

Historic School
Flowerfield School
Arithmetic Lesson

Strike while the iron is hot.

Introduction to the study of Arithmetic
From: Primary Arithmetic, McLellan and Ames, 1898.

While number work in the first grade may be largely incidental, it ought not to be accidental. The teacher should have a clear conception of the work to be done, and of the order and method by which the child may step by step reach the desired end. When the child enters school the number sense is alert, he is, roughly speaking, in the counting stage of development. Upon the principle "strike while the iron is hot," this counting power should at once be used for further growth by applying it to more definite measurement. Such application arouses fresh interest in numbers, and is in a high degree educative. On this point Dr. Dewey says, "Unless there is to be arrested development when the child enters school, some function must be found with reference to which he may utilize his ability to count—the number sense becomes vitalized and truly educative at this point by being largely directed towards the definition of values in the form of measurement."

Historic School Arithmetic Lesson

Lesson Time: 25 minutes

Objectives: Students will compare the mental arithmetic focus of the early schools with the wide variety of activities available in modern times.

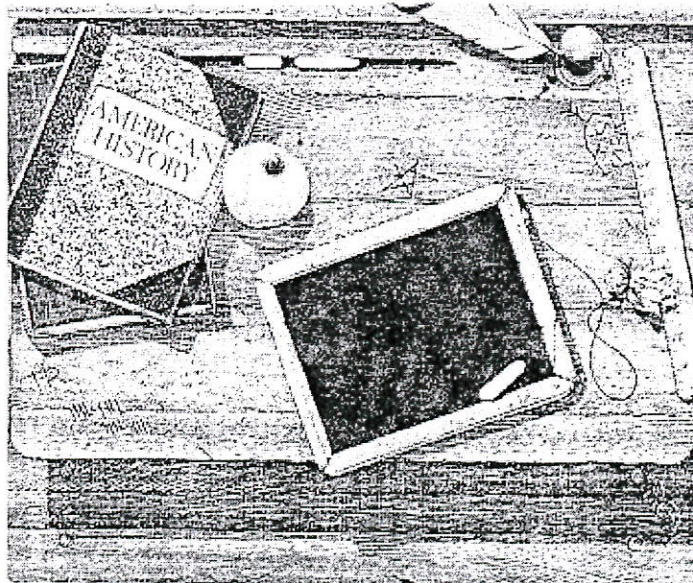
Background Information

According to John H. French in Common School Arithmetic, 1875, each new process or method of computation is introduced inductively, and the Principles which follow are evident sequents of the Inductions. The learner is required to make practical applications of the Principles in solving a number of problems, thus giving him a thorough comprehension of the Principles upon which the practical calculations of after life are based. Rules are then presented, which are uniformly based upon the Principles previously established.

George Hull, in 1894, wrote “It is evident to every thoughtful instructor of mathematics that a great many processes are taught in arithmetic today which neither furnish the mind with useful knowledge nor develop in it a high degree of culture.” Hull’s book contained a large number of exercises in calculation and concrete problems.

Sample lessons from Hull’s book are reproduced in this guide.

He who copies, does not learn.



* every one who ciphers, will of course have a slate. Indeed, it is desirable that every scholar in school, even to the very youngest, should be furnished with a small slate, so that when the little fellows have learned their lessons, they may busy themselves in writing and drawing various familiar objects. *Idleness* in school is the parent of *mischief*, and *employment* is the best antidote against *disobedience*.

Historic School Arithmetic activities

1. The teacher will conduct oral drills, concentrating on addition, subtraction, and multiplication facts (two's, five's, and ten's). The teacher will ask the question, the student will stand, repeat the question, and respond. The teacher will acknowledge the answer, and the student will return to his seat.
2. Slates will be used to respond to dictated problems.
3. Story problems emphasizing money will be solved.

UNITED STATES MONEY.

7.—1. Name the coin of least value in United States money.

2. How many cents in a dollar?

3. How many cents in a half dollar?

4. How many cents in a quarter dollar?

The dollar is indicated by the symbol \$, called the *dollar sign*, which is written before the number of dollars. Thus, two dollars is written \$2, or \$2.00.

5. Write four dollars both ways, using the dollar sign.

6. Write five dollars. Six dollars. Ten dollars.

Fifteen dollars and twenty-five cents is written \$15.25. The dot between the 5 and the 2 is called the *decimal point*. The two figures on the right of the decimal point express cents, and the figures on the left express dollars.

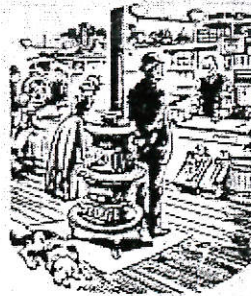
7. How many places do cents occupy?

