syl-la-bic)

### Teaching Notes:

Quinque - a combining form meaning "having five or consisting of five." Quinquennial - We can recognize the "-nn" of annus - year, in this word (and in all the other "ennial" words. The "a" of annus has been dropped and the "e" at the end of quinque does the vowel work in its place. Quinquagenarian - Latin numbers start adding -ginta at twenty (viginti) to show multiples of ten. ALSO - Latin has something we don't have in English: "distributive forms", which mean "so-many each". So the Latin quinquageni means "fifty each" and quinquagenarians have fifty years each! There are dozens of words in the unabridged dictionary beginning with quinque - . The dictionary doesn't even bother to define them all. Once you know the root word combining with quinque, you've got the meaning of the compound derivative, as you can see in the extra words below.

### Extra Words:

Quinquelateral - (latus - side) - five-sided. Quinquedentate - (dens, dentis - tooth) - having five teeth. Quinquefoliate - (folium - leaf) - having five leaves. Quinquepedal - (pes, pedis - foot) - having five feet.

Go ahead! Make up some of your own words using quinque!

# SEX

## six

sexennial - (annus- year) - six-year period or celebration

sexagenarian - (sexageni - 60 each) - a person who is 60 to 69 years old

sexdigital - (digitus - finger, toe) - having six fingers or toes

sexcentenary - (centum - hundred) - a 600-year period or celebration

### Teaching Notes:

This -ennial (year) ending is becoming predictable by now - and that is just what we are working for! When children begin to be able to GUESS the meaning of a new word from recognizing the root parts, we have arrived at new country in vocabulary development. That is why we are using all these cardinal numbers consecutively - so children will notice the similarities in the derivatives even before we point them out, as each new number root word is introduced. Sexagenarian - See notes on Quinquagenarian. Sexcentenary - Someone might want to find out in the library what happened 600 years ago this year (the late 1300s, which is called the late 14th century) that might be worth celebrating!

### Extra Words:

This Latin word sex (meaning six) always sets people to wondering (and sometimes asking) where the English word sex (not meaning six) came from. The answer is that there are two Latin words, sexus and secus (both meaning sex) which the Oxford Concise Etymological Dictionary speculates came from seco, secare (to cut or divide). And so mankind is divided into two kinds - male and female.

# septem

## seven

September - seventh month in the Roman calendar

septennial - (annus - year) - seven-year period or celebration

septangle - (angulus - corner) - a plane (flat) figure with seven sides and seven angles

Septuagenarian - (septuageni - seventy each) - person  
- who is 70 to 79 years old

### Teaching Notes:

September - How did the seventh month in the Roman calendar get to be the ninth month in our calendar? Legend has it that Romulus, the first King of Rome, used a ten-month moon cycle calendar. Six months had 30 days and four had 31. This added up to 304 days with a couple of nameless moon cycles left over in mid-winter. Each new year started in spring with the growing season.

March, the first month, was named after Mars, god of war. He was very important to the Romans since he was said to be the father of Romulus and Remus. April, the second month (aprilis - to open) could have meant opening leaf and flower buds and opening doors to warmer weather. May, was named for Maia, goddess of spring and growth, and June for Juno, goddess of marriage. Romulus then began counting: Quintilis, the fifth month, Sextilis, the sixth, and September, the seventh.

Rome's second King, Numa Pompilius took those 60 blank mid-winter days and made two new months out of them - January, for the two-faced god Janus, who could look back to the old year and forward to the new one; and February (februum - purification) the month of purifying rites, to start the new year on the farm with a clean slate where the gods were concerned. Romulus being the founder of Rome, Numa thought it wise not to change the names Romulus had thought up. So when January and February became the beginning months of the year, September, the seventh month, became the ninth and so it has stayed to this day! (See notes on page 42.)



# octo

## eight

October - eighth month in the old Roman calendar

octopus - (pous, podos [Gr.] - foot) - eight-footed ocean creature

octogenarian - (octogeni - 80 each) - person between 80 and 89 years old

octagon - (gonia [Gr.] - angle) - figure with eight sides and eight corners or angles

octennial - (annus - year) - eight-year period or celebration

### Teaching Notes:

**October** - This month, along with September, November and December, is a holdover from that ancient Roman calendar which named only ten months and which began in the spring with March. **Octopus** - This word is really a Greek derivative. The Greek word for "eight" is *okto*, which is like the Latin except that it uses the Greek letter "kappa" rather than the Roman "c". We won't have the Greek number words in this book and this word, *octopus*, is sure to come up when you talk about *octo*, so we thought we had better explain. The Greek *pous, podos* is very similar to the Latin *pes, pedis*, too, and shows how indebted the Romans were to the Greeks for some of their vocabulary. **Octogenarian** - This word comes from that unique Latin form - the "distributive". *Octogeni* means "80 each". Of all the years being distributed to human beings, the octogenarians each have 80.

### Extra Words:

You can use *octo-* as a combining form with dozens of partner roots. For example: **octolateral** (*latus* - side) - having eight sides; **octogamy** (*gamos* [Gr.] - marriage) - marriage to eight spouses; **octodentate** (*dens, dentis* - tooth) - having eight teeth. Look in the unabridged dictionary for a treasury of these interesting words.

# novem

## nine

November - ninth month in the Roman calendar

novena - devotions for nine days in the Roman Catholic church

novennial (annus - year) - nine-year period or celebration

novemdigitate - (digitus - finger) - having nine fingers

novendial - (dies - day) - lasting nine days

### Teaching Notes:

Our word nine and novem come from the ancient Indo-European word neun, meaning "nine". An earlier Latin form of novem was noven which was related to the word NOVUS meaning "new". It seems they had an early system of counting in which they used sets of four (fingers, not counting the thumb). The Indo-European word oktu meant two fours so the next number (noven, or nine) started a new set! (Someone else's fingers, no doubt! Or perhaps they used toes as well?) It is fascinating to explore early counting systems. Early calculators (calx, calcis - limestone pebble) which consisted of pebbles lined up in grooves on a flat surface led, much later, to the abacus and then to IBM computers! For many of us, however, nothing has ever quite taken the place of fingers for quick calculations! Usually we use our thumbs as well, so most of us feel very comfortable with the base 10 (decimal) number system.

November is the ninth month when you start counting with March, as the early Romans did.

In early Christian times, prayers were said at dawn (roughly 6:00 a.m.) and then every three hours: the third hour, terce; the sixth, midday; the ninth, none. Later the hours were shifted back and none became noon. An old word (schenche - pouring out) was combined with none and so nuncheon was when workers in the field stopped for the "noon pouring out" and took a good long drink! When time allowed, they had a lump of bread as well. Obviously they preferred combining lump and nuncheon to have LUNCHEON!

Perhaps you can plan to teach this lesson to be followed immediately by LUNCH. You and the children will be ready for it!

# decem

## ten

December - Tenth month in the old Roman calendar

decennial - (annus - year) - Tenth anniversary or celebration

decemdentate - (dens, dentis - tooth) - having ten teeth

decemfoliate - (folium - leaf) - having ten leaves

decempedal - (pes, pedis - foot) - having ten feet

decemplicate - (plico, plicatum - fold) - tenfold or ten copies (think of duplicate, triplicate)

### Teaching Notes:

December - Romulus, Rome's founder, invented a ten-month calendar ending with December. (See SEPTEM, page 39.) Because December, which means tenth, is the twelfth month in the modern calendar, it reminds us each year of those twin baby boys, Romulus and Remus. The legend says that Numitor, the good King of Alba Longa, was deposed by his wicked brother, Amulius. To prevent Good Old Numitor from having heirs who might take back the throne, Amulius forced Numitor's only child, Silvia, to become a Vestal Virgin, a priestess who is forbidden to marry. The god, Mars, married her anyway and she had twin boys. Enraged, Amulius had the twins thrown into the Tiber River, but they floated to shore and were found and nurtured by a she-wolf until a peasant and his wife adopted them and raised them to manhood. Then, Romulus founded the city of Rome and built a fine wall around it. Remus mocked his industrious brother, and one of Romulus's soldiers killed him. Romulus invented the ten-month calendar and, after reigning for forty years, mysteriously vanished in a storm. Ever since, people have shown their respect for him by keeping the calendar he designed even though the number names September, October, November, and December no longer fit.

The meanings of the rest of the words up in the list of derivatives are easy to figure out when you know the partner root words. Use DECEM and make up your own new words!

# centum

## hundred

cent - one hundredth of a dollar

century - a set of one hundred

centurion - Roman military officer over 100 men

centimeter - (metron - measure) - one hundredth of a meter

centennial - (annus - year) - a hundred-year celebration or anniversary

percent - (per - through) - number of parts in every hundred; 10 cents is 10 percent of a dollar

centipede - (pes, pedis - foot) - hundred-footed "bug"

centigrade - (gradus - step, degree) - temperature scale with one hundred degrees between freezing and boiling

### Teaching Notes:

Century, to us, usually means a hundred years, but it can mean a set of one hundred of anything: a collection of 100 poems, a group of 100 soldiers, etc. You hold in your hands a century of Latin and Greek roots!

Centipedes are bugs which appear to have "about a hundred legs or feet". They come in all sizes (some up to 8 or 10 inches long in tropical countries!). *Webster's Dictionary, Second Edition* says they are "of active, predacious and nocturnal habits", meaning they they keep very busy at night, mostly preying on (fortunately for us!) insects.

A centipede locomotive is a railroad engine which has the pilot ("cowcatcher" to us) and one truck wheel in front of its cylinders and six big driving wheels behind. It is not for express passenger trains but for heavy freight. Here is a diagram of those wheels: <math>0=000000</math>. The child who looks up "locomotive" will find other wheel arrangements.

The centigrade scale has one hundred degrees between the freezing and boiling temperatures of water. At zero degrees, water hardens into ice; at 100 degrees, it steams away into the air. It is also called Celsius after the Swedish astronomer Anders Celsius who invented it in 1742.

# mille

## thousand

**mile** - a thousand paces (1 pace = 2 steps - one with each foot)

**mill** - one thousandth of a dollar

**millimeter** - (metron - measure) - one thousandth of a meter

**millennium** - (annus - year) - thousand-year period or anniversary

**millipede** - (ped, pedis - foot) - thousand-footed "bug"

### Teaching Notes:

**Mile** - Those thousand paces which constituted a Roman mile were marched off by well-exercised Roman soldiers on the thousands of miles of good Roman roads. This measure of distance, varying here and there, spread throughout the Western world. The ancient Roman mile was about 1,620 English yards or 4,860 feet. Our modern mile measures 5,280 feet, so the Roman soldiers weren't quite as tired as you would be, walking the same number of miles. Nautical or sea miles are a bit longer (about 6,080 feet). How you feel about that depends on whether you are swimming or boating!

A mill, which is one thousandth of a dollar or one tenth of a cent, is a favorite unit of money lawmakers use to levy our taxes. Since it is too small to warrant minting a coin, we never actually SEE mills, so perhaps we feel better about paying taxes which are levied in mills.

We are likely to be hearing more about the millennium in the next few years as we approach the year 2000. The millennium has historically been spoken of as a time when evil will have been banished from the world and peace, happiness, holiness, and good government will prevail.

Millipedes don't really have a thousand feet, of course, but it would be pretty hard to count them and prove it! They are fairly harmless and eat only leaves and vegetable matter - which may or may not be all right depending on whose vegetable matter they are eating.



