

NOT FOR REPLICATION



HAMMOND
& STEPHENS

STUDENT
Planner

PLANNING

the **ROAD** to

SUCCESS

A good plan is like a road map: it shows the final destination and usually the best way to get there.

H. Stanley Judd

This Planner Belongs to:

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

School Name _____

Student Number _____ Homeroom _____

In Case of Emergency Notify:

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Physician _____ Physician's Phone _____

Instructions for Proper Use of This Planner:

1 Week of _____

	Subject	Done ✓	Assignment	Hall Pass
Monday				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____
				To: _____ Time Out: _____ Time In: _____ Initial: _____

- 1 Enter the current week's dates (month, day, year).
- 2 Write in the subject and assignment.
- 3 When the assignment is completed, mark the "✓" box.
- 4 Record information for a Hall Pass.

Student Responsibilities

- ✓ The student has the responsibility to develop good work and study habits.
- ✓ The student should clarify any homework-related questions with the teacher at the appropriate time.
- ✓ The student should take home any materials and information needed to complete the assignment.
- ✓ The student should learn to budget his or her time.
- ✓ The student should take advantage of study time provided during the day.
- ✓ It is the student's responsibility to return all work completed to the teacher by the date requested.
- ✓ The student should make up work missed during absence.

Goal Setting

A goal is something you want to achieve.

Goal setting means identifying what you want, making a plan to achieve it, and setting a time limit for each of the steps.

Use these guidelines to set and achieve your goals:

1. Identify Your Goal

Make your goal realistic—one you have an excellent chance of achieving, even though it may be hard. Write your goal out clearly to reinforce it.

2. Set a Deadline

Choose a reasonable timeline for achieving your goal—long enough to ensure your success, but not so far off that it can't readily be seen.

3. Make It Manageable

Divide your goal into a series of steps that you need to complete. Give each step a timeline and completion date. All the steps should be completed by the deadline you established for your goal.

4. Stay on Track

When you successfully complete each step within its timeline you know you are on track to achieve your goal.

5. Reward Yourself

Congratulate yourself on achieving your goal. Give yourself some time to enjoy what you have achieved.

Managing Your Time

Get organized! Your planner can help!

1. Give Yourself a Deadline

Use the page "Plan & Set Your Monthly or Weekly Goals" to create a timeline for completing long-term assignments or studying. Prioritize the work according to the assignment due date or test date. Estimate the time you will need to do each task and assign the time on the appropriate days in your planner.

2. Get Started

Follow the schedule you wrote in your planner to complete your work on time. Avoid distractions such as television, social media, or phone calls. Take breaks and reward yourself as you make progress on your work.

3. Review

Check your planner to confirm that you have completed all the necessary work. Put a ✓ in the margin to show the work is finished. If you need to carry work forward, use an → and be sure to enter the work on the day you expect to do it.

You're off to a great start.

Getting organized puts you in control of your work.

Listening

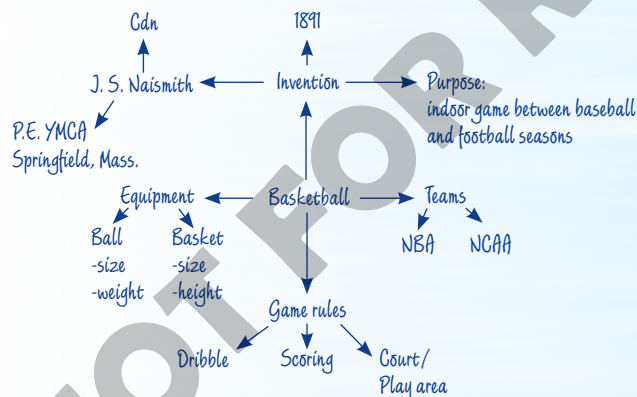
- ◆ Concentrate on your instructor.
- ◆ Tune out noise and talking.
- ◆ Listen for the main ideas.
- ◆ Focus on Who? What? When? Where? Why? and How?
- ◆ Be alert for the speaker's feelings and style.

Taking Notes

- ◆ Do not write down everything.
- ◆ Write down important ideas and supporting facts.
- ◆ Use your own words, not your instructor's.
- ◆ Learn different note-taking methods.
 - mapping
 - outlining
- ◆ Keep notes organized by dating and numbering pages.
- ◆ Keep all notes for a class in one place.

TIP

Listen 80% and write 20% of the time.



TIP

Short, repeated study periods work better than one long cram session.

Remembering

- ◆ Quickly review what you're learning in each class daily and weekly.
- ◆ Summarize important chapters, lectures, or discussions. Just doing this will help you remember.
- ◆ Apply what you're learning as soon as possible.
- ◆ Form a study group with friends or classmates. Ask questions, and answer their questions.
- ◆ Learn memory-aid techniques to trigger recall.

