



# **COLLEGE**

# **REFERENCE PAGES**

**8.5" X 11"**



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# LANGUAGE ARTS *parts of speech*

|             |                                                                     |
|-------------|---------------------------------------------------------------------|
| <b>NOUN</b> | A WORD THAT NAMES A PERSON, PLACE, THING, QUALITY, ACT, OR FEELING. |
|-------------|---------------------------------------------------------------------|

**Common nouns** are general and do not refer to a specific person, location, or object.

→ *Examples:* man, city, tonight, honesty, happiness

**Proper nouns** are capitalized and refer to a particular person, place, or thing.

→ *Examples:* Reggie, Market Square Arena, Saturday

|                |                                        |
|----------------|----------------------------------------|
| <b>PRONOUN</b> | A WORD THAT TAKES THE PLACE OF A NOUN. |
|----------------|----------------------------------------|

**Nominative Case Pronouns** replace the subject of a sentence or clause.

→ *Examples:* *She* took the bus to visit Aunt Jane.  
We are looking forward to visiting Oregon.

**Objective Case Pronouns** receive a verb's action or follow a preposition.

→ *Examples:* Please give *me* the papers.  
Timothy's outstanding service earned *him* the award.

**Possessive Case Pronouns** show ownership or possession.

→ *Examples:* The cougar escaped from *its* cage.  
*Their* car slid off the icy road.

|             |                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VERB</b> | A WORD THAT EXPRESSES ACTION OR STATE OF BEING. IT ALSO INDICATES THE TIME OF ACTION OR STATE OF BEING. A VERB HAS DIFFERENT FORMS DEPENDING ON NUMBER, PERSON, VOICE, TENSE, AND MOOD. |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Number** indicates whether a verb is singular or plural.

The verb and its subject must agree in number.

→ *Examples:* One dog barks. Two dogs bark.

**Person** indicates whether the subject of the verb is 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> person and whether the subject is singular or plural. Verbs usually have a different form only in *third person singular* of the *present tense*.

→ *Examples:*

|                         |                  |               |
|-------------------------|------------------|---------------|
|                         | <i>Singular</i>  | <i>Plural</i> |
| 1 <sup>st</sup> Person: | I stop.          | We stop.      |
| 2 <sup>nd</sup> Person: | You stop.        | You stop.     |
| 3 <sup>rd</sup> Person: | He/She/It stops. | They stop.    |

**Voice** indicates whether the subject is the doer or the receiver of the action verb.

→ *Examples:* Cathy wrote the letter. (active voice)  
The letter was written by Cathy. (passive voice)

**Tense** indicates when the action or state of being is taking place.

→ *Examples:* We *need* the information now. (present)  
Reggie *shot* the ball. (past)  
You *will enjoy* the school play. (future)

|               |                                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ADVERB</b> | A WORD THAT DESCRIBES OR MODIFIES A VERB, AN ADJECTIVE, OR ANOTHER ADVERB. AN ADVERB TELLS HOW, WHEN, WHERE, WHY, HOW OFTEN, AND HOW MUCH. |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------|

→ *Examples:* The ball rolled *slowly* around the rim.  
Soccer scores are reported *daily* in the newspaper.

|                  |                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------|
| <b>ADJECTIVE</b> | A WORD THAT DESCRIBES OR MODIFIES NOUNS AND PRONOUNS. ADJECTIVES SPECIFY COLOR, SIZE, NUMBER, AND THE LIKE. |
|------------------|-------------------------------------------------------------------------------------------------------------|

→ *Examples:* red, large, three, gigantic, miniature

Adjectives have three forms: **positive**, **comparative**, and **superlative**.

The **positive** form describes a noun or pronoun without comparing it to anything else.

→ *Example:* My apple pie is *good*.

The **comparative** form compares two things.

→ *Example:* Aunt Betty's apple pie is *better* than mine.

The **superlative** form compares three or more things.

→ *Example:* Mom's apple pie is the *best* of all!

|                    |                                                                                                    |
|--------------------|----------------------------------------------------------------------------------------------------|
| <b>PREPOSITION</b> | A WORD (OR GROUP OF WORDS) THAT SHOWS HOW A NOUN OR PRONOUN RELATES TO ANOTHER WORD IN A SENTENCE. |
|--------------------|----------------------------------------------------------------------------------------------------|

→ *Examples:* The man walked *into* the garage.

The horse leaped *over* the fence.

Their team won the meet *in spite of* several players being injured.

|                    |                                                           |
|--------------------|-----------------------------------------------------------|
| <b>CONJUNCTION</b> | A WORD THAT CONNECTS INDIVIDUAL WORDS OR GROUPS OF WORDS. |
|--------------------|-----------------------------------------------------------|

**Coordinating conjunctions** connect a word to a word, a clause to a clause, or a phrase to a phrase. The sentence elements joined by a coordinating conjunction must be equal. Common coordinating conjunctions are: *and, but, or, nor, for, yet, so*.

Coordinating conjunctions used in pairs are called **correlative conjunctions**. Common correlative conjunctions are: *either, or; neither, nor; not only, but also; both, and; whether, or*.

→ *Examples:* *Both* raccoons *and* squirrels frequently invade our birdfeeders.

*Neither* Mary Ann *nor* Julie will be able to go with you.

**Subordinating conjunctions** connect and show the relationship between two clauses that are not equally important. Common subordinating conjunctions are: *until, unless, since, where, because, as, if, when, although, after, because, while, as long as, as if, though, whereas*.

→ *Examples:* *Until* you decide to study, your grades won't improve.

*If* I hadn't already made plans, I would have enjoyed going to the mall with you.

|                     |                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INTERJECTION</b> | A WORD THAT IS USED IN A SENTENCE TO COMMUNICATE STRONG EMOTION OR SURPRISE. PUNCTUATION IS USED TO SEPARATE AN INTERJECTION FROM THE REST OF THE SENTENCE. |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

→ *Examples:* *Hooray!* We finally scored a touchdown.

*Oh, no!* I forgot the picnic basket.

*Yes!* Her gymnastic routine was perfect.

*Ah,* we finally get to stop and rest.



# LANGUAGE ARTS *capitalization & plurals*

## CAPITALIZATION

THE FOLLOWING CHART PROVIDES A QUICK OVERVIEW OF CAPITALIZATION RULES.

All proper nouns → Shannon O'Connor, Orlando, Bill of Rights  
 All proper adjectives → Kraft cheese, Bounty paper towels, Phillips screwdriver  
 The first word in every sentence → Her dress is stunning.  
 Races, languages, nationalities → Asian, French, African-American  
 Nouns/Pronouns that refer to a supreme being → God, Yahweh  
 Days of the week → Sunday, Monday, Tuesday  
 Formal epithets → Ivan the Terrible  
 Bodies of water → Amazon River, Lake Huron, Wea Creek  
 Cities, towns → Houston, Lafayette, Dearborn  
 Counties → Tippecanoe, Cork  
 Countries → U.S.A, Mexico, Canada  
 Continents → Africa, North America  
 Landforms → Mojave Desert, Appalachian  
 Holidays and holy days → Veterans Day, Christmas, Yom Kippur  
 Months → January, February  
 Official documents → Emancipation Proclamation  
 Official titles → President Obama, Mayor Bradley  
 Periods and events in history → Middle Ages, Renaissance  
 Planets, heavenly bodies → Mars, Jupiter, Milky Way  
 Public areas → Yellowstone National Park  
 Sections of a country or continent → the Northwes, the Middle East  
 Special events → Battle of Lexington  
 Streets, roads, highways → Rodeo Drive, Route 66, Interstate 65  
 Trade names → Honda Accord, Kellogg's Corn Flakes

## PLURALS

THE FOLLOWING CHART PROVIDES A QUICK OVERVIEW OF PLURALIZATION RULES.

The plurals of most nouns are formed by adding *s* to the singular.

→ Examples: pie = pies | desk = desks | machine = machines

The plurals of nouns ending in *s*, *sh*, *x*, *z*, and *ch* are made by adding *es* to the singular.

→ Examples: bus = buses | dish = dishes | fox = foxes | buzz = buzzes | church = churches

The plurals of common nouns that end in *y* preceded by a consonant are formed by changing the *y* to *i* and adding *es*.

→ Examples: fly = flies | copy = copies

The plurals of words that end in *e* preceded by a vowel are formed by adding only *s*.

→ Examples: holiday = holidays | monkey = monkeys

The plurals of words ending in *o* preceded by a vowel are formed by adding *s*.

→ Examples: studio = studios | rodeo = rodeos

The plurals of words ending in *o* preceded by a consonant are formed by adding *s* or *es*.

→ Examples: hero = heroes | banjo = banjos | tomato = tomatoes | piano = pianos

The plurals of nouns ending in *f* or *fe* are formed in one of two ways:

{1} If the *f* sound is still heard in the plural form, simply add *s*.

→ Examples: roof = roofs | chief = chiefs

{2} If the final sound in the plural is a *ve* sound, change the *f* to *ve* and add *s*.

→ Examples: wife = wives | knife = knives

Foreign words and some English words form the plural by taking on an irregular spelling.

→ Examples: crisis = crises | criterion = criteria | goose = geese | ox = oxen

The plurals of symbols, letters, and figures are formed by adding an *s*.

→ Examples: 5 = 5s

The plural of nouns that end in *ful* are formed by adding *s* at the end of the word.

→ Examples: handful = handfuls | pailful = pailfuls | tankful = tankfuls



# LANGUAGE ARTS *sentence structure & spelling rules*

## SENTENCE STRUCTURE

A **complete sentence** must express a complete thought and must have a subject and a verb.

→ *Example:* He lost the game.

A **sentence fragment** results from a *missing* subject, verb, or complete thought.

→ *Example:* Because he was lost.



THERE ARE FOUR TYPES OF SENTENCES: SIMPLE, COMPOUND, COMPLEX, OR COMPOUND-COMPLEX

1

A **simple sentence** consists of one main clause. It expresses one main thought and has one subject and one verb.

A simple sentence may contain a compound subject, a compound verb, or both.

→ *Examples:* We enjoy the concert.

Amy and Scott were married yesterday. (compound subject: Amy and Scott)

Ben is leaving work and going home. (compound verb: leaving and going)

2

A **compound sentence** contains two or more main clauses (in *italics*) connected by a conjunction, a semicolon, or a comma with a conjunction.

→ *Example:* *Collecting fossils is fun*, but *I think identifying fossils is difficult*. (conjunction)

*Andy's suit is new*; *it just got back from the cleaners*. (semicolon)

*Erin came home for Easter* and *Courtney went to Florida*. (comma/conjunction)

3

A **complex sentence** has one main clause (in *italics*) and one or more subordinate clauses (underlined).

→ *Examples:* *Dad says* that good grades are the result of diligent studying. (main clause, one independent clause)

*Diligent studying is difficult*, because I have to work several hours before I can start studying. (main clause, two dependent clauses)

4

A **compound-complex sentence** has two or more main clauses (in *italics*) and one or more subordinate clauses (underlined).

→ *Example:* *Because the school bus broke down*, *the team rode in a van*, and *the cheerleaders rode in cars*.

Unless my eyes are deceiving me, *Kristi is on that runaway horse*, and *Dale is behind her*.

## SPELLING RULES

Write *i* before *e* except after *c*, or when sounded like *a* as in *weigh* and *eight*.

→ *Exceptions:* seize, weird, either, leisure, neither

When the *ie/ei* combination is not pronounced *ee*, it is usually spelled *ei*.

→ *Examples:* reign, weigh, neighbor

→ *Exceptions:* friend, view, mischief, fier

When a multi-syllable word ends in a consonant, and the accent is on the last syllable and the suffix begins with a vowel — the same rule holds true when you double the final consonant.

→ *Examples:* prefer = preferred | allot = allotted | control = controlling

If a word ends with a silent *e*, drop the *e* before adding a suffix that begins with a vowel.

→ *Examples:* use = using | like = liking | state = stating | love = loving

When the suffix begins with a consonant, do not drop the *e*.

→ *Examples:* use = useful | state = statement | nine = ninety

→ *Exceptions:* argument, judgment, truly, ninth

When *y* is the last letter in a word and the *y* is preceded by a consonant, change the *y* to *i* before adding any suffix except those beginning with *i*.

→ *Examples:* lady = ladies | try = tries | happy = happiness | ply = pliable | fly = flying



# LANGUAGE ARTS *the writing process*

## WRITING VARIABLES

BEFORE BEGINNING ANY ASSIGNMENT, IT WILL HELP YOU TO FOCUS AND REMAIN CONSISTENT IN STYLE IF YOU CONSIDER THE FOLLOWING VARIABLES.

- Audience** For whom am I writing? A letter written to your ten-year-old sister will be much different in vocabulary, subject, content, format, and sentence complexity than one written to your senator.
- Topic** About what subject should I write? If possible, choose a subject that interests you. Research your subject well.
- Purpose** Why am I writing? Have a clear purpose in mind before starting your paper. Are you writing to entertain, instruct, inform, or persuade? Keeping your purpose in mind as you write will result in a paper that is focused and consistent.
- Voice** What point of view or “voice” will I use? Will I write from my own point of view or the point of view of another person rather than from their own point of view. This can add variety and help you see your subject in a new way. Make sure your “voice” remains consistent.
- Format** What form will my writing take? Different forms of writing such as letters, diaries, reports, essays, research papers, etc., have specific requirements. Decide on the form your writing will take, and then make sure you know the requirements for that form of writing.

## PLANNING AND WRITING AN ESSAY OR COMPOSITION

- {1} Select a general subject area that interests you.
- {2} Make a list of your thoughts and ideas about the subject.
- {3} Use your list to help focus on a specific topic within the subject area.
- {4} Decide what you want to say about the topic and write an introductory statement that reflects this purpose.
- {5} Make a list of details to support your statement.
- {6} Arrange the list of details into an outline.
- {7} Do any reading and research necessary to provide additional support for specific areas of your outline. Keep a careful list of all of your sources for your bibliography.
- {8} Write a first draft.
- {9} Revise your first draft, making sure that:
  - {a} The introduction includes a clear statement of purpose.
  - {b} Each paragraph begins with some link to the preceding paragraph.
  - {c} Every statement is supported or illustrated.
  - {d} The concluding paragraph ties all of the important points together, leaving the reader with a clear understanding of the meaning of the essay or composition.
  - {e} Words are used and spelled correctly.
  - {f} Punctuation is correct.
- {10} Read your revised paper aloud to check how it sounds.
- {11} Proofread your revised paper two times: once for spelling, punctuation, and word usage, and again for meaning and effectiveness.

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# LANGUAGE ARTS *punctuation*



## PERIOD ●

**Use:** to end a sentence that makes a statement or gives a command not used as an exclamation.

→ *Example:* Go to your room, and do not come out until dinner.

**Use:** after an initial or an abbreviation.

→ *Examples:* Mary J. Jones, Mr., Mrs., Ms.

## COMMA ,

**Use:** to separate words or groups of words in a series.

→ *Example:* I used worms, minnows, larva, bread balls, and bacon for bait.

**Note:** Some stylebooks and teachers require a comma before “and” in a series.

→ *Example:* He ran, jumped, and yelled.

**Use:** to separate an explanatory phrase from the rest of the sentence.

→ *Example:* Escargots, or snails, are a delicacy that I relish.

**Use:** to distinguish items in an address and in a date.

→ *Examples:* John Doe, 290 Main St. Midtown, IN 48105  
September 20, 1950

**Use:** to separate a title or an initial that follows a name.

→ *Example:* Joseph Jones, Ph.D.

## QUESTION MARK ?

**Use:** at the end of a direct or indirect question.

→ *Example:* Did your relative invite you to visit them this summer?

**Use:** to punctuate a short question within parentheses.

→ *Example:* I am leaving tomorrow (is that possible?) to visit my cousins in France.

## APOSTROPHE ’

**Use:** to show that one or more letters or numbers have been left out of a word to form a contraction.

→ *Examples:* do not = don’t | I have = I’ve

**Use:** followed by an s is the possessive form of singular nouns.

→ *Example:* I clearly saw this young man’s car run that stop sign.

**Use:** possessive form of plural nouns ending in s is usually made by adding just an apostrophe. An apostrophe and s must be added to nouns not ending in s.

→ *Example:* bosses = bosses’, children’s

## COLON :

**Use:** after words introducing a list, quotation, question, or example.

→ *Example:* Sarah dropped her book bag and out spilled everything: books, pens, pencils, homework, and makeup.

## SEMICOLON ;

**Use:** to join compound sentences that are not connected with a conjunction.

→ *Example:* It’s elementary, my dear Watson; the butler is clearly responsible.

**Use:** to separate groups of words.

→ *Example:* I packed a toothbrush, deodorant, and perfume; jeans, a raincoat, and sweatshirts; and boots and tennis shoes.

## QUOTATION MARKS “ ”

**Use:** to frame direct quotations in a sentence. Only the exact words quoted are placed within the quotation marks.

→ *Example:* “I don’t know,” she said, “if I will be able to afford the vacation.”

**Use:** to distinguish a word that is being discussed.

→ *Example:* Mr. Jones suggested I replace the word “always” with “often” in my rhyme.

**Use:** to indicate that a word is slang.

→ *Example:* Julie only bought that outfit to show that she’s “with it.”

**Use:** to punctuate titles of poems, short stories, songs, lectures, course titles, chapters of books, and articles found in magazines, newspapers, and encyclopedias.

→ *Examples:* “You Are My Sunshine,” “Violence in Our Society,” “The Road Not Taken”

## SINGLE QUOTATION MARK ‘ ’

**Use:** to punctuate a quotation within a quotation.

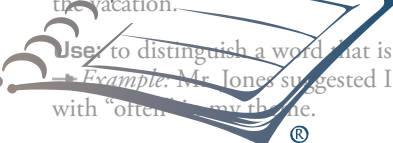
→ *Example:* “My favorite song is ‘I’ve Been Working on the Railroad,’ ” answered little Joey.

## EXCLAMATION MARK !

**Use:** to express strong feeling.

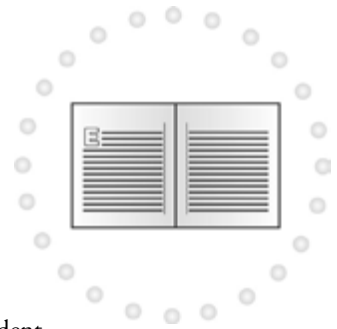
→ *Example:* Help! Help!

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# LANGUAGE ARTS *frequently confused words*



**accept** | to agree to something or receive something willingly  
**except** | not including

→ *Examples:* Jonathon will *accept* the job at the restaurant.  
 Everyone was able to attend the ceremony *except* Phyllis.

**capital** | chief, important, excellent. Also the city or town that is the official seat of government of a state or nation

**capitol** | the building where a state legislature meets

**the Capitol** | the building in Washington, D.C., in which the United States Congress meets

→ *Examples:* The *capital* of France is Paris.

The *capitol* of Indiana is a building in Indianapolis.

The vice president arrived at the *Capitol* to meet the arriving senators.

**hear** | to listen to

**here** | in this place

→ *Examples:* Do you *hear* that strange sound?

The juice is right *here* in the refrigerator.

**it's** | the contraction for *it is* or *it has*

**its** | shows ownership or possession

→ *Examples:* *It's* nearly time to leave for the football game.

The wagon lost *its* wheel in the mud.

**lead** | a heavy, gray metal

**lead** | to go first, guide

**led** | the past tense of *lead*

→ *Examples:* Water pipes in many older homes are made of *lead*.

This path will *lead* us to the waterfall.

Bloodhounds *led* the police to the hideout.

**loose** | free or not tight

**lose** | to misplace or suffer the loss of something

→ *Examples:* Since she lost weight, many of her clothes are *loose*.

If you *lose* your money, you will not be able to get into the park.

**principal** | the first or most important. It also refers to the head of a school.

**principle** | a rule, truth, or belief

→ *Examples:* Pineapple is one of the *principal* fruits of Hawaii.

One *principle* of science is that all matter occupies

**quiet** | free from noise

**quite** | truly or almost completely

→ *Examples:* Our teacher insists that all students are *quiet* during a test.

This enchilada is *quite* spicy.

**their** | belonging to them

**there** | at that place

**they're** | the contraction for *they are*

→ *Examples:* *Their* new puppy is frisky.

Please place all of the newspapers over *there*.

*They're* coming over tonight.

**to** | in the direction of

**too** | also or very

**two** | the whole number between one and three

→ *Examples:* The paramedics

rushed *to* the scene of the accident.

This meal is delicious, and it is low in fat, *too*.

Only *two* of the 10 runners were able to complete the race.

**weather** | the state of the atmosphere referring to wind,

humidity, temperature, etc.

**whether** | choice or alternative

→ *Examples:* We are hoping for warm, sunny *weather* for our family reunion.

We cannot decide *whether* we will drive or fly to the reunion.

**Who's** | the contraction for *who is* or *who has*

**Whose** | the possessive form of *who*

→ *Examples:* *Who's* in charge of the auditioning for the stage?

*Whose* bicycle is out in the rain?

**you're** | the contraction for *you are*

**your** | the possessive form of *you*

→ *Examples:* She called to ask if *you're* planning to attend the party.

*Your* term paper will be due four weeks from today.

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# LANGUAGE ARTS *frequently misspelled words*

|              |               |            |              |             |                |             |
|--------------|---------------|------------|--------------|-------------|----------------|-------------|
| absence      | Christian     | either     | happiness    | ninety      | receive        | suspicion   |
| absorb       | cinnamon      | embarrass  | hear         | notice      | receiving      | swimming    |
| accept       | climbed       | enough     | height       | noticeable  | recess         | synagogue   |
| accidentally | climbing      | entertain  | here         | nuisance    | recognize      | temperament |
| accompany    | clothes       | envelope   | history      | obedience   | recommend      | themselves  |
| accuse       | colonel       | equipment  | hoping       | occasion    | reference      | there       |
| ache         | college       | equipped   | hospital     | occur       | referring      | therefore   |
| achieve      | column        | escape     | humor        | occurred    | rein           | they        |
| acquaintance | commercial    | especially | humorous     | occurrence  | reign          | they're     |
| acquire      | committee     | etc.       | hungry       | occurring   | relative       | thief       |
| affect       | completely    | everybody  | imagine      | opinion     | relief         | thoroughly  |
| afraid       | concentrate   | everywhere | immediate    | opportunity | religion       | thought     |
| against      | conscientious | exaggerate | immediately  | opposite    | remember       | through     |
| aggression   | conscious     | exceed     | immensely    | original    | repetition     | tobacco     |
| aggressive   | continue      | excellence | incident     | other       | rescue         | together    |
| all right    | conductor     | excellent  | independent  | pageant     | restaurateur   | tomorrow    |
| a lot        | convention    | except     | Indian       | pamphlet    | rhyme          | tragedy     |
| already      | convenient    | excitement | innocent     | parallel    | rhythm         | tried       |
| always       | counterfeit   | exciting   | instead      | parents     | ridiculous     | trouble     |
| amateur      | countries     | existence  | intelligence | parliament  | running        | truly       |
| ambition     | crash         | expense    | intelligent  | particular  | safety         | two         |
| among        | crude         | experiment | interpret    | passed      | Saturday       | unique      |
| apology      | deceitful     | expect     | interrupt    | peculiar    | scent          | until       |
| apparent     | defect        | familiar   | introduce    | perform     | schedule       | unusual     |
| appearance   | criticism     | families   | it's         | persuade    | scissors       | usually     |
| appreciate   | criticize     | fascinate  | jealous      | phenomenon  | search         | vaccinate   |
| arctic       | curiosity     | fasten     | knew         | piece       | secret         | vacuum      |
| argument     | debt          | fatigue    | know         | pilot       | secretary      | vegetable   |
| article      | deceive       | favorite   | knowledge    | plane       | semester       | village     |
| associate    | decide        | fiction    | laboratory   | planned     | sense          | villain     |
| athlete      | define        | fictitious | laid         | pleasant    | separate       | weather     |
| attendance   | definitely    | field      | leisure      | poison      | separation     | Wednesday   |
| attitude     | descend       | finally    | lightning    | possess     | sergeant       | weight      |
| author       | describe      | first      | literature   | possession  | shepherd       | weird       |
| awful        | desert        | forecast   | lonely       | possible    | shining        | were        |
| beautiful    | dessert       | foreign    | loose        | practically | sincerely      | we're       |
| beauty       | destroy       | foresee    | lying        | prairie     | sold           | where       |
| because      | develop       | forest     | magazine     | precede     | someone        | whether     |
| beginning    | dictionary    | foretell   | magnificent  | preference  | paghetti       | which       |
| believe      | didn't        | formerly   | marriage     | preparation | speak          | whole       |
| benefit      | difficult     | fragile    | mathematics  | principal   | speech         | whose       |
| bicycle      | dinner        | freight    | meant        | principle   | sponsor        | witch       |
| biscuit      | dining        | friend     | millionaire  | privilege   | squirrel       | woman       |
| boundary     | disappear     | front      | miniature    | probably    | stationery     | women       |
| Britain      | disappoint    | fulfill    | minute       | profession  | stepping       | wonderful   |
| brilliance   | discipline    | government | mischief     | psychology  | stopping       | wreck       |
| brilliant    | discussion    | governor   | model        | pursue      | stories        | writing     |
| bureau       | disease       | grabbed    | mosquito     | quantity    | strengthen     | written     |
| business     | disatisfy     | grammar    | narrative    | quiet       | stretch        | wrote       |
| captain      | doctor        | grateful   | necessary    | quite       | studies        | yolk        |
| career       | does          | guarantee  | neighbor     | raspberry   | studying       | your        |
| carrying     | doesn't       | guard      | niece        | realize     | succeed        | you're      |
| cemetery     | dropping      | guess      | nineteen     | really      | successful     |             |
| certain      | during        | guest      |              |             | suggest        |             |
| challenge    | easier        | handsome   |              |             | summarize      |             |
| chief        | easiest       | happen     |              |             | summary        |             |
| children     | easily        | happiest   |              |             | superintendent |             |
| chocolate    | effect        | happily    |              |             | suspense       |             |
| chosen       |               |            |              |             |                |             |

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# LANGUAGE ARTS *outlining*

## OUTLINING

OUTLINES CAN HELP YOU ORGANIZE YOUR IDEAS. YOU MIGHT USE AN OUTLINE TO PLAN A SPEECH, COMPOSITION, OR TERM PAPER. YOU ALSO MIGHT USE AN INFORMAL OUTLINE TO TAKE NOTES.