# pyro

## fire

pyrotechnics - (techne - work, skill) - fireworks

pyrotechnician - (techne - work, skill) - one who is skilled with fireworks

pyre - huge bonfire for burning bodies at ancient funerals (and even today in India)

pyromaniac - (mania - craze) - a crazy person who plays with fire

empyrean - (em - in) - the heavens - home of the fiery sun

pyrometer - (metron - measure) - instrument to measure very hot temperatures

### Teaching Notes:

Empyrean - The ancients thought the highest layer of the sky was the home of fire and, therefore, of light. So they called the heavens the "empyrean."  
Pyrometer - Temperatures which are so hot that they are off the top of the mercury thermometer scale, need a pyrometer. People in industry and scientists in laboratories need them. So do vulcanologists need pyrometers to measure the heat in a volcano!

### Extra Words:

Pyrite - A common mineral of pale brass yellow color with a brilliant metallic luster. It is called "fool's gold" because it shines like gold when you find it on a beach or in the mountains. You may think you have "struck it rich" - but no, it's only "fool's gold". REAL gold comes in lumps or nuggets, not the clean, straight crystal shapes of pyrite. Pyrite is really a chemical called iron disulphide, and a lot of it is burned to make sulphuric acid, which is used in batteries. Pyrites (in plural form) - any of several stones which the ancient peoples called "fire-stones" because they were used to strike sparks to make fire. Flint is one of those pyrites.

# ignis

## fire

igneous (ous (E.) - full of) - pertaining to fire

ignite - to set on fire

ignition - act of "firing up" or starting an engine; setting anything afire

### Teaching Notes:

Igneous rocks - In geology, we speak of rocks according to the way they were formed in the far distant past. Stratified rocks are formed by layers (strata) of sediment at the bottom of a lake or ocean, compressed over time into limestone, shale, etc. Igneous rocks are formed by fiery temperatures far below the earth's surface. There is magma (molten rock) down there under us which sometimes moves up toward the surface and cools into dense stone such as granite. Sometimes the magma pours out on the earth's surface in the eruption of a volcano and forms basalt, pumice, etc. Rocks and stones are very interesting to study! Ignition - There aren't many derivatives from ignis, but this is one which is used all the time. The ignition of your car provides the spark which lights the fuel and fires up your engine. When rockets are sent up, we have GO! IGNITION! BLAST OFF!

# Vulcanus

## Vulcan - Roman god of fire

**volcano** - a crack in the earth pouring out hot magma (molten rock) and hot gases

**volcanic** - like or pertaining to volcanoes

**vulcanize** - to treat raw rubber with heat and sulphur to make it harder and more durable

**vulcanite** - hard rubber, treated with heat and sulphur

**vulcanology** - (logos - word, study) - the study of volcanoes

### Teaching Notes:

**Vulcanus** - The Roman god of fires and volcanoes. He was feared when the Romans first began to worship him. Later, they thought of him as married to Venus, the goddess of beauty, so he settled down and became the god of metal working, blacksmiths, and heavy industry. He wasn't completely domesticated though, as the Romans found out in 79 A.D. when the volcanic mountain, Vesuvius, erupted and buried the beautiful little seaside city of Pompeii. Maybe it was Vulcan who "started the ignition" of Mount St. Helens in Washington State on May 18, 1980! (This is a great take-off point for a study of Pompeii and of famous volcanic eruptions that have taken place around the world.)

**Vulcanize** - To treat with heat and sulphur to make rubber hard and durable so that it can be used for car, truck, and airplane tires. Sulphur is associated with volcanoes because the gases that come out of vents or cracks in the ground near a volcano smell like sulphur. You can smell sulphur in the smoke when you blow out a match. The process of vulcanization may not smell very good, but it does wonderful things to rubber. Traveling America depends on Vulcanus for its smooth-riding tires!

# hydros

## water

hydroplane - (L. planus - flat surface) - boat that glides on the surface of the water

hydrophobia - (phobos - fear) - fear of water

dehydrate - (de - down, away from) - take water away

hydrogen - (genos, origin) - a gas which, when burned, produces water

hydrophone - (phone - sound) - instrument to "hear" under water

hydrology - (logos - word, study) - study of water

hydroelectric - (electron - amber) - electricity produced by moving water

### Teaching Notes:

Hydrogen is one of the original elements listed on the periodic table of chemical elements. Hydrophobia (see Teaching Notes on page 7). Hydroplane - Most children have seen hydroplane boat races on TV where the boats skim across the water surface. Hydroelectric - is a word first used in 1884 to refer to a way of generating electricity by using moving water to turn turbines. The interesting partner word is electron - the Greek word for amber, a jewel which is really fossilized resin formed in prehistoric forests around the Baltic Sea millions of years ago. Ancient Greek traders brought these lumps of amber resin home where people valued it because it was pretty and easy to carve. Thales of Miletus, a Greek philosopher in 600 B.C., discovered that amber had strange characteristics. When he rubbed it with cloth, it would attract little feathers, threads, and straw. In the 1500s, an Englishman, William Gilbert, found other things, such as glass and sulphur, which behaved like amber and he called them "electrica". What we know as "electricity" took thousands of years getting itself discovered. But aren't we glad we have it now? Thales and Gilbert would be amazed! Do you have a piece of amber you could show the children?



### water

aquarium - a pond or tank of water where fish or water plants can live

aqueduct - (duco, ductum - lead) - a structure for bringing water to where it is needed

aquaculture - (cultura - till, cultivate) - growing food in water (fish, oysters, seaweed)

aquamarine - blue-green color of water

aquaplane - (planus - flat surface) - surf board

Aquarius - a constellation called "Water Carrier"

aqueous humor - (humor - moisture) - fluid in the eye between the lens and cornea

aquifer - (fero, latum - carry) - a layer under the earth where water flows

### Teaching Notes:

How about a trip to the aquarium? - or, better still, is there one in school to look at? Aqueduct - notice the "e" in aqueduct! It is commonly misspelled since we expect it to be spelled with an "a" like its root, AQUA. The Romans were great engineers, and since they needed clean, healthy water in their cities, they built magnificent bridges over land and valleys so cool mountain water could flow by gravity down to the fountains and storage cisterns of the towns. Aqueducts can still be seen today. Someone could find a picture of the Pont du Gard near Nîmes, France, in the encyclopedia. Someone might like to build a model! Aquarius - There is a series of entertaining stories about the constellations and how they got their names. The Egyptians believed that Aquarius, the water carrier, caused the annual floods of the Nile River. The zodiac sign, Aquarius, comes from the hieroglyph for "running water." Aqueous humor - This part of the eye is easy to find on a cross-section drawing of the eyeball. A small introduction to anatomy may be in order here. Aquifer - notice the "i" in this spelling. Some layers underground are solid rock. Others are porous, carry water, and are called aquifers.



# bonus

## good

bonus - something extra good

bon bon (French) - beautifully decorated candy; a good "goody"

bonny (Scottish) - good looking

boon - a good deed; a favor

bounteous - (-ous - full of) - plentiful good

bounty - plenty or reward

bonanza (Spanish - fair weather, prosperity) - rich find in a gold mine

debonaire (Fr. - of good disposition) - kindly, jaunty

### Teaching Notes:

Bonus is one Latin word which the English language has adopted without change. We think of a bonus as a premium which is given when something is purchased, or as an extra payment beyond one's salary, given for extra effort, or when business has been especially good. The word is found in all the "Romance" languages (languages which come from the language of the Romans). The French, of course, took the Latin word bonus from the Gauls who, in turn, had gotten it from Julius Caesar's conquering soldiers.

The last word in the list, debonaire, was originally a French phrase, de bonne aire, which meant, "kindly, gracious, of a good or gentle disposition". It undoubtedly came to England with the Norman Conquest of 1066. The first published use in English was written "debonere" in 1225. Until the time of Samuel Johnson, who wrote the first dictionary of the English language in 1755, spellings were rather flexible (though phonetic). In the present English spelling of the old French phrase, we abbreviate the phrase to a single word, debonaire. The French actor Maurice Chevalier exemplified this pleasant word.

# helios

## sun

Helios - sun god; also called Apollo or Phaethon

heliotrope - (tropos - turn) - plant which turns toward the sun

helium - light gas used in balloons

perihelion - (peri - around, near) - closest point to the sun in earth's orbit

aphelion - (apo - away from) - furthest point from the sun in earth's orbit

helioscope - (skopeo - look) - telescope for looking at the sun

heliometer - (metron - measure) - instrument for measuring the diameter of the sun

### Teaching Notes:

Don't confuse helios - sun, with helix which means "spiral" and which is found in "helicopter" and "double helix" (the shape of the DNA molecule). Heliotrope is an old-fashioned plant grown for its sweet fragrance. It turns to face the sun (as do most flowers). It grows to four feet high with rich dark leaves and violet to blue-purple flowers. Maybe the children could grow some heliotrope seeds! Helianthus mustn't be left out. It is the good old farmyard sunflower, grown as much for its seeds as for its large yellow blossoms. Helianthus or sunflowers could be started from seed in class and set out in gardens in the spring. Maybe someone could do some research on the nutritional value of sunflower seeds too! Perihelion and aphelion are two astronomical terms which relate to our own solar system and are useful for children to know. The orbit of the earth around the sun is an ellipse, not a circle. Moreover, the sun is not exactly at the center of the ellipse, so in January the earth is closer to the sun (perihelion) than it is in July (aphelion). A diagram on the board would help to make this clear.

### Extra Words:

Heliotherapy (therapeia - healing) - sun baths for health.  
Heliocentric (kentros - center) - with the sun at the center. (Our solar system is heliocentric.) Heliograph (graph - write, draw) - instrument for photographing the sun.

# SOL

## sun

solar - pertaining to the sun

solar system - the sun with the objects which revolve around it

solarium - a sun dial; a glass-enclosed sun room

solaster - (astron - star) - a star-fish with more than five rays;  
a sun-star fish

parasol - (Italian - parare - to ward off) - a light portable  
sunshade

solstice - (sisto, statum - set, cause to stand) - stopping or  
standing still of the sun

"Old Sol" - folk name for the sun

### Teaching Notes:

Copernicus and Galileo led the world to realize that we live in a solar system in which the sun is at the center and the planets and their satellites, the asteroids, comets and meteors all revolve around the sun. Before these two far-seeing gentlemen, people believed that the earth was at the center and the sun and moon moved around it! A sentence will help children remember the planets in order of their distance from the sun: Matilda (Mercury) visits (Venus) every (Earth) Monday (Mars); just (Jupiter) stays (Saturn) until (Uranus) noon (Neptune), period (Pluto)!

A solarium was a sun dial in ancient times, but we just call them sundials now. When we speak of a solarium, we mean a room with lots of windows to let in the sunlight.

A discussion of the summer and winter solstices would be fascinating for the children, particularly if they can see the points on the globe, north and south, where the direct perpendicular rays of the sun actually strike the earth. Because of the incline of the earth's axis, the sun shines straight down only as far north as the Tropic of Cancer on June 22, the summer solstice. On that day the sun stops moving north and begins moving south to the Tropic of Capricorn which it reaches by December 22, the winter solstice. Primitive cultures such as the Druids at Stonehenge attached great significance to these dates.

# luna

## moon

lunar - of or pertaining to the moon

lunatic - mad; affected by the moon

lunacy - madness caused by the moon; "moonstruck"

clair de lune - (French) - moonlight

lunambulist - (ambulo, ambulatum - walk) - one whose sleep walking is supposedly caused by the moon

lunarium - instrument showing the phases and motions of the moon

interlunar - (inter - between) - time between old and new moon when the moon is invisible

lunation -  $29\frac{1}{2}$  days - a lunar month or the time from one new moon to the next

### Teaching Notes:

The moon has been an object of wonder all through the history of the world. People who believe in astrology have long thought the stars influenced their lives. But the moon has usually been thought to bring on a kind of madness, so we have lunacy and lunatic and lunambulist all meaning "moonstruck" in some way. A popular movie in recent years, "MOONSTRUCK", shows that this superstition still exists.