Read—

| 8. | 9. | 10. | 11. |
|--------|---------|----------|-----------|
| \$1.25 | \$10.30 | \$125.63 | \$118.07 |
| \$2.50 | \$62.75 | \$245.75 | \$200.50 |
| \$5.00 | \$85.25 | \$405.40 | \$1000.00 |
| \$8.75 | \$50.00 | \$714.02 | \$9025.75 |

Write in figures—

12. 8 dollars and 25 cents.
13. 16 dollars and 50 cents.
14. 20 dollars and 75 cents.
15. 50 dollars and 85 cents.
16. 84 dollars and 5 cents.
17. 125 dollars and 6 cents.
18. 200 dollars and 4 cents.
19. 100 dollars and 1 cent.
20. 400 dollars and 33 cents.
21. 1200 dollars and 62 cents.
22. One hundred and five dollars and five cents.
23. Two thousand dollars and eight cents.



SUBTRACTION

INDUCTIVE EXERCISES.

62. When no figure of the subtrahend has a greater value than the corresponding figure of the minuend.

1. A merchant had 15 barrels of flour, and sold 4 of them. How many had he left?

ANALYSIS.—Since he had 15 barrels of flour and sold 4 of them, he had left the difference between 15 barrels and 4 barrels, which is 11 barrels.

2. Alice bought 18 cakes, and ate 6 of them. How many had she left?

3. James saw 17 birds on a tree, but 7 soon flew away. How many remained?

4. If a man earns \$19 a week, and spends \$9, how much will he save each week?

5. Lewis owed his brother \$7, and paid him \$3. How much did he still owe him?

6. Eliza had 16 plums, but gave 5 to her father. How many had she left?

7. James had \$12, and lost \$2. How many had he left?

8. If John is 19 years old, and Maggie 13, how much younger than John is Maggie?

9. In the same shop 6 boys and 17 men work. How many more men than boys are there in the shop?

10. There were 18 girls and 7 boys in a class. How many more girls than boys were there?

11. Laura had 14 cents, and lost 3 cents. How many had she then?

12. Henry solved 19 examples, and George solved 8. How many more did Henry solve than George?

13. William wrote 16 lines in his copy-book, and Peter wrote 5 lines less. How many did Peter write?

ADDITION

ADDITION.

| | | | | | |
|-----|-------|-------|-------|-------|-------|
| Add | 4. | 5. | 6. | 7. | 8. |
| | 58 | 82 | 76 | 94 | 49 |
| | + 75 | + 49 | + 88 | + 57 | + 58 |
| | ----- | ----- | ----- | ----- | ----- |
| | 133 | 131 | 164 | 151 | 107 |
| | 9. | 10. | 11. | 12. | 13. |
| | 42 | 36 | 63 | 42 | 81 |
| | + 87 | + 57 | + 89 | + 59 | + 17 |
| | ----- | ----- | ----- | ----- | ----- |
| | 129 | 93 | 152 | 101 | 98 |
| | 15. | 16. | 17. | 18. | 19. |
| | 713 | 424 | 763 | 708 | 572 |
| | + 254 | + 653 | + 415 | + 592 | + 643 |
| | ----- | ----- | ----- | ----- | ----- |
| | 967 | 1077 | 1178 | 1300 | 1215 |
| | 21. | 22. | 23. | 24. | 25. |
| | 364 | 518 | 461 | 167 | 555 |
| | + 582 | + 819 | + 895 | + 845 | + 666 |
| | ----- | ----- | ----- | ----- | ----- |
| | 946 | 1337 | 1356 | 1012 | 1221 |
| | 432 | 345 | 604 | 216 | 888 |
| | ----- | ----- | ----- | ----- | ----- |
| | 864 | 690 | 820 | 1008 | 1224 |

1. A grocer sold 8 pounds of sugar to one man and 7 pounds to another. How many pounds did he sell to both?

ANALYSIS.—Since he sold 8 pounds to one man and 7 pounds to another, to both he sold the sum of 8 pounds and 7 pounds, which is 15 pounds.

2. A man rode 7 miles the first hour and 6 miles the second hour. How far did he ride in the two hours?

17. What is the sum of eighteen dollars, five cents; fifty-one dollars, fifty-one cents; ten dollars, ten cents; eighteen dollars, twenty-four cents; thirty-five dollars, four cents?