### formal

A **formal outline** lists the main points of a topic and shows the relative importance of each and the order in which these points are presented. It also shows the relationships among them.

*Formal Outline Format:*

- I.
  - A.
  - B.
    - 1.
    - 2.
      - a.
      - b.
        - (1)
        - (2)

II.

No new subdivision should be started unless there are at least two points to be listed in the new division. This means that each *I* must have a *2*; each *a* must have a *b*.

Formal outlines may be either a **sentence outline** or a **topic outline**.

A **sentence outline** uses a complete sentence for each point and subpoint. A **topic outline** uses words or phrases for each point and subpoint.

### informal

An **informal outline** uses as few words as possible. Supporting details are written below each heading. Numerals, letters, or dashes may be used. Informal outlines are especially useful for taking notes.

→ Here is an example of a informal outline.

- I. How lightning forms
  - cloud's particles collide and become electrically charged
  - positively and negatively charged particles separate
  - positively charged particles in cloud collide with negatively charged particles on ground
- II. Forms of lightning
  - forked
  - streak
  - ribbon
  - broad or sheet
  - ball

→ Here is an example of a topic outline.

Thesis or Introductory Statement

- I. Gasoline shortage
  - A. Long lines
  - B. Gas "rationing"
- II. Voluntary energy conservation
  - A. Gasoline
  - B. Electricity
  - C. Home heating fuel
- III. Forced energy conservation
  - A. Fuel allocation
  - B. Speed limit
  - C. Airline flights
  - D. Christmas lighting

Conclusion



# LANGUAGE ARTS *MLA style of documentation*

|                              |                                                                                                                                                                                                                                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>YOUR WORKS-CITED LIST</b> | Your works-cited list should appear at the end of your essay. It provides the information necessary for a reader to locate and retrieve any source you cite in the essay. Each source you cite in the essay must appear in your works-cited list; likewise, each entry in the works-cited list must be cited in the text. |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

According to the *Modern Language Association Handbook for Writers of Research Papers, 9th edition*:

- {1} Double-space all entries.
- {2} Begin the first line of an entry flush with the left margin, and indent lines that follow by one-half inch.
- {3} List entries in alphabetical order by the author's last name. If you are listing more than one work by the same author, alphabetize the works according to title. Instead of repeating the author's name, type three hyphens followed by a period, and then give the title.
- {4} Italicize the titles of works published independently (books, plays, long essays, pamphlets, periodicals, and films are all published independently).
- {5} If the title of a book you are citing includes the title of another book, italicize the main title but not the other title.
- {6} Use quotation marks to indicate titles of short works included in larger works, song titles, and titles of unpublished works.
- {7} Separate the author, title, and publication information with a period followed by one space.
- {8} Use lowercase abbreviations to identify parts of a work (for example, vol. for volume), a named translator (trans.), and a named editor (ed.). However, when these designations follow a period, the first letter should be capitalized.
- {9} Use the shortened forms for the publisher's name. When the publisher's name includes the name of a person, cite the last name alone. When the publisher's name includes the name of more than one person, cite only the first of these names.
- {10} Use the phrase, "Accessed 5 Jan. 2019" instead of listing the date or the abbreviation, "n.d."

|                                                                |                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ANY CITATION<br/>(GENERAL GUIDELINES)</b>                   | Author, title, title of container (self contained if book), Other contributors (translators or editors), Version (edition), Number (vol. and/or no.), Publisher, Publication Date, Location, pages, paragraphs, URL, or DOI, and container's title, Other contributors, Version, Number, Publisher, Publication date, Date of Access if applicable. |
| <b>PAGE ON A WEBSITE</b>                                       | "How to Change Your Car's Oil." <i>eHow</i> , 25 Sept. 2018, www.ehow.com/how-to.html. Accessed 5 Jan. 2019.                                                                                                                                                                                                                                        |
| <b>ARTICLE IN A JOURNAL FROM A WEBSITE<br/>(ALSO IN PRINT)</b> | Doe, Jim. "Laws of the Open Sea." <i>Maritime Law</i> , vol. 3, no. 6, 2018, pp. 595-600, www.maritimelaw.org/article. Accessed 8 Feb. 2017.                                                                                                                                                                                                        |
| <b>ARTICLE IN A PERIODICAL<br/>(GENERAL GUIDELINES)</b>        | Author's last name, first name. "Article title." <i>Periodical title</i> , Day Month Year, pages.                                                                                                                                                                                                                                                   |
| <b>BYLINED ARTICLE FROM A DAILY NEWSPAPER</b>                  | Barker, Felicity. "Where Many Elderly Live, Signs of a Future." <i>New York Times</i> , 7 Mar. 2018, p. A12.                                                                                                                                                                                                                                        |
| <b>UNBYLINED ARTICLE FROM A DAILY NEWSPAPER</b>                | "Infant Mortality Down; Race Disparity Widens." <i>Washington Post</i> , 12 Mar. 2018, p. A12.                                                                                                                                                                                                                                                      |
| <b>ARTICLE FROM A MONTHLY OR BIMONTHLY MAGAZINE</b>            | Willis, Garry. "The Words that Remade America: Lincoln at Gettysburg." <i>Atlantic</i> , June 2019, pp. 57-79.                                                                                                                                                                                                                                      |
| <b>ARTICLE FROM A WEEKLY OR BIWEEKLY MAGAZINE</b>              | Hughes, Robert. "Futurism's Farthest Frontier." <i>Time</i> , 9 July 2019, pp. 58-59.                                                                                                                                                                                                                                                               |
| <b>EDITORIAL</b>                                               | "A Question of Medical Sight." Editorial. <i>Plain Dealer</i> , 11 Mar. 2019, p. 6B.                                                                                                                                                                                                                                                                |



# LANGUAGE ARTS *MLA style of documentation*

|                                             |                                                                                                                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BOOK</b><br>(GENERAL GUIDELINES)         | Author's last name, first name. <i>Book title</i> . Publisher, publication date.                                                                                                     |
| <b>BOOK BY ONE AUTHOR</b>                   | Wheelen, Richard. <i>Sherman's March</i> . Crowell, 1978.                                                                                                                            |
| <b>TWO OR MORE BOOKS BY THE SAME AUTHOR</b> | Garreau, Joel. <i>Edge City: Life on the New Frontier</i> . Doubleday, 1991.<br>---. <i>The Nine Nations of North America</i> . Houghton, 1981.                                      |
| <b>BOOK BY TWO OR THREE AUTHORS</b>         | Purves, Alan C., and Victoria Rippere. <i>Elements of Writing About a Literary Work</i> . NCTE, 1968.                                                                                |
| <b>BOOK BY FOUR OR MORE AUTHORS</b>         | Pratt, Robert A., et al. <i>Classical Literature</i> . Houghton, 1956.                                                                                                               |
| <b>BOOK BY A CORPORATE AUTHOR</b>           | The Rockefeller Panel Reports. <i>Prospect for America</i> . Doubleday, 1961.                                                                                                        |
| <b>BOOK BY AN ANONYMOUS AUTHOR</b>          | <i>Literary Market Place: The Directory of the Book Publishing Industry</i> . 2003 ed., Bowker, 2002.                                                                                |
| <b>BOOK WITH AN AUTHOR AND AN EDITOR</b>    | Toomer, Jean. <i>Cane</i> . Edited by Darwin T. Turner, Norton, 1988.                                                                                                                |
| <b>A WORK IN AN ANTHOLOGY</b>               | Morris, William. "The Haystack in the Floods." <i>Nineteenth Century British Minor Poets</i> , edited by Richard W. B. Lewis and W. H. Auden, Dell, Laurel Edition, 1973, pp. 35-52. |
| <b>AN EDITION OTHER THAN THE FIRST</b>      | Chaucer, Geoffrey. <i>The Riverside Chaucer</i> . Edited by Larry D. Benson. 3rd ed., Houghton, 1987.                                                                                |
| <b>SIGNED ARTICLE IN A REFERENCE BOOK</b>   | Wallace, Wilson D. "Superstition." <i>World Book Encyclopedia</i> . 1970 ed., 1982, Macmillan, 2019.                                                                                 |

School  
Datebooks



# LANGUAGE ARTS *APA style of documentation*

## YOUR REFERENCE LIST

YOUR REFERENCE LIST SHOULD APPEAR AT THE END OF YOUR ESSAY. IT PROVIDES THE INFORMATION NECESSARY FOR A READER TO LOCATE AND RETRIEVE ANY SOURCE YOU CITE IN THE ESSAY. EACH SOURCE YOU CITE IN THE ESSAY MUST APPEAR IN YOUR REFERENCE LIST. LIKEWISE, EACH ENTRY IN THE REFERENCE LIST MUST BE CITED IN THE TEXT.

## BASIC RULES

According to the seventh edition of the *Publication Manual of the American Psychological Association*:

- Indent your reference list one-half inch from the left margin, excluding the first line of each reference, which should remain flush left. This is called a hanging indent.
- Double-space all references.
- Capitalize only the first word of a title or subtitle of a work. Capitalize all words in journal titles. Italicize titles of books and journals. Note that the italicizing in these entries includes commas and periods.
- Invert authors' names (last name first); give last name and initials for all authors of a particular work, unless the work has more than six authors (in this case, list the first six authors and then use et al. after the sixth author's name to indicate the rest of the authors). Alphabetize by authors' last names letter by letter. If you have more than one work by a particular author, order them by publication date, oldest to newest (thus a 2016 article would appear before a 2018 article). When an author appears as a sole author and again as the first author of a group, list the one-author entry first. If no author is given for a particular source, alphabetize by the title of the piece in the reference list. Use a shortened version of the title for parenthetical citations within the text.
- Use "&" instead of "and" before the author's name when listing multiple authors of a single work.

## BASIC FORMS FOR SOURCES IN PRINT

**An article in a periodical (such as a journal, newspaper, or magazine)**

- Author, A. A. Author, B. B., & Author, C. C. (Publication year, month, day). Title of article. *Title of Periodical*, volume number (issue number), pages.

You need to list only the volume number if the periodical uses continuous pagination throughout a particular volume; each issue begins with page 1. When you should list the issue number as well → Title of Periodical, volume number (issue number), pages.

**A nonperiodical (such as a book, report, brochure or audiovisual media)**

- Author, A. A. (Year of publication). Title of work: Capital letter also for subtitle (Edition) Publisher.

Do not include the location of the publisher in the citation.

**Part of a nonperiodical (such as a book chapter or an article in a collection)**

- Author, A. A., & Author, B. B. (Year of publication). Title of chapter. In A. Editor & B. Editor (Eds.), *Title of book* (pages of chapter). Publisher.

When you list the pages of the chapter or essay in parentheses after the book title, use "pp." before the numbers. (pp. 1-21). This abbreviation, however, does not appear before the page numbers in periodical references, except for new papers.

## BASIC FORMS FOR ELECTRONIC SOURCES

**A web page**

- Author, A. A. (Date of publication or revision). Title of page. Site name. URL

**An online journal or magazine**

- Author, A. A., & Author, B. B. (Date of publication). Title of article. Title of Journal, volume number (issue number), page range. doi:00000000/000000000000

Since online materials can potentially change URLs, APA recommends providing a Digital Object Identifier (DOI), when it is available, as opposed to the URL. DOIs are unique to their documents and consist of a long alphanumeric code.

**An online journal or magazine (with no DOI assigned)**

- Author, A. A., & Author, B. B. (Date of publication). Title of article. Title of Journal, volume number (issue number), page range. URL

**Email**

Because email is a personal communication, not easily retrieved by the general public, no entry should appear in your reference list. Instead, parenthetically cite in text the communicator's name, the fact that it was personal communication, and the date of the communication: The novelist has repeated this idea recently (S. Rushdie, personal communication, May 1, 1995).



# LANGUAGE ARTS *APA style of documentation*



## EXAMPLES

### Journal article, one author

- Harlow, H. F. (1983). Fundamentals for preparing psychology journal articles. *Journal of Comparative and Physiological Psychology*, 55, 893-896.

### Journal article, more than one author

- Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A., & Harlow, T. (1993). There's more to self-esteem than whether it is high or low: The importance of stability of self-esteem. *Journal of Personality and Social Psychology*, 65, 1190-1204.

### Work discussed in a secondary source

- Coltheart, M., Curtis, B., Atkins, P., & Haller, M. (1993). Models of reading aloud: Dual-route and parallel-distributed-processing approaches. *Psychological Review*, 100, 589-608.

Give the secondary source in the references list; in the text, name the original work, and give a citation for the secondary source. For example, if Seidenberg and McClelland's work is cited in Coltheart et al. and you did not read the original work, list the Coltheart et al. reference in your reference list; in the text, use the following citation:

- In Seidenberg and McClelland's study (as cited in Coltheart, Curtis, Atkins, & Haller, 1993), ...

### Magazine article, one author

- Henry, W. A. (1990, April 9). Making the grade in today's schools. *Time*, 135, 28-31.

### Book

- Calfee, R. C., & Valencia, R. S. (1991). *APA guide to preparing manuscripts for journal publication*. American Psychological Association.

### An article or chapter of a book

- O'Neil, J. M., & Egan, J. (1992). Men's and women's gender role journeys: Metaphor for healing, transition, and transformation. In B. R. Wainrib (Ed.), *Gender issues across the life cycle* (pp. 107-123).

### A government publication

- National Institute of Mental Health. (1990). *Clinical training in serious mental illness* (HHS Publication No. ADM 90-1679). U.S. Government Printing Office.

### A book or article with no author or editor named

- *Merriam-Webster's collegiate dictionary* (11th ed.). (2005). Merriam-Webster.
  - New drug appears to cut risk of death from heart failure. (1993, July 15). *The Washington Post*, p. A1.
- For parenthetical citations of sources in text with no author named, use a shortened version of the title instead of an author's name. Use quotation marks and italics, as appropriate. For example, parenthetical citations of the two sources above would appear as follows: (Merriam-Webster's, 2005) and ("New Drug," 1993).

### A translated work and/or a republished work

- Laplace, P. S. (1951). *A philosophical essay on probabilities* (F. W. Truscott & F. J. Flory, Trans.). (Original work published 1814).

### A review of a book, film, television program, etc.

- Baumeister, R. F. (1993). Exposing the self-knowledge myth [Review of the book *The self-knower: A hero under control*]. *Contemporary Psychology*, 38, 466-467.

### An entry in an encyclopedia

- Bergmann, P. G. (1993). Relativity. In *The new encyclopaedia britannica* (Vol. 26, pp. 501-508). Encyclopaedia Britannica.

### An online journal article (no DOI assigned)

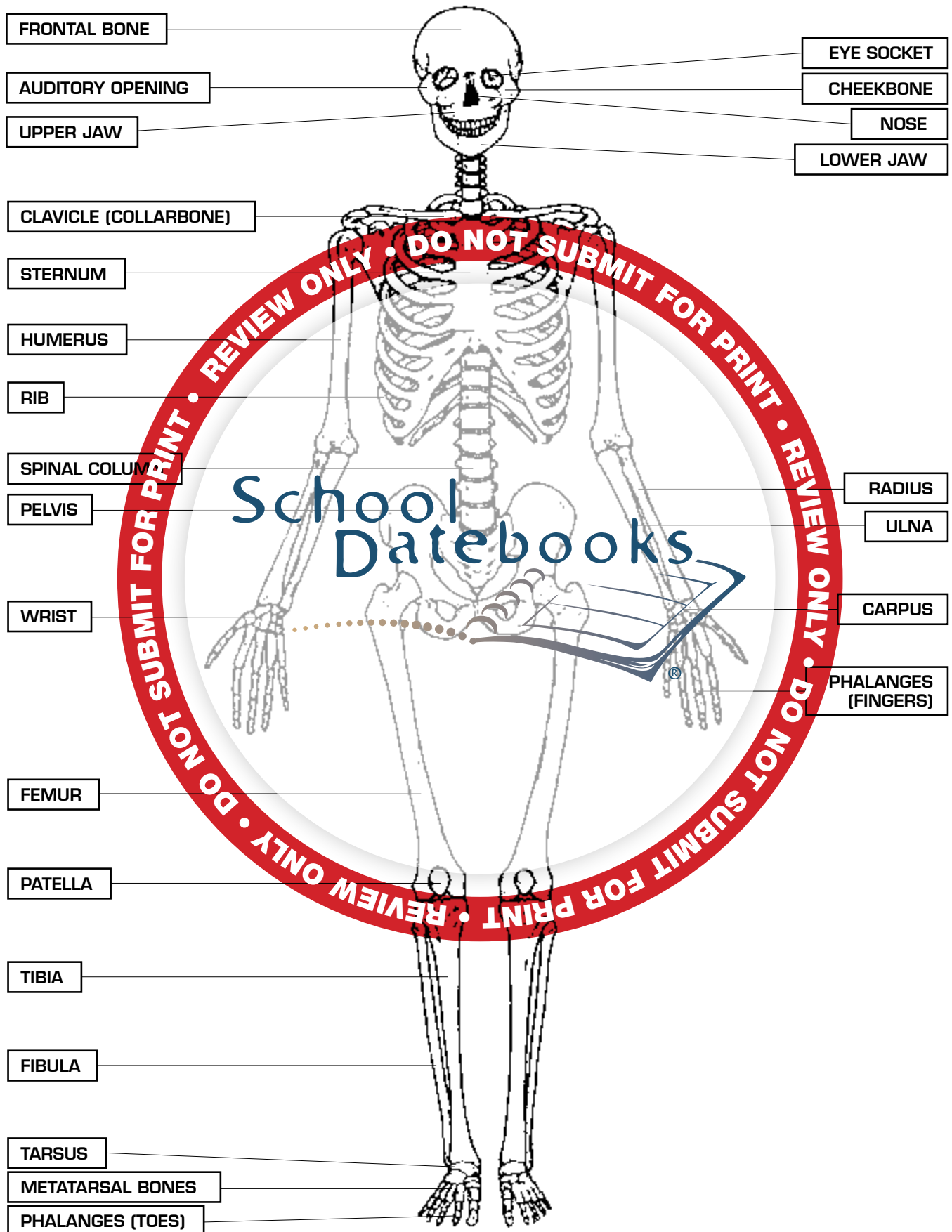
- Kenneth, I. A. (2000). A Buddhist response to the nature of human rights. *Journal of Buddhist Ethics*, 8. <http://www.buddhistethics.org/2/inada1>

### A web page

- Daly, B. (1997). *Writing argumentative essays*. <http://www.ltn.lv/~markir/essaywriting/frntpage.htm>