The words "lunar module" brought this Latin derivative into everyone's day-to-day conversation after July 20, 1969, when astronaut Neil Armstrong first set foot on the moon.

Claude Debussy (1862-1918), a French composer who was influenced by the impressionist painters of his day, wrote a composition for piano, Clair de Lune, in which he tried to express how one feels on a moonlit night. Ludwig von Beethoven tried his hand at expressing the same mood with his Moonlight Sonata. Perhaps you could play recordings of these two musical compositions for the children while they draw or write the impressions which come to them as they listen.

# dia

## through, between, across, apart

diabolical - (bole - shot, blow) - shot through, possessed (by a devil)

diadem - (desmos - bond) - bound across the forehead, a wreath or crown

diagnosis - (gnosis - knowledge) - thorough knowledge

diagonal - (gony - knee) - line between two non-adjacent corners in a figure of four or more sides

diagram - (graph - write, draw) - a cross-section drawing

diameter - (metron - measure) - measure across

diamond - (ā - not + damos - tame) - hardest substance

diacritical - (krinein - separate) - marks to separate long and short vowel sounds

### Teaching Notes:

Diabolical is related to Spanish "diablo" and French "diable", both meaning "devil". It means possessed or shot through by a devil or evil spirit. Cupid shot arrows so people would be possessed by love, but not diabolical. A diadem is usually a sparkling crown, but since it is really something bound across (or around) the head, it could also be a runner's sweatband or the wreath he wins in a race. Diagonal - It's fascinating how many words the Greeks made by observing their own bodies. The four angles in a square are thought of as its "knees". (Some LEG, huh?) A diamond is the hardest and clearest stone ever found. The ancients had trouble cutting through, shaping (or taming) the ones they found, so they called them "not tamable all the way through". Diacritical marks are those which help us to distinguish between long and short vowel sounds in words we want to pronounce. A "macron" shows the long "ū" in cube and a "breve" shows the short "ū" in cub.

### Extra Words:

Diaphanous (phainein - show) means to show through, usually said of a fabric so delicate you can see through it. In Egypt where it is hot, ancient paintings show people wearing diaphanous (see through, or let-the-breezes-blow-through) clothes. Today, nylon stockings are diaphanous.



# trans

## across, over, beyond, through

transport - (porto, portatum - carry) - carry across

transaction - (ago, actum - do, drive) - trade, exchange

transcript - (scribo, scriptum - write) - speech put into writing

transfer - (fero, latum - carry) - carry across

transform - (formo, formatum - form, shape) - change over to a different form

transplant - (planta - sprout, plant) - move a plant.

transparent - (pareo - appear) - appear or be seen through

### Teaching Notes:

Trans is another Latin word which is used both as a preposition and as a prefix. In English it is always a prefix. Transaction is a word for a great many actions which involve exchanges between people, companies, countries, etc. Money may be involved, or it may not. But a bargain, an agreement, an exchange of some sort is implied in the word. A transcript is the taking down in writing what someone has spoken. There are court transcripts of trial proceedings. Lots of TV stations sell transcripts of their programs. Sometimes an audio recording is called a transcription.

### Extra Words:

Transcend (scando, scansum - climb) - Climb over, exceed, climb beyond. Knowing the scando part of this word explains and helps one remember the sc spelling in transcend. In English the "c" sounds like /s / because it is followed by "e", but in Latin, it is always pronounced with its hard /k / sound. Transcontinental (con - together + teneo - hold) - across the held-together land. The Roman word contineo was made of these two parts. We speak of transcontinental railroad and airplane rides. Long trips!

# geo

## earth

**geography** - (graph - write, draw) - draw the earth (make maps) and write about it

**geographer** - one who makes maps and writes about the earth

**geology** - (logos - word, study) - study of the earth and its formations

**geologist** - one who studies the formations of the earth's crust; rocks, minerals, oil, etc.

**geometry** - (metron - measure) - branch of study on ways to measure the earth

**George** - (ergon - work) - one who works the earth; a farmer

### Teaching Notes:

**George** - Not everyone who is named George is a farmer these days, but that's what the name really means! Agriculture has always been a highly respected profession since it was by working the earth and raising crops that all civilizations have lived since they progressed beyond the hunter-gatherer stage. The Greek poet and farmer, Hesiod (c. 700 B.C.)\*, in his *Works and Days*, and the Roman poet, Vergil (70-19 B.C.), in *Georgics* celebrated the life of a farmer. **Geometry** - The ancient Greeks were interested in the size of the earth and invented ways to measure it. One man, Eratosthenes (c. 276-194 B.C.) thought the earth was round, not flat, and accurately measured the circumference of the earth! He read that a post cast no shadow on June 21 in Syene (800 km south of Alexandria, Egypt) but that a post in Alexandria DID cast a shadow on the same day! Carl Sagan's COSMOS series, episode #1, shows just how Eratosthenes figured out the earth's circumference.

### Extra Words:

**Geocentrism** (kentros - center) - theory that the earth is the center of the universe. **Geochrony** (chronos - time) - **Geologic** time measured since the world began.

\* c. - abbreviation for circa - around, approximately

# terra

## land

territory - land under control of a government or owner

terrace - raised platform of earth

terra cotta - (coquo, coctum - cook) - "cooked earth",  
fired clay pottery, tiles, etc.

terrarium - garden in a small glass container

terrestrial - pertaining to the earth

extraterrestrial - (extra - outside) - outside the earth's  
atmosphere

terrier - small dog which hunts for burrowing game

Mediterranean Sea - (medius - middle) - the sea in the  
middle of the land

### Teaching Notes:

Territory - This word is usually thought to come from terra - earth, but some sources say that, since it is land which belongs to someone, it may have also come from terreo, territum, which means "frighten", with the idea that it was land from which outsiders were warned or frightened off. It's a good story, but I think we can safely group it with terra's derivatives. Terra cotta is an Italian word which has been taken into English. The Latin word for the same sort of glazed or unglazed pottery or tiles was terra cocta. Firing or "cooking" the clay, of course, made it durable and able to hold water. Extraterrestrial - This word is written as one long, unhyphenated word, but of course, E.T. would write it as two words, as his initials indicate. Terrier - This small hunting dog was trained to dig for small burrowing game animals such as rabbits, badgers, etc.

### Extra Words:

Inter (in - in, into) put into the earth, bury. When intér means "bury", you must accent the second syllable. Terrain - A tract of land considered for its features such as hills, ravines, etc.

# dormio

# dormitum

## sleep

- dormant - sleeping
- dormant spray - insecticide for plants used in the non-growing season
- dormitory - place for sleeping
- dormer window - bedroom window set into a roof
- dormouse - sleeping (hibernating) mouse
- dormeuse - railway sleeping car
- dormitive - something that causes sleep
- dormition - act of sleeping

### Teaching Notes:

Latin is an "inflected" language: That means it "bends" (from the Latin word flecto, flectere, flexi, flexum - to bend) the endings of words rather than using extra words, such as I, you, he, she, or it. (WE say, "I sleep", "you sleep", "he sleeps", etc.). Latin attaches the I, you, she, etc., to the end of the word like this: dormio - I sleep, dormis - you sleep, dormit - he, she, or it sleeps. The DORMI- stays the same and gives you the "sleep" idea. The endings, -o, -s, -t, tell you WHO is sleeping. In English, we take the "root" word DORMI- and add various endings which form our derivatives - all having something to do with the idea of "sleep".

Italian, Spanish, and French started out as dialects of Latin, so if you know this Latin root DORM, you won't be surprised to find that a word for "sleep" in Italian is "dormire", in Spanish is "dormir", and in French, "dormir". Learning these Latin roots will give you a great head start on learning the vocabulary of these three modern Romance languages!

Dormer window - Attic rooms under the roof are often used as bedrooms. The windows, being vertical and set into a slanted roof, have their own little roofs. Perhaps the children can find pictures of them in the encyclopedia. Dormouse - He's not a mouse who comes in your door, nor does he have a door to his own house. He hibernates during cold months. Remember that in *Alice's Adventures in Wonderland*, the dormouse just couldn't stay awake at the tea party?

# hypnos

## sleep

hypnosis - sleep-like state controlled by a hypnotizer

hypnotize - put into a hypnotic sleep or trance

hypnology - (logos - word, study) - study of sleep

hypnotic - tending to induce sleep

hypnotherapy - (therapeia - treatment) - treatment of disease by hypnosis

hypnophobia - (phobos - fear) - fear of sleep

Hypnos - god of sleep in Greek mythology; Somnus

### Teaching Notes:

Dormio, the Latin word for sleep, refers to the usual kind of sleeping which we all do every night. The English words derived from it carry that same connotation.

Derivatives from the Greek word, hypnos are somewhat different. Perhaps it has something to do with the fact that Hypnos, the mythological god of sleep, had a twin brother, Thanatos, god of death, who didn't care for gifts and was NOT worshipped! Both were the fatherless sons of Nyx (night). Hypnos, according to Hesiod, lived in the underworld and never got to see the sun. He did, however, come softly to men and bestow restful sleep upon them, sometimes by gently brushing the forehead of a weary one with a leafy branch, or by pouring a sleep-inducing liquid from a horn (rather like early powder horns, perhaps?). He is a sort of classical forerunner of the sandman, celebrated in folklore. When children began to get sleepy and to rub their eyes, their elders would nod wisely and say that the sandman had dropped some of his "sleeping sand" into their eyes and that it was clearly time for bed!

English derivatives from hypnos refer mostly to the kind of sleeping trance which is induced by a hypnotist who then has control over his subject and can make him think or do whatever the hypnotist suggests. Rather than bestowing natural sleep, hypnosis involves yielding control of one's thoughts and will to another, who may or may not have the best interests of the "sleeper" at heart. Hypnosis has been used for many years as an entertainment act - particularly in old-time vaudeville. There are various and controversial medical applications of hypnosis today.



# annus

## year

annual - yearly

anniversary - (verto, versum - turn) - celebration marking the turning of a year

biannual - (bi - two) - occurring twice a year

biennial - (bi - two) - every two years

triannual - (tri - three) - three times a year

triennial - (tri - three) - every three years

centennial - (centum - hundred) - every hundred years

millennial - (mille - thousand) - every thousand years

perennial - (per - through) - through the years

annuity - amount of money paid yearly

annals - historical events recorded year by year

### Teaching Notes:

A useful thing to remember about all these English words derived from ANNUS is the presence of the "nn" in each one of them. The "a" in ANNUS changes to "e" in many of the words in our list. It is also useful to point out to children that biannual (with an "a") means "two times a year" whereas biennial (with an "e") means "every two years". The same holds true for triannual and triennial.

Pages 35-44 feature Latin cardinal numbers (e.g., one, two, three, etc.) all of which combine with the "-ennial" ending and mean "every four, five, six, etc., years": quadrennial, quinquennial, sexennial, septennial, octennial, novennial, decennial, centennial, and millennial. All use the cardinal number root words and not the ordinal number words (e.g., first, second, third, etc.). (Latin ordinal number words will be given in Volume II of this book series.)

Investing money in an annuity is one of the many ways that working people can provide a yearly income for the rest of their lives when they retire and can no longer work.

Ancient Roman historians at first wrote annals in which they recorded important events, records of magistrates, religious events, etc. Annalists later wrote more interesting stories about what was happening. The whole concept of history and how it is recorded, published and preserved is worth thinking about and discussing in class. Perhaps the class could write the "Annals of the school year".