Workplace

- ◆ Work in the same place as much as possible.
- ◆ Keep your workplace clean and uncluttered.
- ◆ Make sure you have good lighting to avoid tired eyes and drowsiness.
- ◆ Use a firm, straight chair.
- ◆ Don't do homework in front of the TV!
- ◆ Quiet music may help, or it may just distract you. Choose what's best and stick to it.

GET READY ...

- ♦ Find out what kind of test you're getting (multiple choice, essay).
- ♦ Avoid cramming.
- ♦ Set up a study schedule to review everything well before the test. Use your planner to keep track.
- ♦ Write out likely test questions and answer them.
- ♦ Get enough rest the night before.
- ♦ Wear comfortable clothing.
- ♦ Take all the necessary tools: pens, pencils, erasers, calculator, highlighter, etc.

GET SET, GO!

- ♦ Don't start writing as soon as you get the test.
- ♦ First, skim the exam to make sure you have it all.
- ♦ Then, read the instructions.
- ♦ Highlight key words such as *discuss*, *compare*, *list*...
- ♦ Quickly estimate how much time you have to answer questions.
- ♦ Answer easier questions first to boost your confidence.
- ♦ Read questions several times to be sure you understand exactly what is being asked.
- ♦ Never rush through questions in a panic. Be calm and pace yourself.
- ♦ Try to leave some time before the test is over to review and correct errors.
- ♦ If you run out of time on a certain question, leave some room and return to it later.

TIP

When you're well prepared, you experience less stress.

Multiple Choice

- ♦ Don't guess unless there is no penalty for wrong answers.
- ♦ Before looking at the possible answers, try to form the answer in your mind.
- ♦ Don't change an answer that comes to mind unless you're absolutely sure it's wrong.

Essay Questions

- ♦ Always write answers in paragraph form unless a list is specifically asked for.
- ♦ Answer essay questions this way:
 1. Make a rough outline.
 2. Begin with a topic sentence that includes the key words of the question.
 3. Support your position with specific examples and detailed information.
 4. Conclude by very briefly summing up your answer.

Assignment

Subject

Done ✓

Hall Pass

Monday

Tuesday

Wednesday

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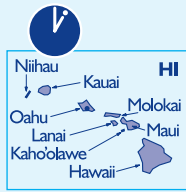
Initial:

NOT FOR REPLICATION

North America



UNITED STATES



UNITED STATES

Capital: Washington, D.C.

STATE	CAPITAL	ID Idaho	Boise	NE Nebraska	Lincoln	TN Tennessee	Nashville
AL Alabama	Montgomery	IL Illinois	Springfield	NV Nevada	Carson City	TX Texas	Austin
AK Alaska	Juneau	IN Indiana	Indianapolis	NH New Hampshire	Concord	UT Utah	Salt Lake City
AZ Arizona	Phoenix	IA Iowa	Des Moines	NJ New Jersey	Trenton	VT Vermont	Montpelier
AR Arkansas	Little Rock	KS Kansas	Topeka	NM New Mexico	Santa Fe	VA Virginia	Richmond
CA California	Sacramento	KY Kentucky	Frankfort	NY New York	Albany	WA Washington	Olympia
CO Colorado	Denver	LA Louisiana	Baton Rouge	NC North Carolina	Raleigh	WV West Virginia	Charleston
CT Connecticut	Hartford	ME Maine	Augusta	ND North Dakota	Bismarck	WI Wisconsin	Madison
DE Delaware	Dover	MD Maryland	Annapolis	OH Ohio	Columbus	WY Wyoming	Cheyenne
FL Florida	Tallahassee	MA Massachusetts	Boston	OK Oklahoma	Oklahoma City	PR Puerto Rico	San Juan
GA Georgia	Atlanta	MI Michigan	Lansing	OR Oregon	Salem	VI Virgin Islands	Charlotte Amalie
HI Hawaii	Honolulu	MN Minnesota	St. Paul	PA Pennsylvania	Harrisburg	GU Guam	Hagatna
		MS Mississippi	Jackson	RI Rhode Island	Providence	MP Northern Mariana Islands	Saipan
		MO Missouri	Jefferson City	SC South Carolina	Columbia	AS American Samoa	Pago Pago
		MT Montana	Helena	SD South Dakota	Pierre		

THE PROCESS OF WRITING

Use these steps not only in your writing, but also for oral or digital presentations.

1. TOPIC

Choose what you will write about. Your topic should be clear and well defined.

2. RESEARCH

Gather facts to support your statements or opinions.

3. FORMAT

The requirements for writing a letter, an essay, a speech, or a journal are different. Make sure you follow the requirements of the format you are using.

4. PURPOSE

Your purpose will focus your writing. Are you writing to inform, to entertain, to instruct, or to persuade your audience?

5. AUDIENCE

Your choice of words and writing style will be shaped by your audience. Are you writing for your peers, younger children, or adults?

6. OUTLINE

Write your thesis (topic) statement clearly. Then write your subtopics in a logical order that leads to a conclusion.