# SCIENCE *the human skeleton*



# SCIENCE *Periodic table of the elements*



| GROUP<br>1 **<br>IA ***                    | 2<br>IIA                               | 3                                             | 4<br>IVB                                   | 5<br>VB                                 | 6<br>VIB                                | 7<br>VIIB                               | 8<br>VIII                                | 9<br>VIII                                | 10<br>VIII                                | 11<br>IB                                 | 12<br>IIB                                | 13<br>IIIA                               | 14<br>IVA                                | 15<br>VA                                 | 16<br>VIA                                | 17<br>VIIA                               | 18<br>VIIIA                                |
|--------------------------------------------|----------------------------------------|-----------------------------------------------|--------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------|-------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|--------------------------------------------|
| 1<br><b>H</b><br>hydrogen<br>1.008         | 2<br><b>He</b><br>helium<br>4.003      | 3<br><b>Li</b><br>lithium<br>6.941(2)         | 4<br><b>Be</b><br>beryllium<br>9.012       | 5<br><b>B</b><br>boron<br>10.81         | 6<br><b>C</b><br>carbon<br>12.011       | 7<br><b>N</b><br>nitrogen<br>14.01      | 8<br><b>O</b><br>oxygen<br>16.00         | 9<br><b>F</b><br>fluorine<br>19.00       | 10<br><b>Ne</b><br>neon<br>20.18          | 11<br><b>Na</b><br>sodium<br>22.99       | 12<br><b>Mg</b><br>magnesium<br>24.31    | 13<br><b>Al</b><br>aluminum<br>26.98     | 14<br><b>Si</b><br>silicon<br>28.09      | 15<br><b>P</b><br>phosphorus<br>30.97    | 16<br><b>S</b><br>sulfur<br>32.07        | 17<br><b>Cl</b><br>chlorine<br>35.45     | 18<br><b>Ar</b><br>argon<br>39.95          |
| 19<br><b>K</b><br>potassium<br>39.10       | 20<br><b>Ca</b><br>calcium<br>40.08    | 21<br><b>Sc</b><br>scandium<br>44.96          | 22<br><b>Ti</b><br>titanium<br>47.87       | 23<br><b>V</b><br>vanadium<br>50.94     | 24<br><b>Cr</b><br>chromium<br>52.00    | 25<br><b>Mn</b><br>manganese<br>54.94   | 26<br><b>Fe</b><br>iron<br>55.85         | 27<br><b>Co</b><br>cobalt<br>58.93       | 28<br><b>Ni</b><br>nickel<br>58.69        | 29<br><b>Cu</b><br>copper<br>63.55       | 30<br><b>Zn</b><br>zinc<br>65.38(2)      | 31<br><b>Ga</b><br>gallium<br>69.72      | 32<br><b>Ge</b><br>germanium<br>72.63    | 33<br><b>As</b><br>arsenic<br>74.92      | 34<br><b>Se</b><br>selenium<br>78.97     | 35<br><b>Br</b><br>bromine<br>79.90      | 36<br><b>Kr</b><br>krypton<br>83.80        |
| 37<br><b>Rb</b><br>rubidium<br>85.47       | 38<br><b>Sr</b><br>strontium<br>87.62  | 39<br><b>Y</b><br>yttrium<br>88.91            | 40<br><b>Zr</b><br>zirconium<br>91.22      | 41<br><b>Nb</b><br>niobium<br>92.91     | 42<br><b>Mo</b><br>molybdenum<br>95.95  | 43<br><b>Tc</b><br>technetium<br>(97)   | 44<br><b>Ru</b><br>ruthenium<br>101.1    | 45<br><b>Rh</b><br>rhodium<br>102.91     | 46<br><b>Pd</b><br>palladium<br>106.4     | 47<br><b>Ag</b><br>silver<br>107.9       | 48<br><b>Cd</b><br>cadmium<br>112.4      | 49<br><b>In</b><br>indium<br>114.8       | 50<br><b>Sn</b><br>tin<br>118.7          | 51<br><b>Sb</b><br>antimony<br>121.8     | 52<br><b>Te</b><br>tellurium<br>127.6    | 53<br><b>I</b><br>iodine<br>126.9        | 54<br><b>Xe</b><br>xenon<br>131.3          |
| 55<br><b>Cs</b><br>cesium<br>132.9         | 56<br><b>Ba</b><br>barium<br>137.3     | 57-71<br>Lanthanoids                          | 72<br><b>Hf</b><br>hafnium<br>178.5        | 73<br><b>Ta</b><br>tantalum<br>180.9    | 74<br><b>W</b><br>tungsten<br>183.8     | 75<br><b>Re</b><br>rhenium<br>186.2     | 76<br><b>Os</b><br>osmium<br>190.2       | 77<br><b>Ir</b><br>iridium<br>192.2      | 78<br><b>Pt</b><br>platinum<br>195.1      | 79<br><b>Au</b><br>gold<br>197.0         | 80<br><b>Hg</b><br>mercury<br>200.6      | 81<br><b>Tl</b><br>thallium<br>204.4     | 82<br><b>Pb</b><br>lead<br>207.2         | 83<br><b>Bi</b><br>bismuth<br>209        | 84<br><b>Po</b><br>polonium<br>(209)     | 85<br><b>At</b><br>astatine<br>(210)     | 86<br><b>Rn</b><br>radon<br>(222)          |
| 87<br><b>Fr</b><br>francium<br>(223)       | 88<br><b>Ra</b><br>radium<br>(226)     | 89-103<br>Actinoids                           | 104<br><b>Rf</b><br>rutherfordium<br>(261) | 105<br><b>Db</b><br>dubnium<br>(262)    | 106<br><b>Sg</b><br>seaborgium<br>(269) | 107<br><b>Bh</b><br>bohrium<br>(270)    | 108<br><b>Hs</b><br>hassium<br>(269)     | 109<br><b>Mt</b><br>meitnerium<br>(277)  | 110<br><b>Ds</b><br>darmstadtium<br>(281) | 111<br><b>Rg</b><br>roentgenium<br>(282) | 112<br><b>Cn</b><br>copernicium<br>(285) | 113<br><b>Nh</b><br>nihonium<br>(286)    | 114<br><b>Fl</b><br>flerovium<br>(290)   | 115<br><b>Mc</b><br>moscovium<br>(290)   | 116<br><b>Lv</b><br>livermorium<br>(293) | 117<br><b>Ts</b><br>tennessine<br>(294)  | 118<br><b>Og</b><br>oganesson<br>(294)     |
| 101<br><b>La</b><br>lanthanum<br>138.90547 | 102<br><b>Ce</b><br>cerium<br>140.116  | 103<br><b>Pr</b><br>praseodymium<br>140.90768 | 104<br><b>Nd</b><br>neodymium<br>144.242   | 105<br><b>Pm</b><br>promethium<br>(145) | 106<br><b>Sm</b><br>samarium<br>150.36  | 107<br><b>Eu</b><br>europium<br>151.964 | 108<br><b>Gd</b><br>gadolinium<br>157.25 | 109<br><b>Tb</b><br>terbium<br>158.92535 | 110<br><b>Dy</b><br>dysprosium<br>162.500 | 111<br><b>Ho</b><br>holmium<br>164.93033 | 112<br><b>Er</b><br>erbium<br>167.259    | 113<br><b>Tm</b><br>thulium<br>168.93422 | 114<br><b>Yb</b><br>ytterbium<br>173.054 | 115<br><b>Lu</b><br>lutetium<br>174.9668 | 116<br><b>Yb</b><br>ytterbium<br>173.054 | 117<br><b>No</b><br>nobelium<br>(259)    | 118<br><b>Lr</b><br>lawrencium<br>(262)    |
| 89<br><b>Ac</b><br>actinium<br>(227)       | 90<br><b>Th</b><br>thorium<br>232.0377 | 91<br><b>Pa</b><br>protactinium<br>231.03688  | 92<br><b>U</b><br>uranium<br>238.02891     | 93<br><b>Np</b><br>neptunium<br>(237)   | 94<br><b>Pu</b><br>plutonium<br>(244)   | 95<br><b>Am</b><br>americium<br>(243)   | 96<br><b>Cm</b><br>curium<br>(247)       | 97<br><b>Bk</b><br>berkelium<br>(247)    | 98<br><b>Cf</b><br>californium<br>(251)   | 99<br><b>Es</b><br>einsteinium<br>(252)  | 100<br><b>Fm</b><br>fermium<br>(257)     | 101<br><b>Md</b><br>mendelevium<br>(258) | 102<br><b>No</b><br>nobelium<br>(259)    | 103<br><b>Lr</b><br>lawrencium<br>(262)  | 104<br><b>Yb</b><br>ytterbium<br>173.054 | 105<br><b>Lu</b><br>lutetium<br>174.9668 | 106<br><b>La</b><br>lanthanum<br>138.90547 |

Source: The International Union of Pure and Applied Chemistry (IUPAC), and others.

Updated 9/2022



# SCIENCE *physics laws & formulas*

## Mass Density

$$\text{mass density} = \frac{\text{mass}}{\text{volume}}$$

## Speed

$$\text{average speed} = \frac{\text{distance covered}}{\text{elapsed time}}$$

## Acceleration

$$a = \frac{\Delta v}{\Delta t} \text{ or } \frac{v_F - v_I}{t_F - t_I}$$

(a=average acceleration; v=velocity; t=time;  
v<sub>F</sub>=final velocity; v<sub>I</sub>=initial velocity; t<sub>F</sub>=final time;  
t<sub>I</sub>=initial time)

## Law of Universal Gravitation

$$F = G \frac{m_1 m_2}{d^2}$$

(F=force of attraction; m<sub>1</sub> & m<sub>2</sub>=the masses of the two bodies; d=distance between the centers of m<sub>1</sub> and m<sub>2</sub>; G=gravitational constant)

## Work Done by a Force

$$\text{work} = (\text{force})(\text{distance})$$

## Power

$$\text{power} = \frac{\text{work}}{\text{time}} \text{ (see above definition of work)}$$

## Kinetic Energy

$$KE = \frac{mv^2}{2}$$

(KE=kinetic energy; m=mass; v=velocity)

## Specific Heat

$$Q = cm\Delta t$$

(Q=quantity of heat; c=specific heat; m=mass;  
Δt=change in temperature)

## Electric Current - Strength

$$I = \frac{Q}{t}$$

(I=the current strength; Q=quantity of charge; t=time)

## Momentum

$$\text{momentum} = (\text{mass})(\text{velocity})$$

## Mass-Energy Equivalence

$$E = mc^2$$

(E=the energy [measured in ergs] equivalent to a mass m [measured in grams]; c=speed of light [measured in centimeters per second])

## Power Expended in an Electric Appliance

$$P = IV$$

(P=power in watts; I=current; V=voltage)

## Newton's Second Law of Motion

$$\text{force} = (\text{mass})(\text{acceleration})$$

## Torque

$$T = FR$$

(T=torque; F=tangential force; R=radius)

## Boyle's Law when temperature constant:

$$p_1 V_1 = p_2 V_2$$

(p<sub>1</sub>=original pressure; p<sub>2</sub>=new pressure;  
V<sub>1</sub>=original volume; V<sub>2</sub>=new volume)

## Wave Motion

$$V = n\lambda$$

(V=wave velocity; n=wave frequency; λ=wavelength)

## Illumination on a Surface Perpendicular to the Luminous Flux

$$E = \frac{I}{r^2}$$

(E=illumination; I=intensity of the source; r=distance from source to surface perpendicular to the beam)

## Focal Length of Mirrors and Lenses

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$$

(f=focal length; d<sub>o</sub>=object distance; d<sub>i</sub>=image distance)

## Images in Mirrors and Lenses

$$\frac{h_i}{d_i} = \frac{h_o}{d_o}$$

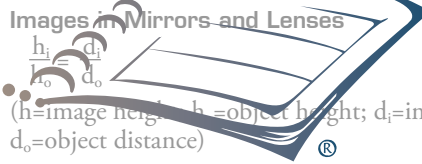
(h<sub>i</sub>=image height; h<sub>o</sub>=object height; d<sub>i</sub>=image distance;  
d<sub>o</sub>=object distance)

## Ohm's Law

$$I = \frac{V}{R}$$

(I=strength of the current flowing in a conductor;  
V=the potential difference applied to its ends;  
R=its resistance)

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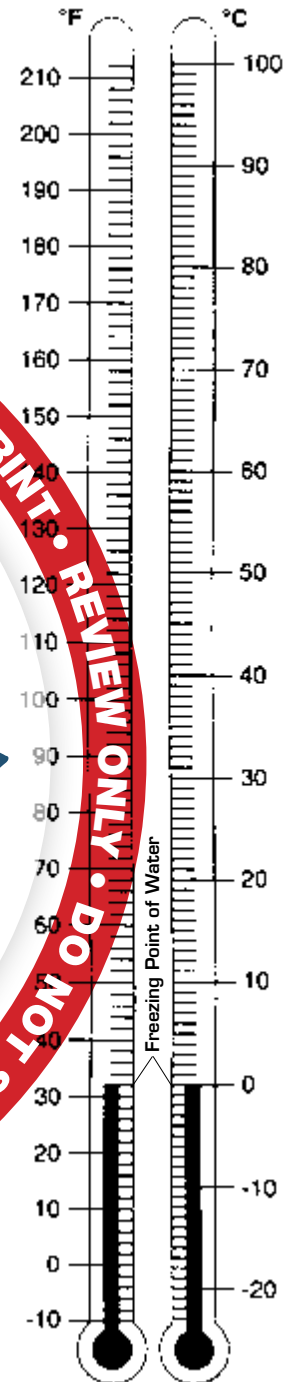
# SCIENCE *unit conversions*

## ENGLISH TO METRIC CONVERSIONS

| To Convert→            | Multiply By→ | To Find→           |
|------------------------|--------------|--------------------|
| <b>AREA</b>            |              |                    |
| square inches          | 6.45         | square centimeters |
| square feet            | 0.09         | square meters      |
| square miles           | 2.59         | square kilometers  |
| acres                  | 0.40         | hectares           |
| <b>LENGTH</b>          |              |                    |
| inches                 | 2.54         | centimeters        |
| feet                   | 0.30         | meters             |
| yards                  | 0.91         | meters             |
| miles                  | 1.61         | kilometers         |
| <b>MASS AND WEIGHT</b> |              |                    |
| ounces                 | 28.35        | grams              |
| pounds                 | 0.45         | kilograms          |
| pounds-force           | 4.45         | newtons            |
| short tons             | 0.91         | metric tons        |
| <b>VOLUME</b>          |              |                    |
| cubic inches           | 16.39        | cubic centimeters  |
| cubic feet             | 0.03         | cubic meters       |
| quarts                 | 0.95         | liters             |
| gallons                | 3.79         | liters             |

## METRIC TO ENGLISH CONVERSIONS

| To Convert→            | Multiply By→ | To Find→      |
|------------------------|--------------|---------------|
| <b>AREA</b>            |              |               |
| square centimeters     | 0.16         | square inches |
| square meters          | 10.76        | square feet   |
| square kilometers      | 0.39         | square miles  |
| hectares               | 2.47         | acres         |
| <b>LENGTH</b>          |              |               |
| centimeters            | 0.39         | inches        |
| meters                 | 3.28         | feet          |
| meters                 | 1.09         | yards         |
| kilometers             | 0.62         | miles         |
| <b>MASS AND WEIGHT</b> |              |               |
| grams                  | 0.04         | ounces        |
| kilograms              | 2.20         | pounds        |
| newtons                | 0.23         | pound-force   |
| metric tons            | 1.10         | short tons    |
| <b>VOLUME</b>          |              |               |
| cubic centimeters      | 0.06         | cubic inches  |
| cubic meters           | 35.31        | cubic feet    |
| liters                 | 1.06         | quarts        |
| liters                 | 0.26         | gallons       |



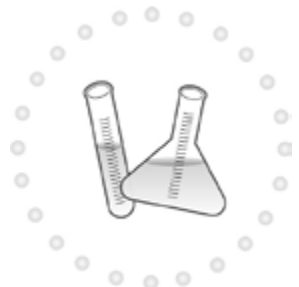
### TEMPERATURE

**Fahrenheit to Celsius:**  
subtract 32, then multiply  
by 5 and divide by 9.

**Celsius to Fahrenheit:**  
multiply by 9, divide by 5,  
then add 32.



# SCIENCE *weights & measures & formulas*



## WEIGHTS AND MEASURES

### ENGLISH

#### Area

|                                  |       |                                      |
|----------------------------------|-------|--------------------------------------|
| 1 square foot (ft <sup>2</sup> ) | ----- | 144 square inches (in <sup>2</sup> ) |
| 1 square yard (yd <sup>2</sup> ) | ----- | 9 square feet                        |
| 1 acre                           | ----- | 43,560 square feet                   |
| 1 square mile (mi <sup>2</sup> ) | ----- | 640 acres                            |

#### Capacity

|                |       |                        |
|----------------|-------|------------------------|
| 1 cup (c)      | ----- | 8 fluid ounces (fl oz) |
| 1 pint (pt)    | ----- | 2 cups                 |
| 1 quart (qt)   | ----- | 2 pints                |
| 1 quart        | ----- | 4 cups                 |
| 1 gallon (gal) | ----- | 4 quarts               |

#### Length

|             |       |                |
|-------------|-------|----------------|
| 1 foot (ft) | ----- | 12 inches (in) |
| 1 yard (yd) | ----- | 36 inches      |
| 1 yard      | ----- | 3 feet         |
| 1 mile (mi) | ----- | 5,280 feet     |
| 1 mile      | ----- | 1,760 yards    |

#### Time

|                |       |                |
|----------------|-------|----------------|
| 1 minute (min) | ----- | 60 seconds (s) |
| 1 hour (h)     | ----- | 60 minutes     |
| 1 day (d)      | ----- | 24 hours       |
| 1 week (wk)    | ----- | 7 days         |
| 1 year (yr)    | ----- | 12 months (mo) |
| 1 year         | ----- | 52 weeks       |
| 1 year         | ----- | 365 days       |
| 1 century (c)  | ----- | 100 years      |

#### Weight

|                 |       |                |
|-----------------|-------|----------------|
| 1 pound (lb)    | ----- | 16 ounces (oz) |
| 1 short ton (T) | ----- | 2,000 pounds   |

### METRIC

#### Area

|                                    |       |                                       |
|------------------------------------|-------|---------------------------------------|
| 1 sq centimeter (cm <sup>2</sup> ) | ----- | 100 sq millimeters (mm <sup>2</sup> ) |
| 1 sq meter (m <sup>2</sup> )       | ----- | 10,000 sq centimeters                 |
| 1 hectare (ha)                     | ----- | 10,000 square meters                  |
| 1 sq kilometer (km <sup>2</sup> )  | ----- | 1,000,000 sq meters                   |

#### Capacity

|                   |       |                |
|-------------------|-------|----------------|
| 1 milliliter (ml) | ----- | .001 liter (L) |
| 1 centiliter (cl) | ----- | .01 liter      |
| 1 deciliter (dl)  | ----- | .1 liter       |
| 1 dekaliter (dal) | ----- | 10 liters      |
| 1 hectoliter (hl) | ----- | 100 liters     |
| 1 kiloliter (kl)  | ----- | 1,000 liters   |

#### Length

|                   |       |                |
|-------------------|-------|----------------|
| 1 millimeter (mm) | ----- | .001 meter (m) |
| 1 centimeter (cm) | ----- | .01 meter      |
| 1 decimeter (dm)  | ----- | .1 meter       |
| 1 dekameter (dam) | ----- | 10 meters      |
| 1 hectometer (hm) | ----- | 100 meters     |
| 1 kilometer (km)  | ----- | 1,000 meters   |

#### Mass/Weight

|                  |       |                 |
|------------------|-------|-----------------|
| 1 milligram (mg) | ----- | .01 gram (g)    |
| 1 centigram (cg) | ----- | .01 gram        |
| 1 decigram (dg)  | ----- | .1 gram         |
| 1 dekagram (dag) | ----- | 10 grams        |
| 1 hectogram (hg) | ----- | 100 grams       |
| 1 kilogram (kg)  | ----- | 1,000 grams     |
| 1 metric ton (t) | ----- | 1,000 kilograms |

## FORMULAS

|                                |       |              |
|--------------------------------|-------|--------------|
| Perimeter of a rectangle       | ----- | $P = 2(l+w)$ |
| Perimeter of a square          | ----- | $P = 4s$     |
| Perimeter of a regular polygon | ----- |              |
| (n = number of sides)          |       |              |

|                               |       |                               |
|-------------------------------|-------|-------------------------------|
| Area of a rectangle           | ----- | $A = lw$                      |
| Area of a square              | ----- | $A = s^2$                     |
| Area of a parallelogram       | ----- | $A = bh$                      |
| Area of a triangle            | ----- | $A = \frac{1}{2}bh$           |
| Area of a trapezoid           | ----- | $A = \frac{1}{2}h(b_1 + b_2)$ |
| Area of a circle              | ----- | $A = \pi r^2$                 |
| Circumference of a circle     | ----- | $C = \pi d$ , or $2\pi r$     |
| Volume of a rectangular prism | ----- | $V = lwh$                     |
| Volume of any prism           | ----- | $V = Bh$                      |
| Volume of a cylinder          | ----- | $V = \pi r^2 h$               |
| Volume of a pyramid           | ----- | $V = \frac{1}{3}Bh$           |
| Volume of a cone              | ----- | $V = \frac{1}{3}\pi r^2 h$    |

|                 |       |           |
|-----------------|-------|-----------|
| Simple interest | ----- | $I = prt$ |
|-----------------|-------|-----------|

|          |       |          |
|----------|-------|----------|
| Distance | ----- | $D = rt$ |
|----------|-------|----------|

|                             |       |                           |
|-----------------------------|-------|---------------------------|
| Surface area of a cylinder  | ----- | $SA = 2\pi r^2 + 2\pi rh$ |
| Pythagorean Theorem         | ----- | $a^2 + b^2 = c^2$         |
| (sides of a right triangle) |       |                           |

### FORMULA KEY

|                                                                                               |                   |
|-----------------------------------------------------------------------------------------------|-------------------|
| A = area                                                                                      | l = length        |
| b = base, length of any side of a plane figure                                                | P = perimeter     |
| B = area of base                                                                              | r = radius        |
| d = diameter                                                                                  | s = side          |
| h = height, perpendicular distance from the furthest point of the figure to the extended base | sa = surface area |
|                                                                                               | V = volume        |
|                                                                                               | w = width         |

|                                                 |
|-------------------------------------------------|
| I = interest, p = principal, r = rate, t = time |
|-------------------------------------------------|

|                                  |
|----------------------------------|
| D = distance, r = rate, t = time |
|----------------------------------|



# MATHEMATICS *Roman numerals & place value*

## ROMAN NUMERALS

IN THE ROMAN NUMBER SYSTEM, NUMERALS ARE REPRESENTED BY 7 CAPITAL LETTERS FROM OUR ALPHABET. THESE LETTERS ARE COMBINED IN DIFFERENT WAYS TO FORM NUMBERS. THE VALUES OF THE LETTERS ARE ADDED TOGETHER, UNLESS A LETTER WITH A LESSER VALUE COMES BEFORE ONE WITH A LARGER VALUE. IN THIS CASE, THE VALUE IS THE DIFFERENCE OF THE TWO LETTER VALUES.

FOLLOWING ARE THE 7 LETTERS AND THEIR VALUES:

**I** → one  
**V** → five  
**X** → ten  
**L** → fifty  
**C** → one hundred  
**D** → five hundred  
**M** → one thousand

|         |              |
|---------|--------------|
| {1}=    | <b>I</b>     |
| {2}=    | <b>II</b>    |
| {3}=    | <b>III</b>   |
| {4}=    | <b>IV</b>    |
| {5}=    | <b>V</b>     |
| {6}=    | <b>VI</b>    |
| {7}=    | <b>VII</b>   |
| {8}=    | <b>VIII</b>  |
| {9}=    | <b>IX</b>    |
| {10}=   | <b>X</b>     |
| {11}=   | <b>XI</b>    |
| {12}=   | <b>XII</b>   |
| {13}=   | <b>XIII</b>  |
| {14}=   | <b>XIV</b>   |
| {15}=   | <b>XV</b>    |
| {16}=   | <b>XVI</b>   |
| {17}=   | <b>XVII</b>  |
| {18}=   | <b>XVIII</b> |
| {19}=   | <b>XIX</b>   |
| {20}=   | <b>XX</b>    |
| {30}=   | <b>XXX</b>   |
| {40}=   | <b>XL</b>    |
| {50}=   | <b>L</b>     |
| {60}=   | <b>LX</b>    |
| {70}=   | <b>LXX</b>   |
| {80}=   | <b>LXXX</b>  |
| {90}=   | <b>XC</b>    |
| {100}=  | <b>C</b>     |
| {500}=  | <b>D</b>     |
| {1000}= | <b>M</b>     |

## PLACE VALUE

| Hundred Trillions | Ten Trillions | One Trillions | Hundred Billions | One Billions | Hundred Millions | Ten Millions | One Millions | Hundred Thousands | Ten Thousands | One Thousands | Hundred | Tens | Ones |
|-------------------|---------------|---------------|------------------|--------------|------------------|--------------|--------------|-------------------|---------------|---------------|---------|------|------|
| 1                 | 5             | 4             | 3                | 9            | 7                | 1            | 5            | 4                 | 6             | 2             | 1       | 0    | 0    |

**Read** this number as one hundred fifty-four trillion, three hundred ninety-one billion, seven hundred fifteen million, four hundred sixty-two thousand, one hundred.  
**Write** this number as 154,399,715,462,100.