# lithos

## stone

**lithograph** - (graph - write, draw) - picture drawn on stone so the stone can "draw a picture"

**monolith** - (monos - one, alone) - lone stone

**megalith** - (me-gas - large) - large stone

**lithology** - (logos - word, study) - study of rocks or stone

**lithosphere** - (sphaira - ball, globe) - the rocky crust of the earth

**lithic** - made of or pertaining to stone

**eolith** - (eo - dawn) - earliest stone age

**paleolithic** - (paleo - old, ancient) - ancient stone age after the eolithic period

**neolithic** - (neo - new) - new or late stone age

### Teaching Notes:

A film or video which shows the process of lithography would be wonderful for the children to see. Lithographs were vastly important in publishing before the age of photography. The two great lithographers, Currier and Ives, were credited with people's enthusiasm for the westward movement in 19th century America. They made it look grand and inviting, so people packed up and went west! Currier and Ives lithographs are used on Christmas cards every year. Perhaps someone could bring one to class.

A monolith is a large, single stone used as a monument or obelisk. A megalith is a really HUGE stone such as the ones used in building Stonehenge. Children will enjoy finding out how the early people moved those megaliths and set them up in place.

The layers of matter which comprise the earth are of great interest to children. The outer crust, the lithosphere, is 50 miles thick! Inside the lithosphere, there is red hot molten rock called MAGMA which erupts from time to time in volcanoes. (See VULCANUS - p.47).

Finding out what early man learned to do in the various stone ages, eolithic, paleolithic, and neolithic, never fails to capture children's interest. A university archeology department might recommend someone who would show the children how stone tools were made.

# petros

## rock, stone

petrified - (facio, factum - make, do) - made into stone

petrification - process of making into stone

Peter - name which means "reliable, like a rock"

petroleum - (oleum - olive, olive oil) - oil from rocks

petroglyph - (glyphein - carve) - rock carving

petrography - (graph - write, draw) - writing about rocks

petrous - hard, stone-like, rocky

### Teaching Notes:

We speak of being petrified when we are frightened into rigidity - made stone-like by fear. Prehistoric trees were literally petrified (turned to stone) as mineral molecules underground gradually replaced the wood molecules, but assumed the same structural grain as the wood. Some petrified wood is beautiful when it is polished. All of it is interesting!

Peter is the name given by Jesus Christ to his disciple, Simon Bar Jonah, because he was so dependable and firm in his faith. Peter was "like a rock"!

The Greeks and Romans both used olive oil. The Romans took their words petra and oleum from the Greek words petros and elaion. Petroleum is really a modern derivative from the Latin words and refers to mineral oil which comes from rocks in the ground rather than from vegetables or olives.

We usually think of petroglyphs as the ancient carvings on rocks done by primitive people. Actually, any rock carving can be a petroglyph, even if you did it today!

The word petrography refers to writing of descriptions of various rocks and classifying them rather than to writing on rocks.

# astron

## star

aster - star-shaped flower

astronomer - (onoma - name) - one who names the stars

asteroid - (eidos - form) - in the form of a star

astrologer - (logos - study, knowledge) - one who gets knowledge from stars

astronaut (nauta - sailor) - star sailor

disaster - (dis - separation or parting from) - separation from the good influence of friendly stars

astral - pertaining to stars (astral navigation - navigating by the stars)

astrodome - covered stadium where sports stars perform

### Teaching Notes:

Astrodome - The huge domed stadiums being built for sports are marvels of engineering today. In the ancient world there were great buildings which attracted tourists from everywhere. If your library has a copy of Richard Halliburton's *Book of Marvels - The Orient*, you will find a good story about an Athenian boy, Demetrius, who in 250 B.C. sets sail with his father to visit the seven wonders of the ancient world. Reading this aloud is a way of giving your children some knowledge about ancient times from a child's point of view. Demetrius visits 1) The Temple of Zeus at Olympia, 2) The Temple of Diana at Ephesus, 3) The Tomb of Mausolus at Hallicarnassus (the first mausoleum), 4) The Colossos of Rhodes, 5) The Pharos (lighthouse) of Alexandria, 6) The Egyptian Pyramids and Sphinx, and 7) The Palace of King Minos at Knossos. In connection with the last one, you can tell them a story of Theseus and the Minotaur!

Asteroids aren't really star-shaped. They are very small planets which revolve around the sun between the orbits of Mars and Jupiter. In the story, *The Little Prince* by Antoine de Saint Exupéry, the prince lives on an asteroid and takes good care of it.

# stella

## star

stellar - pertaining to a star, or stars

constellation - (cum - together) - group of stars

interstellar - (inter - between) - between the stars

stellate - star-shaped

stellascope - (skopeo [Gr.] - look at) - instrument for looking at the stars; astronomical telescope

stellerid - a star fish

stellify - (facio, factum - make) - transform a person or thing into a star or constellation

Stella - girl's name meaning "Star"

Estellita - girl's name meaning "Little Star"

### Teaching Notes:

We have just looked at the Greek word for "star" - astron. The Romans adopted it as astrum. Both the Latin stella and the Greek astron came from the ancient Indo-European word ster. The Indo-Europeans tacked an ending on ster, making it ster-la, so it's easy to see how stella developed. The Germanic word which came from ster was sterron, and it is from this old German word that we get the English word star. Some of the ancient Indo-Europeans moved east into the land which is now India where their language developed into Sanskrit. The Sanskrit word for star is "(s)tara" - not very different. Old Sanskrit developed into modern Hindi, spoken in India today. It's wonderful to see how all these languages are related.

Wondering about the stars and trying to learn more about them is something we share with people of all ages in history. The constellations were given Latin names so people everywhere would know which stars or star groups were being discussed. Latin helps draw people together in their search for knowledge.

Incidentally, the motto of the state of Kansas is "Ad astra per aspera", which means "To the stars through difficulties." A pretty good motto to learn!



# dendron

## tree

rhododendron - (rhodos - rose, red) - evergreen shrub with large flowers

lepidodendron - (lepidos - scale) - extinct prehistoric tree with scaly bark

dendrophile - (philia - love) - lover of trees

dendrometer - (metron - measure) - instrument for measuring the height and diameter of trees

dendrolite - (lithos - stone) - petrified or fossil trees

dendriform - (forma - form, shape) - having the shape of a tree

### Teaching Notes:

Rhododendrons are spectacular shrubs which grow in temperate climates. Even though rhodos means "rose or red", the large multiple flower heads can also be many other colors. A trip to a rhododendron show or nursery in spring would help children see how many and varied the colors are, and how the plants are identified by their Latin botanical names. The rhododendron is the Washington State flower.

Lepidodendrons lived between 400 million and 250 million years ago. They are extinct now, but they are still very important to us. Lepidodendrons grew in what is known as the Carboniferous (carbon bearing) age. The 100-foot high lepidodendrons, with their umbrella-shaped spray of leaves at the top, their scaly bark, and pulpy (rather than truly wooden) trunks, fell by the millions into the mud of the steamy primeval swamps in which they grew. They sank deep down and, under great pressure, formed the vast layers of coal which have been found all over the world. This coal has provided energy for man's use for thousands of years. The forms of the trees and the scaly pattern of the trunks can still be seen in the coal beds. Lepidodendron scales looked so much like reptile scales that early people thought they had found the fossils of huge snakes! If someone can bring some coal to class to be examined with magnifiers, you may find some interesting fossil patterns.

Knowing how much we owe to trees for the well-being of our environment, we can all call ourselves dendrophiles!

# arbor arboris

## tree

**arboretum** - public garden where trees are cultivated and exhibited

**Arbor Day** - day designated for planting trees - usually in March, April or May

**grape arbor** - grape vines trained to climb on a trellis or open-roof framework

**arboraceous** - full of trees, wooded

**arboriculture** - (cultura - tending) - cultivation of trees and shrubs

**arborvitae** - (vita - life) - "tree of life"; an evergreen tree of the cypress family bearing cones (conifer)

### Teaching Notes:

Most cities have a public garden called an arboretum where trees are cultivated for enjoyment and study. Most states observe Arbor Day but not all on the same day. The first Arbor Day was April 10, 1872, in the state of Nebraska. On that day, Nebraskans planted over one million trees! Tree planting is a fine class project. Timber companies often make seedlings available for children to plant. Trees clean the air of carbon dioxide and give back oxygen. They help to counteract the air pollution caused by millions of gasoline-burning vehicles all over the world. We need a worldwide Arbor Day! The story of Johnny Appleseed used to be a favorite in elementary schools. Your school or public library very likely can find a copy for you and your children to read. Johnny never ate an apple without planting the seeds in the core by the roadside so that coming generations would have shade and good apples to eat.

Grape arbors are common in sunny parts of the world where the climate is good for grapes. The vines, which are trained to climb up over an open-roof framework, grow very thick, almost like tree trunks. The clusters of grapes then hang down through the roof and are easily picked. While the vines are in leaf, a grape arbor makes a shady and fragrant place to sit and enjoy a pleasant hour of reading or sharing refreshments. Could your class make a project of building a small grape arbor and of planting apple trees around the school?

# chronos

## time

synchronize - (syn - together, same) - do at same time

chronometer - (metron - measure) - device to measure time

chronology - (logos - word, study) - relate events in time sequence

chronic - over a period of time; "from time to time"

chronograph - (graph - write, draw) - device to measure and record time

**Teaching Notes:** Synchronize - We usually use this word to mean setting our watches to the same time so that we can meet later, or do separate tasks at the exact same moment. Chronology - The children can write chronologies of one of their days, from the time they get up to the time they go to bed. (It's always an instructive eye-opener to how time is spent!) Chronic - This seems to have more of a negative meaning. We speak of "chronic illness" or "chronic tardiness" when it happens frequently, or all the time.

**Extra Words:** A chronologist (logos - word or study) is a person skilled in putting time or dates in sequence. A chronicle is a record of events in order of time. Newspapers often adopt "chronicle" as part of their names. *The San Francisco Chronicle* gives you daily news of events as they happen.

# tempus temporis

## time

temporal - pertaining to time

temporary - for a limited time

temporize - play for time; stall

extemporaneous - (ex - out) - speak or act at (or out of) the time without preparation

contemporary - (cum - together, with) - with the time

contemporaries - people who are alive at the same time

tempo - (Italian from Latin) - time in music; rate of speed at which a piece of music moves

tense - (French: temps) - verb forms which indicate past, present or future time

### Teaching Notes:

This Latin word, tempus, temporis is descended from an old Indo-European root word, temp, which meant "stretch or extend". Ancient people set aside a "stretch of land" for observing the stars which were objects of religious contemplation. The Romans called a place dedicated to religious observances a templum (a temple, to us). The places on the human body where the skin is stretched thinnest are the temples on the head. If one's will power is stretched, one is tempted. To stretch toward an object or goal is to attempt it. Tempus, temporis, meant a span, stretch, or extent of time - between "then and now"; between "now and later"; between "before and after".

Children will enjoy exploring how the ancient people gradually gained a sense of time by observing events which were repeated regularly (such as ocean waves, tides, sunrise and sunset, moon phases, growing seasons, etc.). Finding out how the ancients kept track of time is a wonderful project for a class. If we had no clocks or calendars, how would we organize our days and our work? How would we make arrangements to meet each other? Would life move faster or more slowly? Why?

When you stretch your imagination, you can see how the old Indo-European idea temp (stretch) was used metaphorically in various situations over more than 4,000 years. TEMPUS FUGIT! (Time flies!)

# para

## beside, along with

parable - (ballein - to throw) - to throw a story in for comparison while teaching a lesson or moral

parachute - (L. cadere - to fall) - goes along with you as you fall and slows you down

parenthesis - (thesis - place) - a statement placed beside (or within) the main sentence

paragraph - (graph - write) - ¶ - an editing mark beside a page of print to show needed indentation

parallel - (allos - other) - lying along side of another line but not touching

### Teaching Notes:

**Para** - There are a great many English derivatives which use this hardworking Greek prefix. Knowing the root and knowing how it is used in the words above makes many words accessible to children which they otherwise might not understand. **Parable** - It would be useful to read a parable from the Bible or from Aesop or La Fontaine to the children so they understand how this kind of literature works.

