

## ANALYTIC SUBSTITUTIONS.

ANOTHER METHOD FOR REMEMBERING  
DATES AND FIGURES.

This lesson in figures is given for the benefit of those who have not yet mastered NUMERIC THINKING. The pupil will appreciate its practical value the moment he masters the key to it.

This is given in the next few pages, and it will be found to be easy of comprehension and interesting to a surprising degree.

The whole thing is in a nutshell. Numbers, as such, are abstractions and hard to be remembered. To make them hard to forget, we translate them into words or phrases. These are easily remembered and they always instantly *give back* the figures they stand for.

We represent the figures 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0, by certain *consonants*; and then, as the vowels [a, e, i, o, u, and y, together with w] have *no numerical* value assigned to them, we turn dates or any numbers into translating *words*, which will always tell us precisely the figures the words stand for.

As this simple process enables us to remember any dates or numbers with *absolute certainty*, the pupil will be pleased to know that he can learn *how it is done* by only *one thoughtful* perusal.

The questions at the bottom of each page constitute an invaluable aid to test the accuracy of his knowledge and the correctness of his inferences.

1. Is it possible to exaggerate the importance of this lesson? 2. When will the pupil appreciate its practical value? 3. Where is this key given? 4. Are numbers hard to remember? 5. How do we make them hard to forget? 6. By what are the figures represented? 7. What letters have no numerical value assigned to them? 8. What do the questions at the bottom of each page constitute?

The nought and the nine digits are *represented* by the following *consonants* when they are *sounded or pronounced*; viz., 0 (nought) by s, z, or c<sup>soft</sup> as in cease, 1 by t, th, or d, 2 by n, 3 by m, 4 by r, 5 by l, 6 by sh, j, ch, or g<sup>soft</sup> as in the first g of George, 7 g<sup>hard</sup> as in Gorge, k, c<sup>hard</sup> as in cane, q, or ng, 8 by f or v, and 9 by b or p.

Ample practice in translating the sounded consonants of words into figures, or of figures into the sounded consonants of words will now be given. If the reader can *remember* the foregoing consonant equivalents of figures in connection with the tabulated Figure Alphabet on the 74th page of this lesson, he can at once pass on through the book. If not, he must carefully study the intervening pages with painstaking—for when once learned, no further difficulty can arise.

The tabulated Figure Alphabet on the 74th page of this lesson expresses the consonant values of the nought and nine digits in perpendicular columns, as under nought (o) are placed s, z, and c<sup>soft</sup>; under nine are placed b and p; under six are placed sh, j, ch, and g<sup>soft</sup>, &c. Only those who possess first-rate natural memories can learn the equivalents of the sounded consonants in figures from this table. But when learned in this way, the pupil requires much practice in translating words into figures and figures into words. Even this exceptional pupil had better carefully study the ensuing examples.

The first thing to be done is to learn *which* consonants are used to stand for and represent the nought (o) and 1, 2, 3, 4, 5, 6, 7, 8 and 9. Let the student remember that we use vowels to make words with, but we do not give the vowels [a, e, i, o, u], or w, or y, *any number value whatever*.

WE REPRESENT THE NOUGHT OR CYPHER [o] BY THE CONSONANTS S, Z, OR C<sup>soft</sup> [AS IN *cease*].

The figure value of "sew," therefore equals or is represented by a cipher [o]. S = o, and the vowel "e" and the consonant "w" have *no figure value*. Cannot the

1. What is the first thing to be done? 2. What must the student remember in connection with vowels? 3. By what do we represent the cipher? 4. What other way is given for fixing the first rule in the mind? 5. What is meant by a "cognate"? 6. What kind of a letter is S?



student understand at once that Say = o, See = o, Ease = o, Is = o, and Zoe = o, and Seize = oo, Size = oo, Sauce = oo?

The following is another way of fixing in mind this first rule.

If the capital letter **S** were cut into two parts, and the bottom half attached to the top half, it would make a nought (0). So it is easy to remember that *S* represents 0. *C*<sup>soft</sup> as in *cease* has the same sound as *S*, and should therefore stand for the same figure, viz., 0; and *Z* is a cognate of *S*—that is, it is made by the same organs of speech in the same position as when making *S*, only it is an undertone, and *S* is a whispered letter. Besides *Z* should represent 0 because it begins the word *Zero*—*C*<sup>soft</sup> should also stand for 0 for the additional reason that *C*<sup>soft</sup> begins the word *cipher*. In translating a word into figures we always turn *S*, *Z*, or *C*<sup>soft</sup> into nought (0); in turning figures into words we always translate a nought (0) into *S*, *Z*, or *C*<sup>soft</sup>.