## Number Zeros

|             |     |
|-------------|-----|
| Thousand    | 3   |
| Million     | 6   |
| Billion     | 9   |
| Trillion    | 12  |
| Quadrillion | 15  |
| Quintillion | 18  |
| Sextillion  | 21  |
| Septillion  | 24  |
| Octillion   | 27  |
| Nonillion   | 30  |
| Decillion   | 33  |
| Googol      | 100 |

## NUMBER PREFIXES

|         |       |
|---------|-------|
| uni-    | one   |
| bi-     | two   |
| tri-    | three |
| quadri- | four  |
| quint-  | five  |
| sex-    | six   |
| sept-   | seven |
| oct-    | eight |
| non-    | nine  |
| deci-   | ten   |



# MATHEMATICS *squares & square roots*

## SQUARES & SQUARE ROOTS

| N  | N <sup>2</sup> | $\sqrt{N}$ | N   | N <sup>2</sup> | $\sqrt{N}$ | N   | N <sup>2</sup> | $\sqrt{N}$ |
|----|----------------|------------|-----|----------------|------------|-----|----------------|------------|
| 1  | 1              | 1.00       | 51  | 2,601          | 7.14       | 101 | 10,201         | 10.05      |
| 2  | 4              | 1.41       | 52  | 2,704          | 7.21       | 102 | 10,404         | 10.10      |
| 3  | 9              | 1.73       | 53  | 2,809          | 7.28       | 103 | 10,609         | 10.15      |
| 4  | 16             | 2.00       | 54  | 2,916          | 7.35       | 104 | 10,816         | 10.20      |
| 5  | 25             | 2.24       | 55  | 3,025          | 7.42       | 105 | 11,025         | 10.25      |
| 6  | 36             | 2.45       | 56  | 3,136          | 7.48       | 106 | 11,236         | 10.30      |
| 7  | 49             | 2.65       | 57  | 3,249          | 7.55       | 107 | 11,449         | 10.34      |
| 8  | 64             | 2.83       | 58  | 3,364          | 7.62       | 108 | 11,664         | 10.39      |
| 9  | 81             | 3.00       | 59  | 3,481          | 7.68       | 109 | 11,881         | 10.44      |
| 10 | 100            | 3.16       | 60  | 3,600          | 7.75       | 110 | 12,100         | 10.49      |
| 11 | 121            | 3.32       | 61  | 3,721          | 7.81       | 111 | 12,321         | 10.54      |
| 12 | 144            | 3.46       | 62  | 3,844          | 7.87       | 112 | 12,544         | 10.58      |
| 13 | 169            | 3.61       | 63  | 3,969          | 7.94       | 113 | 12,769         | 10.63      |
| 14 | 196            | 3.74       | 64  | 4,096          | 8.00       | 114 | 12,996         | 10.68      |
| 15 | 225            | 3.87       | 65  | 4,225          | 8.06       | 115 | 13,225         | 10.72      |
| 16 | 256            | 4.00       | 66  | 4,356          | 8.12       | 116 | 13,456         | 10.77      |
| 17 | 289            | 4.12       | 67  | 4,489          | 8.19       | 117 | 13,689         | 10.82      |
| 18 | 324            | 4.24       | 68  | 4,624          | 8.25       | 118 | 13,924         | 10.86      |
| 19 | 361            | 4.36       | 69  | 4,761          | 8.31       | 119 | 14,161         | 10.91      |
| 20 | 400            | 4.47       | 70  | 4,900          | 8.37       | 120 | 14,400         | 10.95      |
| 21 | 441            | 4.58       | 71  | 5,041          | 8.43       | 121 | 14,641         | 11.00      |
| 22 | 484            | 4.69       | 72  | 5,184          | 8.49       | 122 | 14,884         | 11.05      |
| 23 | 529            | 4.80       | 73  | 5,329          | 8.54       | 123 | 15,129         | 11.09      |
| 24 | 576            | 4.90       | 74  | 5,476          | 8.60       | 124 | 15,376         | 11.14      |
| 25 | 625            | 5.00       | 75  | 5,625          | 8.66       | 125 | 15,625         | 11.18      |
| 26 | 676            | 5.10       | 76  | 5,776          | 8.72       | 126 | 15,876         | 11.22      |
| 27 | 729            | 5.20       | 77  | 5,929          | 8.77       | 127 | 16,129         | 11.27      |
| 28 | 784            | 5.29       | 78  | 6,084          | 8.83       | 128 | 16,384         | 11.31      |
| 29 | 841            | 5.39       | 79  | 6,241          | 8.89       | 129 | 16,641         | 11.36      |
| 30 | 900            | 5.48       | 80  | 6,400          | 8.94       | 130 | 16,900         | 11.40      |
| 31 | 961            | 5.57       | 81  | 6,561          | 9.00       | 131 | 17,161         | 11.45      |
| 32 | 1,024          | 5.66       | 82  | 6,724          | 9.06       | 132 | 17,424         | 11.49      |
| 33 | 1,089          | 5.74       | 83  | 6,889          | 9.11       | 133 | 17,689         | 11.53      |
| 34 | 1,156          | 5.83       | 84  | 7,056          | 9.17       | 134 | 17,956         | 11.58      |
| 35 | 1,225          | 5.92       | 85  | 7,225          | 9.23       | 135 | 18,225         | 11.62      |
| 36 | 1,296          | 6.00       | 86  | 7,396          | 9.27       | 136 | 18,496         | 11.66      |
| 37 | 1,369          | 6.08       | 87  | 7,569          | 9.33       | 137 | 18,769         | 11.70      |
| 38 | 1,444          | 6.16       | 88  | 7,744          | 9.38       | 138 | 19,044         | 11.75      |
| 39 | 1,521          | 6.24       | 89  | 7,921          | 9.43       | 139 | 19,321         | 11.79      |
| 40 | 1,600          | 6.32       | 90  | 8,100          | 9.49       | 140 | 19,600         | 11.83      |
| 41 | 1,681          | 6.40       | 91  | 8,281          | 9.54       | 141 | 19,881         | 11.87      |
| 42 | 1,764          | 6.48       | 92  | 8,464          | 9.59       | 142 | 20,164         | 11.92      |
| 43 | 1,849          | 6.56       | 93  | 8,649          | 9.64       | 143 | 20,449         | 11.96      |
| 44 | 1,936          | 6.63       | 94  | 8,836          | 9.70       | 144 | 20,736         | 12.00      |
| 45 | 2,025          | 6.71       | 95  | 9,025          | 9.75       | 145 | 21,025         | 12.04      |
| 46 | 2,116          | 6.78       | 96  | 9,216          | 9.80       | 146 | 21,316         | 12.08      |
| 47 | 2,209          | 6.86       | 97  | 9,409          | 9.85       | 147 | 21,609         | 12.12      |
| 48 | 2,304          | 6.93       | 98  | 9,604          | 9.90       | 148 | 21,904         | 12.17      |
| 49 | 2,401          | 7.00       | 99  | 9,801          | 9.95       | 149 | 22,201         | 12.21      |
| 50 | 2,500          | 7.07       | 100 | 10,000         | 10.00      | 150 | 22,500         | 12.25      |



# MATHEMATICS *algebra & mathematical symbols*

## ALGEBRA

### Expanding

- {1}  $a(b+c) = ab+ac$
- {2}  $(a+b)^2 = a^2+2ab+b^2$
- {3}  $(a-b)^2 = a^2-2ab+b^2$
- {4}  $(a+b)(a+c) = a^2+ac+ab+bc$
- {5}  $(a+b)(c+d) = ac+ad+bc+bd$
- {6}  $(a+b)^3 = a^3+3a^2b+3ab^2+b^3$
- {7}  $(a-b)^3 = a^3-3a^2b+3ab^2-b^3$
- {8}  $a^2-b^2 = (a+b)(a-b)$
- {9}  $a^3+b^3 = (a+b)(a^2-ab+b^2)$
- {10}  $a^3b-ab = ab(a+1)(a-1)$
- {11}  $a^2-2ab+b^2 = (a-b)^2$
- {12}  $a^3-b^3 = (a-b)(a^2+ab+b^2)$

### Laws of Exponents

- {1}  $a^r a^s = a^{r+s}$
  - {2}  $a^r / a^s = a^{r-s}$
  - {3}  $a^r a^s / a^p = a^{r+s-p}$
  - {4}  $(a^r)^s = a^{rs}$
  - {5}  $(ab)^r = a^r b^r$
  - {6}  $(a/b)^r = a^r / b^r$  ( $b \neq 0$ )
  - {7}  $a^0 = 1$  ( $a \neq 0$ )
  - {8}  $a^{-s} = 1/a^s$  ( $a \neq 0$ )
- r and s are positive integers*

### Logarithms

- {1}  $\text{Log}(xy) = \text{Log } x + \text{Log } y$
  - {2}  $\text{Log } x^r = r \text{Log } x$
  - {3}  $\text{Log } x = n \iff x = 10^n$  (Common log)
  - {4}  $\text{Log}_a x = n \iff x = a^n$  (Log to the base a)
  - {5}  $\text{Ln } x = n \iff x = e^n$  (Natural log)
  - {6}  $\text{Log}_a (x/y) = \text{Log } x - \text{Log } y$
- $e = 2.71828$

### Quadratic Formula

When given a formula in the form of a quadratic equation  $\rightarrow$

$$ax^2+bx+c=0$$

The solution can be derived using the quadratic formula  $\rightarrow$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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## MATHEMATICAL SYMBOLS

|               |                  |     |                          |   |               |
|---------------|------------------|-----|--------------------------|---|---------------|
| +             | plus             | >   | greater than             | ○ | circle        |
| -             | minus            | <   | less than                | ⌢ | arc of circle |
| ±             | plus or minus    | ≥   | greater than or equal to | □ | square        |
| ×             | multiplied by    | ≤   | less than or equal to    | ▭ | rectangle     |
| ÷             | divided by       | ∞   | infinity                 | ▭ | parallelogram |
| =             | equal to         | ∝   | proportional to (ratio)  | △ | triangle      |
| ≠             | not equal to     | ∝   | as proportion            | ∠ | angle         |
| ≈             | nearly equal to  | π   | pi (=3.14159...)         | ⊥ | perpendicular |
| $\sqrt{x}$    | square root of x | ∴   | therefore                |   | parallel      |
| $\sqrt[n]{x}$ | nth root of x    | ∵   | because                  | ° | degrees       |
| %             | percentage       | x   | absolute value of x      | ' | minutes       |
| Σ             | sum of           | ... | and so on                |   |               |



# MATHEMATICS *fractions & percentages & multiplication table*

## FRACTIONS AND PERCENTAGES

|      |   |       |   |       |
|------|---|-------|---|-------|
| 1    | = | 1.0   | = | 100%  |
| 3/4  | = | 0.75  | = | 75%   |
| 2/3  | = | 0.667 | = | 66.7% |
| 1/2  | = | 0.5   | = | 50%   |
| 1/3  | = | 0.333 | = | 33.3% |
| 1/4  | = | 0.25  | = | 25%   |
| 1/5  | = | 0.2   | = | 20%   |
| 1/6  | = | 0.167 | = | 16.7% |
| 1/7  | = | 0.142 | = | 14.2% |
| 1/8  | = | 0.125 | = | 12.5% |
| 1/9  | = | 0.111 | = | 11.1% |
| 1/10 | = | 0.1   | = | 10%   |
| 1/11 | = | 0.091 | = | 9.1%  |
| 1/12 | = | 0.083 | = | 8.3%  |

## WORKING WITH FRACTIONS

The top number of a fraction is called the **numerator**.

The bottom number of a fraction is called the **denominator**.

To multiply:

$$\frac{1}{2} \times \frac{3}{4} = \frac{1 \times 3}{2 \times 4} = \frac{3}{8}$$

To divide, multiply the first fraction with the reciprocal of the other:

$$\frac{2}{3} \div \frac{1}{6} = \frac{2}{3} \times \frac{6}{1} = \frac{12}{3} = 4$$

To add or subtract, first find the common denominator:

$$\frac{1}{3} + \frac{2}{5} = \left( \frac{1 \times 5}{3 \times 5} \right) + \left( \frac{2 \times 3}{5 \times 3} \right) = \frac{5}{15} + \frac{6}{15} = \frac{11}{15}$$

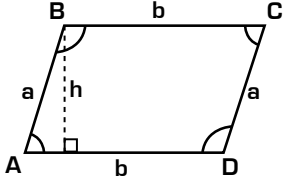
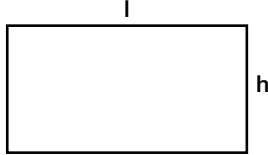
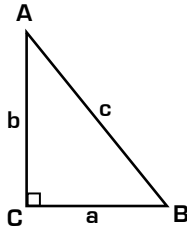
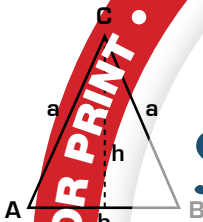
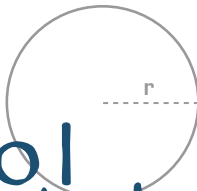
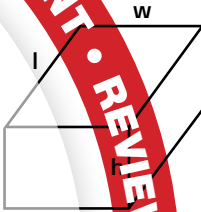
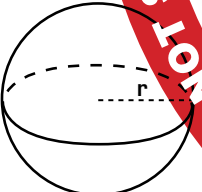
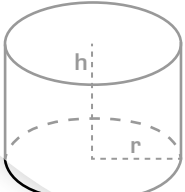
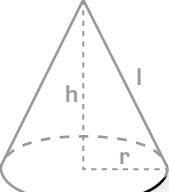
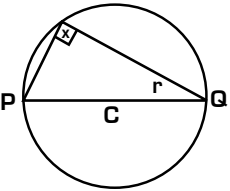
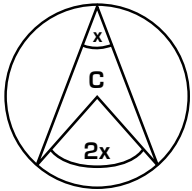
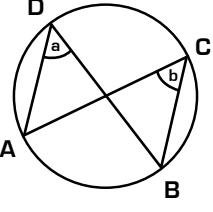


## MULTIPLICATION TABLE

|    | 1  | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1  | 1  | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
| 2  | 2  | 4  | 6  | 8  | 10  | 12  | 14  | 16  | 18  | 20  | 22  | 24  | 26  | 28  | 30  | 32  | 34  | 36  | 38  | 40  |
| 3  | 3  | 6  | 9  | 12 | 15  | 18  | 21  | 24  | 27  | 30  | 33  | 36  | 39  | 42  | 45  | 48  | 51  | 54  | 57  | 60  |
| 4  | 4  | 8  | 12 | 16 | 20  | 24  | 28  | 32  | 36  | 40  | 44  | 48  | 52  | 56  | 60  | 64  | 68  | 72  | 76  | 80  |
| 5  | 5  | 10 | 15 | 20 | 25  | 30  | 35  | 40  | 45  | 50  | 55  | 60  | 65  | 70  | 75  | 80  | 85  | 90  | 95  | 100 |
| 6  | 6  | 12 | 18 | 24 | 30  | 36  | 42  | 48  | 54  | 60  | 66  | 72  | 78  | 84  | 90  | 96  | 102 | 108 | 114 | 120 |
| 7  | 7  | 14 | 21 | 28 | 35  | 42  | 49  | 56  | 63  | 70  | 77  | 84  | 91  | 98  | 105 | 112 | 119 | 126 | 133 | 140 |
| 8  | 8  | 16 | 24 | 32 | 40  | 48  | 56  | 64  | 72  | 80  | 88  | 96  | 104 | 112 | 120 | 128 | 136 | 144 | 152 | 160 |
| 9  | 9  | 18 | 27 | 36 | 45  | 54  | 63  | 72  | 81  | 90  | 99  | 108 | 117 | 126 | 135 | 144 | 153 | 162 | 171 | 180 |
| 10 | 10 | 20 | 30 | 40 | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |
| 11 | 11 | 22 | 33 | 44 | 55  | 66  | 77  | 88  | 99  | 110 | 121 | 132 | 143 | 154 | 165 | 176 | 187 | 198 | 209 | 220 |
| 12 | 12 | 24 | 36 | 48 | 60  | 72  | 84  | 96  | 108 | 120 | 132 | 144 | 156 | 168 | 180 | 192 | 204 | 216 | 228 | 240 |
| 13 | 13 | 26 | 39 | 52 | 65  | 78  | 91  | 104 | 117 | 130 | 143 | 156 | 169 | 182 | 195 | 208 | 221 | 234 | 247 | 260 |
| 14 | 14 | 28 | 42 | 56 | 70  | 84  | 98  | 112 | 126 | 140 | 154 | 168 | 182 | 196 | 210 | 224 | 238 | 252 | 266 | 280 |
| 15 | 15 | 30 | 45 | 60 | 75  | 90  | 105 | 120 | 135 | 150 | 165 | 180 | 195 | 210 | 225 | 240 | 255 | 270 | 285 | 300 |
| 16 | 16 | 32 | 48 | 64 | 80  | 96  | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304 | 320 |
| 17 | 17 | 34 | 51 | 68 | 85  | 102 | 119 | 136 | 153 | 170 | 187 | 204 | 221 | 238 | 255 | 272 | 289 | 306 | 323 | 340 |
| 18 | 18 | 36 | 54 | 72 | 90  | 108 | 126 | 144 | 162 | 180 | 198 | 216 | 234 | 252 | 270 | 288 | 306 | 324 | 342 | 360 |
| 19 | 19 | 38 | 57 | 76 | 95  | 114 | 133 | 152 | 171 | 190 | 209 | 228 | 247 | 266 | 285 | 304 | 323 | 342 | 361 | 380 |
| 20 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 | 380 | 400 |

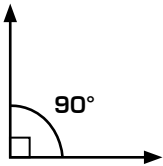
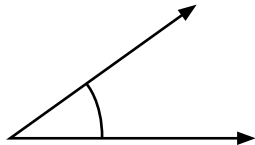
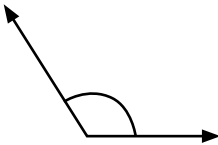
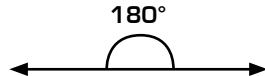
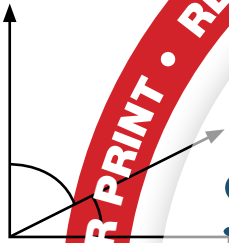
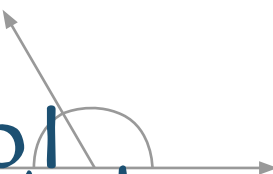
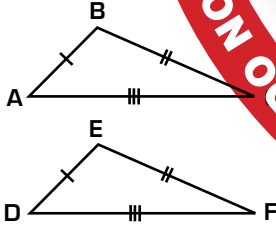
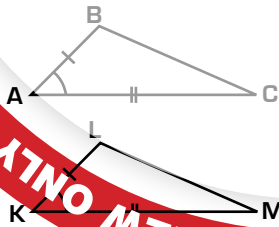
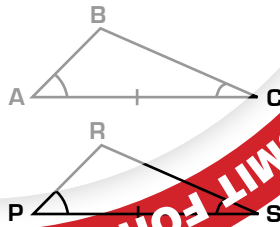
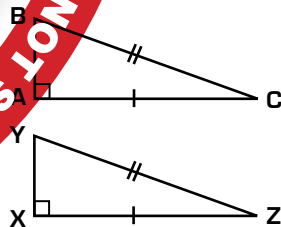
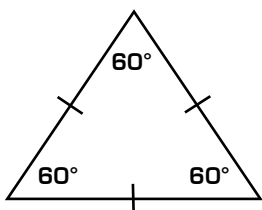
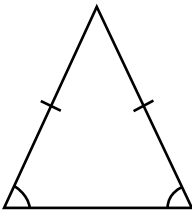
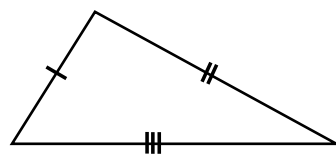


# MATHEMATICS *area & volume*

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div>PARALLELOGRAM</div> <div></div> <div>Area of ABCD = <math>bh</math></div>                                                                                                                                                                                                                                                                                                                                                        | <div>RECTANGLE</div> <div></div> <div>Perimeter = <math>2(l + h)</math><br/>Area = <math>l \times h</math></div>                                            | <div>RIGHT TRIANGLE</div> <div></div> <div>Area = <math>ab/2</math><br/><math>c^2 = a^2 + b^2</math> (Pythagorean Theorem)</div>                                               |                                                                                                                                                                                                                                                                                                                      |
| <div>ISOSCELES TRIANGLE</div> <div></div> <div>Area = <math>bh/2</math></div>                                                                                                                                                                                                                                                                                                                                                         | <div>CIRCLE</div> <div></div> <div>Circumference of a circle = <math>2\pi r</math><br/>Area of a circle = <math>\pi r^2</math></div>                        | <div>RECTANGULAR PRISM</div> <div></div> <div>Surface area of a prism = <math>2(lw + lh + wh)</math><br/>Volume of a prism = <math>l \times w \times h</math></div>            |                                                                                                                                                                                                                                                                                                                      |
| <div>SPHERE</div> <div></div> <div>Surface area of a sphere = <math>4\pi r^2</math><br/>Volume of a sphere = <math>4\pi r^3/3</math></div>                                                                                                                                                                                                                                                                                          | <div>CYLINDER</div> <div></div> <div>Surface area of a cylinder = <math>2\pi rh + 2\pi r^2</math><br/>Volume of a cylinder = <math>\pi r^2 h</math></div> | <div>CONE</div> <div></div> <div>Surface area of a cone = <math>\pi rl + \pi r^2</math> (<math>l</math> = slant height)<br/>Volume of a cone = <math>\pi r^2 h/3</math></div> | <div>PYRAMID</div> <div></div> <div>Surface area of a pyramid = <math>B + \text{Lateral area}</math> (Lateral area = sum of triangular faces)<br/>Volume of a pyramid = <math>Bh/3</math> (<math>B</math> = area of base)</div> |
| <div>CIRCLE THEOREMS</div> <div></div> <div><math>\angle x = 90^\circ</math><br/>(PQ is the diameter)</div> <div></div> <div>C is the center of the circle</div> <div></div> <div><math>\angle a = \angle b</math><br/>(Both angles intercept arc AB)</div> |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                      |



# MATHEMATICS *geometric angles & congruence cases*

| GEOMETRIC ANGLES                                                                                                                                                                     |                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>A right angle is exactly <math>90^\circ</math></p>                                              |  <p>An acute angle is less than <math>90^\circ</math></p>                                            |  <p>An obtuse angle is greater than <math>90^\circ</math></p>                                         |  <p>A straight angle is exactly <math>180^\circ</math></p>                                                                             |
|  <p>Complementary angles add up to <math>90^\circ</math></p>                                        |  <p>Supplementary angles add up to <math>180^\circ</math></p>                                        |                                                                                                                                                                                         |  <p>One complete angle of rotation = <math>360^\circ</math></p>                                                                        |
| GEOMETRIC CONGRUENCE CASES                                                                                                                                                           |                                                                                                                                                                                       |                                                                                                                                                                                         |                                                                                                                                                                                                                           |
| <p>S.S.S. POSTULATE</p>  <p>Side-Side-Side<br/><math>\triangle ABC \cong \triangle DEF</math></p> | <p>S.A.S. POSTULATE</p>  <p>Side-Angle-Side<br/><math>\triangle ABC \cong \triangle KLM</math></p> | <p>A.S.A. POSTULATE</p>  <p>Angle-Side-Angle<br/><math>\triangle ABC \cong \triangle PRS</math></p> | <p>H.S. POSTULATE (RIGHT <math>\triangle</math> ONLY)</p>  <p>Hypotenuse-side<br/><math>\triangle ABC \cong \triangle XYZ</math></p> |
| EQUILATERAL TRIANGLE                                                                                                                                                                 | ISOSCELES TRIANGLE                                                                                                                                                                    | SCALENE TRIANGLE                                                                                                                                                                        |                                                                                                                                                                                                                           |
|  <p>3 Sides of Equal Length<br/>3 Angles of <math>60^\circ</math> Each</p>                        |  <p>2 Sides of Equal Length<br/>2 Base Angles are Equal</p>                                        |  <p>3 Unequal Sides<br/>3 Unequal Angles</p>                                                       |                                                                                                                                                                                                                           |



# MATHEMATICS *trigonometry*

## TRIGONOMETRIC RATIOS

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\sin(A-B) = \sin A \cos B - \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$\cos(A-B) = \cos A \cos B + \sin A \sin B$$

$$\tan(A+B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

$$\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

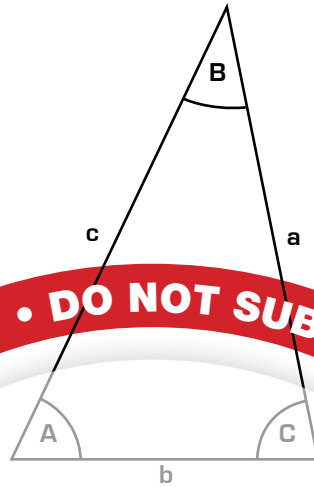
$$\tan \theta = \frac{\sin \theta}{\cos \theta}$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\cos^2 \theta - \sin^2 \theta = \cos 2\theta$$

$$\tan^2 \theta + 1 = \sec^2 \theta$$

$$\cot^2 \theta + 1 = \csc^2 \theta$$



## Law of Sines

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

## Law of Cosines

$$a^2 = b^2 + c^2 - 2bc(\cos A)$$

$$b^2 = a^2 + c^2 - 2ac(\cos B)$$

$$c^2 = a^2 + b^2 - 2ab(\cos C)$$

## Law of Tangents

$$\frac{a-b}{a+b} = \frac{\tan \frac{1}{2}(A-B)}{\tan \frac{1}{2}(A+B)}$$

$$\frac{b-c}{b+c} = \frac{\tan \frac{1}{2}(B-C)}{\tan \frac{1}{2}(B+C)}$$

$$\frac{c-a}{c+a} = \frac{\tan \frac{1}{2}(C-A)}{\tan \frac{1}{2}(C+A)}$$

**Values for 45°:**

$$\sin 45^\circ = \frac{1}{\sqrt{2}}, \quad \cos 45^\circ = \frac{1}{\sqrt{2}}, \quad \tan 45^\circ = 1$$