### Extra Words:

There is a French word, para, from the Italian parare which means "to protect or defend" - which undoubtedly can be traced back to the Greek meaning of "beside". It is used in the "defending" sense in parachute since the silk umbrella protects you from falling too fast; a parasol protects you from the sun. Words like paratroops come from the meaning of parachute and mean soldiers who parachute down from the sky. Paramedic - works beside a doctor as an aide. Paralegal - works beside a lawyer as an aide.



# inter

## between, among, amid

international - (natio - nation, race, kindred) - between or among nations

interject - (jacio, jactum - throw) - throw between

interaction - (ago, actum - act, perform) - discussion or action between or among people

intervene - (venio, ventum - come) - come between

intergalactic - (galactos [Gr] - milk) - between stars in the Milky Way

interlude - (ludus - play) - light entertainment in the midst of serious activities; a "break"

### Teaching Notes:

*Webster's International Dictionary*, Second Edition, devotes 27 columns to words beginning with **INTER**. It is so well integrated with the English language that we may forget that it was a separate Latin word long ago. The Romans used it both as a preposition and as a prefix but we use it only as a prefix.

The related words, **INTRA**, which means "within" or "inside", and **INTRO**, meaning "go into" or "enter", were also separate words in Latin. The differences in meaning may seem like small distinctions, but pointing out such distinctions to children helps them become more precise in their use of language and therefore much more confident in their ability to express themselves. You may want to make separate root cards for each one of these words in order to give the differences in meaning the attention they deserve.

### Extra Words:

Students will want to know the difference between **INTER**scholastic athletic competitions, meaning games between schools, and **INTRAM**ural (**MURUS** - wall) sports, meaning "within or inside the walls" of one school (perhaps games between classes or clubs). **INTRO**duce (**DUCO** - lead) means "to lead into" which happens when you lead or bring a new person into a discussion. **INTRO**spection means looking into or entering one's own thoughts and feelings for the purpose of self-evaluation. Three good root words to know!

# techne

## art, skill

technology - (logos - word, study) - study of how to do things

technical - pertaining to the art or skill involved in all kinds of work, science, sport, business, profession, mechanical arts

technique - expert skill in accomplishing something

technician - one who is skilled in details of an art or subject

architect - (archi - chief, master) - a master builder

architecture - art or science of building

### Teaching Notes:

We use the words technical and high tech almost as though we had invented them in the last few years. We associate any word which has TECH in it with the latest wonders of the modern world. Sleek cars, fast airplanes, streamlined trains, computers, telecommunications - all are images which pop into mind when technology is mentioned. It has been that way for thousands of years, though.

The ancient Indo-European word TEKH meant weaving or building. The ancients wove and built with simple materials which came to hand in those days (around 6000 B.C., according to Robert Claiborne). We think the Indo-European tribes lived in the valley of the Danube River and were the first farmers in their part of the world. Agriculture was very different from hunting, or gathering grains and berries wherever they happened to be found. The old Indo-Europeans developed the new technologies of plowing, planting, and harvesting. They built homes and made clothing in new ways.

Mankind has kept on devising new technology ever since man's time began. When you think about it, all through history, whenever someone has invented something new, it has always been the latest, modern, state-of-the-art technology. Even 100 years ago, they said, "Everything's up to date in Kansas City!"

# ars artis

## art, skill

art - display or application of skill

artist - one who acts or creates with skill

artistic - pertaining to skillful creation

artless - without skill, natural, simple and sincere

artful - full of, or characterized by skill

artificial - (facio, factum - make) - made by man; not occurring naturally

artillery - (artiller [F.] - equip) - equipment for war

inert - (in - not) - not skilled, inactive, sluggish

inertia - state of inactivity; motion which continues unless altered by an external force

### Teaching Notes:

Even though both techne and ars, artis mean "art or skill", we need derivatives from each of them for our English vocabulary because we use them somewhat differently. We attribute more personal creativity and inner feeling to someone whom we call an artist. We tend to think more of expert manual or mechanical skill when we talk of a technician. In the United States today, we associate technology with industry or practical goods, and think more of music, painting, drama, and literature as the arts. Is an artisan more a technician than he or she is an artist? Is an architect more an artist than she or he is a technician? Puzzling questions to think and talk about!

Artillery has an interesting background. The French word, artiller, meaning "equip" is combined with ars to form a word which means heavy war equipment which requires a skilled operator. We might jokingly refer to a club as a caveman's "artillery", but it really means cannon, missiles, anti-aircraft guns, machine guns, etc.

Metro-Goldwyn-Mayer movies, for many years, began with a picture of a roaring lion framed in a circle bearing the inscription, "Ars gratia artis" (art for the sake of art).

# bios

## life

biology - (logos - word, study) - study of life

biography - (graph - write, draw) - written life story

autobiography - (autos - self) - written life story of one's self

microbe - (micro - small) - tiny form of life

amphibian - (amphi - both) - creature who can live both on land and in water

bionic - life-like

biotic - pertaining to life

antibiotic - (anti - against) - against living forms which invade the body

### Teaching Notes:

This Greek word continues to contribute new words to the English language every year. Its meaning, "life", is so universally recognized, that BIOS is readily combined with other root words to coin new English scientific terms which can be widely understood. Biodegradable is a word which is much in the news these days when plastics and detergents, considered harmful to the natural environment, are being discussed. It simply describes a substance which can be broken down by the action of microbes, or tiny forms of life. The degradable portion of the word (de - down + gradus - step) means that a complex, manufactured substance can be "stepped" or broken down into its simple, natural components in the way that fallen trees rot in the forest. On TV, the famous "Bionic Man" had life-like artificial body parts which enabled him to race with trains and leap over trees.

A search of the unabridged dictionary will reveal many infrequently used scientific terms all having some connection to the concept of life. Biolysis (lysis - loosing, parting, breaking up) has a meaning similar to biodegradable since it refers to the destruction of organic material by microorganisms. We mustn't leave out an early term, biophotophone, just for the fun of figuring out what it meant - now that we know photo and phone. It's what they called an early machine for making talking motion pictures. It was a bit unwieldy and was soon discarded. They don't all work!

# VIVO victum

## live

vivid - lively, animated, spirited

revive - (re - back, again) - come back to life

survive - (sur [F. from L.] super - over) - to live over, or beyond a threat of death

vivacity - liveliness, vigor

convivial - (con - with, together) - relating to feasting together

viand - food to support life

victual - (pronounced "vit'l") - food to support life

victim - religious sacrifice of live animal or person

### Teaching Notes:

Vivo, victum (pronounced wee-woh, wictim) may not look as though it is related to the Greek word for "life", bios, but it is! They both came from the old Indo-European word gwei meaning "life" or "alive". It's interesting that two rather old-fashioned words for "food", viand and victual ("vit'l") actually came from our Latin word vivo, victum. For the ancient people, life depended entirely on whether they were able to find something to eat or not, so they thought of the meat from the tribe's hunting trip, or the grains and berries they were able to gather, as "life".

We now speak of anyone who has suffered a misfortune or an accident as a "victim". However, the word originally referred to the live animal or human being who was sacrificed to appease a god. In the story of the Trojan War, Agamemnon had vowed to sail to Troy to help his younger brother, Menelaus, bring back his beautiful wife, Helen, who had been stolen by the Trojan prince, Paris. However, having gathered thousands of ships and allies on the beach at Aulis, Agamemnon found that the goddess, Artemis, angry at the killing of a sacred deer, had becalmed the winds so that the Greek ships could not sail to Troy. Agamemnon felt he had to get them moving by making a sacrifice to Artemis. Poor Iphigenia was the victim! Some stories say the goddess rescued her at the last minute and made her a priestess.



# mikros

## small

- microphone - (phone - sound) - device for transmitting a small sound over distance
- microbe - (bios - life) - tiny form of life
- microcosm - (cosmos - world) - a tiny world
- microfilm - (filmen [Anglo-Saxon] - thin skin) - tiny film for storing books, records, etc.
- micrometer - (metron - measure) - instrument for measuring small things
- micron - unit of length 1/1000 of 1 millimeter
- microscope - (skopeo - look at) - instrument for looking at tiny things
- microwave - (wafian [Anglo-Saxon] - wave) - tiny electromagnetic wave between 1 and 100 centimeters long

**Teaching Notes:** When Greek words were taken into Latin, as mikros was, the Greek letter kappa "K" was changed to a "c". The Romans did take the letter "K" from Greek, but used it very little since "c" was always pronounced like a "k" and never like an "s". In English, of course, "c" before "e", "i", or "y" says /s/.

Microcosm - We speak of tiny worlds such as those found in drops of water or decaying logs, in which thousands of tiny creatures live their lives unaware of the larger world about them. A small human community in which all the functions of the great world are carried on could be called a microcosm as well. Microfilm and microwave are both "hybrid" words since they combine Greek and Anglo-Saxon roots. Usually Greek roots combine with Greek to make new vocabulary, but it is becoming more common to put roots from different languages together.

Nothing makes the meaning of mikros mean more to children than the opportunity to look at something tiny (an insect, a grain of salt or sugar, a stamp) through a microscope. Is there a microscope that your children could use?

# megas

## great, large, big

**megaphone** - (phone - sound) - device for making a sound larger (louder)

**megalith** - (lithos - rock) - huge rock (such as those in Stonehenge)

**megalomania** - (mania - craze) - crazy person with delusions of grandeur or greatness

**megalophonous** - (phone - sound) - having a big or loud sound or voice

**mega** - in the metric system, a million times

**megameter** - a million meters

**megatons** - a million tons

### Teaching Notes:

You have seen that some Latin nouns in this book have given you two forms of the word so you can recognize derivatives from both forms (see pp. 29, 31, 32 etc). The ancient Indo-Europeans had a word (megh - great) which was handed down to all the languages which descended from it. Megas, megale, mega is the Greek adjective which came from it. Megalou is the genitive (possessive) case ending and gives you the letters "lo" in words like megalomania. The two combining forms of this word in English, mega- and megalo- both have the same meaning - "great". You have examples of both of them up there in the box. You'll find many more in your large dictionary.

Mega is used in English almost as a slang expression when people speak of large amounts of anything. Mega really means "million times" in the metric system of numbers, but a child might speak of a \$100 bicycle as one which "costs megabucks"! Literally, though, you have to be a millionaire to have "megabucks"!

### Extra Words:

Megalopolis (polis - city) is a word we use to mean a huge sprawling city like New York or Los Angeles, which may end only where the next city begins. Megalops (ops - eye) is the name of a certain stage in the development of a crab when its legs are still small, but its eyes are very large. Megalo is part of many scientific terms.

# magnus

## big, large, great

magnify - (facio, factum - make, do) - make larger

magnifier - that which makes greater

magnitude - (-tudo - ness) - greatness

magnate - person of great rank or influence

magnificent - great in deed or character; lavish

magnanimous - (animus - mind, spirit) - great in mind;  
above what is low, mean or ungenerous; noble in soul

### Teaching Notes:

Magnify - the ending -fy comes from the Latin word facio through the French ending -fier which means "make" or "do". Sometimes it isn't quite as easy to recognize Latin roots when they have stopped over in France (Gaul) for a while first. (See p. 25 for a discussion of how Latin became French.) The second word, magnifier is not a French word (as you might conclude from its ending at this point) but simply magnify with the "y" changed to "i" before adding an ending (-er) that begins with a vowel. The ending on the word magnitude, like the Anglo-Saxon ending, -ness, simply makes a noun out of an adjective and means "state or condition of being great".