**1** IS REPRESENTED BY THE CONSONANT "T," "TH," OR "D."

*T*oy = 1. As "t" stands for 1, and o and y are vowels, and have no figure value, the numerical value of *T*oy must be 1.

*Thee* = 1, *Thou* = 1, *Day* = 1, *Dew* = 1, *This* = 10, *Thus* = 10, *Does* = 10, *Ties* = 10, *Toes* = 10, *Deed* = 11, *Doth* = 11, *To-day* = 11, *Tattoo*\* = 11, *Tut* = 11, *Toad* = 11, *Tied* = 11, *Sat* = 01, *Said* = 01, *Seat* = 01, *Days* = 10, *Toys* = 10, *These* = 10, *Those* = 10.

"t" stands for 1, because it is made with one downward stroke. "h" has no figure value except when it is united with "s" or "c" in sh or ch, and therefore "th" must represent 1, and d, being the cognate of "t," it is represented by 1. Hence we translate "t," "th," and "d" by the figure 1, and when we want to represent 1, by letters, we translate it into t, th, or d.

1. In translating a word into figures, what do we always do? 2. By what letters is the figure 1 represented? 3. Why does "t" stand for 1? 4. When does the letter "h" have a figure value? 5. By what is 2 represented? 6. Why? 7. How do we represent 3? 8. Why? 9. By what consonant is 4 represented? 10. Why?

\* See rules on page 72.

**2** IS REPRESENTED BY "N," because it is made by two downward strokes. *No* = 2, *Any* = 2, *One* = 2, *Noise* = 20, *Nice* = 20, *Nest* = 201, *Note* = 21, *Then* = 12, *Nun* = 22, *Nan* = 22, *Son* = 02, *Sine* = 02, *Zone* = 02, *Nine* = 22, *Zeno* = 02, *Sown* = 02.

**3** IS REPRESENTED BY "M," because the written m is made by three downward strokes. *Aim* = 3, *Sum* = 03, *Mum* = 33, *Maim* = 33, *Money* = 32, *Moth* = 31, *Moon* = 32, *Man* = 32, *Month* = 321, *Amends* = 3210, *Thin* = 12, *Enemies* = 230, *Home* = 3.

**4** IS REPRESENTED BY "R," because it terminates the word *four* in several languages. *Air* = 4. A and i are vowels, and count for no figure value in *Air*, and hence that word represents only the figure 4. *Wire* = 4, *Row* = 4, *Wort* = 41, *Wrath* = 41, *Worth* = 41, *Ride* = 41, *Heirs* = 40, *Ruins* = 420, *Roast* = 401, *Rum* = 43, *Roar* = 44, *Saucer* = 004, *Swordsman* = 041032, *Razors* = 4040, *Arise*n = 402, *Hermits* = 4310.

**5** IS REPRESENTED BY "L," because in the Roman alphabet L stood for 50, and we disregard the cipher and make it stand for 5 only—as, *Oil* = 5. O and i, being vowels, may be used in a word, but having no figure value, do not change the numerical value of the word; therefore the figure value of "oil" is 5, the same as though the "1" stood alone. *Lay* = 5, *Law* = 5, *Holy* = 5, *Awhile* = 5, *Wheel* = 5, *Lit* = 51, *Wealth* = 51, *Lad* = 51, *Solo* = 05, *Sales* = 050, *Slower* = 054, *Lane* = 52, *Alone* = 52, *Lama* = 53, *Earlier* = 454, *Wholesale* = 505, *Unmilitaryness* = 2351420.