18. A owns 345 sheep, B owns 295, C owns 436, D owns 524. How many sheep do all own?

Preparatory Activities for Arithmetic

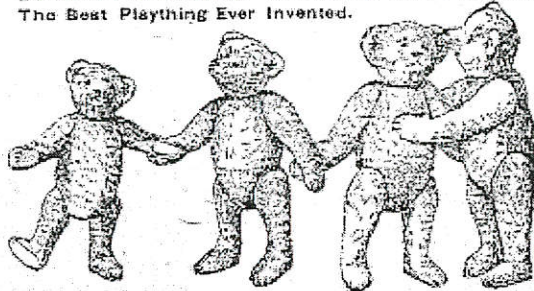
1. Teach children the proper procedure for use of slates for arithmetic. Write the problem on the slate using primarily the left side of it. After solving the problem, write the answer on the right side of the slate at the top. Erase the work leaving only the answer on the right side of the slate. Then continue with the next problem. If slates are not available, dark construction paper may be used. Students should bring a slate cloth (old soft cloth or sock works well).
2. Share with the students examples of problems taken from the old arithmetic books. Notice the reliance on story problems and computation. Students may become aware that the story problems are of a practical application nature—appropriate to the workday needs of people of that time period.
3. Have students scrutinize their own math text and class activities for its reflection of current society. Note use of technology, such as calculators and computers, and subject matter of story problems. Have students discuss the relevance of mathematics instruction in modern society.
4. Familiarize students with techniques of oral drills. Students will be expected to stand, repeat the question, and respond with their answer beside their seat.

Follow-up Activities for Arithmetic

1. Encourage students to give their impressions of the arithmetic experience. Ask them to compare and contrast their pioneer activities to modern day classroom techniques, such as learning centers, games, and computers. Students can extend the discussion to consider mathematics skills which may be needed in the future.
2. Maintain the pioneer techniques, including mental arithmetic and using slates, to enrich mathematics instruction throughout the year.
3. Students can compare costs from the 1908 Sears and Roebuck catalog with modern day catalogs. Have students cut modern catalogs and create story problems using the supplied information.

He who multiplies riches multiplies cares.

"TEDDY BEARS" ARE ALL THE RAGE
The Best Plaything Ever Invented.



THESE BEARS ARE THE MOST SENSIBLE AND SERVICEABLE

days ever put before the public. Not a doll or campaign article, but something which has come to stay as a great asset. An article which will delight your children and even yourself if great pleasure and lasting pleasure. Made of the most quality material and bear heads, they come in remarkable like little dolls. They are full bodied and you receive countless different and sizes (from 12 inches to 24 inches). Each bear has a natural voice, produced by special mechanism on the front of body, and they are practically indestructible. We also have bears in four sizes. Natural complexion cover only. The larger the size the better proportioned are the bears. Order one of these bears at once for your boy or girl, and you will find that no toy which you could select would give them more actual pleasure and entertainment.

| No. | Size | Shipping Wt. | Price |
|----------|--------------------------|--------------|--------|
| 18K21358 | 10 inches high 16 inches | 10 ounces | \$0.75 |
| 18K21359 | 12 inches high 18 inches | 1 1/2 ounces | 1.10 |
| 18K21360 | 14 inches high 18 inches | 1 7/8 ounces | 1.25 |
| 18K21361 | 16 inches high 24 inches | 2 3/4 ounces | 2.30 |

Use these illustrations from the 1908 Sears Catalogue to write story problems or to compare prices. Another fun game is to have a pretend auction. Make a list of the items and their prices. When you reproduce these pages to show the students, cut the prices off. The "auctioneer" shows the object and reads parts of the descriptions. Give a real sales pitch. When everyone has had a chance to see the item, start the bidding. Write down the bids. Then announce the actual price. Use math skills to see who was the closest. The object is to buy the item at the original 1908 price.