7. POINT OF VIEW

Determine the point of view (I, he/she, etc.) from which you will write. Your understanding of a topic may increase when you consider different points of view.

8. ROUGH DRAFT

Write a rough draft that follows your outline, keeping your audience and point of view in mind. Each paragraph should deal with only one main idea. Your composition should follow a logical order to a conclusion.

9. EDIT AND REVISE

Check your work for spelling and formatting. Revise the content if necessary. Proofread carefully.

10. SOURCES

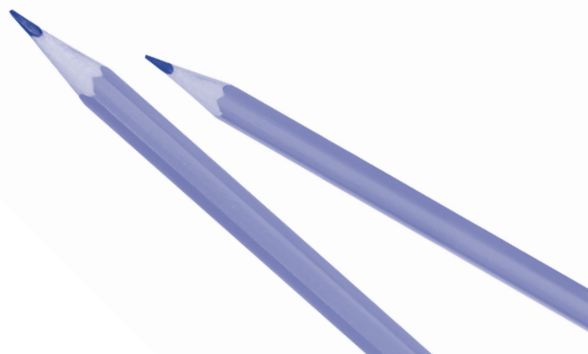
DO NOT PLAGIARIZE. Give the source for all quotes, facts, and ideas that are not your own. Use footnotes and/or a bibliography or "Works Cited" page.

TIP

When you take notes, immediately jot down the title of the work, the author, the publisher, and the date published. This saves time later!

II. FINAL DRAFT

Prepare a neat, final copy for submission. Be proud of your work!



READING FOR UNDERSTANDING

Practice these techniques when reading for understanding:

1. Get a general idea about the selection by skimming the headings, bold words, and illustrations.
2. Read the questions, if any, at the end of the selection and use them as a study guide. If no questions are provided, make up your own. This helps identify key points.
3. Read as quickly as you can to help you stay on task and absorb the main ideas.*
4. Take notes, and underline or highlight key phrases and sentences.
5. Answer the questions and study your notes. Clear up anything you don't understand by reading the selection again. If necessary, ask your teacher for an explanation.

*Some students find it better to read an article or a chapter twice—once very rapidly (skimming), and again more slowly, paying more attention to details. Others prefer a single reading, pausing as necessary to absorb main points. Decide which approach is better for you.

REFERENCES

Your Works Cited page should have a separate entry for every book, website, article, or other source you use. List the entries alphabetically by each one's first word.

Most entries will include:

- 1. The name(s) of the author(s) or editor(s).** Put the last name of the first author or editor first (Leung, Mary). Put the first names of any following authors or editors first (Andrew Janowicz).
- 2. The title.** Put book or website titles in *italics*. Put quotation marks around the titles of articles or encyclopedia entries.
- 3. The place** the book was published, or its address on the Internet.
- 4. The publisher:** a publishing company, magazine, newspaper, or website sponsor.
- 5. The date** a book or article was published (in print or on the web), and the date you retrieved it (on the web). Include the source (Print or Web) before the date you retrieved it (on the web).
- 6. The page numbers** of articles in magazines and newspapers.

Here are some sample entries:

A book with one author:

Leung, Mary. *Purcell: The English Orpheus*. London: Heinemann, 2006. Print.

A book with two or three authors:

Avandez, Diana, and Andrew Janowicz. *Art Deco*. Acadie: Moncton, 2004. Print.
Burney, Chuck, Tyler Capriotti, and Ann Kovak. *A History of Aviation*. Toronto: Doubleday, 2009.

A book with more than three authors:

Silverstein, Gordon, et al. *The Eleusinian Mysteries*. New York: Penguin, 2004. Print.

A book with an editor, but no author listed on the title page:

Faber, K. R., ed. *Shakespeare's Great Tragedies: Critical Essays*. London: Oxford UP, 2000. Print.

An article in a newspaper:

Kurozumi, T. "How the West Was Won." *Los Angeles Times* 14 June 2009: F3. Print.

An article in a magazine or journal:

Wheatley, Meaghan. "Swans in Danger." *Wide World* March 2001: 18-21. Print.

An entry in an encyclopedia:

"Theseus." *Encyclopedia of Myth and Legend*. 2000 ed. Print.

A web page:

Eng, C. "The Missing Shoe." *Kids' Lit Online*. 11 Jan. 2006. Premier Publications. Web. 25 Apr. 2006. <<http://www.premier.us/missingshoe/>>

A work with print publication; data accessed online:

Chekhov, Anton. *The Sea-Gull*. Fairfield: 1st World Library, 2004. Google Books Search. Web. 20 June 2011.

Note: There are different citation styles; your teacher may give you guidelines for a different style instead. The examples on this page are based on MLA (Modern Language Association) style, which is commonly used for academic writing in the humanities (literature, philosophy, art, and classical studies). Also note that some instructors may prefer the use of underlining for titles, rather than italics.