**6** IS REPRESENTED BY "SH," "J," "CH," AND "G<sup>soft</sup>." WE HAVE THE LETTER VALUES OF 6, THROUGH THE INITIAL CONSONANTS OF THE PHRASE: (Six), *Shy Jewesses Chose George*. In the following words, the vowels have no figure value, hence in translation are never counted. *Show* = 6, *Joy* = 6, *Hatch* = 6, *Huge* = 6, *Sage* = 06, *Cheats* = 610, *Shed* = 61, *Sheath* = 61, *Shot* = 61, *Gin* = 62, *Shin* = 62, *Jean* = 62, *Chin* = 62, *Gem* = 63, *Jam* = 63, *Shame* = 63, *Chime* = 63, *Usher* = 64, *Jury* = 64, *Chair* = 64, *Wager* = 64, *Shall* = 65, *Jail* = 65, *Chill* = 65, *Gentle* = 6215, *Jewish* = 66.

**7** IS REPRESENTED BY "G<sup>hard</sup>" "K," "C<sup>hard</sup>" "Q," AND



"NG." WE FIND THE LETTER EQUIVALENTS OF 7 IN THE INITIAL CONSONANTS OF THE PHRASE: (Seven), Great King Came Quarrelling. We thus use the termination "ng" to express 7. Hog = 7, Key = 7, Cue = 7, Young = 7, Yoke = 7, Wig = 7. As no vowels have any figure value, they cut no figure in translating into numbers. Deck = 17, Desk = 107, Kid = 71. Skate = 071, Ask = 07, Asking = 077, Sketch = 076, Squire = 074, Cases = 700, Gate = 71, Egad = 71, Kite = 71, Quote = 71. This first "g" is hard (7) and the second "g" is soft (6) in Ganges. The "g" in Governor is hard and in General is soft in Governor-General. The first "c" is hard (7) and the second "c" is soft (0) in accident, = 70121, Haggle = 75, Acme = 73, Cannon = 722, Guitar = 714, Squeak = 077.

WE REPRESENT 8 BY "F" AND "V," BECAUSE YOU CAN IMAGINE A WRITTEN "F" TO BE AN ELONGATED 8, AND "V" IS A COGNATE OF "F," hence equivalent to the same number; as, Wife = 8, Wove = 8. The vowels, although used in the words, have no figure values, neither do "w," "y," or "h," when not a part of "sh" or "ch." Safe = 08, Save = 08, Ivy = 8, Hize = 8, Foe = 8, Dive = 18, Edify = 18, Tiff = 18, Thief = 18, Thieve = 18, Tough = 18, Enough = 28, Navy = 28, Knave = 28, Nefarious = 2840, Muff = 38, Move = 38, Ruff = 48, Roof = 48, Rough = 48, Review = 48, Alive = 58, Aloof = 58, Leave = 58, Leaf = 58, Alpha = 58, Sheaf = 68, Chaff = 68, Jove = 68, Shave = 68, Shove = 68, Cave = 78, Calf = 78, Gave = 78, Cough = 78, Quaff = 78, Quiver = 784, Five = 88, Fife = 88, Feoff = 88, Fifth = 881, Vivid = 881, Faces = 800.

9 IS REPRESENTED BY "B" AND "P." [Nine] Beautiful Peacocks would indicate the figure value of 9, in the ini-

1. Why is 5 represented by "L"? 2. By what is 6 represented? 3. Through the initial consonants of what sentence, not considering the six in brackets? 4. Where do we find the letter equivalents of 7, not regarding the seven in brackets? 5. What termination do we also use to express 7? 6. If the termination "ng" represent 7, what is the figure value of Singing? 7. Give the figure value of Hong-kong. 8. By what two consonants do we represent 8? 9. Why? 10. Give the figure value of the vowels in these illustrations, if you find they have any value.

tial consonants of "beautiful peacocks." Bee = 9, and the two vowels "ee" have no figure value. Bow = 9, Pie = 9, Pew = 9, Pay = 9, Ape = 9, Up = 9, By = 9, Base = 90, Bias = 90, Pose = 90, Pause = 90, Boat = 91, Both = 91, Bead = 91, Bean = 92, Bone = 92, Pot = 91, Path = 91, Pad = 91, Pine = 92, Beam = 93, Bar = 94, Bale = 95, Badge = 96, Bush = 96, Buff = 98, Baby = 99, Poem = 93, Pair = 94, Pile = 95, Push = 96, Page = 96, Puff = 98, Pipe = 99, Pope = 99, Pack = 97.