**Values for 30°:**

$$\sin 30^\circ = \frac{1}{2}, \quad \cos 30^\circ = \frac{\sqrt{3}}{2}, \quad \tan 30^\circ = \frac{1}{\sqrt{3}}$$

**Values for 60°:**

$$\sin 60^\circ = \frac{\sqrt{3}}{2}, \quad \cos 60^\circ = \frac{1}{2}, \quad \tan 60^\circ = \sqrt{3}$$

**General definitions:**

$$\sin \theta = \frac{o (\text{opposite})}{h (\text{hypotenuse})} = \frac{1}{\csc \theta}$$

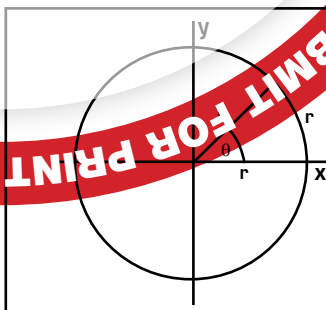
$$\cos \theta = \frac{a (\text{adjacent})}{h (\text{hypotenuse})} = \frac{1}{\sec \theta}$$

$$\tan \theta = \frac{o (\text{opposite})}{a (\text{adjacent})} = \frac{1}{\cot \theta}$$

## VALUES OF TRIGONOMETRIC RATIOS

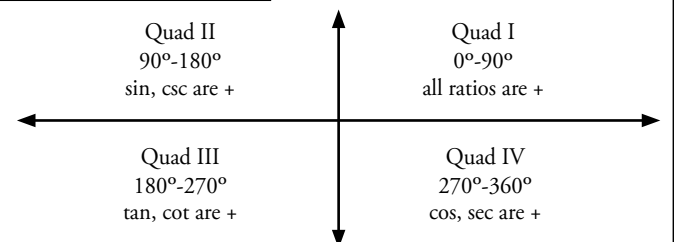
| $\theta$                         | 0        | $\pi/2$  | $\pi$     | $3\pi/2$  | $2\pi$   |
|----------------------------------|----------|----------|-----------|-----------|----------|
| $\sin \theta$                    | 0        | 1        | 0         | -1        | 0        |
| $\cos \theta$                    | 1        | 0        | -1        | 0         | 1        |
| $\tan \theta$<br>( $\sin/\cos$ ) | 0        | $\infty$ | 0         | $-\infty$ | 0        |
| $\sec \theta$<br>( $1/\cos$ )    | 1        | $\infty$ | -1        | $\infty$  | 1        |
| $\csc \theta$<br>( $1/\sin$ )    | $\infty$ | 1        | $\infty$  | -1        | $\infty$ |
| $\cot \theta$<br>( $1/\tan$ )    | $\infty$ | 0        | $-\infty$ | 0         | $\infty$ |

note:  $\infty$  denotes undefined or infinite



$\theta = 1$  radian  
 $\pi$  radians =  $180^\circ$   
 $2\pi$  radians =  $360^\circ$

## QUADRANTS





# CIVICS *Bill of Rights*

## AMENDMENT

### I

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

## AMENDMENT

### II

A well regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.

## AMENDMENT

### III

No soldier shall, in time of peace be quartered in any house, without the consent of the owner, nor in time of war, but in a manner to be prescribed by law.

## AMENDMENT

### IV

The right of the people to be secure in their persons, houses, papers and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

## AMENDMENT

### V

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

## AMENDMENT

### VI

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

## AMENDMENT

### VII

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any court of the United States, than according to the rules of the common law.

## AMENDMENT

### VIII

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

## AMENDMENT

### IX

The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.

## AMENDMENT

### X

The powers not delegated to the United States by the Constitution, nor prohibited to the states, are reserved to the states respectively, or to the people.

School Datebooks



|      |                     |                |
|------|---------------------|----------------|
| {MT} | Montana-----        | Helena         |
| {NE} | Nebraska-----       | Lincoln        |
| {NV} | Nevada-----         | Carson City    |
| {NH} | New Hampshire-----  | Concord        |
| {NJ} | New Jersey-----     | Trenton        |
| {NM} | New Mexico-----     | Santa Fe       |
| {NY} | New York-----       | Albany         |
| {NC} | North Carolina----- | Raleigh        |
| {ND} | North Dakota-----   | Bismarck       |
| {OH} | Ohio-----           | Columbus       |
| {OK} | Oklahoma-----       | Oklahoma City  |
| {OR} | Oregon-----         | Salem          |
| {PA} | Pennsylvania-----   | Harrisburg     |
| {RI} | Rhode Island-----   | Providence     |
| {SC} | South Carolina----- | Columbia       |
| {SD} | South Dakota-----   | Pierre         |
| {TN} | Tennessee-----      | Memphis        |
| {TX} | Texas-----          | Austin         |
| {UT} | Utah-----           | Salt Lake City |
| {VT} | Vermont-----        | Montpelier     |
| {VA} | Virginia-----       | Richmond       |
| {WA} | Washington-----     | Olympia        |
| {WV} | West Virginia-----  | Charleston     |
| {WI} | Wisconsin-----      | Madison        |
| {WY} | Wyoming-----        | Cheyenne       |





# CIVICS *United States presidents*

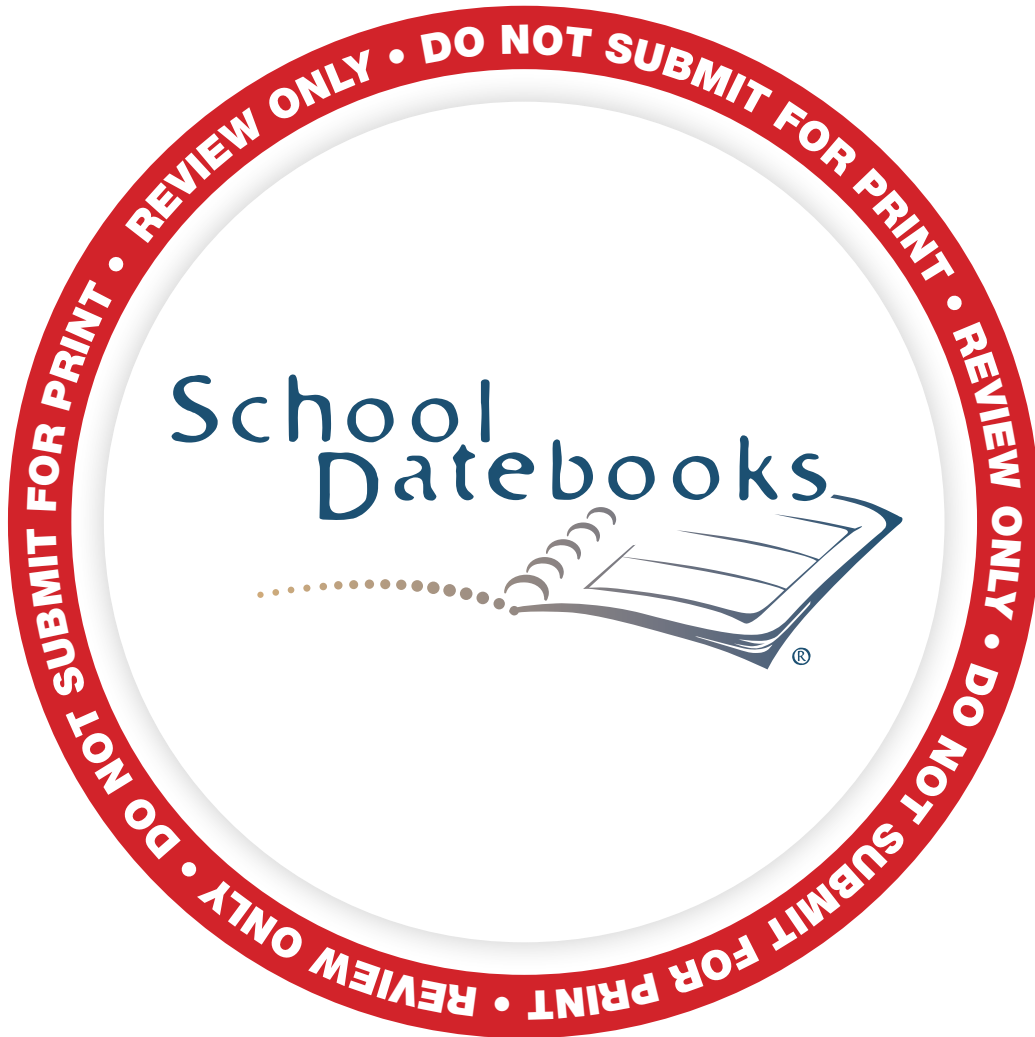
| No.  | President               | Party        | Native State   | Dates of term(s)                      | Vice President       |
|------|-------------------------|--------------|----------------|---------------------------------------|----------------------|
| {1}  | George Washington       | Unaffiliated | Virginia†      | April 30, 1789-March 3, 1797          | John Adams           |
| {2}  | John Adams              | Fed.         | Massachusetts† | March 4, 1797-March 3, 1801           | Thomas Jefferson     |
| {3}  | Thomas Jefferson        | Dem.-Rep.    | Virginia†      | March 4, 1801-March 3, 1805           | Aaron Burr           |
| {4}  | Thomas Jefferson        | Dem.-Rep.    | Virginia†      | March 4, 1805-March 3, 1809           | George Clinton       |
|      | James Madison           |              |                | March 4, 1809-March 3, 1813           | George Clinton*      |
| {5}  | James Madison           | Dem.-Rep.    | Virginia†      | March 4, 1813-March 3, 1817           | Elbridge Gerry*      |
|      | James Monroe            |              |                | March 4, 1817-March 3, 1825           | Daniel D. Tompkins   |
| {6}  | John Quincy Adams       | Dem.-Rep.    | Massachusetts† | March 4, 1825-March 3, 1829           | John C. Calhoun      |
| {7}  | Andrew Jackson          | Dem.         | Carolina†      | March 4, 1829-March 3, 1833           | John C. Calhoun*     |
|      | Andrew Jackson          |              |                | March 4, 1833-March 3, 1837           | Martin Van Buren     |
| {8}  | Martin Van Buren        | Dem.         | New York       | March 4, 1837-March 3, 1841           | Richard M. Johnson   |
| {9}  | William Henry Harrison* | Whig         | Virginia†      | March 4, 1841-April 4, 1841           | John Tyler           |
| {10} | John Tyler              | Whig         | Virginia       | April 6, 1841-March 3, 1845           | George M. Dallas     |
| {11} | James K. Polk           | Dem.         | North Carolina | March 4, 1845-March 3, 1849           | Millard Fillmore     |
| {12} | Zachary Taylor*         | Whig         | Florida        | March 4, 1849-July 9, 1850            | Millard Fillmore     |
| {13} | Millard Fillmore        | Whig         | New York       | July 10, 1850-March 3, 1853           | William A. R. King*  |
| {14} | Franklin Pierce         | Dem.         | New Hampshire  | March 4, 1853-March 3, 1857           | John C. Breckinridge |
| {15} | James Buchanan          | Dem.         | Pennsylvania   | March 4, 1857-March 3, 1861           | Hannibal Hamlin      |
| {16} | Abraham Lincoln         | Rep.         | Kentucky       | March 4, 1861-March 3, 1865           | Andrew Johnson       |
|      | Abraham Lincoln*        |              |                | March 4, 1865-April 15, 1865          |                      |
| {17} | Andrew Johnson          | Dem.         | North Carolina | April 15, 1865-March 3, 1869          | Schuyler Colfax      |
| {18} | Ulysses S. Grant        | Rep.         | Ohio           | March 4, 1869-March 3, 1873           | Henry Wilson*        |
|      | Ulysses S. Grant        |              |                | March 4, 1873-March 3, 1877           | William A. Wheeler   |
| {19} | Rutherford B. Hayes     | Rep.         | Ohio           | March 4, 1877-March 3, 1881           | Chester A. Arthur    |
| {20} | James A. Garfield       | Rep.         | Ohio           | March 4, 1881-Sept. 19, 1881          |                      |
| {21} | Chester A. Arthur       | Rep.         | Vermont        | Sept. 19, 1881-March 3, 1885          | Thomas A. Hendricks* |
| {22} | Grover Cleveland        | Dem.         | New Jersey     | March 4, 1885-March 3, 1889           | Levi P. Morton       |
| {23} | Benjamin Harrison       | Rep.         | Ohio           | March 4, 1889-March 3, 1893           | Adlai E. Stevenson   |
| {24} | Grover Cleveland        | Dem.         | New Jersey     | March 4, 1893-March 3, 1897           | Adlai E. Stevenson   |
| {25} | William McKinley        | Rep.         | Ohio           | March 4, 1897-September 14, 1901      | Garret Hobart*       |
|      | William McKinley*       |              |                | September 14, 1901-September 14, 1901 | Theodore Roosevelt   |
| {26} | Theodore Roosevelt      | Rep.         | New York       | Sept. 14, 1901-March 3, 1905          | Charles W. Fairbanks |
| {27} | Theodore Roosevelt      | Rep.         | Ohio           | March 4, 1905-March 3, 1909           | James S. Sherman*    |
|      | William H. Taft         |              |                | March 4, 1909-March 3, 1913           | Thomas R. Marshall   |
| {28} | Woodrow Wilson          | Dem.         | Virginia       | March 4, 1913-March 3, 1917           | Thomas R. Marshall   |
| {29} | Woodrow Wilson          | Rep.         | Ohio           | March 4, 1917-March 3, 1921           | Charles G. Dawes     |
|      | Warren G. Harding*      |              |                | March 4, 1921-August 2, 1923          | Charles Curtis       |
| {30} | Calvin Coolidge         | Rep.         | Vermont        | August 3, 1923-March 3, 1925          | John N. Garner       |
|      | Calvin Coolidge         |              |                | March 4, 1925-March 3, 1929           | Charles G. Dawes     |
| {31} | Herbert C. Hoover       | Rep.         | Iowa           | March 4, 1929-March 3, 1933           | Charles Curtis       |
| {32} | Franklin D. Roosevelt   | Dem.         | New York       | March 4, 1933-Jan. 20, 1937           | John N. Garner       |
|      | Franklin D. Roosevelt   |              |                | Jan. 20, 1937-Jan. 20, 1941           |                      |
|      | Franklin D. Roosevelt   |              |                | Jan. 20, 1941-Jan. 20, 1945           | Henry A. Wallace     |
|      | Franklin D. Roosevelt*  |              |                | Jan. 20, 1945-April 12, 1945          | Harry S. Truman      |
| {33} | Harry S. Truman         | Dem.         | Missouri       | April 12, 1945-Jan. 20, 1949          | Alben W. Barkley     |
|      | Harry S. Truman         |              |                | Jan. 20, 1949-Jan. 20, 1953           | Richard M. Nixon     |
| {34} | Dwight D. Eisenhower    | Rep.         | Texas          | Jan. 20, 1953-Jan. 20, 1957           | Richard M. Nixon     |
| {35} | Dwight D. Eisenhower    | Dem.         | Massachusetts  | Jan. 20, 1957-Jan. 20, 1961           | Lyndon B. Johnson    |
|      | John F. Kennedy*        |              |                | Jan. 20, 1961-Nov. 22, 1963           | Lyndon B. Johnson    |
| {36} | Lyndon B. Johnson       | Dem.         | Texas          | Nov. 22, 1963-Jan. 20, 1969           | Hubert H. Humphrey   |
|      | Lyndon B. Johnson       |              |                | Jan. 20, 1969-Jan. 20, 1973           | Spiro T. Agnew*      |
| {37} | Richard M. Nixon        | Rep.         | California     | Jan. 20, 1973-Aug. 9, 1974            | Gerald R. Ford*      |
| {38} | Gerald R. Ford          | Rep.         | Nebraska       | Aug. 9, 1974-Jan. 20, 1977            | Nelson Rockefeller   |
| {39} | James E. Carter, Jr.    | Dem.         | Georgia        | Jan. 20, 1977-Jan. 20, 1981           | Walter Mondale       |
| {40} | Ronald Reagan           | Rep.         | Illinois       | Jan. 20, 1981-Jan. 20, 1985           | George H. W. Bush    |
|      | Ronald Reagan           |              |                | Jan. 20, 1985-Jan. 20, 1989           |                      |
| {41} | George H. W. Bush       | Rep.         | Massachusetts  | Jan. 20, 1989-Jan. 20, 1993           | Dan Quayle           |
| {42} | William J. Clinton      | Dem.         | Arkansas       | Jan. 20, 1993-Jan. 20, 1997           | Albert Gore, Jr.     |
|      | William J. Clinton      |              |                | Jan. 20, 1997-Jan. 20, 2001           |                      |
| {43} | George W. Bush          | Rep.         | Connecticut    | Jan. 20, 2001-Jan. 20, 2005           | Richard B. Cheney    |
|      | George W. Bush          |              |                | Jan. 20, 2005-Jan. 20, 2009           |                      |
| {44} | Barack H. Obama         | Dem.         | Hawaii         | Jan. 20, 2009-Jan. 20, 2013           | Joseph R. Biden, Jr. |
|      | Barack H. Obama         |              |                | Jan. 20, 2013-Jan. 20, 2017           |                      |
| {45} | Donald Trump            | Rep.         | New York       | Jan. 20, 2017-Jan. 20, 2021           | Mike Pence           |
| {46} | Joseph R. Biden, Jr.    | Dem.         | Delaware       | Jan. 20, 2021-Jan. 20, 2025           | Kamala Harris        |
| {47} | Donald Trump            | Rep.         | New York       | Jan. 20, 2025-                        | JD Vance             |

(\*did not finish term; †born as subjects of Great Britain before United States was established)

## ORDER OF PRESIDENTIAL SUCCESSION

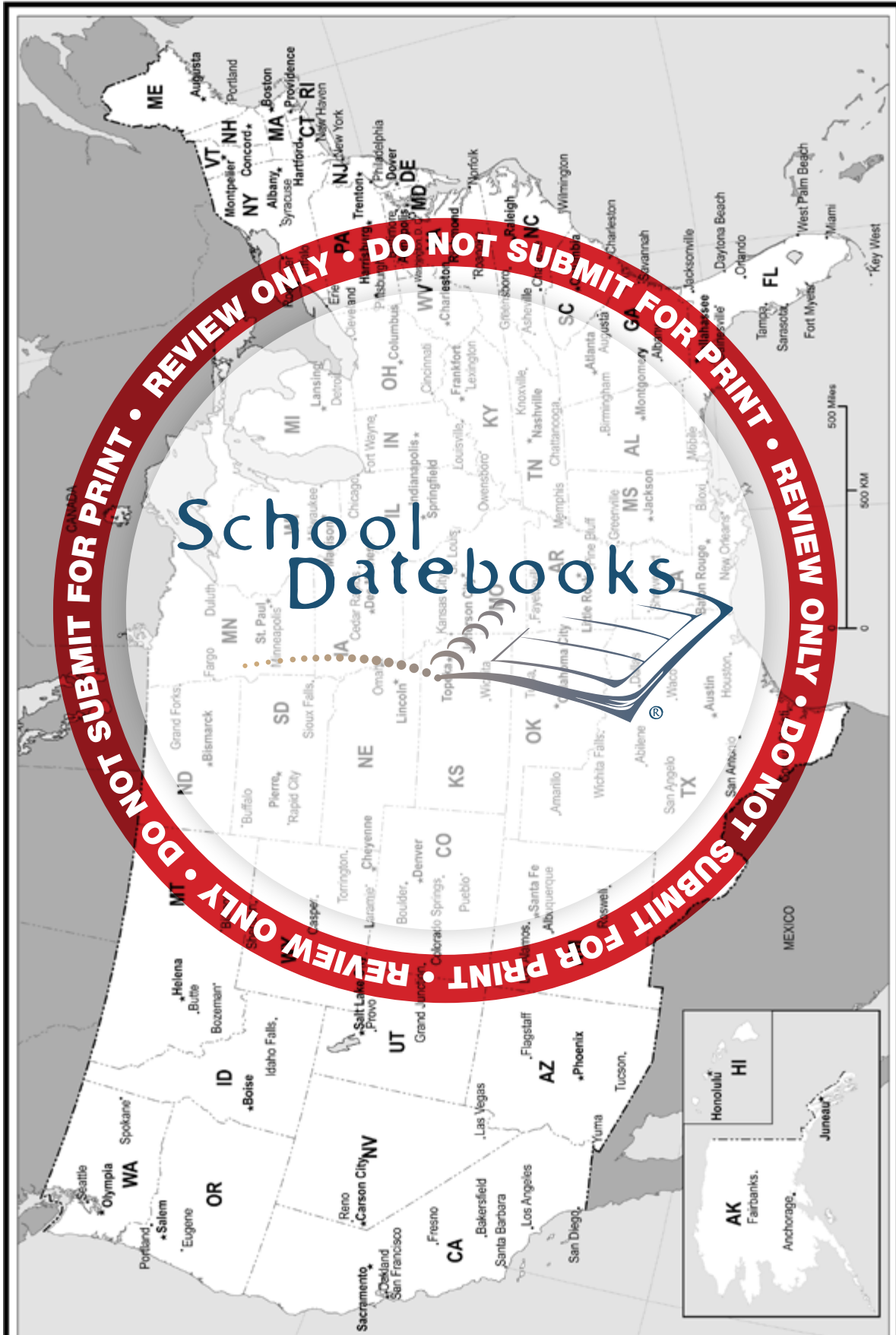
- {1} The Vice President
- {2} Speaker of the House
- {3} President pro tempore of the Senate
- {4} Secretary of State
- {5} Secretary of the Treasury
- {6} Secretary of Defense
- {7} Attorney General
- {8} Secretary of the Interior
- {9} Secretary of Agriculture
- {10} Secretary of Commerce
- {11} Secretary of Labor
- {12} Secretary of Health and Human Services
- {13} Secretary of Housing and Urban Development
- {14} Secretary of Transportation
- {15} Secretary of Energy
- {16} Secretary of Education
- {17} Secretary of Veterans Affairs
- {18} Secretary of Homeland Security