SPELLING RULES

- I before E, except after C, or when sounded as A, as in neighing and weigh.
- Final consonants are not doubled when the word ends in more than one consonant.
EXAMPLE: conform, conformed, conforming
help, helped, helping

- When words end in soft ce or ge, keep the e before able and ous.
EXAMPLE: advantageous, changeable, chargeable, courageous, enforceable, manageable, noticeable, outrageous, peaceable

- When verbs end in ie, change the ending to y before adding ing.

EXAMPLE: die dying (but died)
lie lying (but lied)
tie tying (but tied)

- Drop the final e before a suffix beginning with a vowel.

EXAMPLE: love + ing = loving

EXCEPTIONS: canoe + ing = canoeing
hoe + ing = hoeing

- Keep the final e before a suffix beginning with a consonant.

EXAMPLE: care + ful = careful

EXCEPTIONS: true + ly = truly
argue + ment = argument

- Final consonants may or may not be doubled when the accent is thrown forward. The American tendency is not to double the final consonant; British and Canadian usage is to double it.

EXAMPLE: benefit: benefiting or benefitting,
benefited or benefitted

cancel: canceling or cancelling,
canceled or cancelled

travel: traveling or travelling,
traveled or travelled

Note: If in doubt, check it out!



GRAMMAR

NOUN

Common nouns refer to any person, place, thing, or idea.

EXAMPLE: gate, idea, tulip, time, cow, shock

Proper nouns are capitalized and refer to specific persons, places, objects, or ideas.

EXAMPLE: Carlos, London, Friday, Supreme Court

PRONOUN

A **pronoun** can take the place of a noun.

EXAMPLE: My friend decided he would do something nice for me.

There are three kinds of personal pronouns: subjective, objective, and possessive.

EXAMPLE: He gave me some of his cows.

VERB

A **verb** shows action or state of being and indicates the time of that action or state.

EXAMPLE: I thought I locked the gate. (*past*)

Now I see my cows are eating the tulips. (*present*)

I will lock the gate more carefully tomorrow. (*future*)

ADJECTIVE

Adjectives are words that describe nouns and specify size, color, number, and so on. This is called *modifying*; adjectives are modifiers.

EXAMPLE: The four cows looked smug as they chewed on bright red and yellow tulips.

ARTICLE

Articles introduce nouns, and are sometimes classified as adjectives. There are only three articles in English: a, an, and the.

EXAMPLE: Tomorrow will be a better day for the cows and me.

ADVERB

Adverbs are words that describe verbs, adjectives, or other adverbs. They specify in what manner, when, where, and how much.

EXAMPLE: They ambled slowly back through the gate as I shouted impatiently.

PREPOSITION

Prepositions show how a noun or a pronoun is related to another word in a sentence.

EXAMPLE: Finally they went back into the barnyard.

I didn't know the gate behind the barn was broken, too.

CONJUNCTION

Conjunctions join words, phrases, or clauses.

EXAMPLE: I thought everything was fine, but then I glanced out the window again.

Maybe I should just become a poet, or an accountant.

INTERJECTION

Interjections are also known as exclamations and are indicated by the use of the exclamation mark (!).

EXAMPLE: Wow! I didn't know cows could run like that!

PUNCTUATION

- Place a **period** at the end of a declarative sentence.
EXAMPLE: I seem to have lost my planner.

Also use a period at the end of an imperative sentence (a command) that does not express strong emotion.

EXAMPLE: Please help me look for it.

- Use **commas** to separate a list of words in a sentence.
EXAMPLE: I'm lost, confused, and hopeless without my planner.

Also use commas before or after quotations.

EXAMPLE: "This is very alarming," I said.

My mom asked, "Did you leave it in your locker?"

- Use **question marks** after (can you guess?) questions.
EXAMPLE: How will I survive without my planner?

- Use **exclamation marks** after sentences that express deep feeling or surprise, or after strong commands. Don't overuse exclamation marks, or they lose their effectiveness.

EXAMPLE: I need my planner desperately!

Please help me find it!

- Use a **semicolon** to join sentences that are connected in meaning, without using words like "and," "or," and "but." Semicolons work best with two fairly short sentences.

EXAMPLE: It's no use going to school without my planner;
I might as well stay home today.

- Use a **colon** to introduce a list in a sentence.
EXAMPLE: I already lost five things today: my planner, my bus pass, my English essay, my lunch money, and one of my shoes.

- Use an **apostrophe** for contractions.
EXAMPLE: It's [It is] not a very good day.

Also use an apostrophe to show possession.

EXAMPLE: Maybe I can borrow Dana's planner.

- Use **double quotation marks** around direct speech or a direct quote from another source.

EXAMPLE: "How on earth did you lose one shoe?"
Dana asked.

- Use **parentheses** around a side thought in a sentence or paragraph.

EXAMPLE: I didn't tell her about all the other things I lost
(she already thinks I'm absentminded).