The representatives of the figures from 0 up to 9 are given in the initial consonants of the ten subsequent phrases following the figures:—

"Sidney Merlish gave a bow" * = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.	
Nought	(0) So Zealous Ceases.
One	(1) Tankard this Day.
Two	(2) Nostrils. (or 2 Nations. Ex. 35, 10; 37, 22.)
Three	(3) Meals. (or 3 Mighty Men. 2 Sam. 23.)
Four	(4) Roads. (or 4 Rings. Ex. 25, 26; 38, 5.)
Five	(5) Loaves. (Matt. 14; Mark 6; Luke 9.)
Six	(6) Shy Jewesses Chose George.
Seven	(7) Great Kings Came Quarrelling.
Eight	(8) Fold Value. (or 8 Varsity Fellows.)
Nine	(9) Pin Bowling.

This explanation is a help to remember the *letter-values of the figures*. Another way to fix these values in mind for permanent use is to turn *words into figures*, as in going through an ordinary spelling-book. This practice quickly enables you to *turn figures into words*, and to translate them back into figures. Facility will be attained long before the lessons are completed. But this lesson, *thoroughly* studied, will secure the needful proficiency.

1. By what two consonants is the figure value of 9 represented? 2. What are represented in the initial consonants of the ten Phrases here given, not including, of course, the words before the figures in brackets? 3. Are these sentences of any help in remembering the letter values of the figures? 4. What other way is there to fix these values in mind? 5. What does this practice enable you to do?

\* Gouraud said: "Satan may relish coffee pie."



## RULES.

*Not to be glanced at or skipped, but to be carefully studied.*

- 1.—Two consonants of the *same kind* with no vowel between, provided they have the *same sound*, are treated as one consonant, as “ll” = 5, “nn” = 2, “rr” = 4, “dd” = 1, &c. The first two consonants have different values in the word “accident” = 70121.
- 2.—All *silent consonants* are *disregarded*, as “b” in “Lamb” = 53, “Comb” = 73, or in “Tomb” = 13. “Ph” and *h* in “Phtisic” = 107; “gh” in Bought = 91; “k” in Know = 2; “gh” in Neighbours = 2940; “l” in Could = 71, or in Psalm = 03.
- 3.—The *equivalents* of the figure-consonants have the *same value* as those consonants themselves, as “gh” in “Tough” = 18, “gh” in Enough = 28; “gh” in Rough = 48. “Phrase” = 840, “Nymph” = 238, “Lock” = 57. “N” sometimes sounds like ng, and so represents 7, as in “Bank” (977) which *sounds* like “bang” (not “ban”) with a “k” after it; ng are not always taken together as one sound and translated into 7, but when they sound separately are treated separately, as in engage = 276\*. X = gs or ks = 70, as in example = 70395; in oxygen = 7062. Sometimes X = Z, as in Xerxes = 04700,

1. When will facility be attained? 2. Are these rules to be carefully studied? 3. Repeat the first rule. 4. What value is given to silent consonants? 5. What have the same value as the consonants themselves? 6. What does the consonant “N” sometimes sound like? 7. What value is assigned to it in such cases? 8. What is the consonant X equal to?

\* Pupils who have a poor ear for sounds sometimes fail to note when “n” sounds like “ng” and so means 7 instead of 2. Let them study the words “ringer” (474), “linger” (5774), and “ginger” (6264). The first syllable of “linger” rhymes with the first of “ringer” and not with the first of “ginger;” it rhymes with “ring” and not with “gin;” and if the first syllable of “ringer” is 47, the first of “linger” must be 57; but the second syllable of “linger” is “ger,” while the second syllable of “ringer” is only “er.” So “linger” is pronounced as if spelled “ling-ger,” the “n” sounds like “ng.” “Ringer is pronounced “ring-er,” and “ginger” as if spelled “gin-ger.”

- and then it = 0. Ci and ti, and sometimes si and sci = sh, as gracious = 7460; Nation = 262; Conscience = 72620. Dge = j, as in Judge = 66. Tch = ch = 6, as in ditch = 16 (it rhymes with rich = 46). Ch sometimes = k, as in Christmas = 74030. S and z sometimes = zh, which is the cognate equivalent of sh = 6, as in pleasure = 9564, and in Crozier = 7464. Acquiesce = 70, excrescence = 7074020.
- 4.—No notice is taken of any *vowel* or of w (war = 4) or y (yoke = 7), or of h (the = 1) except as part of ch or sh. Words like Weigh, Whey, &c., having no figure values, are never counted. If one word ends with, and the next word begins with, the *same consonant*, they are both reckoned, as That Toad = 1111.