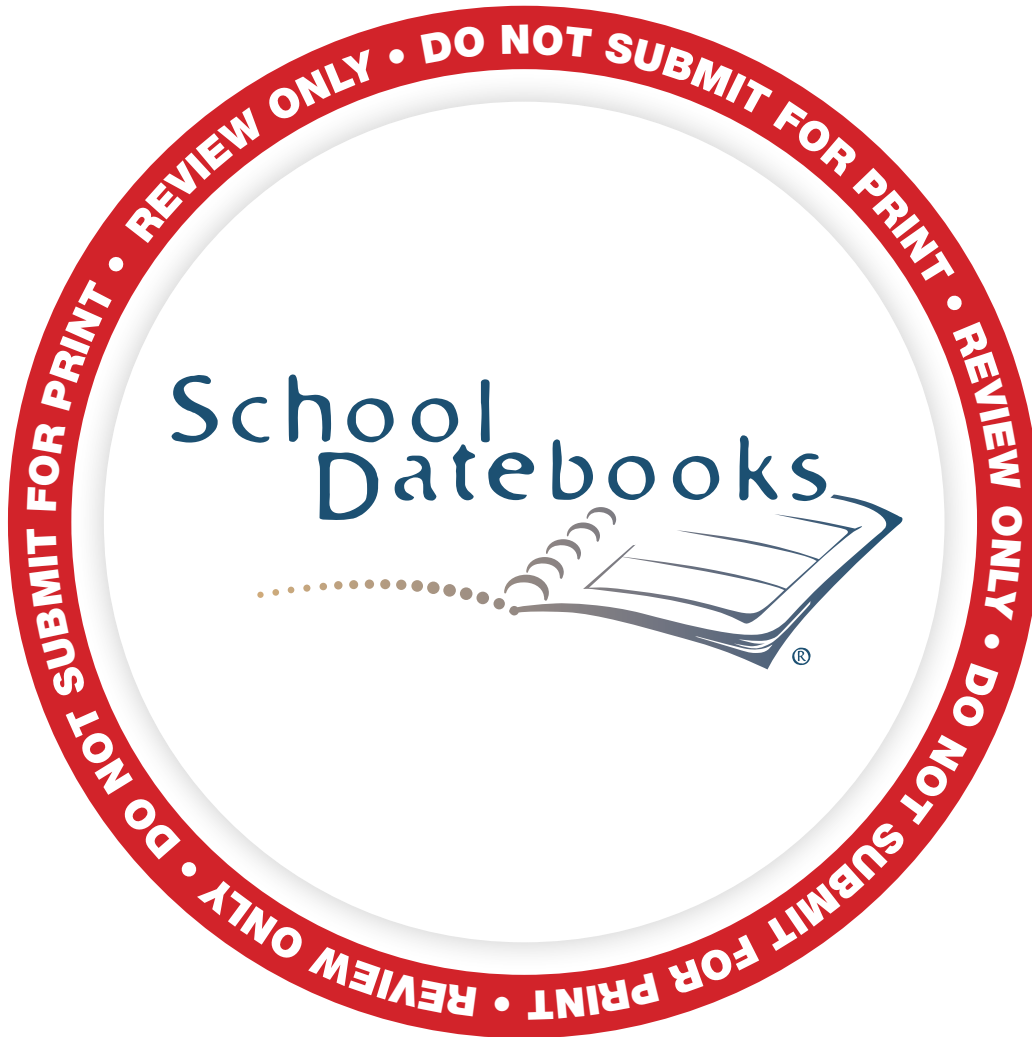


# GEOGRAPHY *United States map*



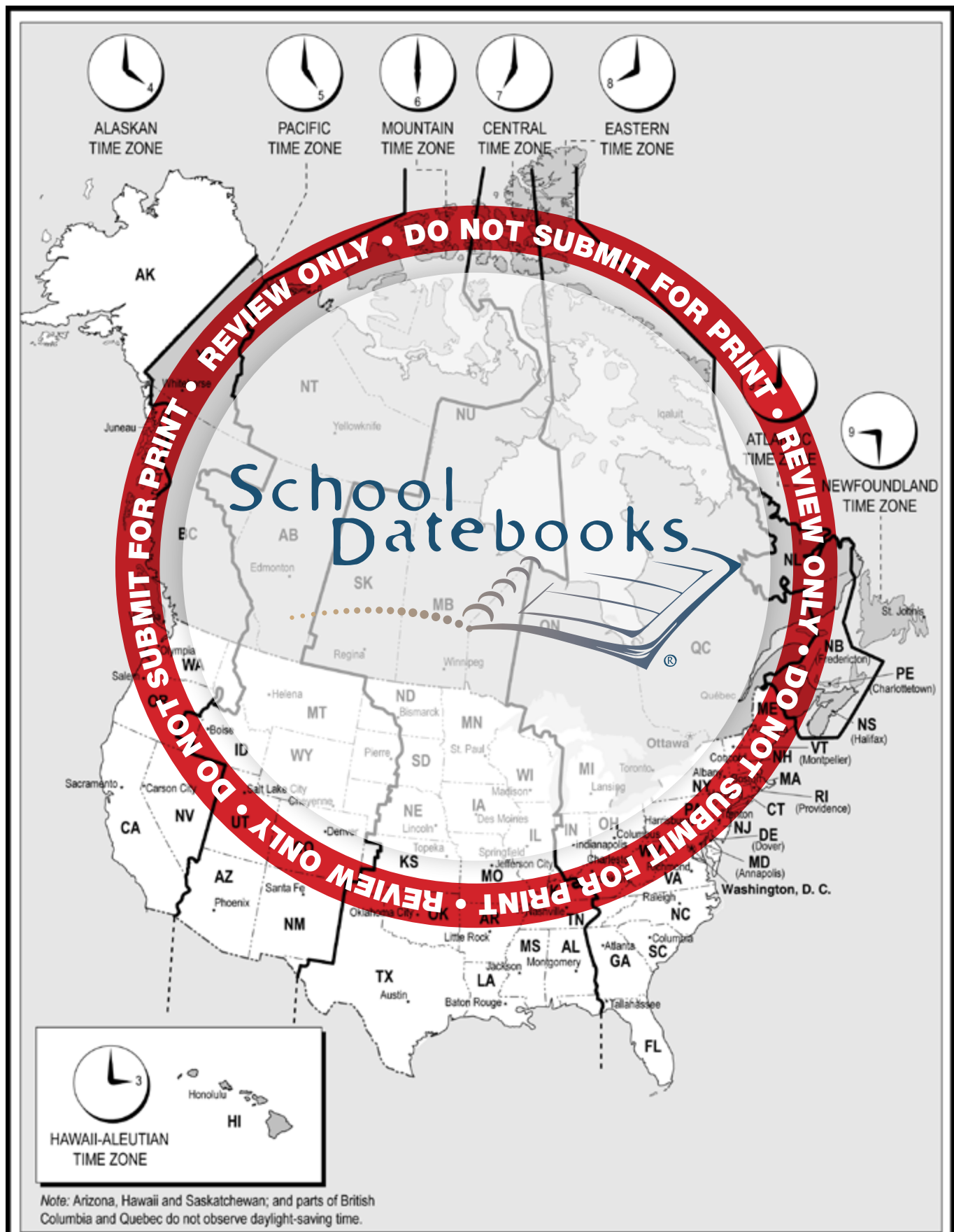


INSERT STATE MAP





# GEOGRAPHY *U.S. & Canada time zones*





# HEALTHY LIVING *dietary guidelines*

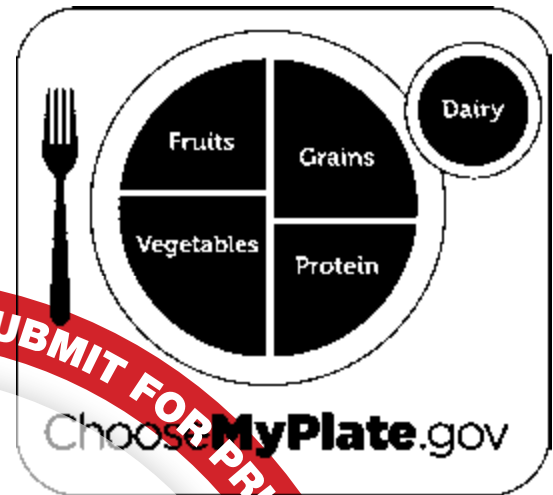
## DIETARY GUIDELINES

### RECOMMENDATIONS FOR DAILY FOOD CHOICES

A balanced diet of nutrient-rich foods is a key component of overall health. Follow the food group recommendations to help you eat better every day. Each of these food groups provides some, but not all, of the nutrients you need.

A healthy diet is one that emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk products; includes lean meats, poultry, fish, beans, eggs, and nuts; and is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars.

Daily recommendations vary depending on age, weight, calorie intake, and exercise patterns. The United States Department of Agriculture (USDA) has developed a website, [ChooseMyPlate.gov](http://ChooseMyPlate.gov), to help you figure out the foods and portions that are right for you.



### GRAINS

Make half your grains whole

Eat grains, especially whole-grains, like brown rice, oatmeal, or popcorn.

Other grain choices include bread, crackers, cereal, or pasta.

### VEGETABLES

Vary your veggies

Eat more dark green veggies like broccoli, spinach, and other dark leafy greens.

Eat more orange vegetables like carrots and sweet potatoes.

Eat more dry beans and peas like pinto beans, kidney beans, and lentils.

Limit starchy vegetables.

### FRUITS

Focus on fruits

Eat a variety of fruit.

Choose fresh, frozen, canned, or dried fruit.

Go easy on fruit juices.

### DAIRY

Get your calcium-rich foods

Go low-fat or fat-free when you choose milk, yogurt, and other milk products.

If you don't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages.

### PROTEIN

Go lean with protein

Choose low-fat or lean meat and poultry.

Bake it, broil it, or grill it.

Vary your protein sources – choose more fish, beans, peas, nuts, and seeds.

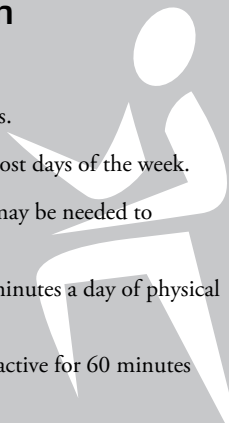
Your food and physical activity choices each day affect your health. How you feel today, tomorrow, and in the future.

To find the foods and portions that are right for you,

visit [ChooseMyPlate.gov](http://ChooseMyPlate.gov)

## Find your balance between food and physical activity

- Be sure to stay within your daily calorie needs.
- Be physically active for at least 30 minutes most days of the week.
- About 60 minutes a day of physical activity may be needed to prevent weight gain.
- For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required.
- Children and teenagers should be physically active for 60 minutes every day, on most days.



## Know the limits on fats, sugars, and salt (sodium)

- Make most of your fat sources from fish, nuts and vegetable oils.
- Limit solid fats like butter, margarine, shortening, and lard, as well as foods that contain these.
- Check the Nutrition Facts label to keep saturated fats, trans fats, and sodium low.
- Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients.



# HEALTHY LIVING *hotlines & helplines*

| GENERAL CRISIS                                                 |                                 |                                |
|----------------------------------------------------------------|---------------------------------|--------------------------------|
| 7 Cups of Tea                                                  | Online listeners                | 7cups.com                      |
| Boys Town Hotline (24 hrs.)                                    | 800-448-3000                    | boystown.org                   |
| I'm Alive (Online Crisis Network)                              | Online chat                     | imalive.org                    |
| 988 Suicide & Crisis Lifeline                                  | 988                             | 988lifeline.org                |
| National Center for Missing and Exploited Children (24 hrs.)   | 800-843-5678                    | missingkids.org                |
| National Runaway Safeline (24 hrs.)                            | 800-RUNAWAY                     | 1800runaway.org                |
| Teen Line                                                      | 800-852-8336                    | teenlineonline.org             |
| Youth America Hotline   Your Life Counts                       | 877-968-6111                    | yourlifecounts.org             |
| ALCOHOL/SUBSTANCE ABUSE                                        |                                 |                                |
| Al-Anon/Alateen (For Families and Friends of Problem Drinkers) | 888-4AL-ANON                    | al-anon.alateen.org            |
| Alcoholics Anonymous                                           | 212-870-3400                    | aa.org                         |
| Substance Abuse and Mental Health Services Administration      | 1-800-662-HELP (4357)           | samhsa.gov/                    |
| Narcotics Anonymous                                            | 818-773-9999                    | na.org                         |
| National Institute on Alcohol Abuse and Alcoholism             | niaaaweb-r@exchange.nih.gov     | niaaa.nih.gov                  |
| ABUSE/HEALTH INFO                                              |                                 |                                |
| American Heart Association                                     | 800-AHA-USA-1                   | heart.org                      |
| CDC National HIV/AIDS Contact Center                           | 800-CDC-INFO                    | cdc.gov/hiv                    |
| CDC National STD Contact Center                                | 800-CDC-INFO                    | cdc.gov/std                    |
| National Cancer Institute                                      | 800-4-A-CANCER                  | cancer.gov                     |
| Childhelp National Child Abuse Hotline (24 hrs.)               | 800-4-A-CHILD                   | childhelp.org                  |
| National Organization for Rare Disorders                       | 800-999-6673                    | rarediseases.org               |
| Office on Women's Health                                       | 800-994-9662                    | womenshealth.gov               |
| American Association of Poison Control Centers (24 hrs.)       | 800-222-1222                    | aapcc.org                      |
| Rape, Abuse and Incest National Network (RAINN) (24 hrs.)      | 800-656-HOPE                    | rainn.org                      |
| Youth Violence Prevention                                      | 800-CDC-INFO                    | cdc.gov/violenceprevention     |
| MENTAL HEALTH                                                  |                                 |                                |
| Depression and Bipolar Support Alliance Helpline               | 800-526-3632                    | dballiance.org                 |
| Mental Health America                                          | 800-969-6642                    | mhanational.org/               |
| National Alliance on Mental Illness Information Helpline       | 800-950-NAMI                    | nami.org                       |
| National Mental Health Consumers' Self-Help Clearinghouse      | selfhelpclearinghouse@gmail.com | mhsselfhelp.org                |
| National Eating Disorders Association Helpline                 | 800-931-2237                    | nationaleatingdisorders.org    |
| SAFE Alternatives (Self Abuse Finally Ends)                    | 800-DONT-CUT                    | selfinjury.com                 |
| SEXUAL ORIENTATION/GENDER IDENTITY                             |                                 |                                |
| Lesbian, Gay, Bisexual and Transgender National Youth Talkline | 800-246-7743                    | lgbthotline.org/youth-talkline |
| LYRIC (Center for LGBTQQ Youth)                                | 415-703-6150                    | lyric.org                      |
| The Trevor Project Lifeline (LGBTQ Ages 13-24) (24 hrs.)       | 866-488-7386                    | thetrevorproject.org           |



# HEALTHY LIVING *emergency action steps*

|                                                                                                                                                                                                                                                                                        |  |                                                                                                                                                                                                                                       |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>EMERGENCY ACTION STEPS</b>                                                                                                                                                                                                                                                          |  | <i>Adult Life-Saving Steps</i> → IN THE PANIC OF AN EMERGENCY, YOU MAY BE FRIGHTENED OR CONFUSED ABOUT WHAT TO DO. STAY CALM. YOU CAN HELP. THE THREE "EMERGENCY ACTION STEPS" WILL HELP YOU ORGANIZE YOUR RESPONSE TO THE SITUATION. |  |
| <div>1</div> <b>CHECK</b>                                                                                                                                                                                                                                                              |  | <div>2</div> <b>CALL</b>                                                                                                                                                                                                              |  |
| → Check the scene for safety.<br>→ Check the victim for consciousness, breathing, pulse, and bleeding.                                                                                                                                                                                 |  | → Dial 9-1-1 or your local emergency number.<br>→ Be prepared to give the dispatcher the exact address or location of the emergency.                                                                                                  |  |
| <div>3</div> <b>CARE</b>                                                                                                                                                                                                                                                               |  | → Care for the victim.                                                                                                                                                                                                                |  |
| Always care for life-threatening conditions first. If there are none:<br>→ Watch for changes in the victim's breathing or consciousness.      → Help the victim rest comfortably.<br>→ Keep the victim from getting chilled or overheated.                      → Reassure the victim. |  |                                                                                                                                                                                                                                       |  |
| If victim is unable to speak, cough, or breathe –<br>Give abdominal thrusts (if person is conscious)                                                                                                                                                                                   |  | If victim is not breathing –<br>Give rescue breathing                                                                                                                                                                                 |  |
|  <p>Place fist just above the navel and give quick, upward thrusts until object obstructing their breathing is removed.</p>                                                                          |  |  <p>Tilt head back and lift chin.<br/>Pinch nose shut.<br/>Give one slow breath out every 5 seconds.</p>                                         |  |
| If air won't go in – Give abdominal thrusts                                                                                                                                                                                                                                            |  | If not breathing and no pulse – Give CPR                                                                                                                                                                                              |  |
|  <p>Give up to 5 abdominal thrusts.</p>                                                                                                                                                             |  |  <p>Compress chest 30 times.<br/>Give 2 slow breaths.<br/>Repeat sets of compressions and breaths until ambulance arrives.</p>                     |  |
| Find hand position on center of breastbone.                                                                                                                                                                                                                                            |  | Find hand position on center of breastbone.                                                                                                                                                                                           |  |



# HEALTHY LIVING 2025-2026 NCAA Banned Drugs List

It is the student-athlete's responsibility to check with the appropriate or designated athletics staff before using any substance.

The NCAA bans the following drug classes.

1. Stimulants.
2. Anabolic agents.
3. Beta blockers (banned for golf and rifle).
4. Diuretics and masking agents.
5. Narcotics.
6. Peptide hormones, growth factors, related substances, and mimetics.
7. Hormone and metabolic modulators.
8. Beta-2 agonists.

**Note:** Any substance chemically/pharmacologically related to any of the classes listed above is also banned. All drugs within the banned-drug class shall be considered to be banned regardless of whether they have been specifically identified. Examples of substances under each class can be found at [ncaa.org/drugtesting](http://ncaa.org/drugtesting). There is no complete list of banned substances.

**Substances and methods subject to restrictions:**

1. Blood and gene doping.
2. Local anesthetics (permitted under some conditions).
3. Manipulation of urine samples.
4. Tampering of urine samples.
5. Beta-2 agonists (permitted only by inhalation with prescription).

**NCAA nutritional/dietary supplement**

Before a student-athlete consumes any nutritional/dietary supplement or uses any medication, they should review the product and/or medication label with the appropriate athletics department staff.

1. There are no NCAA-approved nutritional or dietary supplements.
2. Nutritional/dietary supplements, including vitamins and minerals, are not well regulated and may cause a positive drug test.
3. Student-athletes have tested positive and lost their eligibility using nutritional/dietary supplements.
4. Many nutritional/dietary supplements are contaminated with banned drugs not listed on the label.
5. While third-party tested and low-level risk products may be options, complete elimination of risk is impossible.
6. All nutritional/dietary supplements are taken at the student-athlete's own risk.

As part of its responsibility to provide education about banned substances, athletics department staff should consider providing information about supplement use and the importance of having nutritional/dietary products evaluate by qualified staff members before consuming. The NCAA has identified Drug Free Sport AXIS™ (AXIS) as the service designated to facilitate student-athlete and institutional review of label ingredients in medications and nutritional/dietary supplements. Contact AXIS at 816-474-7321 or [axis.drugfreesport.com](http://axis.drugfreesport.com) (password ncaa1, ncaa2 or ncaa3).

THE IS NO COMPLETE LIST OF BANNED SUBSTANCES. DO NOT RELY ON THIS LIST AS EXHAUSTIVE OR TO CONFIRM OR RULE OUT ANY LABEL INGREDIENT THAT MAY CONTAIN A POTENTIAL BANNED SUBSTANCE.

Many nutritional/dietary supplements are contaminated with banned substances not listed on the label. It is the student-athlete's responsibility to check with the appropriate or designated athletics and/or medical staff before using any substance.

**Some examples of substances in each NCAA banned drug class:**

**Stimulants:**

Amphetamine (Adderall), Caffeine (Guarana), Cocaine, Dimethylbutylamine (DMBA; AMP), Dimethylhexylamine (DMA; Octodrine), Ephedrine, Heptaminol, Hordenine, Lisdexamphetamine (Vyvanse), Methamphetamine, Methylhexanamine (DMAA; Forthane), Methylphenidate (Ritalin), Mephedrone (bath salts), Modafinil, Octopamine, Phenethylamines (PEAs), Phenylephrine, Synephrine (bitter orange).

*Exceptions: Phenylephrine and Pseudoephedrine are not banned.*

**Anabolic agents:**

Androstenedione, Boldenone, Clenbuterol, Clostebol, DHCMT (Oral Turinabol), DHEA, Drostanolone, Epitenbolone, Etiocholanolone, Methandienone, Methasterone, Nandrolone (19-nortestosterone), Oxandrolone, SARMS [Ligandrol (LGD-4033); Ostarine; RAD140; S-23], Stanozolol, Stenbolone, Testosterone, Trenbolone.

**Beta blockers** (banned for rifle only):

Atenolol, Metoprolol, Nadolol, Pindolol, Propranolol, Timolol.

**Diuretics and masking agents:**

Bumetanide, Canrenone (Spironolactone), Chlorothiazide, Furosemide, Hydrochlorothiazide, Probenecid, Triamterene, Trichlormethiazide.

*Exception: Finasteride is not banned.*

**Narcotics:**

Buprenorphine, Dextromoramide, Diamorphine (heroin), Fentanyl and its derivatives, Hydrocodone, Hydromorphone, Meperidine, Methadone, Morphine, Nicomorphine, Oxycodone, Oxymorphone, Pentazocine, Tramadol.

**Peptide hormones, growth factors, related substances and mimetics**

BPC-157, Growth hormone (hGH), Human Chorionic Gonadotropin (hCG), Erythropoietin (EPO) [AS-1, colostrum; deer antler velvet], Ibutamoren (MK-677), TB-500.

*Exceptions: Liraglutide, Semaglutide, Synthroid and Forteo are not banned.*

**Hormone and metabolic modulators (anti-estrogens) :**

Anti-Estrogen (Elacestrant, Fulvestrant), Aromatase Inhibitors [Anastrozole (Arimidex); ATD (androstatrienedione); Formestane; Letrozole], PPAR-d [GW1516 (Cardarine); GW0742], SERMS [Clomiphene (Clomid); Raloxifene (Evista); Tamoxifen (Nolvadex)].

**Beta-2 agonists:**

Albuterol, Formoterol, Higenamine, Salbutamol, Salmeterol, Vilanterol.

**Any substance that is chemically/pharmacologically related to one of the above drug classes, even if it is not listed as an example, is also banned.**

Information about ingredients in medications and nutritional/dietary supplements can be obtained by contacting AXIS at 816-474-7321 or [axis.drugfreesport.com](http://axis.drugfreesport.com) (password ncaa1, ncaa2 or ncaa3).



# SUCCESS SKILLS *tips for improving your memory & taking standardized tests*

## TIPS FOR IMPROVING YOUR MEMORY

- {1} Keep notes, lists, and journals to jog your memory.
- {2} Decide what is most important to remember by looking for main ideas.
- {3} Classify information into categories. Some categories may be:
  - a. Time – summer, sun, swimming, hot
  - b. Place – shopping center, stores, restaurants
  - c. Similarities – shoes, sandals, boots
  - d. Differences – mountain, lake
  - e. Wholes to parts – bedroom, bed, pillow
  - f. Scientific groups – Flower, carnation, rose
- {4} Look for patterns. Try to make a word out of the first letters of a list of things you are trying to remember. You also could make a sentence out of the first letters of the words you need to remember.
- {5} Associate new things you learn with what you already know.
- {6} Use rhythm or make up a rhyme.
- {7} Visualize the information in your mind.
  - a. See the picture clearly and vividly.
  - b. Exaggerate and enlarge things.
  - c. See it in three dimensions.
  - d. Put yourself into the picture.
  - e. Imagine an action taking place.
- {8} Link the information together to give it meaning.
- {9} Use the information whenever you can. Repetition is the key to memory.

## TIPS FOR TAKING STANDARDIZED TESTS

- {1} *Concentrate.* Do not talk or distract others.
- {2} *Listen carefully to the directions.* Ask questions if they are not clear.
- {3} *Pace yourself.* Keep your eye on the time, but do not worry too much about not finishing.
- {4} *Work through all of the questions in order.* If you do not think you know an answer to a problem, skip it and come back to it when you have finished the test.
- {5} *Read all of the possible answers* for each question before choosing an answer.
- {6} *Eliminate any answers that are clearly wrong,* and choose from the others. Words like *always* and *never* often signal that an answer is false.
- {7} *If questions are based on a reading passage,* read the questions first and then the passage. Then go back and try to answer the questions. Scan through the passage one last time to make sure the answers are correct.
- {8} *When you finish the test, go back through and check your answers for careless mistakes.* Change answers only if you are sure they are wrong or you have a very strong feeling they are wrong.
- {9} *Do not be afraid to guess at a question.* If you have a hunch you know the answer, you probably do!
- {10} *Use all of the time allotted* to check and recheck your test.