Someone always brings up the word "magnet", so (preferably with a magnet in hand) you will want to explain that it is NOT from magnus. Rather, the original magnets were known as "Magnesian stones". Legend has it that a shepherd boy, from Magnesia in Asia Minor, noticed that certain black stones stuck to the iron tip of his staff. They were attracted to iron. Much later, in the 13th century, people discovered that an oblong piece of this stone would point to the north if it were hung on a string. They called it "loadstone" or "lodestone". "Lode" is Anglo-Saxon for "way" and people would find the way on a journey if they had one of these magnetic "lodestones". Soon lodestones were made into compasses so sailors no longer had to find the way at sea only by the stars. This was a very GREAT thing, to be sure, but "magnet" still doesn't come from magnus!

pater  
patris

### father

patriarch - (archos [Gr.] - chief) - chief father of a family or of a society

patriotism - love for the fatherland

patrician - nobly born person; descendant of the founding fathers of Rome

patrimony - (-monia - condition) - condition or estate inherited from one's fathers

patron - one who acts like a father toward another

patronymic - (onyma [Gr.] - name) - a father's name adapted and given to his children

### Teaching Notes:

In many ancient societies (and some modern ones too), the oldest grandfather in an extended family is thought of as the patriarch. The founding fathers of a society are thought of as the patriarchs of the whole society. (The ch in archos is pronounced like "k"). The patricians of Rome were the upper class and descendants of the founders. They had rights and privileges and usually wealth which the "plebeians" or lower classes did not have. In the early days of Rome, you had to be a patrician to hold the high offices of senator or consul. Later, however, things loosened up and the plebeians gained more power.

A patrimony is usually money or land which is handed down from a father to his children. In the story of the prodigal son in the Bible, the son asks his father for "that portion of goods that falleth to me". That was his patrimony or inheritance. As the story goes, the son wastes the money, repents, and returns home a sadder and wiser man, ready to start over and do better.

A patron is usually one who gives financial support as a father would. Those who contribute to charities and cultural organizations today are known as patrons.

Patronymics are found in most societies in the world. In Ireland, Brian's son was John O'Brian; in Scotland, Donald's son was John MacDonald; in Sweden, Peter's son was John Peterson; in Norway, Olaf's son was John Olafssen (and his daughter was Kari Olafsdatter); in Russia, Ivan's son was John Ivanovich. Are there any patronymics in the class?

mater  
matris

### mother

matriarch - (archos - chief) - a woman who rules the family

maternal - motherly

maternal grandparents - parents of one's mother

matrix - the ground from which some thing or idea springs

matriculate - have one's name entered on the list of students  
of a school or college

alma mater - (alma - nourishing; kind) - the "dear old  
school" from which one graduates

matrimony - (-monia - condition) - state from which  
motherhood develops

### Teaching Notes:

There have been societies in the world in which the women rule the families and the societies. These are matriarchies. It is not the general rule in today's world.

If maternal grandparents are the parents of one's mother, paternal grandparents are the parents of one's father.

The first definition given for matrix is "a womb". It is used, however, to mean the pattern or mold which gives form to things made from it such as coins, or printing type.

Matriculating at a college implies the whole process of getting accepted, arriving and being registered for classes at what will become one's alma mater.

Scholars for hundreds of years have spoken of their colleges in after years as alma mater - kind and nourishing mother. Like a mother, the college had taught them what they needed to learn, nourished them with ideas and knowledge which helped them grow intellectually and spiritually, and maintained an interest in their welfare. That is just what all schools are supposed to do! When they do, students usually have affectionate feelings for their school days at the old alma mater.

Historically, getting married meant that a woman would soon have children, so marriage is called matrimony, the state or condition of motherhood.



# frater fratris

## brother

fraternal - brotherly

fraternity - brotherly association of men

fraternize - associate together on friendly or brotherly terms

friar - a member of a men's religious order

frère - French word for brother

### Teaching Notes:

The ancient Indo-European word bhrater, meaning "brother" or "clansman" was the grandparent of this Latin word frater, the Greek word, phrater and the Germanic word brothor.

At the time of the great Greek leader, Solon (c. 639-559 B.C.), Athens had 12 phratriai or clans, each of which had 30 genēs or old patrician houses, headed by a patriarch. The ancient idea of brotherhood involved belonging to an extended family under one of these patriarchs. It means "kinsman," rather than "sibling" as we use it today.

In Roman times, men enrolled in religious groups as fratres or brothers, even though they had no blood relationship.

In medieval times, orders of monks were called fraternitas or brotherhoods. The great medieval universities such as Oxford, Cambridge, and Heidelberg had colleges where scholars lived while studying to earn their university degrees. American colleges inherited some medieval traditions (e.g., caps and gowns) and started the idea of associations of university men called fraternities to provide a place to live and study. They usually had Greek letter names. The oldest is Phi Beta Kappa, founded in 1776.

In the 1500s, working men's Fraternal Societies sprang up, primarily to provide disability and death benefits to members. Some of these evolved into insurance companies and others into organizations such as Masons, Knights of Columbus, B'nai B'rith, Elks, Odd Fellows, et cetera.

The French children's song, "Frère Jacques" is one the children will enjoy learning and singing as a three-part round.

# demos

## the people, the citizens

democracy - (kratos - power) - people power

demotic - pertaining to the people; popular

demography - (graph - write, draw) - draw charts of information about the people - where they live, etc.

demophile - (philia - love) - friend of the people

demophobe (phobos - fear) - one who fears the people

epidemic - (epi - upon) - a plague on the people; disease spread among citizens

### Teaching Notes:

The word demos meant a great deal to the Greeks. More than any people in the history of the world before them, they thought that the people were important. The Greeks who lived in the city/state of Athens were very special. They discussed ideas and learned to write them down and argue about them. They decided that the demos - people should have a say in choosing their leaders and their laws. They voted and elected their leaders. For a short time, which we now call the Golden Age of Greece, they enjoyed living in a democracy - where the citizens were free and governed themselves. They honored the ideas of people who were not kings or nobles, but ordinary citizens. They were philosophers, poets, playwrights, politicians and teachers, sculptors, painters, architects, and musicians, actors and dancers, merchants and traders. Unfortunately, the democracy lasted less than 50 years. A strong neighboring state, Sparta, which was not a democracy but hard and warlike, attacked Athens and conquered it. But the idea of democracy never died. It lived in the thoughts of people through 2000 years and finally in our United States of America, it came to life again. We have been able to keep our democracy for more than 200 years.

# populus

## people

- people - a collection of persons  
 public - general body of people in a community  
 republic - (res - thing) - public thing or entity  
 publish - make known to people in general  
 populace - the common people  
 popular - pleasing to people in general  
 population - whole number of people in an area  
 pueblo - (Spanish) people of a village or town  
 SPQR Senatus Populusque Romanus - The Senate and people of Rome

### Teaching Notes:

All the Romance languages (French, Spanish, Italian, Portuguese, Romanian - which were originally Latin or "Roman's languages") have derivatives from populus which are easy to recognize. The rather odd spelling of the English word, people (which is often difficult for children to learn) is a relic of Middle English, which took it from the Old French spelling, peuple sometime following the Norman Conquest of England.

*Webster's Unabridged Dictionary* explains how our marvelous modern English language developed. The Norman French conquered England in 1066 and old Anglo-Saxon English mingled with French after that time. (Do find a library book on the Bayeux Tapestry - a 230-foot-long embroidered picture of the whole Norman Conquest - and show it to the children. They may enjoy making a long scroll picture on shelf paper themselves as a class project!)

The Spanish word, pueblo, means a town or village in Spain, Spanish America or the Philippine Islands. In the United States we use it to refer to the ingenious Indian dwellings of Arizona, New Mexico, and Texas. The Indians whose ancestors built them, starting around 500 A.D., are called Pueblo Indians.

S.P.Q.R. were the letters on standards carried by Roman soldiers and other dignitaries to show that they represented the Senate and People of Rome and to proclaim the sovereign power of Rome. These standards show up frequently in movies about the Roman Empire usually with the sound of marching feet and martial music in the background. In present day Rome, the letters can occasionally be seen on such public works fixtures as manhole covers!

# polis

## city

**metropolis** - (meter - mother) - mother city - or main city with smaller suburbs around it

**political** - concerning management of a city

**police** - those who keep order in the city

**polite** - having city (civilized) manners

**policy** - course of action adopted in the management of the city

### Teaching Notes:

Since ancient Greek cities (polis) were really city-states, the idea of polis to us can mean government, not just of a city, but of a state (like Washington) or nation (like the U.S.A.). This, along with demos - people, is a particularly valuable root word for children to acquire. The Greeks invented democracy (demos - people and kratos - power) and gave a great deal of thought and discussion to what kind of government is best for all the people. (See page 81.) The Greeks borrowed the newly invented phonetic alphabet from the Phoenicians, with whom they traded. It was easy to learn, so many Greeks could read and write. They wrote down their ideas about politics and government. The Athenians (Greek people in Athens) decided to govern themselves.

### Extra Words:

Politics - the art and science of government. It's important to remember the real meaning of politics since it is so often used in a negative way to describe the actions of someone who is trying to grab power and influence for himself. There may be some people of that kind, but the real meaning of the word implies good politicians who work for good government for the benefit of all.

urbs  
urbis

### city

urban - pertaining to the city

suburb - (sub - under, below, near) - outlying part of a city; smaller town near a city

suburbanite - one who lives in a suburb

interurban - (inter - between) - between cities

urbane - polite; having city manners

urbanity - civility; courtesy, politeness

urbanites - those who live in a city

### Teaching Notes:

The origin of this word, urbs, urbis, is rather obscure, but *Webster's International Dictionary*, Second Edition, comes up with an interesting bit in its definition of urban. After telling us that it is from urbs, urbis, it offers this: "perhaps originally a palisade of hurdles, hence enclosure, town, and akin to L. verber - rod." (Remember that "v" in Latin is pronounced like "w". It begins to sound a bit like urbis, doesn't it?) *Cassell's Latin Dictionary* tells us that verber is a "lash or whip". Thin flexible branches or rods can be used not only for whipping, also for weaving a fence or wall. A widely used primitive construction method for building houses was called "wattle and daub" or "stud and mud". The Pilgrims who came to America in 1620 built houses in Plymouth Colony of wattle and daub. You can see replicas of them there today.

David Macaulay's book, *City*, shows how a Roman town was built. The pictures show how they laid out a square camp site and surrounded it with a stockade fence made of thin poles to keep out wild animals and intruders. The word verber may have referred to rods as thick as the poles in a stockade fence as well as to the wattle and daub whips. So the whole primitively enclosed settlement area, which later progressed to a bustling town with the palisade fence replaced by a sturdy stone wall, became urbs, urbis. 2000 years later, wherever English is spoken, we refer to our cities as urban areas. Smaller towns near our cities are suburban communities and we commute on interurban rapid transit. We, the citizens, are urbane and polite!



# pathos

## feeling, suffering

pathos - dramatic device to cause pity, sympathy or sorrow

pathetic - marked by suffering or sorrow

pathology - (logos - word, study) - study of suffering or disease

pathometer - (metron - measure) - measures feeling; a lie detector

apathy - (a - not) - not feeling; lack of feeling

antipathy - (anti - against) - feeling against

sympathy - (syn - together) - to feel what another feels

telepathy - (tele - far away) - knowing how someone far away feels

### Teaching Notes:

Sympathy - Remember that the actual Greek word which means "with, together" is syn. When it is used as a prefix, it assimilates to the word with which it is combined. Since "m" is easier to say than "n" when followed by "p", syn obligingly becomes sym. It becomes syl when the next letter is "l", as in syllable. The two symbolic masks of Comedy and Tragedy, which have been used so much by drama clubs and theatres, were meant to represent the mask worn by actors in the comic and tragic dramas of ancient Greece. The mask of Tragedy expresses pathos and was designed to help the actor inspire feelings of pity and sadness at the pathetic plight of the tragic hero or heroine. Pathos is used both as a prefix (patho-) and as a suffix (-pathy). In both uses, it adds the idea of feeling or suffering to the word to which it is attached. Pathology is the branch of medical science which deals with diseases and their treatment.