## HOW TO DEAL WITH DECIMAL FRACTIONS.

The pupil may skip the next paragraph if not wishing to deal with decimals.

[As a rule, it is better not to use words *beginning* with S, except to translate *decimals* and *fractions*, and Date-words where a *doubt* might otherwise arise (unless in a phrase like “To see Jiji,” “delay a spy,” &c.); and in case of the *decimals*, S, as the *initial* letter, means (not 0, but) the decimal point. (1) If there is an integer followed by a decimal, two separate words are used; the decimal-word begins with S, thus: 945<sup>5</sup>51 = barley sold; 71<sup>3</sup>412 = “good Samaritan.” (2) If it is a decimal by itself, the S indicates the decimal point only; <sup>0</sup>01 = society; <sup>0</sup>02 = Susan; <sup>0</sup>94 = sparrow. (3) If it is a vulgar fraction, the words translating numerator and denominator begin with

1. Do we ever take any notice of a vowel? 2. Are there any words which do not have a figure value, and if so, what are they? 3. When do we use the letter “S” in dealing with decimals? 4. When does “S” indicate the decimal point? 5. When are two separate words used? 6. In such cases, with what does the decimal word begin? 7. In case of a vulgar fraction, what words begin with “S”? 8. Are the S’s then counted? 9. Which word comes first? 10. How may we deal with date-words which express the time of events before the Christian Era? 11. After?



S, and the S's are not counted, the numerator-word coming first, and the denominator-word last; thus  $\frac{5}{12}$  = sell Satan.]

As to Date-words, just *before* the Christian Era you may use an initial S [or the vowel A, or any other vowel], as, Stir would mean 14 B.C. [Before Christ]; and, of course, Tower would mean 14 A.D. [for *Anno Domini*—in the year of our Lord]; Soar = 4 B.C., and Rue = 4 A.D. In a Date-word like Trial, to express 145 B.C., no doubt could arise; if the Pupil knows the contemporary history, he could not imagine it could be 290 later, or 145 A. D. If he fears he might not remember that it was B.C. he could remove all doubt by using the word Stroll, or any other word which translates 145 and begins with S.

For convenience of reference I now give the figure Alphabet tabulated.

o	1	2	3	4	5	6	7	8	9
S	t	n	m	r	l	sh	g <sup>hard</sup>	f	b
	th					j	k	v	p
Z	d					ch	c <sup>hard</sup>		
C <sup>soft</sup>						g <sup>soft</sup>	q		
							ng		

If the pupil has mastered the Figure Alphabet he will proceed with the greatest satisfaction and profit. If he has not mastered it, let him carefully review the foregoing

1. Write the Figure Alphabet from memory. 2. If the pupil has not thoroughly mastered this alphabet, what is required of him? 3. If the pupil must review the foregoing six pages, let him find words himself which spell the figures. 4. Is not such a course much better than merely to read over the examples and illustrations which I give? 5. Is it easy to find words with which to translate dates and numbers?

pages of this chapter, and then he can advance with the assurance of meeting no difficulties.

#### HOW TO FIND WORDS WITH WHICH TO TRANSLATE DATES AND NUMBERS.

It is a simple and easy process; knowing exactly what consonants are used to represent each of the numbers, you simply write at the side of the numbers to be turned into words the consonants which stand for them; and using any vowels you please, you find out by experimenting what words can translate the figures. Suppose you wish to find out what words will translate the date of the settlement of Jamestown, Va., 1607. You place the figures under each other as below, and then you place at the right hand of each figure the consonants which translate it.

1 = t, th, d.

6 = sh, j, ch, g soft (as in gem).

o = s, z, c soft (as in cease).

7 = g hard, k, c hard, q, and ng.

By experimenting you soon find the following phrases will represent 1607; as, "A Dutch Song," "Dash a Sack," "To wash a Sock," "The Choosing," "The Chasing," "Touches a Key," &c.