# SUCCESS SKILLS *listening & homework skills*

## LISTENING SKILLS

Listening (unlike hearing, which is a physical process that does not require thinking) gives meaning to the sounds you hear. It helps you understand. Listening is an active process that requires concentration and practice. In learning, the teacher's responsibility is to present information; the student's responsibility is to be "available" for learning. Not listening means you will be unable to learn the material.

**To help develop listening skills:**

- *Approach the classroom ready to learn;* leave personal problems outside the classroom. Try to avoid distractions.
- *Even if you do not sit close to the teacher,* focus your attention directly on them.
- *Pay attention to the teacher's style* and how the lecture is organized.
- *Participate;* ask for clarification when you do not understand.
- *Take notes.*
- *Listen for key words,* names, events, and dates.
- *Don't make hasty judgments;* separate fact from opinion.
- *Connect what you hear* with what you already know.

## HOMEWORK SKILLS

- *Keep track of your daily assignments* in this datebook so you will always know what you have to do.
- *Homework is an essential part of learning.* Even though you may not have written work to do, you can always review or reread assignments. The more you review information, the easier it is to remember, and the longer you are able to retain it. Not doing your homework because you do not believe in homework is self-defeating behavior.
- *It is your responsibility to find out what you have missed when you are absent.* Take the initiative to ask a classmate or teacher what you need to make up. You also need to know when it must be turned in. If you are absent for several days, make arrangements to receive assignments while you are out.
- *Have a place to study that works for you* – one that is free from distractions. Be honest with yourself about using the TV or stereo during study time. Make sure you have everything you need before you begin to work.
- *Develop a schedule that you can follow.* Be rested when you study. It is okay to study in short blocks of time. Marathon study sessions may be self-defeating.
- *Prioritize your homework* so that you begin with the most important assignment first: study for a test, then do the daily assignment, etc.
- *Study for 30-40 minutes at a time,* then take a 5-10 minute break. Estimate the amount of time it will take to do an assignment and plan your break time accordingly.



# SUCCESS SKILLS *successful notetaking*

## SUCCESSFUL NOTETAKING

- Taking notes reinforces what we hear in the classroom and requires active listening. Having accurate information makes your outside study and review time that much easier. Good notetaking requires practice.
- Be aware of each teacher's lecture style; learning how to adapt to each style takes patience. Take notes as you (attentively) listen to the lecture. Keep notes in an individual notebook for a loose-leaf binder that has a section for each class. Your teacher may have certain requirements.
- Date each day's notes, and keep them in chronological order. Some teachers provide outlines that tell you how a series of lectures will be organized; other teachers will deliver the lectures and expect you to write the information in your notes. Most teachers will emphasize important points by stressing them or repeating them a few times. Make a note in the margin or highlight any information the teacher specifically identifies as important.
- Write notes in short phrases, leaving out unnecessary words. Use abbreviations. Write clearly so you will be able to understand your notes when you review them.
- If you make a mistake, a single line through the material is less time consuming than trying to erase the whole thing. This will save time and you won't miss any of the lecture. Don't copy your notes over to make them neat; write them neatly in the first place. Don't create opportunities to waste your time.
- Write notes in the right two-thirds of the notebook page. Keep the left one-third free for your follow-up questions or to highlight the really important points in the discussion.
- Listen for key ideas. Write them down in your own words. Don't try to write down every word that your teachers say. Some teachers will use the chalkboard or overhead projector, or a PowerPoint presentation to outline these key ideas. Others will simply stress them in their discussion.
- Soon after class, while the information is still fresh in your mind, create questions directly related to your notes in the left column of the paper. Place these questions across from the information to which it pertains. Highlight or underline any key points, terms, events or people. Quiz yourself by covering the 2/3 side of your notes and try to answer the questions you developed without referring to your notes. If you need to refresh your memory, simply uncover the note section to find the answers to your questions. Short, quick reviews will help you remember and understand the information as well as prepare for tests.
- Review your notes daily. This reinforces the information and helps you make sure that you understand the material.
- Make sure your notes summarize, not duplicate, the material.
- Devise your own use of shorthand.
- Vary the size of titles and headings.
- Use a creative approach, not the standard outline form.
- Keep class lecture notes and study notes together.



School Datebooks



# SUCCESS SKILLS *plan for success*

## PLAN FOR SUCCESS

SUCCESSFUL PEOPLE DON'T BECOME SUCCESSFUL BY LUCK. THEIR SUCCESS IS THE RESULT OF SETTING GOALS AND WORKING TO ACHIEVE THOSE GOALS. IN OTHER WORDS, SUCCESSFUL PEOPLE PLAN TO SUCCEED. YOU, TOO, CAN PLAN TO SUCCEED. DON'T PROCRASTINATE. GOOD INTENTIONS WILL NOT HELP YOU SUCCEED. START PLANNING FOR SUCCESS TODAY!

{1} **Organization** – Getting organized is the first step to success.

- Remember that you are responsible for knowing about and completing your assignments and special projects.
- Use your datebook to write down your homework, extracurricular activities, community activities, and home responsibilities.
- Make sure you have all the materials you need when you go to class and when you do your homework.

{2} **Time Management** – Managing time wisely will help ensure that you have the opportunity to do both the things you need to do and the things you want to do.

- Plan a definite time to do your homework.
- Plan time for extracurricular and social activities, as well as home responsibilities.
- Commit yourself to your time plan, but be flexible. For example, if something happens that makes it impossible for you to do homework during the regularly scheduled time, plan an alternate time to do the homework.

{3} **Set Priorities** – If you have lots to do, it is important to set priorities.

- Rank each task in 1, 2, 3 order. Start with #1 – the most important task – and continue on down the list.
- When doing homework, start with the subject in which you need the most improvement.
- Check off finished tasks.
- If you frequently find that you cannot finish all the tasks on your list, you may need to prioritize your optional activities and eliminate some that are low on your priority list.

{4} **Set Goals** – Just wishing to get better grades or to excel in a sport accomplishes nothing. You need a plan of action to achieve your goals. Setting goals will result in better grades and higher self-esteem. Best of all, setting goals will make you feel in control of your life. Some hints for setting goals:

- Be specific. List specific goals for each academic subject. Also list goals for other school and home activities.
- Set time limits. Your goals can be both short-term (within a month or on the next quiz or test) and long-term (within the semester or within the school year).
- Set realistic goals. For example, if math has always been difficult for you, don't aim for an "A" in Algebra at the beginning of a year. If you usually get a "C-" in math, you may want to begin by setting a short-term goal of "C+" or "B-". Reaching that first short-term goal will give you the confidence to raise your goal for the next test or next semester.
- Draw up a step-by-step plan of action for reaching each goal; then go for it!
- Write your goals down, and put them in several places (your locker, your datebook, your bulletin board) so you will see them several times a day.
- Share your goals with others – your parents, teachers, good friends, etc. They can give you encouragement.
- Keep at it! Be determined, and keep a positive attitude. Visualize yourself achieving your goals.
- Reward yourself when you reach a goal.

School  
Datebooks





# SUCCESS SKILLS *basic résumé writing*

## BASIC RÉSUMÉ WRITING

### The Functional Résumé Format

*The functional format is useful for graduating high school or college students who do not have extensive job experience. This type of résumé emphasizes skills and accomplishments achieved in school, activities, internships, and in life.*

*These are the 5 basic parts →*

- {1} **Header:** your name, address, phone number, email address.
- {2} **Job objective:** a short statement describing how you can be of help to the employer and what you intend to do (e.g., sell, design, operate, manage).
- {3} **Overview:** a brief list or statement highlighting your background, your strengths, and what you want your employer to know about you. This can be optional.
- {4} **Skills/Achievements:** a description of your abilities, accomplishments, and areas of competence. These can also be grouped under headings, such as *Office Skills*, *Technical Experience*, or *Planning/Organization*.
- {5} **Education:** a list of all formal education, workshops, seminars, internships, school-related activities, and on-the-job training (if any). The most recent should come first.

### Remember:

- Use only one or two typefaces in the design of your résumé.
- Use short phrases instead of long sentences and paragraphs.
- Line up all headings to keep your résumé looking clean and professional.
- Use good quality paper; A neutral color, such as white or ivory, is recommended.
- Do not include salary requirements.
- Do not include personal information such as date of birth, height, weight, marital status, health, religion, or hobbies.
- Do not use the word *résumé* at the top of the page.
- Keep your résumé to one page.
- Have a list of references (names, company names, phone numbers) ready to give if requested.

### Use Action Words to Describe Skills

|              |              |             |             |
|--------------|--------------|-------------|-------------|
| accomplished | classified   | evaluated   | issued      |
| activated    | communicated | executed    | launched    |
| administered | completed    | facilitated | led         |
| advanced     | computed     | formulated  | lectured    |
| advised      | coordinated  | gathered    | managed     |
| analyzed     | created      | generated   | organized   |
| applied      | critiqued    | guided      | outlined    |
| arranged     | delegated    | implemented | refined     |
| assembled    | designed     | improved    | reorganized |
| attained     | determined   | initiated   | streamlined |
| automated    | developed    | instituted  | trained     |
| budgeted     | devised      | instructed  | updated     |
| calculated   | engineered   | introduced  | utilized    |
| charted      | established  | invented    | wrote       |





# SUCCESS SKILLS *basic résumé writing*

## SAMPLE RÉSUMÉ

### Joe Anybody

---

**Campus Address**  
 14 Residence Hall Drive  
 Campus Town, OH 45628  
 (123) 987-6543  
 j.anybody@e-mail.com

**Permanent Address**  
 234 Oak Street  
 Anytown, MD 21113  
 (555) 123-4567  
 http://www.anybodywebsite.com

**OBJECTIVE**

A web design position that allows me to utilize my computer graphic and illustration skills and apply my knowledge of the online sales industry.

**EDUCATION**

*State University, Campus Town, OH* May 2010  
 School of Technology  
 B.S. in Computer Graphic Design Major GPA: 3.25/4.0  
 Visual Communications Design minor GPA: 3.6/4.0

**EXPERIENCE**

*Design Assistant, internship* May-August 2018  
 Wicked Web Design, Cincinnati, OH  
 • Created templates for multi-use applications  
 • Designed and updated client websites  
 • Reorganized digital file storing system

*Webmaster* August 2018-present  
 Kappa Sigma Fraternity, Campus Town, OH  
 • Designed and maintained website  
 • Established internal e-mail server  
 • Collaborated on intercampus fraternity website

**TECHNICAL SKILLS**

CSS, HTML, Java Script, PhotoShop, Illustrator, Microsoft Office

**MEMBERSHIPS**

- Kappa Sigma Fraternity
- Student Volunteer Outreach Summit
- Campus Town Big Brothers/Big Sisters

**REFERENCES**

Available upon request



# SUCCESS SKILLS *helpful hints*

THE SUCCESSFUL STUDENT'S

## ( BAG OF SKILLS )

### LAUDABLE LISTENING

- Concentrate on what the instructor says.
- Avoid distractions.
- Pay attention to the lecture, and take good notes.
- Participate! Ask questions if you don't understand.
- Listen for key words, names, events, and dates.
- Don't assume or judge. Separate fact from opinion.
- Connect what you hear to what you already know.

### HEALTHY HOMEWORK SKILLS

- Use this datebook to track your daily assignments.
- If you're absent, have a friend or parent get your assignments.
- Develop a routine for completing your homework: Set aside a time; choose a place; have your supplies at hand; and turn off the TV and music.
- Study in blocks of time (if that works best for you).
- Begin with your most important assignments first.
- Take breaks periodically to refresh yourself and review what you've learned.

### NOTABLE NOTETAKING

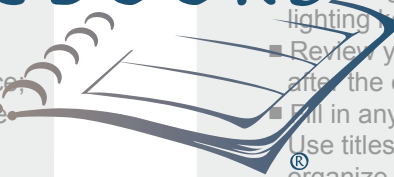
- Date your notes and organize them chronologically.
- Paraphrase and abbreviate – but make sure you understand your own shorthand!
- Use the right two thirds of the page for notes and the left third for writing questions and highlighting key points.
- Review your notes immediately after the class session.
- Fill in any points you missed. Use titles, drawings, etc., to organize and highlight the material.

### A MEMORABLE MEMORY

- Use a variety of avenues (listening, notetaking, reading, online resources, etc.) to improve your chances of retaining the material.
- Look for the main ideas, then find out how they all relate.
- Use mnemonic devices. For example, make a word out of the first letters of the items you are trying to remember. To remember the five Great Lakes, think of HOMES: Huron, Ontario, Michigan, Erie, and Superior.

- Make up rhymes using the information you want to remember.
- Visualize the information or make up a story using the different facts you must recall.
- Use and review the information as often as you can because repetition is the key to a good memory.

School Datebooks





# SUCCESS SKILLS *keeping a monthly budget*

Learning how to manage your money is an important step in becoming financially independent. It's never too early to start keeping a budget. Use this budget worksheet to determine your income and expenses. If you need to cut back on spending, little bits add up.

→ When dining out with friends, don't order a soda; drink water instead.

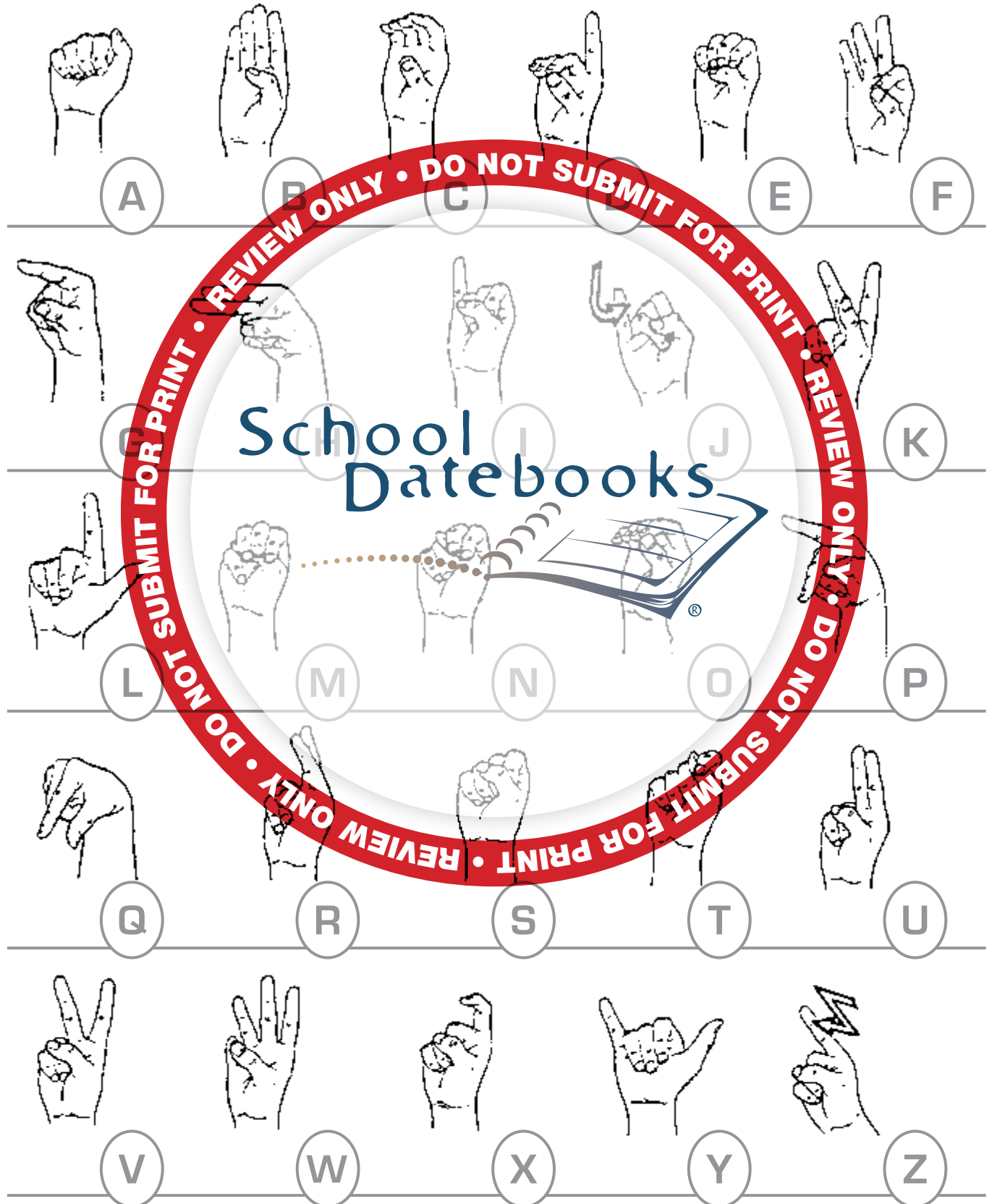
- Skip costly coffeehouses and brew your own at home.
- Save money on gas and parking by walking to class or carpooling with pals.
- Many communities offer paying recycling programs, so cash in those cans.
- Consider trimming "extras" that add up, such as streaming services or eating out.

| Category                                     | Monthly Budget | Monthly Actual | Semester Budget | Semester Actual | School Yr. Budget | School Yr. Actual |
|----------------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|-------------------|
| <b>INCOME</b>                                |                |                |                 |                 |                   |                   |
| From Jobs                                    |                |                |                 |                 |                   |                   |
| From Parents                                 |                |                |                 |                 |                   |                   |
| From Student Loans                           |                |                |                 |                 |                   |                   |
| From Scholarships                            |                |                |                 |                 |                   |                   |
| From Financial Aid                           |                |                |                 |                 |                   |                   |
| Miscellaneous Income                         |                |                |                 |                 |                   |                   |
| <b>INCOME TOTAL</b>                          |                |                |                 |                 |                   |                   |
| <b>EXPENSES</b>                              |                |                |                 |                 |                   |                   |
| Rent or Room and Board                       |                |                |                 |                 |                   |                   |
| Utilities (Gas, Electric, Water)             |                |                |                 |                 |                   |                   |
| Cell Phone                                   |                |                |                 |                 |                   |                   |
| Cable TV or Streaming Services               |                |                |                 |                 |                   |                   |
| Groceries                                    |                |                |                 |                 |                   |                   |
| Car Payment/Transportation                   |                |                |                 |                 |                   |                   |
| Insurance                                    |                |                |                 |                 |                   |                   |
| Gasoline/Oil                                 |                |                |                 |                 |                   |                   |
| Entertainment                                |                |                |                 |                 |                   |                   |
| Eating Out/Vending                           |                |                |                 |                 |                   |                   |
| Tuition                                      |                |                |                 |                 |                   |                   |
| Books                                        |                |                |                 |                 |                   |                   |
| School Fees                                  |                |                |                 |                 |                   |                   |
| Computer Expense                             |                |                |                 |                 |                   |                   |
| Miscellaneous Expense                        |                |                |                 |                 |                   |                   |
| <b>EXPENSES TOTAL</b>                        |                |                |                 |                 |                   |                   |
| <b>NET INCOME</b><br>(Income minus expenses) |                |                |                 |                 |                   |                   |



# SUCCESS SKILLS *manual alphabet*

American Sign Language





# GRADE RECORD

[illegible]

## CLASS SCHEDULE *first semester*

## FIRST SEMESTER

[illegible]

| Time  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-------|--------|---------|-----------|----------|--------|----------|
| 7:00  |        |         |           |          |        |          |
| 8:00  |        |         |           |          |        |          |
| 9:00  |        |         |           |          |        |          |
| 10:00 |        |         |           |          |        |          |
| 11:00 |        |         |           |          |        |          |
| 12:00 |        |         |           |          |        |          |
| 1:00  |        |         |           |          |        |          |
| 2:00  |        |         |           |          |        |          |
| 3:00  |        |         |           |          |        |          |
| 4:00  |        |         |           |          |        |          |
| 5:00  |        |         |           |          |        |          |
| 6:00  |        |         |           |          |        |          |
| 7:00  |        |         |           |          |        |          |
| 8:00  |        |         |           |          |        |          |
| 9:00  |        |         |           |          |        |          |



| Time  | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-------|--------|---------|-----------|----------|--------|----------|
| 7:00  |        |         |           |          |        |          |
| 8:00  |        |         |           |          |        |          |
| 9:00  |        |         |           |          |        |          |
| 10:00 |        |         |           |          |        |          |
| 11:00 |        |         |           |          |        |          |
| 12:00 |        |         |           |          |        |          |
| 1:00  |        |         |           |          |        |          |
| 2:00  |        |         |           |          |        |          |
| 3:00  |        |         |           |          |        |          |
| 4:00  |        |         |           |          |        |          |
| 5:00  |        |         |           |          |        |          |
| 6:00  |        |         |           |          |        |          |
| 7:00  |        |         |           |          |        |          |
| 8:00  |        |         |           |          |        |          |
| 9:00  |        |         |           |          |        |          |

## CLASS SCHEDULE *first & second semester*

## FIRST SEMESTER

[illegible]

## SECOND SEMESTER

[illegible]



# CLASS SCHEDULE *trimesters*

## FIRST TRIMESTER

| Time | Subject | Instructor | Bldg/Rm |
|------|---------|------------|---------|
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |

## SECOND TRIMESTER

| Time | Subject | Instructor | Bldg/Rm |
|------|---------|------------|---------|
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
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|      |         |            |         |
|      |         |            |         |
|      |         |            |         |

## THIRD TRIMESTER

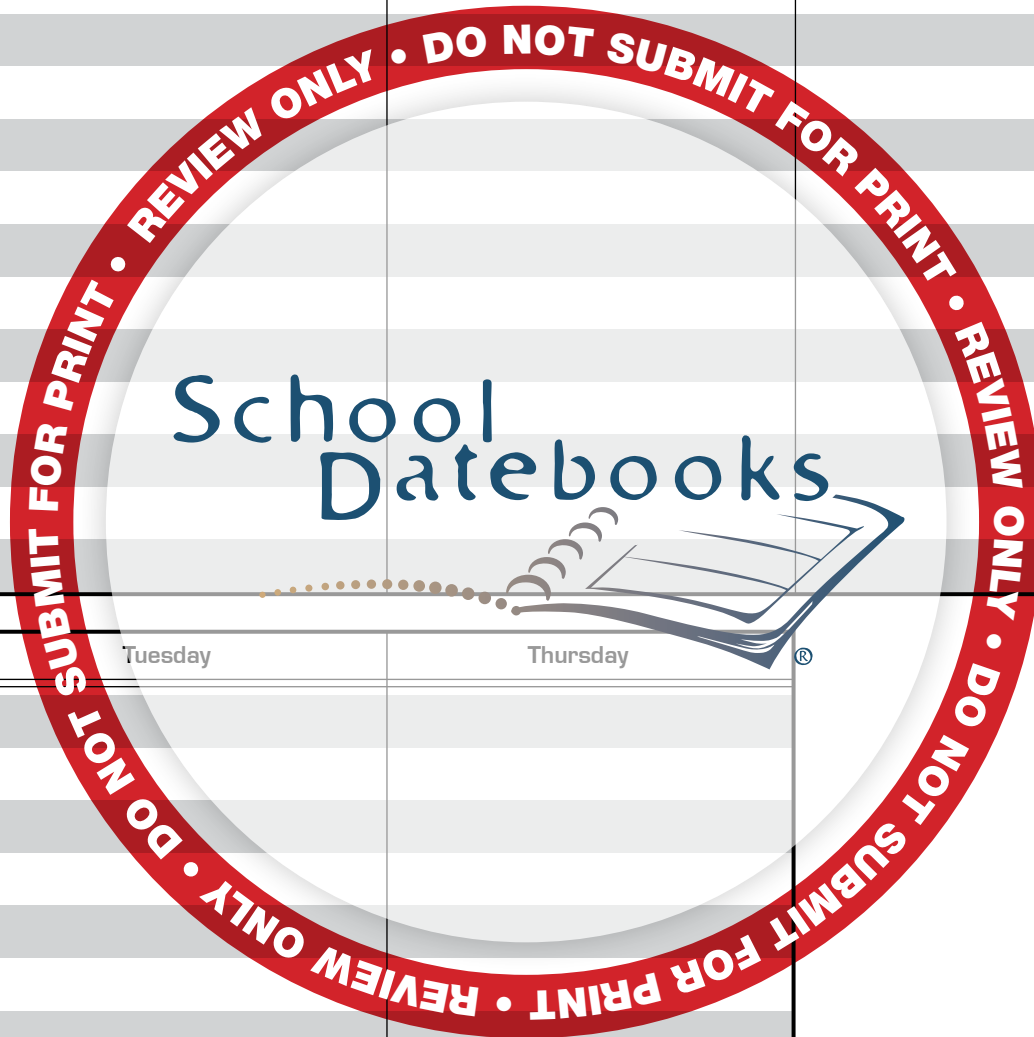
| Time | Subject | Instructor | Bldg/Rm |
|------|---------|------------|---------|
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |
|      |         |            |         |