- Use an **em dash** to separate parts of a sentence for emphasis.

EXAMPLE: I was in despair about my planner—plus a bit concerned about that English essay—but then I noticed something. My cat was sitting on something—it was my planner!

- Use **ellipses** to emphasize a sentence break.

EXAMPLE: Everything's all right now ... until tomorrow.

Also use ellipses to show that a thought or sentence is incomplete (in fiction or informal writing), or that a quote from another source is incomplete (in formal writing).

EXAMPLE: Of course, I still have to find my bus pass,
my English essay, my shoe ...

PROBLEM-SOLVING METHODS

1 UNDERSTAND & EXPLORE	First things first: find out what the real problem is.
2 GUESS & CHECK	Make a reasonable guess and check it out; try again if necessary.
3 SOLVE THE PROBLEM	Sort out all information, draw a picture, graph, or table, and write it out in math. Sometimes it may help to work backward!
4 CHECK YOUR ANSWER	Think logically ... does your solution make sense? Try it out if you can.

ORDER OF OPERATIONS/SYMBOLS

P Do operations within parentheses () and other grouping symbols.	< Is less than
E Do powers (exponents) ² and roots $\sqrt{\quad}$.	> Is greater than
MD Do multiplication x and division ÷ in order from left to right.	= Is equal to
AS Do addition + and subtraction – in order from left to right.	≈ Approximate
	≤ Is less or equal
	≥ Is greater or equal

FRACTIONS, DECIMALS, PERCENTAGES

$\frac{3}{5}$ – numerator 5 – denominator	1 = 1.0 = 100%
To add or subtract different fractions, first obtain a common denominator:	$\frac{3}{4} = 0.75 = 75\%$
$\frac{1}{3} + \frac{2}{5} = \frac{5}{15} + \frac{6}{15} = \frac{11}{15}$	$\frac{2}{3} = 0.6 = 66.6\%$
To multiply :	$\frac{1}{2} = 0.5 = 50\%$
$\frac{1}{3} \times \frac{2}{5} = \frac{1 \times 2}{3 \times 5} = \frac{2}{15}$	$\frac{1}{3} = 0.3 = 33.3\%$
To divide , multiply the first fraction by the reciprocal of the second fraction:	$\frac{1}{4} = 0.25 = 25\%$
$\frac{2}{3} \div \frac{1}{6} = \frac{2}{3} \times \frac{6}{1} = \frac{12}{3} = 4$	$\frac{1}{5} = 0.2 = 20\%$
	$\frac{1}{6} = 0.16 = 16.6\%$
	$\frac{1}{8} = 0.125 = 12.5\%$
	$\frac{1}{9} = 0.1 = 11.1\%$
	$\frac{1}{10} = 0.1 = 10\%$
	$\frac{1}{12} = 0.08\bar{3} = 8.3\%$

METRIC SYSTEM/CONVERSIONS

.001	.01	.1	1	10	100	1,000
milli	centi	deci		deca	hecto	kilo
mm	cm	dm	m	dam	hm	km
mg	cg	dg	g	dag	hg	kg
mL	cL	dL	L	daL	hL	kL

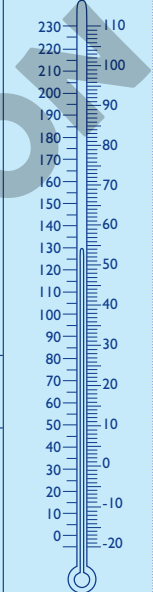
Area
 1 m² = 10,000 cm²
 1 hectare (ha) = 10,000 m²
 1 km² = 100 ha

English System

1 foot (ft)	= 12 inches (in)	= 1' = 12"
1 yard (yd)	= 3 feet	= 36 inches
1 mile (mi)	= 1,760 yards	= 5,280 feet
1 ft ²	= 144 in ²	
1 yd ²	= 9 ft ²	
1 acre	= 4,840 yd ²	
1 tablespoon (Tbsp.)	= 3 teaspoons (tsp.)	
1 cup (c)	= 16 Tbsp.	= 8 fluid ounces (fl oz)
1 pint (pt)	= 2 c	
1 quart (qt)	= 2 pt	= 4 c = 32 fl oz
1 gallon (gal)	= 4 qt	

Temperature

Fahrenheit Celsius



$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$
 $^{\circ}\text{F} = 9/5 ^{\circ}\text{C} + 32$

Length / Area

to go from	to	multiply by
cm	→ in	0.39
in	→ cm	2.54
m	→ ft	3.28
ft	→ m	0.30
km	→ mi	0.62
mi	→ km	1.61
m ²	→ ft ²	10.76
ft ²	→ m ²	0.09
km ²	→ mi ²	0.39
mi ²	→ km ²	2.59