Try the date of the adoption of the Constitution of the United States, 1787. Writing down the numbers as before, you place t, th, d, opposite 1; g hard, k, c hard, q, ng, opposite 7; f and v, opposite 8; g hard, k, c hard, q, and ng, opposite 7; and then you soon find translating words, as follows: "To give a Key," "The giving," "The quaffing," "The Coughing," &c.

In all cases you must carefully comply with the rules

1. What would be your method of procedure? 2. What must be done in all cases? 3. What will a little practice enable you to do? 4. What must be done to secure accuracy at first? 5. Deal with an original date in the way indicated here. 6. In dealing with the date of the foundation of Yale College, would the phrase "taxes due" express 1701? 7. If not, why? 8. Can you translate into a word or phrase the date of your own birth? 9. Translate into words or phrases the birth and death dates of some of the historic characters which you admire most. 10. Keep a record of these words or phrases for future examination.



and explanations heretofore given. A little practice will enable you to dispense with writing down the figures and the consonants which represent them; but at first pains must be taken in the above way to secure accuracy.

Try 1636, the date of the founding of Harvard College: You obtain "Dash a midge," "The chum age," "Teach much," "To show my joy," &c.

The founding of Yale College in 1701 gives: "Took a seat," "The cost," "The quest," "The cast," "A tax due," or "Took a city," &c.

Sometimes the first consonants only of words are used. Comenius, Educational Reformer (things before words, pictured illustrations, &c.) and Moravian Bishop, was born 1592: or (1) Things (5) Well (9) Pictured (2) Now. He died 1671; or A (1) Teaching (6) Churchman (7) Gave (1) Out.

#### SYNTHETIC TRANSLATION OF FIGURES.

*When the word or phrase used to translate figures sustains no relation of In., Ex., or Con., to the event itself, that word or phrase is synthetic and is dealt with hereafter.*

Nearly all the translating words given in this section so far are synthetic. "The coughing," sustains no relation of In., Ex., or Con., to the adoption of the Constitution of the U. S., and is therefore relegated to the next chapter for the method of cementing it to that event if we were obliged to use that phrase.

Synthesis will be sometimes hereafter resorted to to connect in our minds an event to its date. When this will be necessary, the sequel will show.

#### ANALYTIC DATE AND NUMBER WORDS.

*When the word or phrase which translates the date or number sustains the relation of In., Ex., or Con., to the event or fact itself, that word or phrase is analytic, and is memorised by merely assimilating that relation.*

Different ways of expressing figures by words, phrases, or sentences that are self-connected to the fact or event will now be given.

1. SOMETIMES ALL THE SOUNDED CONSONANTS OF A WORD OR PHRASE ARE USED.

Room-mates in college are called "chums." Harvard College—the oldest Collegiate Institution in America—really introduced "the chum age" in America. The formula for the date of its foundation in 1636 may be thus expressed—Harvard College founded; *the chum age* [1636].

The annual production of iron in America is said to be *six million four hundred and twenty-seven thousand, one hundred and forty-eight tons*. These figures may be analytically expressed thus: "Huge iron we get rough" [6,427,148 tons].

The great wall of China is 1,250 miles long. This may be expressed thus: "They now a high Wall see" [1250].

A characteristic of Herbert Spencer is the accuracy of his definitions. His birth, in 1820, may be indicated by this significant phrase: "He Defines" [1820].

2. SOMETIMES ONLY THE INITIAL CONSONANTS OF THE WORDS OR PHRASES OR SENTENCES ARE USED.

Caius Julius Cæsar was born 100 B.C., and he died 44 B.C. His birth may be expressed by the phrase, (1) "The (o) Stripling (o) Cæsar;" and his death by a phrase which declares that his death was the remote result of his crossing the Rubicon, thus: (4) "Rubicon's (4) Revenge."

Marcus Tullius Cicero was born 106 B.C., and he died 43 B.C. His birth: (1) "Tullius (o) Cicero's (6) Childhood." His death: (4) "Remove (3) Marcus." [In allusion to the order for his death.]

The height of Egypt's greatest pyramid is 479 feet, or (4) "World's (7) Greatest (9) Pyramid."

The city of Melbourne was named after Lord Melbourne in 1837, or (3) "Melbourne (7) Christened."