### Extra Words:

Pathogenic (genos - origin, cause) - causing disease or suffering. Pathophobia (phobos - fear) - fear of disease or suffering. Pathomania (mania - craze, mental disorder) - a medical term for moral insanity. Empathy (en - in) - imaginative projection of one's own consciousness into another being.

# autos

## self

autograph - (graph - write) - writing the name of oneself

automobile - ((L.) mobilis - movable) - self moving

autobiography - (bios - life) - life story written by oneself

autocrat - (kratos - power, strength) - power in one person

autonomy - (nomos - law) - being a law to oneself

autodynamic - (dynamikos - power) - supplying its own  
power

automatic (matos - think) - a machine that seems to  
think for itself; self-acting; self-regulating

### Teaching Notes:

Most people think of an auto as a car, and unless the original idea of the person who thought up the word automobile is known (self-moving vehicle), children might be forgiven for thinking that all those other derivatives have something to do with cars instead of self. At the time the automobile was invented, people understood perfectly that the word was intended to mean "horseless carriage" - and, indeed, that name was used for a while. But doesn't "automobile" sound more streamlined and aerodynamic to you? The *Oxford English Dictionary* cites several of the earliest-known uses of the word. *The Daily News* (London) reports on October 15, 1895, "Signor Cleto Brena has arrived at Naples with his automobile carriage from Milan." On that very same day, the *Pall Mall Gazette* observed; "Three miles an hour gives the automobile little chance of displaying the powers it doubtless enjoys." Talk about a speed limit!

### Extra Words:

Autopsy (optos - seen) - to see with one's own eyes what was wrong with a person who has died.

# thermos

## heat

thermal - relating to heat

thermos bottle - insulated bottle which keeps the contents hot or cold

thermometer - (metron - measure) - device for measuring heat

thermotropic - (tropos - turn) - turning toward heat

thermogenic - (genos - origin) - causing or originating (generating) heat

thermoplastic - (plastos - shape, mold) - can be molded or formed when heated

### Teaching Notes:

An Englishman named Sir James Dewar invented the thermos bottle in 1885 and patented it in 1904. In 1907, he actually had this Greek word THERMOS registered as a trademark in England. He got the idea that a glass bottle of liquid could be kept hot (or cold) by putting it inside another bottle and then creating a vacuum between them to prevent the conduction of heat. It might be worthwhile taking apart a thermos bottle from an old lunch kit to see how it is constructed! Keep in mind, though, that once taken apart, it won't be easily put back together. A thermometer is another device which can open up a discussion of very useful scientific concepts - such as the expansion of materials when they are heated. The predictable degree to which mercury expands is what makes it such a reliable substance to use in mercury thermometers. Galileo invented the first air thermometer in 1597. One hundred twenty-three years later, in 1720, a Dutchman named Fahrenheit came up with a thermometer using mercury, since its expansion in heat could be so reliably measured. Fahrenheit picked a point well below the freezing point of water for his "zero degree temperature". Twenty-two years later, Celsius came along with his "centigrade thermometer" in which he decided that zero should be the freezing point of water, and 100 degrees its boiling point. Scientists and some other countries use the Celsius centigrade scale, but most of us have Fahrenheit thermometers.

# curro cursum

## run

current - running, ongoing

curriculum - study that runs over a period of time

occur - (ob - against) - run against, happen

recur - (re - again) - run into again

incursion - (in - in, into) - a running into

excursion - (ex - out of) - running out; a trip

cursive - writing that runs on without lifting the pen or pencil

cursor - small moving (running) square on a computer screen

### Teaching Notes:

Curro, cursum is a good example of why we need to learn two forms of these Latin verbs. Curro means "I run" and is the first person singular, present, active, indicative form of the verb. It is the form you will find listed in a Latin dictionary. Usually it will give you all four principal parts which will enable you to "conjugate" the verb in all its moods and tenses. Curro, currere, cucurri, cursum is actually what you will find. It's true that some English dictionaries will give the infinitive form of a Latin verb (currere - to run), but usually, curro would be it. Many of our English derivatives, however, come from the fourth principal part (cursum - to run), called the "supine". It usually has a spelling variation that would keep you from recognizing that "cursive" (from cursum) and "current" (from curro) come from the same word which means "run" unless you had memorized both parts. Look at facio, facere, feci, factum. It has a "t" in the fourth principal part which could make it hard for you to see that "deface" and "factory" come from the same root word/idea - "do, make" unless you learn both facio and factum. I've found, though, that children learn two forms of a Latin verb as easily as they memorize one, and if they study some "real Latin" in the future, they will think back and thank you many times for the helpful preparation! See if the children can figure out which words above come from curro, and which ones come from cursum.

# ZOON

## animal

**zoo** - a zoological park or collection of animals

**zoology** - (logos - word, study) - study of animals

**protozoon** - (protos - first) - earliest form of one-celled animal life on earth

**cenozoic** - (kainos - recent) - recent animal period

**mesozoic** - (meso - middle) - middle animal period

**paleozoic** - (paleo - early, archaic) - early animal period (many fossils)

**proterozoic** - (protero - earlier) - earlier animal period (few fossils; worms)

**archeozoic** - (arche - beginning) - beginning animal period (carbon traces but no fossils)

### Teaching Notes:

A **zoo** (abbreviation for zoological park) is where exotic animals are kept so people can study them.

Protozoa (plural), or first one-celled animals, are very interesting to study. They reproduced by dividing themselves into two new cells, a process called "mitosis".

The five great divisions in the chart of geologic time are very useful for students to know. They date from the beginning of life on earth and are named and dated according to the animal fossils which have been discovered in rocks which were formed during the various periods. The rock formations laid down during the first period, the archeozoic, had traces of carbon showing animal life too soft to leave fossils. The formations of the other periods are rich in fossils. WE live in the cenozoic era!

### Extra Words:

Zodiac comes from the Greek word zodion - a diminutive form of zoon. When the Greeks spoke of zodiakos, you were to understand kyklos, the "zodiac circle". The ancients imagined a belt of constellations in the sky surrounding the earth which extended 8 or 9 degrees on each side of the sun's apparent path around the earth. The original signs of the zodiac were all animals, but they changed over time. The signs: Aries (ram), Taurus (bull), Gemini (twins), Cancer (crab), Leo (lion), Virgo (virgin), Libra (scales), Scorpio (scorpion), Sagittarius (archer), Capricorn (goat), Aquarius (water carrier), Pisces (fish). There are interesting legends about them all.



# verto versum

## turn

- reverse - (re - back, again) - turn back
- advertise - (ad - to, toward) - turn people toward a product
- universe - (unus - one) - stars all turning as one wheel or cosmos
- university - (unus - one) - set of colleges revolving around a central administration
- controversial - (contra - against) - two sides turned against each other
- conversation - (con - with, together) - taking turns in talking together
- diversity - (dis - separate) - turning to separate ways; unlikeness

### Teaching Notes:

The Romans had an adjective, universus, meaning "combined in one; whole, entire". They referred to the whole world as universum. Later in history, scholars began to refer to the earth, sun, moon, stars, and all of space as the universe. It was a natural metaphor for the scholars of the great medieval centers of learning to use to designate the limitless fields of knowledge and wisdom being explored in their scholastic worlds. The oldest university in the world is thought to be the University of Al-Azhar in Egypt (970 A.D.). The University of Bologna, Italy (1170), University of Paris, France (1170), and Oxford University, England (1200) are other great early centers of learning. Harvard University (1636) was first in the United States.

When one is having a conversation, it is good to remember that the word actually means to take turns in talking together!

### Extra Words:

We use the Latin word VERSUS (turned toward) in English in speaking of opponents in a contest. We abbreviate it vs. (Huskies vs. Ducks; Sonics vs. Lakers). The Latin VERSUS (also meaning "turning of the plough; a furrow") gave us the derivative, verse, meaning "a line of poetry".

# facio factum

## do, make

factory - (orium - place for) - place for making things

manufacture - (manus - hand) - make by hand

efface - (ex - out, away) - do away with

deface - (de - down) - to "do down", mar, destroy

perfect - (per - through) - done all the way through

magnify - (magna - large) - to make large

satisfy - (satis - enough) - to make enough

### Teaching Notes:

Manufacture means literally "to make by hand". However, with modern technology, it has come to mean anything man makes with the help of tools. A tree is part of nature, but as soon as man chops it down, it is in the first stage of manufacture! When he strips the bark, saws it into boards and builds a house, he has manufactured his shelter rather than simply standing under the tree and hoping the leaves will ward off the rain!

Some Latin words have contributed SO MANY English words that learning them as soon as possible is a tremendous advantage. Facio is one of these. The *Latin/English Derivative Dictionary* lists 258 English words based on facio. (It was compiled by Rudolph Schaeffer for his doctoral dissertation and published by the American Classical League, Miami University, Oxford, Ohio 45056. Write to them. They will send you a fascinating free catalogue!) There are rich dividends for your effort to learn facio. To begin with, the suffix -fy (from Fr. -fier - make, form into) at the end of many root words adds the meaning "making". Edify combines aedis - building with facio - make, and conveys the meaning "to make a building" or "do something constructive": Haul out the big unabridged dictionary with the children and explore the Latin root words which have been combined with facio to make dozens of English words. For starters: amplify, beautify, certify, deify, dignify, diversify, terrify, verify. HAVE FUN!

# scribo scriptum

## write

scriptures - sacred writings (Bible, Torah)

inscription - (in - in) - writing in a book or in stone

describe - (de - down) - write down

proscription - (pro - for) - written list of names put up for all to see

prescription - (pre - before) - something written ahead  
(doctor's direction to a pharmacist)

scribe - one who knows how to write

transcribe - (trans - across) - transfer speech into writing

manuscript - (manus - hand) - written by hand

script - writing (e.g. \*, the words of a play)

### Teaching Notes:

This word scribo makes us think of the Greek word, graph, which means both write and draw. Scribo means "write". The Romans did use describo to mean "portray" or "give a picture of" but they meant what we mean - to tell about something in visual terms so you can see it in your mind's eye. Our English word, describe, means to give a verbal picture of something rather than to draw or paint it. Isn't that what we teach as good writing? "SHOW - DON'T TELL!" Proscription - This word has a meaning which is alien to us in our society. It means the posting of lists of names of people who are outlawed, exiled, or condemned to death. In a milder form, you might call the pictures in post offices of people the police are looking for, or notices in the newspaper about people whose property is being forfeited for not paying their taxes, proscription lists, but they really aren't. Transcribe - One thing about the television is that you see, but have no record of what important people have said. (A newspaper article can be read again and sent to a friend.) So now, many TV programs (like *Nova*) offer to send you a typewritten transcript of what you saw, so you can read it over again. For serious ideas, there's no substitute for READING! \*(e.g. means exempli gratia - for the sake of example).

plico  
plicatum

### fold

duplicate - (duo - two) - twofold

triplicate - (tres - three) - threefold

multiplication - (multum - many) - increase in number  
manifold

explicit - (ex - out) - folded out, unfolded, smooth

implicate - (in - in, into) - fold into

complication - (con - together) - a "folded" situation

accomplice - (ad - to, toward, con - together) - one who  
is folded together with another in crime

replica - (re - again, back) - a bending or folding again; a  
reproduction or copy

supplication - (sub - under) - humble request or prayer  
made on bended, folded, knees

### Teaching Notes:

The Indo-European word plek, meant "bend, fold, braid, twist and weave", actions which the ancient people must have performed many times a day. The physical action of folding is used metaphorically in many of our abstract English derivatives such as implicate. If you are implicated in a crime, you are "folded" into it or involved in it. Something that is complicated is all folded together and rather hard to figure out. If something is explicit, it is folded out or unfolded and, therefore, perfectly clear and easy to understand. They are all easier to understand and remember if the basic root idea, fold, is clear. (See page 34, duo, for a bit more about plico, plicare, plicatum.)