Weight / Capacity

to go from	to	multiply by
g	→ oz	0.0353
oz	→ g	28.35
kg	→ lbs	2.2046
lbs	→ kg	0.4536
t	→ tn	1.1023
tn	→ t	0.9072
mL	→ fl oz	0.0338
fl oz	→ ml	29.574
L	→ US gal	0.2642
US gal	→ L	3.785

SQUARES AND SQUARE ROOTS

n	n ²	\sqrt{n}
1	1	1
2	4	1.414
3	9	1.732
4	16	2
5	25	2.236
6	36	2.449
7	49	2.646
8	64	2.828
9	81	3
10	100	3.162
12	144	3.464
15	225	3.873
20	400	4.472
25	625	5
100	10,000	10
1/2	1/4	0.707
1/4	1/16	1/2

COMMON UNITS

used with the International System

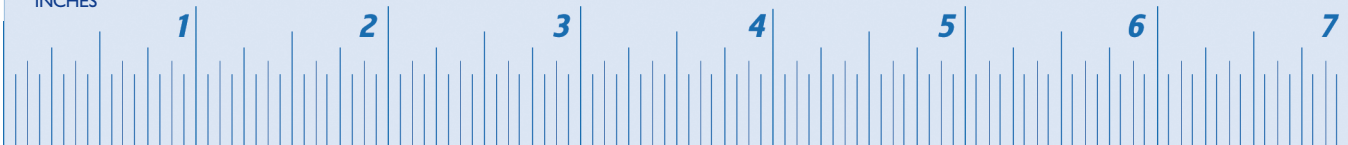
MEASUREMENT	ABBREV.	RELATION
meter*	m	length
hectare	ha	area
kilogram	kg	mass
liter*	L	volume or capacity
second	s	time
hertz	Hz	frequency
degree Celsius	°C	temperature
joule	J	energy, work
watt	W	power, radiant flux
ampere	A	electric current
volt	V	electric potential

*Canadian preferred spelling: metre, litre.

MULTIPLICATION CHART

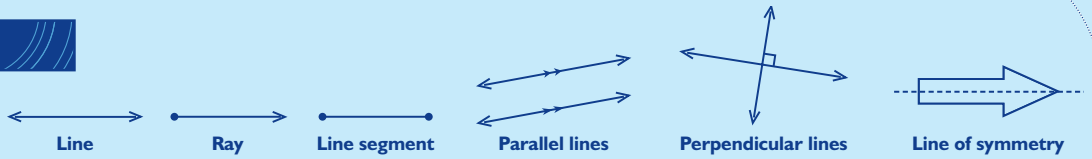
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4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144
13	13	26	39	52	65	78	91	104	117	130	143	156
14	14	28	42	56	70	84	98	112	126	140	154	168
15	15	30	45	60	75	90	105	120	135	150	165	180