It will be convenient to consider all compound names of cities or places as if they were single words, using only the initial consonant of the first of the names, as (2) New-York, or (2) New-Amsterdam, or (2) United-States, etc.

New York City [at first known as New Amsterdam] was settled by the Dutch in 1626, or New York founded: (1) "Dutchmen (6) Chose (2) New-Amsterdam (6) Joyfully."

Virginia was settled at Jamestown in 1607. This date



may be analytically expressed thus : (1) "Then (6) Jamestown (o) Was (7) Colonized."

The exact population of the United States, according to the census of 1880, may be expressed through the initial consonants of the following sentence : "A (5) Late (o) Census, (1) 'Eighty's' (8) Furnishes (9) Precise (2) United-States (o) Sovereign (9) Population," or 50,189,209.

The exact population of the United States declared in June, 1890, commonly called the census of "ninety," was stated as sixty-two millions six hundred and twenty-two thousand two hundred and fifty, or "A (6) General (2) Enumeration (6) which (2) Undoubtedly (2) Indicates (2) 'Ninety's' (5) Large (o) Census." 62,622,250, or for the last three figures we could say : (2) United States' (5) Large (o) Census.

Before the close of the year 1890 an official census of the Whites and Indians on the Indian Reservations added 243,875 to the above number, making the total population of the United States in 1890, 62,866,125. A (6) General (2) Enumeration (8) Officially (6) Shows (6) Just (1) The (2) Number (5) Living. Now (1895) it is computed to be 67,000,000 [to express the round numbers of millions, we could say, (6) Just (7) Government or (6) Charming (7) Country].

The birth of Herbert Spencer, in 1820, may be expressed thus : (1) Advent (8) of (2) Infant (o) Spencer, or (1) The (8) Future (2) "Unknowable" (o) Spencer, (2) Infant (o) Spencer. Several different ways of expressing the same date will be given in a few cases.

It is often convenient for a teacher, and others, to recall the number of a page of a book in which a citation is found. In Prof. William James's Psychology Abridged for Schools and Colleges, the chapter on Habit begins on p. 134, or "(1) The (3) Mould (4) Rules;" the chapter on Will begins on p. 415 : "A (4) Resolve (1) Denotes (5) Will;" the chapter on Attention begins on p. 217, or "(2) Notice (1) Attention's (7) Qualities;" the chapter on Association begins on p. 253, or (2) "Now (5) Help (3) Memory;" and that on Memory on p. 287, or "(2) Intellect (8) Forbids (7) Cramming." Prof. Loissette's New York Office is in

Fifth Avenue at No. 237, or "A (2) New (3) Memory (7) Given," or "A (2) New (3) Memory (7) Acquired." His London Office was formerly at 37 [a memory gained] New Oxford Street. It is now at 200 Regent Street, London [(2) Now (o) Secure (o) Assimilation].

3. SOMETIMES THE FIRST TWO CONSONANTS OF A WORD ARE USED.

Sheridan's famous ride occurred in 1864. In dates of the last and present century it is usual to indicate the last two figures of the date. 64, therefore, is all we need express. Formula : Sheridan's ride in 1864—(64) Cheers ; or, (64) Sheridan. The Pennsylvania Whisky Rebellion took place in 1794 ; or, (94) Brewery.

4. SOMETIMES THE FIRST AND LAST CONSONANTS OF A WORD ARE USED, AND SOMETIMES TWO CONSONANTS IN THE MIDDLE OF A WORD.

These devices are rarely resorted to, but if ever used, they must be thoroughly assimilated. Battle of Waterloo was fought in 1815 ; 15 may be found in the *t* and *l* of (15) Waterloo. Herbert Spencer was born, as we have already seen, in 1820. The 20 may be found in the *n* and *c* of Spencer.

5. Never, on any account, use the same word to express two different dates ; as, its first two consonants for one date and its two middle, or its first and last consonants, to express another date.

6. Never fail to carefully analyse the relations between the fact or event and its date or number word.

SUBJECT TO THE EXCEPTIONS HEREAFTER NAMED, ALL DATES AND NUMBERS SHOULD BE EXACTLY EXPRESSED IN THE DATE OR NUMBER WORDS.