12 bars for 42c



3 cans 63c



6 cans 45c

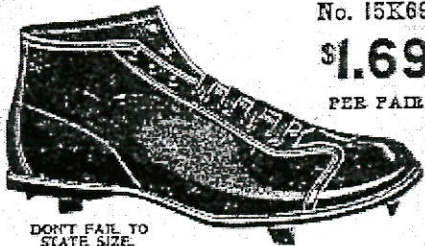


\$43⁹⁵

DESCRIPTION OF No. 11K619

SEAT—Georgia drop back; spring cushions, 25 1/2 inches; padded and lined seat ends; double bar nickel arm rails; upholstered in heavy dark green body cloth or extra grade monogrammed leather. BODY—20 inches wide by 35 inches long; hard wood frame; plain black style; hood on rear of body; carpet; toe carpet on front panel; patent leather trim. TOP—Two and one-half bow; leather quarters and back stays; back curtain lined; heavy sign curtains; wool lined head lining; patent curtain fasteners; two roll-up straps; storm screen. GEARS—16-16-inch axle; long distance dual and mudproof bell contact; hickory axle caps; long easy riding wide springs; no track. WHEELS—38 inches front and 42 inches rear; Sarven's patent style; 3/4-inch screwed rim; 3/4-inch oval edge steel tires, full bolted. SHAFTS—Hickory shafts, trimmed with leather 2 1/2 inches back from tip, flat straps; double bracket; quick shifting shaft supports. PAINTING—End plain black; rest, wheels and chain. Brewster rear screen, striped. TRACK—4 feet 6 inches or 5 feet inches. State width desired. No. 11K619 Price, complete with double braided shafts and steel tires. \$43.95. Shipped from Evansville, Indiana.

"WORLD'S CHAMPION" BASEBALL SHOES.



No. 15K697
\$1.69
PER PAIR

DON'T FAIL TO STATE SIZE.

SEE OUR BASEBALL UNIFORM CATALOGUE.

At this price every club can afford to have them. Made from a good selection of calf stock; best of oak sole leather, fitted with genuine leather toe and heel plates. Sizes and half sizes, 5 to 11. Full weight only. Weight averages 28 ounces. Price, ten pairs for \$15.65

The Defiance Coaster Wagon.



\$2.95

No. 19K1721 The Defiance Improved Coaster Wagon, fitted with brake, so by pressing upon the lever of brake the boy can control the speed of wagon while coasting. Body constructed of well seasoned hardwood, with detachable sides and ends. Gear of No. 1 selected steel, securely braced to body by 7-32x 1/2-inch round steel iron. 8-10-inch round steel axle. Steering gear, as shown in illustration, of heavy malleable iron and hardwood. Wheels are extra heavy, with shaved spokes, rims 3 1/2-inch bent rock rim, tires 3/4-inch rough steel welded and sprung on. Strong malleable iron hub caps and levers. Body and gear varnished on a natural wood, decorated in black and red. Wheels painted in bright red. Length, 30 inches; width, 16 inches; height, 16 inches. Shipping weight, about 35 pounds. Price..... **\$2.95**

Our Big Bargain Cabinet



\$5.45

No. 1K512 This Cabinet is an illustration of the wonderful saving to our customers, not only in this article, but in every other that we offer. It is made of white maple, natural finish, with a white basswood table top. Size, 24x46 inches. Height of entire cabinet, 50 inches. It has two dustproof four bins with wooden bottoms, two drawers partitioned for cutlery, and a removable carving and reading board. Lower part of legs are detachable and plated inside drawers for convenience in shipping. Top has a double paneled back, a roomy top shelf, below which are seven drawers for holding various commodities used in the kitchen. We furnish the base of this cabinet without the top section if desired. Order one of our cabinets, place it beside any other cabinet offered at anywhere near our price, and if you do not find our cabinet double the value of the other, return it to us and we will cheerfully refund your purchase price and transportation charges. Shipped direct from factory in Southern Michigan.

Price, complete cabinet, shipping weight, 135 pounds..... **\$5.45**
 Price, without top section, shipping weight, 85 pounds..... **3.65**

While we are confident that it will prove far superior to the price, we do not recommend it. At the slight difference in price, order one of the better grade maple cabinets which you will find a far better investment and which difference in price is actually represented in the cost of material and labor. Shipping weight, 85 pounds. Price..... **\$2.95**

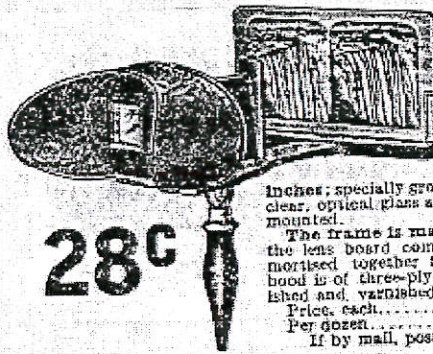
Exceptionally Good Style, Trimmed with Cherries and Ribbon, \$3.25.



\$3.25

No. 18K15380 A handsome short front, mushroom style, beautifully executed on a wire frame. The entire fringe is covered by hand with the new Maline silk finished hair braid in white, which is applied in folds around the upper edge of the brim. The trimming of the hat consists of an imported wreath of cherries, laid on from the front and down to the right side of the hat. Beautiful folds of finest white satin ribbon are placed on the left side front, and the entire brim is finished with folds of the same ribbon. This hat is very handsome as described in white with natural cherry wreath, but can also be ordered in black, light blue, brown or navy, all with natural cherry wreath and ribbon to match. Price..... **\$3.25**

This Standard Stereoscope, 28 Cents.