INCHES

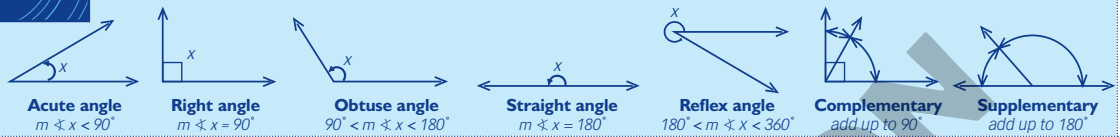


Mathematics

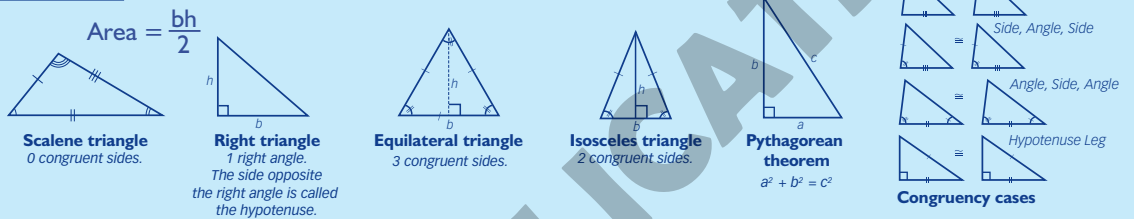
Lines



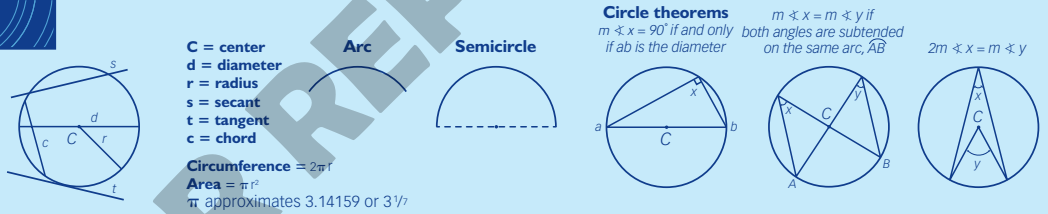
Angles



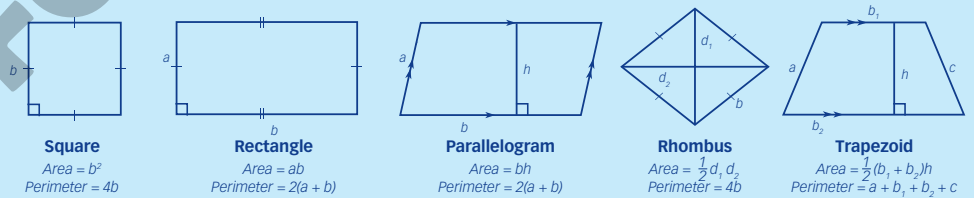
Triangles



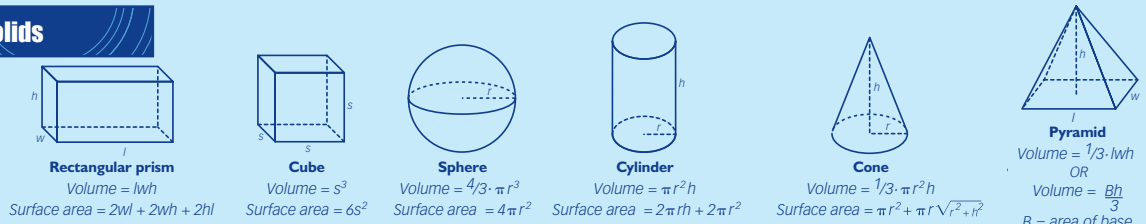
Circles



Quadrilaterals



Solids



CENTIMETERS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Properties of Addition and Multiplication

Commutative property of addition

$$a + b = b + a$$

Commutative property of multiplication

$$ab = ba$$

Associative property of addition

$$a + (b + c) = (a + b) + c$$

Associative property of multiplication

$$a(bc) = (ab)c$$

Distributive property of multiplication over addition

$$a(b + c) = ab + ac$$

Distributive property of multiplication over subtraction

$$a(b - c) = ab - ac$$



Factoring

$a^2 - b^2 = (a + b)(a - b)$	$a^2b - ab = ab(a + 1)(a - 1)$
$a^2 + 2ab + b^2 = (a + b)^2$	$a^2 - 2ab + b^2 = (a - b)^2$
$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$	$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

Roots of a Quadratic

The solution for a quadratic equation in the form of $ax^2 + bx + c = 0$ can be found by using the quadratic formula

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

LAW OF EXPONENTS

If $a, b \in R, a, b \geq 0$ and $p, q, r, s \in Q$, then:

- $a^p a^q = a^{p+q}$
- $\frac{a^p}{a^q} = a^{p-q} \quad (a \neq 0)$
- $(a^p)^q = a^{pq}$
- $(ab)^p = a^p b^p$
- $\left(\frac{a}{b}\right)^p = \frac{a^p}{b^p} \quad (b \neq 0)$
- $a^0 = 1 \quad (a \neq 0)$
- $a^{-p} = \frac{1}{a^p} \quad (a \neq 0)$
- $a^{\frac{p}{q}} = \sqrt[q]{a^p}$

LOGARITHMS

$\log_a x = n \leftrightarrow x = a^n$ (log to the base a)
 $\log_a (xy) = \log_a x + \log_a y$
 $\log_a \left(\frac{x}{y}\right) = \log_a x - \log_a y$
 $\log_a x^p = p \log_a x$
 $\log_a a^x = x$
 $a^{\log_a x} = x$
 $\log_a x = \frac{\log_b x}{\log_b a}$

Common log: A log that is written without a base: $\log x = n$, the base is 10: $\log_{10} x = n$. All \log_a rules apply.

Natural log: A log that is written in $x = n$, where the base is e: $\log_e x = n$. All \log_a rules apply.

Expanding

$a(b + c) = ab + ac$	$(a + b)(c + d) = ac + ad + bc + bd$
$(a + b)^2 = a^2 + 2ab + b^2$	$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$
$(a - b)^2 = a^2 - 2ab + b^2$	$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$