Alexander the Great was born 356 B.C. and died in a drunken debauch 323 B.C. His birth: (3) Macedonia's (5) Alexander a (6) Child. His death : A (3) Macedonian's (2) Inebriation (3) Mortal. Several mnemonists of the old school have for the past forty years used the phrase "Rise, Sire," to express the date of the creation of the world, which according to the accepted biblical chronology took place 4004 B.C. But that phrase, proper enough in the mouths of the sons of Noah, when they found their father lying on the ground in a fit of intoxication, could have no



pertinence when applied to the Creator, to the creation in general, or to the creation of this world in particular. A self-connected phrase would, however, express this date as follows: "Creation of the World: (4) Earth (o) Started (o) Swiftly (4) Rotating."

*First Exception.*—From A.D. 1000 to A.D. 1700 the last three figures of the date should be expressed in the date words. *Mars* expresses 340 and could be used to indicate the invention of cannon in (1) 340 by one who knew that Mars was the name of the god of war in classic mythology. The formula would be: "Invention of cannon: (1) 340 *Mars*." But this term would have no mnemonic significance to one who knows the word Mars as meaning only one of the planets. Hence the danger—ever to be avoided—of using classical allusions in teaching the average student. A (3) *martial* (4) *Organ* (o) *Sways*, or *murderous artillery started*.

*Second Exception.*—From A.D. 1700 to the present moment, the last two figures must be expressed in the date words. Many examples will hereafter illustrate this exception. In very rare cases, the expression of the last figure in the date word will suffice. We know that Ralph Waldo Emerson and Oliver Wendell Holmes [author of the *Autocrat of the Breakfast Table*] were born towards the beginning of this century, the former in 1803 and the latter in 1809. The following formulas would give the date of their birth: Ralph Waldo (180)3 *Emerson*; Oliver Wendell Holmes (180)9 "*Breakfast*."

*Third Exception.*—In cases where there is no practical utility in comparing one very large number with another, as in the case of the distances of the planets from the sun, mere round numbers may suffice, yet astronomers must know such numbers with exactness. But in regard to all mundane affairs, the pupil must throw off the character of scholar and assume the license of children, if he attempts to express large numbers, as of populations, &c., by "guessing," or, what is the same thing, by only giving round numbers. The Brooklyn Suspension Bridge is 5989 feet long, and the Forth Bridge, which crosses the Firth of Forth in Scotland, is 8296 feet long. Now, instead of saying that the former is *about* 5000 feet long, why not say 5989 feet

long? [(5) *Long* (9) *Bridge* (8) *Of* (9) *Brooklyn*.] And instead of saying that the latter is *about or somewhere in the neighbourhood* of 8000 feet long, why not be exact and say 8296 feet long? [(8) *Forth's* (2) *New* (9) *Bridge* (6) *Shown*. It was completed in 1890.]

No one who has not had experience in dealing with thousands of poor memories, as I have had, can realise the fact that in most cases of poor memories *the facts themselves are often possessed*, but are mostly *unrecalable* when wanted. I have tried to teach pupils how to find analytic date or number words *without any previous training in In., Ex., and Con.*, and 99 of all such attempts have always been failures. The 100th case, which succeeded, only confirmed the rule. On the other hand, I have always found that these failures become successes after a thorough practical training in *In., Ex., and Con.*, such as I have already given. In fact, I never had a pupil who became proficient in the use of *In., Ex., and Con.*, who did not arrive at the use of analytic number words without any specific directions from me. But I think, on the whole, that it is the better way to *combine* direct and specific training in analytic number words, with a previous exhaustive general drill in *In., Ex., and Con.*

The rules hereafter given must be carefully studied and every example painstakingly examined. After studying my formulas let the pupil endeavour in *each case* to find a better one himself. If the pupil acts on my advice, he will know how to be always *sure* to think of the needful related or including facts for finding analytic date words, phrases, or sentences.

The different processes for dealing with dates or numbers may be classified as follows:—

(1) *Cases where the name of the person, fact, or event gives its date*; as, Birth of the colored orator and politician Frederick Douglass (18)17. This kind of a case is of rare occurrence, and it would be like the charlatany which has disgraced many former memory systems to allow the pupil to suppose that it frequently happens. A glance at the event, word, or description will quickly tell him if it represents the necessary figures, and if it do not, he must resort to an analytic date word, or phrase, or sentence, whichever he finds most suitable for him. No one figure alphabet con-