# CLASS SCHEDULE *block class schedule*

| Time  | Monday | Wednesday | Friday |
|-------|--------|-----------|--------|
| 7:00  |        |           |        |
| 8:00  |        |           |        |
| 9:00  |        |           |        |
| 10:00 |        |           |        |
| 11:00 |        |           |        |
| 12:00 |        |           |        |
| 1:00  |        |           |        |
| 2:00  |        |           |        |
| 3:00  |        |           |        |
| 4:00  |        |           |        |
| 5:00  |        |           |        |
| 6:00  |        |           |        |
| 7:00  |        |           |        |
| 8:00  |        |           |        |
| 9:00  |        |           |        |

| Time  | Tuesday | Thursday |
|-------|---------|----------|
| 7:00  |         |          |
| 8:00  |         |          |
| 9:00  |         |          |
| 10:00 |         |          |
| 11:00 |         |          |
| 12:00 |         |          |
| 1:00  |         |          |
| 2:00  |         |          |
| 3:00  |         |          |
| 4:00  |         |          |
| 5:00  |         |          |
| 6:00  |         |          |
| 7:00  |         |          |
| 8:00  |         |          |
| 9:00  |         |          |





# ADVANCE PLANNING

AUGUST 2027

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 |    |    |    |    |

SEPTEMBER 2027

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 |    |    |

OCTOBER 2027

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    | 1  | 2  |
| 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 |    |    |    |    |    |    |

NOVEMBER 2027

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    | 1  | 2  | 3  | 4  | 5  | 6  |
| 7  | 8  | 9  | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 |    |    |    |    |

DECEMBER 2027

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 |    |

School  
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## CALENDAR YEARS

# 2026

|           |    |    |    |    |    |    |    |          |    |    |    |    |    |    |    |          |    |    |    |    |    |    |    |          |    |    |    |    |    |   |   |
|-----------|----|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|----------|----|----|----|----|----|---|---|
| January   | S  | M  | T  | W  | T  | F  | S  | February | S  | M  | T  | W  | T  | F  | S  | March    | S  | M  | T  | W  | T  | F  | S  | April    | S  | M  | T  | W  | T  | F | S |
|           |    |    |    |    |    | 1  | 2  |          | 3  | 1  | 2  | 3  | 4  | 5  | 6  |          | 7  |    |    |    |    |    |    |          | 1  | 2  | 3  | 4  |    |   |   |
|           | 4  | 5  | 6  | 7  | 8  | 9  | 10 |          | 8  | 9  | 10 | 11 | 12 | 13 | 14 |          | 15 | 16 | 17 | 18 | 19 | 20 | 21 |          | 22 | 23 | 24 | 25 |    |   |   |
|           | 11 | 12 | 13 | 14 | 15 | 16 | 17 |          | 15 | 16 | 17 | 18 | 19 | 20 | 21 |          | 22 | 23 | 24 | 25 | 26 | 27 | 28 |          | 29 | 30 | 31 |    |    |   |   |
|           | 18 | 19 | 20 | 21 | 22 | 23 | 24 |          | 22 | 23 | 24 | 25 | 26 | 27 | 28 |          | 29 | 30 | 31 |    |    |    |    |          |    |    |    |    |    |   |   |
| May       | S  | M  | T  | W  | T  | F  | S  | June     | S  | M  | T  | W  | T  | F  | S  | July     | S  | M  | T  | W  | T  | F  | S  | August   | S  | M  | T  | W  | T  | F | S |
|           |    |    |    |    |    | 1  | 2  |          | 1  | 2  | 3  | 4  | 5  | 6  | 5  |          | 6  | 7  | 8  | 9  | 10 | 11 | 12 |          | 13 | 14 | 15 |    |    |   |   |
|           | 3  | 4  | 5  | 6  | 7  | 8  | 9  |          | 7  | 8  | 9  | 10 | 11 | 12 | 13 |          | 12 | 13 | 14 | 15 | 16 | 17 | 18 |          | 19 | 20 | 21 | 22 |    |   |   |
|           | 10 | 11 | 12 | 13 | 14 | 15 | 16 |          | 14 | 15 | 16 | 17 | 18 | 19 | 20 |          | 19 | 20 | 21 | 22 | 23 | 24 | 25 |          | 26 | 27 | 28 | 29 |    |   |   |
|           | 17 | 18 | 19 | 20 | 21 | 22 | 23 |          | 21 | 22 | 23 | 24 | 25 | 26 | 27 |          | 28 | 29 | 30 | 31 |    |    |    |          |    |    |    |    |    |   |   |
| September | S  | M  | T  | W  | T  | F  | S  | October  | S  | M  | T  | W  | T  | F  | S  | November | S  | M  | T  | W  | T  | F  | S  | December | S  | M  | T  | W  | T  | F | S |
|           |    |    |    |    |    | 1  | 2  |          | 3  | 4  | 5  | 6  | 1  | 2  | 3  |          | 4  | 5  | 6  | 7  | 8  | 9  | 10 |          | 11 | 12 | 13 | 14 | 15 |   |   |
|           | 6  | 7  | 8  | 9  | 10 | 11 | 12 |          | 14 | 5  | 6  | 7  | 8  | 9  | 10 |          | 8  | 9  | 10 | 11 | 12 | 13 | 14 |          | 15 | 16 | 17 | 18 | 19 |   |   |
|           | 13 | 14 | 15 | 16 | 17 | 18 | 19 |          | 11 | 12 | 13 | 14 | 15 | 16 | 17 |          | 15 | 16 | 17 | 18 | 19 | 20 | 21 |          | 22 | 23 | 24 | 25 | 26 |   |   |
|           | 20 | 21 | 22 | 23 | 24 | 25 | 26 |          | 18 | 19 | 20 | 21 | 22 | 23 | 24 |          | 22 | 23 | 24 | 25 | 26 | 27 | 28 |          | 29 | 30 | 31 |    |    |   |   |

# 2027

| Month     | S  | M  | T  | W  | T  | F  | S  | Month    | S  | M  | T  | W  | T  | F  | S  | Month    | S  | M  | T  | W  | T  | F  | S |
|-----------|----|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|----------|----|----|----|----|----|----|---|
| January   |    |    |    |    |    |    |    | February |    |    |    |    |    |    |    | April    |    |    |    |    |    |    |   |
| 3         | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11       | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19       | 20 | 21 | 22 | 23 | 24 | 25 |   |
| 26        | 27 | 28 | 29 | 30 | 31 |    |    | 27       | 28 | 29 | 30 | 31 |    |    |    | 27       | 28 | 29 | 30 |    |    |    |   |
| May       |    |    |    |    |    |    |    | June     |    |    |    |    |    |    |    | August   |    |    |    |    |    |    |   |
| 2         | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10       | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18       | 19 | 20 | 21 | 22 | 23 | 24 |   |
| 25        | 26 | 27 | 28 | 29 | 30 | 31 |    | 25       | 26 | 27 | 28 | 29 | 30 | 31 |    | 25       | 26 | 27 | 28 | 29 | 30 |    |   |
| September |    |    |    |    |    |    |    | October  |    |    |    |    |    |    |    | December |    |    |    |    |    |    |   |
| 5         | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13       | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21       | 22 | 23 | 24 | 25 | 26 | 27 |   |
| 28        | 29 | 30 |    |    |    |    |    | 28       | 29 | 30 | 31 |    |    |    |    | 28       | 29 | 30 | 31 |    |    |    |   |

# 2028

| January   | S<br>2<br>9<br>16<br>23<br>30  | M<br>3<br>10<br>17<br>24<br>31 | T<br>4<br>11<br>18<br>25 | W<br>5<br>12<br>19<br>26  | T<br>6<br>13<br>20<br>27  | F<br>7<br>14<br>21<br>28  | S<br>1<br>8<br>15<br>22<br>29 |
|-----------|--------------------------------|--------------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-------------------------------|
| February  | S<br>6<br>13<br>20<br>27       | M<br>7<br>14<br>21<br>28       | T<br>8<br>15<br>22<br>29 | W<br>9<br>16<br>23        | T<br>10<br>17<br>24<br>25 | F<br>11<br>18<br>25<br>26 | S<br>5<br>12<br>19<br>26      |
| March     | S<br>12<br>19<br>26            | M<br>13<br>20<br>27            | T<br>14<br>21<br>28      | W<br>15<br>22<br>29       | T<br>16<br>23<br>30       | F<br>17<br>24<br>31       | S<br>4<br>11<br>18<br>25      |
| April     | S<br>2<br>9<br>16<br>23<br>30  | M<br>3<br>10<br>17<br>24       | T<br>4<br>11<br>18<br>25 | W<br>5<br>12<br>19<br>26  | T<br>6<br>13<br>20<br>27  | F<br>7<br>14<br>21<br>28  | S<br>1<br>8<br>15<br>22       |
| May       | S<br>7<br>14<br>21<br>28       | M<br>8<br>15<br>22<br>29       | T<br>9<br>16<br>23<br>30 | W<br>10<br>17<br>24<br>31 | T<br>11<br>18<br>25       | F<br>12<br>19<br>26       | S<br>6<br>13<br>20            |
| June      | S<br>4<br>11<br>18<br>25       | M<br>5<br>12<br>19<br>26       | T<br>6<br>13<br>20<br>27 | W<br>7<br>14<br>21<br>28  | T<br>8<br>15<br>22<br>29  | F<br>9<br>16<br>23<br>30  | S<br>3<br>10<br>17            |
| July      | S<br>9<br>16<br>23<br>30       | M<br>10<br>17<br>24<br>31      | T<br>11<br>18<br>25      | W<br>12<br>19<br>26<br>27 | T<br>13<br>20<br>27       | F<br>14<br>21<br>28       | S<br>1<br>8<br>15             |
| August    | S<br>6<br>13<br>20<br>27       | M<br>7<br>14<br>21<br>28       | T<br>8<br>15<br>22<br>29 | W<br>9<br>16<br>23<br>30  | T<br>10<br>17<br>24       | F<br>11<br>18<br>25       | S<br>5<br>12<br>19            |
| September | S<br>3<br>10<br>17<br>24       | M<br>4<br>11<br>18<br>25       | T<br>5<br>12<br>19<br>26 | W<br>6<br>13<br>20<br>27  | T<br>7<br>14<br>21<br>28  | F<br>8<br>15<br>22<br>29  | S<br>2<br>9<br>16<br>23<br>30 |
| October   | S<br>1<br>8<br>15<br>22<br>29  | M<br>2<br>9<br>16<br>23<br>30  | T<br>3<br>10<br>17<br>24 | W<br>4<br>11<br>18<br>25  | T<br>5<br>12<br>19<br>26  | F<br>6<br>13<br>20<br>27  | S<br>7<br>14<br>21            |
| November  | S<br>5<br>12<br>19<br>26       | M<br>6<br>13<br>20<br>27       | T<br>7<br>14<br>21<br>28 | W<br>8<br>15<br>22<br>29  | T<br>9<br>16<br>23<br>30  | F<br>10<br>17<br>24       | S<br>4<br>11<br>18            |
| December  | S<br>3<br>10<br>17<br>24<br>31 | M<br>4<br>11<br>18<br>25       | T<br>5<br>12<br>19<br>26 | W<br>6<br>13<br>20<br>27  | T<br>7<br>14<br>21<br>28  | F<br>8<br>15<br>22<br>29  | S<br>2<br>9<br>16<br>23       |



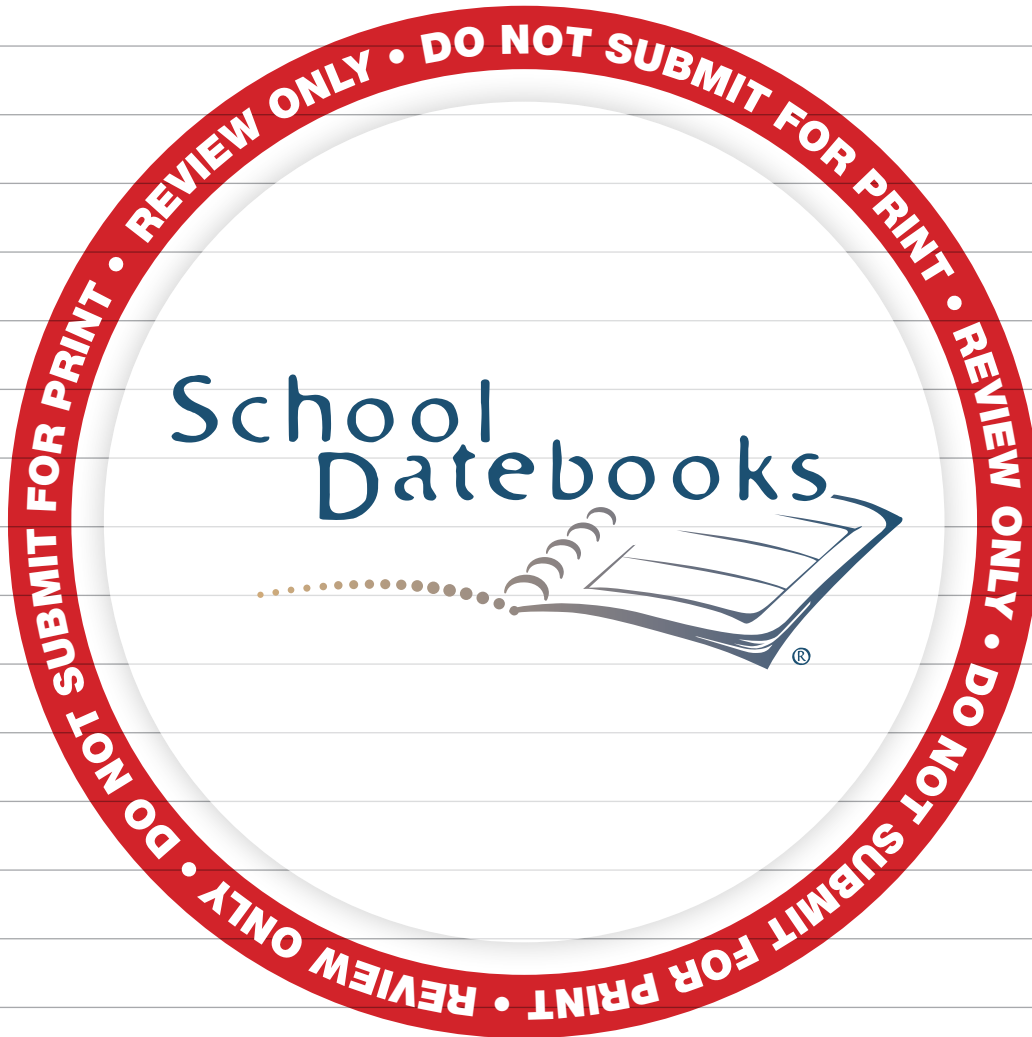
# IMPORTANT DATES *United States*

|                                        | 2026            | 2027             | 2028          |
|----------------------------------------|-----------------|------------------|---------------|
| <i>New Year's Day*</i>                 | Thurs., Jan. 1  | Fri., Jan. 1     | Sat, Jan 1    |
| <i>Martin Luther King Jr. Day*</i>     | Mon., Jan. 19   | Mon., Jan. 18    | Mon, Jan 17   |
| <i>Groundhog Day</i>                   | Mon., Feb. 2    | Tues., Feb. 2    | Wed, Feb 2    |
| <i>Lunar New Year</i>                  | Tues., Feb. 17  | Sat., Feb. 6     | Wed, Jan 26   |
| <i>Lincoln's Birthday</i>              | Thurs., Feb. 12 | Fri., Feb. 12    | Sat, Feb 12   |
| <i>Valentine's Day</i>                 | Sat., Feb. 14   | Sun., Feb. 14    | Mon, Feb 14   |
| <i>Presidents' Day*</i>                | Mon., Feb. 16   | Mon., Feb. 15    | Mon, Feb 21   |
| <i>Washington's Birthday</i>           | Tues., Feb. 17  | Mon., Feb. 22    | Tues, Feb 22  |
| <i>Ash Wednesday</i>                   | Wed., Feb. 18   | Tues., Feb. 10   | Wed, Mar 1    |
| <i>Daylight saving time begins</i>     | Sun., Mar. 8    | Sun., Mar. 14    | Sun, Mar 12   |
| <i>St. Patrick's Day</i>               | Tues., Mar. 17  | Wed., Mar. 17    | Fri, Mar 17   |
| <i>First day of spring</i>             | Fri., Mar. 20   | Sat., Mar. 20    | Sun, Mar 19   |
| <i>April Fools' Day</i>                | Wed., Apr. 1    | Thurs., Apr. 1   | Sat, Apr 1    |
| <i>Palm Sunday</i>                     | Sun., Mar. 29   | Sun., Mar. 21    | Sun, Apr 9    |
| <i>Passover begins at sundown</i>      | Wed., Apr. 1    | Wed., Apr. 21    | Mon, Apr 10   |
| <i>Good Friday</i>                     | Fri., Apr. 3    | Fri., Mar. 26    | Fri, Apr 14   |
| <i>Easter</i>                          | Sun., Apr. 5    | Sun., Mar. 28    | Sat, Apr 16   |
| <i>Earth Day</i>                       | Wed., Apr. 22   | Thurs., Apr. 22  | Fri, Apr 22   |
| <i>Cinco de Mayo</i>                   | Tues., May 5    | Wed., May 5      | Sat, May 5    |
| <i>Mother's Day</i>                    | Sun., May 10    | Sun., May 9      | Sun, May 14   |
| <i>Memorial Day*</i>                   | Mon., May 25    | Mon., May 31     | Mon, May 29   |
| <i>Flag Day</i>                        | Sun., June 14   | Mon., June 14    | Wed, Jun 14   |
| <i>Father's Day</i>                    | Sun., June 21   | Sun., June 28    | Sat, Jun 18   |
| <i>Juneteenth*</i>                     | Fri., June 19   | Sat., June 19    | Mon, Jun 19   |
| <i>First day of summer</i>             | Sun., June 21   | Mon., June 21    | Tues, Jun 20  |
| <i>Independence Day*</i>               | Sat., July 4    | Sun., July 4     | Tues, Jul 4   |
| <i>Labor Day*</i>                      | Mon., Sept. 7   | Mon., Sept. 6    | Mon, Sept 4   |
| <i>Patriot Day</i>                     | Fri., Sept. 11  | Sat., Sept. 11   | Mon, Sept 11  |
| <i>Rosh Hashanah begins at sundown</i> | Fri., Sept. 11  | Fri., Oct. 1     | Wed, Sept 20  |
| <i>First day of autumn</i>             | Tues., Sept. 22 | Thurs., Sept. 23 | Fri, Sept 22  |
| <i>Yom Kippur begins at sundown</i>    | Sun., Sept. 20  | Sun., Oct. 10    | Fri, Sept 29  |
| <i>Columbus Day*</i>                   | Mon., Oct. 12   | Mon., Oct. 11    | Mon, Oct 9    |
| <i>Indigenous Peoples Day</i>          | Mon., Oct. 12   | Mon., Oct. 11    | Mon, Oct 9    |
| <i>Halloween</i>                       | Sat., Oct. 31   | Sat., Oct. 31    | Tues, Oct 31  |
| <i>Standard time begins</i>            | Sun., Nov. 1    | Sun., Nov. 7     | Sun, Nov 5    |
| <i>Election Day</i>                    | Tues., Nov. 3   | Tues., Nov. 2    | Tues, Nov 7   |
| <i>Veterans Day*</i>                   | Wed., Nov. 11   | Thurs., Nov. 11  | Sat, Nov 11   |
| <i>Thanksgiving*</i>                   | Thurs., Nov. 26 | Thurs., Nov. 25  | Thurs, Nov 23 |
| <i>Hanukkah begins at sundown</i>      | Fri., Dec. 4    | Fri., Dec. 24    | Tues, Dec 12  |
| <i>First day of winter</i>             | Mon., Dec. 21   | Tues., Dec. 21   | Thurs, Dec 21 |
| <i>Christmas*</i>                      | Fri., Dec. 25   | Sat., Dec. 25    | Mon, Dec 25   |
| <i>Kwanzaa begins</i>                  | Sat., Dec. 26   | Sun., Dec. 26    | Tues, Dec 26  |

\* Federal Holiday in the United States

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# FINANCIAL MANAGEMENT *keeping a monthly budget*

Learning how to manage your money is an important step in becoming financially independent. It's never too early to start keeping a budget. Use this budget worksheet to determine your income and expenses. If you need to cut back on spending, little bits add up.

- ➔ When dining out with friends, don't order a soda; drink water instead.
- ➔ Skip costly coffeehouse and brew your own at home.
- ➔ Save money on gas and parking by walking to class or carpooling with pals.
- ➔ Many communities offer paying recycling programs, so cash in those cans.
- ➔ Consider trimming "extras" that add up, such as a cell phone entertainment.

| Category                                     | Monthly Budget | Monthly Actual | Semester Budget | Semester Actual | School Year Budget | School Year Actual |
|----------------------------------------------|----------------|----------------|-----------------|-----------------|--------------------|--------------------|
| <b>INCOME</b>                                |                |                |                 |                 |                    |                    |
| From Job                                     |                |                |                 |                 |                    |                    |
| From Parents                                 |                |                |                 |                 |                    |                    |
| From Student Loans                           |                |                |                 |                 |                    |                    |
| From Scholarships                            |                |                |                 |                 |                    |                    |
| From Financial Aid                           |                |                |                 |                 |                    |                    |
| Miscellaneous Income                         |                |                |                 |                 |                    |                    |
| <b>INCOME TOTAL</b>                          |                |                |                 |                 |                    |                    |
| <b>EXPENSES</b>                              |                |                |                 |                 |                    |                    |
| Rent or Room and Board                       |                |                |                 |                 |                    |                    |
| Utilities (Gas, Electricity, Water)          |                |                |                 |                 |                    |                    |
| Telephone                                    |                |                |                 |                 |                    |                    |
| Groceries                                    |                |                |                 |                 |                    |                    |
| Car Payment/Transportation                   |                |                |                 |                 |                    |                    |
| Insurance                                    |                |                |                 |                 |                    |                    |
| Gasoline/Oil                                 |                |                |                 |                 |                    |                    |
| Entertainment                                |                |                |                 |                 |                    |                    |
| Eating Out/Vending                           |                |                |                 |                 |                    |                    |
| Tuition                                      |                |                |                 |                 |                    |                    |
| Books                                        |                |                |                 |                 |                    |                    |
| School Fees                                  |                |                |                 |                 |                    |                    |
| Computer Expense                             |                |                |                 |                 |                    |                    |
| Miscellaneous Expense                        |                |                |                 |                 |                    |                    |
| <b>EXPENSE TOTAL</b>                         |                |                |                 |                 |                    |                    |
| <b>NET INCOME</b><br>(Income minus expenses) |                |                |                 |                 |                    |                    |

## SAVINGS TRACKER

[illegible]