Explicit, which we used to mean something which is so plain and clear that nothing is left to the imagination, has an interesting history. Back in the ancient days books were long strips of papyrus attached to rods at each end and then rolled up. As you were reading a book, you slowly unrolled the long scroll from one rod and rolled it up on the other rod, leaving the part you were reading open between your two hands. When you got to the end, you would usually find the Latin words, "Explicatus est" - "It is rolled out, or unrolled", in the way we find "finis" or "The End" on the last page of our books today.

# dico dictum

## Speak, say

dictate - speak, command

diction - art or manner of speaking

dictation - speaking so another may write down the words

dictator - one whose word has absolute authority

predict - (pre - before) - to say beforehand what will happen

benediction - (bene - well) - well-spoken words; a blessing

contradict - (contra - against) - speak against

verdict - (verus - true; real) - a true saying

### Teaching Notes:

There are so many good derivatives from dico, dictum, that it is hard to leave any of them out. Addict (ad - to) which, today, is used almost exclusively to refer to one who takes "addictive" drugs, started out to mean a legal action under Roman Law. It meant "give over or surrender to under decree of a court". People used to sign their letters, "Your honor's most addicted servant . . . etc.". Then it came to mean attaching oneself to a master, a leader or a cause. The meaning has degenerated at present to mean one who is addicted to drugs or chemical dependency.

We mustn't forget dictionary - a book which lists the words of a spoken language and their meanings. Dictionaries have been one of the greatest tools devised to help people understand each other since the invention of language itself. The earliest dictionaries were compiled to help speakers of one language to learn another. For example: English/Latin and French/Latin. In the 17th century, a dictionary of English words, explained in English, was written, but it included only "hard words". Then from 1747 to 1755, Dr. Samuel Johnson labored over his great *Dictionary of the English Language* which established his reputation and enabled writers and their readers to come to terms with each other. You can see his house in London near Fleet Street. Today, the greatest dictionary is surely the recently published twenty-volume edition of the *Oxford English Dictionary*. No library should be without it!



# biblos

## book

**Bible** - The Book of the Christian religion

**bibliography** - (graph - write) - list of books on a particular subject

**biblioclast** - (klastos - broken) - one who destroys books

**biblioklept** - (klepto - steal) - one who steals books

**bibliolatry** - (latreia - worship) - worship of books

**bibliology** - (logos - word, study) - study of books

**bibliomania** - (mania - madness) - craziness about books

**bibliophile** - (philia - love) - lover of books

**bibliophobia** - (phobos - fear) - fear or dislike of books

**bibliothetic** - (thetos - placed) - pertaining to the placement or arrangement of books

### Teaching Notes:

**Biblos** was the word used by the Greeks for the papyrus scrolls or books which they imported from the Phoenician city of Byblos on the coast of the Mediterranean. (You can find Byblos, now called "Jubail", on a map of Lebanon today.) The Egyptians had invented the smooth, white ancestor of paper when they needed something besides stone or wood on which to write their hieroglyphics. Papyrus plants (which were, incidentally, the "bulrushes" in which Pharaoh's daughter found Moses!) grew up to ten feet tall. When the stems were split and the pulp scraped out, the inner bark came off in long flat strips which were laid out criss-cross on a flat surface. After pressing and drying, it was smoothed and polished with ivory. This made a pleasing, flexible, durable writing surface. Pieces of papyrus were glued together to make strips many feet long. Rods were glued to each end and the strips were rolled up. Scribes wrote records, histories and sacred texts on them. Clay jars were made in which to store them safely.

The sea traders of Byblos bought huge quantities of raw papyrus plants from the Egyptians and made them into papyrus "paper" right there in Byblos. Then, they sold these products in coastal cities all around the Mediterranean where they were known as "**biblos**". Many scrolls survive to this day. The *National Geographic* magazine for December 1958 has a story with pictures of the Dead Sea Scrolls and the men who safely hid them. The French word, **bibliothèque** means "library", or a place to arrange and classify books. (See **bibliothetic** above.)

liber  
libri

## book

library - place where books are kept

librarian - one in charge of a library

libretto - (Italian - booklet) - words to which opera music has been written

librettist - one who writes a libretto

libel - written accusation

### Teaching Notes:

Liber, the Latin word for "book", originally meant the bark of a tree which was used by the Romans in very early days, as writing material. Liber gradually came to mean "book", and the derivative words in our list come from liber, libri. The Latin word libellus was a diminutive form meaning "little book" or "pamphlet". From about the time of Elizabeth I of England, pamphlets were used to write scurrilous political attacks on people, so the word libel came to mean the unpleasant contents of the libellus. We have laws against libel in the United States. When people write accusations or attacks against other people that are proven to be untrue, the writers can go to jail.

Liber in Latin also means "free" and we find it in such English derivatives as liberty, liberal, libertine, liberation, none of which have anything to do with books. You might argue that books, which make possible the free exchange of ideas, help the cause of liberty and freedom, but it is good to point out the difference in meaning of the two Latin words.

Don't confuse either of these with the Latin word libra, which means "balance" or "scales". The sign of the zodiac pictured as a pair of scales is called Libra. The Roman measure of weight, libra (about a pound) is seen every day in our modern abbreviation for pound, "lb.". You might want to make separate red-bordered cards for each of these three words: liber - book; liber - free; and libra - scales and pound.

scio  
scitum

### know

science - knowledge which results from study

scientific - kind of knowledge gained from careful study

conscience - (con - with, together) - knowledge of right and wrong

prescience - (prae - before) - foreknowledge

conscious - (con - with, together) - sharing knowledge; mentally awake or active

omniscience - (omnis - all) - knowing all

### Teaching Notes:

It's useful to point out to children right away that we have kept the "sc-" spelling in science (and in all these other derivative words) even though we don't pronounce the "c" in English, because it helps us to see and recognize immediately the Latin word scio from which they all come. We know, therefore, that they all have something to do with "knowing". The letter "c" in Latin is always pronounced like "k". However, in English, "c" before "e", "i" or "y" is pronounced like "s". Therefore, the "c" sound in science disappears when spoken aloud.

Scientific knowledge is that which is gained from careful, impartial study where the student or scholar is looking only for what is true in his field of study, rather than attempting to find only evidence which will support his own prejudiced ideas. Real scientists search only for truth.

Conscience involves a sense of the moral goodness or blameworthiness of one's own conduct, intentions or character, together with an awareness of one's obligation to do or be that which is recognized as good. It also implies an awareness or feeling of guilt or remorse for doing wrong. Conscience is sometimes called the "still, small voice".

Omniscience is infinite knowledge. It is often used as a name for the omniscient (all-knowing) being, God. Omniscient can also refer to a very learned person. The derivatives which come from scio are words for some of the greatest and grandest ideas of our civilization. No child, however, is too young to be introduced to them by a loving and patient teacher.

# discipulus

## student

disciple - a student

discipline - teaching; instruction, field of learning

disciplinary - pertaining to correction, ordered control or teaching

disciplinarian - one who enforces order

### Teaching Notes:

In our society, the word discipline is used so often to mean "punishment" or "coercion" that we may lose sight of the real meaning which is "teaching" and "learning".

We think of disciples as primarily those men who were pupils and followers of Jesus Christ back in Biblical times. However, we should realize that students in general may be called disciples. In Latin classes everywhere, teachers begin the lessons with the words "Salvete, discipuli" (pronounced: Sal-WAY-tay, dis-SKEE-poo-lee) ("Good morning, students!") to which the students may reply, "Salve, magister!" ("g" as in gun) ("Good morning, teacher!") or, if the teacher is a woman, "Salve, magistra!"

Discipulus is another word like scio, in which the letter "c" is pronounced in Latin, but becomes silent in the English derivatives. Every now and then someone protests that if we are not going to pronounce a letter, we should drop it in order to simplify the English spelling. The Latin spelling is retained, however, in order to quickly recall the original meaning of the root word in sight reading. It is a vital clue to the meaning of all the derivatives. We NEED that "c"!

A disciplinarian is not necessarily a harsh or unkind person, but rather, ideally, is one who fairly and consistently enforces those rules of order or laws which make life secure and pleasant for all those who live in a school or community. It is one thing to pass laws, and quite another to follow through and see to it that they are observed and obeyed. Good discipline will involve making clear to everyone the reasons for rules and the advantages to the entire community when those rules or laws actually guide the actions of all the individuals within it.

# Sauros

## lizard

dinosaur - (deinos - terrible) - terrible lizard

tyrannosaurus - (tyrannos - absolute ruler) - tyrant lizard  
(ate anyone he wanted to eat)

allosaurus - (allos - leap) - leaping lizard

stegasaurus - (stego - roof) - lizard with a shell on his back

brontosaurus - (brontos - thunder) - thunder lizard

ankylosaurus - (ankylos - crooked, bent) - lizard with  
bony plates sticking up from his neck

### Teaching Notes:

The ancient word sauros is a great favorite with children. There are so many kinds of dinosaurs, you won't run out of them! The Greek-derived scientific names are all engagingly simple when translated. The generic term, dinosaur, terrible lizard, sums up the whole clan from our point of view. Tyrannosaurus seems to have been terrible even from the dinosaur's point of view since he was large enough and had the teeth to crunch anyone he cared to eat. Allosaurus must have been Little Orphan Annie's favorite since she was continually exclaiming, "Leaping Lizards!" Stegasaurus had a tough hard shell and may have given even Tyrannosaurus some dental problems! Brontosaurus was so huge, the earth shook when he lumbered onto the scene. The sound must have seemed like thunder.

Lack of Latin and Greek in the school background of many a science student has presented a huge obstacle to learning the hundreds of scientific terms for animals, plants, and parts of the body. You are giving your students an early and entertaining introduction to these terms. After all, these terms make it possible for scientists to communicate with each other all over the world without ambiguity. The terms were agreed upon many years ago and often show that scientists have good senses of humor! You may have encouraged some future scientists today!



amo  
amatum

### love

amateur - (French from L. amator - lover) - lover; one who enjoys an activity without doing it professionally

amiable - kindly, lovable, good-natured

amicable - friendly, peaceable, cordial

amorous - (-osus - full of) - full of love

amour - (French - love) - love affair

enamoured - (in - in) - charmed, captivated, in love

amity - friendship

enmity - (in - not + amity) - ill will; hostility

enemy - (in - not + amity) - hostile, unfriendly person

### Teaching Notes:

The French word, amateur, carries a more complicated meaning than simply "lover". We use it to mean a person who pursues an art, skill or sport for the love of the doing, love of the activity itself, rather than for any reward or payment arising from it. It implies a distinction between the leisure sports enthusiast and the professional athlete. The modern Olympic Games, which have been held every four years since 1896, have traditionally had strict rules barring professional athletes from competing. Athletes had to be very careful to protect their "amateur standing", lest they be disqualified. However, the distinction has been abandoned in recent years. It is an interesting subject on which to debate.

Take a moment to turn to page 25 (jungo, junctum) and review the conjugation of the word we are considering here - amo, amatum. People who have studied Latin in years past may find they have forgotten some of the language over time, but they almost always remember the conjugation of amo, amas, amat, amamus, amatis, amant! It is one of the first verbs to be memorized and it is always pleasant to remember "love".

This concludes our set of 100 Latin and Greek root words. We hope all your children have become Greek and Latin lovers!