PERIODIC TABLE OF THE ELEMENTS

Periods \downarrow	Groups ∇	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	1	1.01 H Hydrogen																	4.00 He Helium	
	2	6.94 Li Lithium	9.01 Be Beryllium																	20.18 Ne Neon
	3	22.99 Na Sodium	24.31 Mg Magnesium												26.98 Al Aluminum	28.09 Si Silicon	30.97 P Phosphorus	32.07 S Sulfur	35.45 Cl Chlorine	39.95 Ar Argon
	4	39.10 K Potassium	40.08 Ca Calcium	44.96 Sc Scandium	47.87 Ti Titanium	50.94 V Vanadium	52.00 Cr Chromium	54.94 Mn Manganese	55.85 Fe Iron	58.93 Co Cobalt	58.69 Ni Nickel	63.55 Cu Copper	65.41 Zn Zinc	69.72 Ga Gallium	72.64 Ge Germanium	74.92 As Arsenic	78.96 Se Selenium	79.90 Br Bromine	83.80 Kr Krypton	
	5	85.47 Rb Rubidium	87.62 Sr Strontium	88.91 Y Yttrium	91.22 Zr Zirconium	92.91 Nb Niobium	95.94 Mo Molybdenum	(98) Tc Technetium	101.07 Ru Ruthenium	102.91 Rh Rhodium	106.42 Pd Palladium	107.87 Ag Silver	112.41 Cd Cadmium	114.82 In Indium	118.71 Sn Tin	121.76 Sb Antimony	127.60 Te Tellurium	126.90 I Iodine	131.29 Xe Xenon	
	6	132.91 Cs Cesium	137.33 Ba Barium		178.49 Hf Hafnium	180.95 Ta Tantalum	183.84 W Tungsten	186.21 Re Rhenium	190.23 Os Osmium	192.22 Ir Iridium	195.08 Pt Platinum	196.97 Au Gold	200.59 Hg Mercury	204.38 Tl Thallium	207.20 Pb Lead	208.98 Bi Bismuth	(209) Po Polonium	(210) At Astatine	(222) Rn Radon	
7	(223) Fr Francium	(226) Ra Radium		(267) Rf Rutherfordium	(270) Db Dubnium	(269) Sg Seaborgium	(270) Bh Bohrium	(270) Hs Hassium	(278) Mt Meitnerium	(281) Ds Darmstadtium	(281) Rg Roentgenium	(285) Cn Copernicium	(289) Nh Nihonium	(289) Fl Flerovium	(289) Mc Moscovium	(293) Lv Livermorium	(293) Ts Tennessine	(294) Og Oganesson		
6	138.91 La Lanthanum	140.12 Ce Cerium	140.91 Pr Praseodymium	144.24 Nd Neodymium	(145) Pm Promethium	150.36 Sm Samarium	151.96 Eu Europium	157.25 Gd Gadolinium	158.93 Tb Terbium	162.50 Dy Dysprosium	164.93 Ho Holmium	167.26 Er Erbium	168.93 Tm Thulium	173.05 Yb Ytterbium	174.97 Lu Lutetium					
7	(227) Ac Actinium	(232.04) Th Thorium	(231.04) Pa Protactinium	(238.03) U Uranium	(237) Np Neptunium	(244) Pu Plutonium	(243) Am Americium	(247) Cm Curium	(247) Bk Berkelium	(251) Cf Californium	(252) Es Einsteinium	(257) Fm Fermium	(258) Md Mendelevium	(258) No Nobelium	(262) Lr Lawrencium					

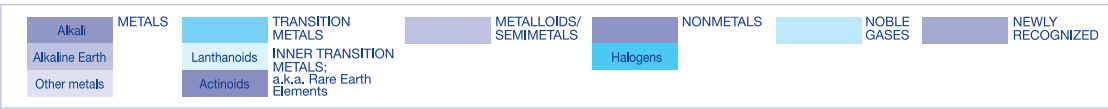
ELEMENT KEY

ATOMIC NUMBER: 82
 ATOMIC MASS: 207.20
 ATOMIC SYMBOL: Pb
 ELEMENT NAME: Lead
 IONIC CHARGE (first, most common): 2+/4+

RADIOACTIVE ELEMENTS

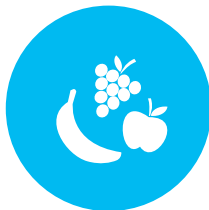
Elements 43, 61, and 84 through 118 are radioactive. Masses for the most stable isotope are listed in parentheses for radioactive elements.

ELEMENT GROUPS





United States Department of Agriculture



Focus on whole fruits

Include fruit at breakfast! Top whole-grain cereal with your favorite fruit, add berries to pancakes, or mix dried fruit into hot oatmeal.



Vary your veggies

Cook a variety of colorful veggies. Make extra vegetables and save some for later. Use them for a stew, soup, or a pasta dish.



Vary your protein routine

Next taco night, try adding a new protein, like shrimp, beans, chicken, or beef.



Make half your grains whole grains

Add brown rice to your stir-fry dishes. Combine your favorite veggies and protein foods for a nutritious meal.



Move to low-fat or fat-free milk or yogurt

Enjoy a low-fat yogurt parfait for breakfast. Top with fruit and nuts to get in two more food groups.



Drink and eat less sodium, saturated fat, and added sugars

Cook at home and read the ingredients to compare foods.

Based on the Dietary Guidelines for Americans.
Go to ChooseMyPlate.gov for more information.

MPMW Tipsheet No. 14
December 2018
Center for Nutrition Policy and Promotion
USDA is an equal opportunity provider, employer, and lender.

NOT FOR REPLICATION

2028801

Weekly Student Planner

- 8" x 10"
- 96 Pages
- Undated