28c

No. 20K2500 This Standard Stereoscope is a first class instrument, guaranteed to give perfect satisfaction, and is exactly the same quality that is sold all over the country by dealers and agents at from 75 cents to \$1.00.

The lenses are large, measuring 1 3/8 by 1 1/2 inches; specially ground from a fine quality of pure, clear, optical glass accurately adjusted and firmly mounted.

The frame is made from selected hardwood; the lens board composed of five pieces carefully mortised together to prevent warping, and the board is of three-ply hardwood veneer, nicely finished and varnished.

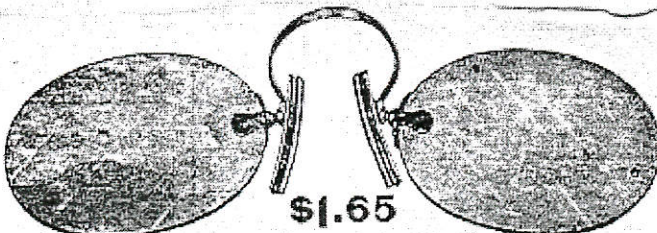
Price, each..... **\$0.28**
 Per dozen..... **3.25**
 If by mail, postage extra, each, 16 cents.

17C CAST BELL METAL HAND OR DINNER BELL, SIZE No. 2.



Made of high grade genuine cast bell metal, highly polished; chromized wood handle, and a sweet, full, musical tone. Full size and weight.

No. 9K48555 Price
 Diameter
 No. 3, 3 inches..... **\$0.17**
 No. 7, 4 1/2 inches..... **.52**
 No. 9, 5 1/2 inches..... **.52**
 No. 12, 7 1/2 inches..... **1.02**

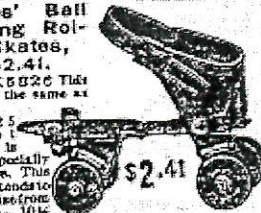


\$1.65

STYLISH AND ELEGANT. Rimless spectacles are the very latest and most stylish spectacles made. They are light and elegant in appearance, comfortable to wear and contribute in no small measure towards giving the wearer a neat and dressy appearance.

Ladies' Ball Bearing Roller Skates, \$2.41.

No. 6K5826 This skate is the same as No. 6K5825 except that it is made especially for ladies. This skate extends to many sizes from 7 1/2 to 10 1/2 inches. Weight, per pair, 67 ounces. Price, per pair, with steel roller..... **\$2.41**



\$2.41

Tear-proof 95¢ FOR 6 PAIRS
SPECIAL VALUE, HEAVY FINE RIBBED BLACK COTTON STOCKINGS FOR BOTH BOYS AND GIRLS.



No. 16K2808—Stocking of special value for both boys and girls. This stocking is fairly heavy in weight but not too heavy; it has just enough body to it so that we know it will wear and will give great satisfaction. A great many mothers believe that to secure a stocking that will wear, they have to buy an extra heavy one; this is false in this stocking, because we know that we have a stocking in this number that will give excellent wear and satisfaction without the uncomfortable weight of a heavy stocking. Made from the very best combed yarn, legy seamless, shaped ankle, perfectly made throughout. Guaranteed fast black in color. Sizes, 6, 6½, 7, 7½, 8, 8½, 9, 9½ and 10. Be very sure to give us correct size.
 Pairs for 6 pairs 95¢
 If by mail, postage extra, for 6 pairs, 35 cents.

\$1.69



\$1.69 BLACK MERCERIZED SATIN WRAPPER.

This neat wrapper is made with pointed yoke in back and square yoke in front. Finished with two rows of narrow ribbon and ruffle. Turquoise collar and cuffs are finished with row of ribbon. Front is finished at neck with a made with lace. Size, 32 to 44 inches bust measure. Always give our measure.
 No. 38K7204 Color, Black only.
 Price \$1.69
 (If by mail, postage extra, 33c.)

31¢ NICKEL PLATED CRUMB TRAY AND SCRAPER, POLISHED AND ETCHED.



These trays and scrapers have the appearance of the finest silver. They are highly nickel plated and polished. Are decorated in handsome designs and guaranteed satisfactory.
 No. 9K26108
 Price, for crumb tray and scraper... 31¢

Indestructible Rag Dolls, Exceptional Value.



No. 18K23148 Indestructible Rag Doll, well shaped and proportioned. His nicely made garments dress in bright attractive colors and bound to last. The face is photograph from life and gives a tremendous improvement over the old style rag doll faces. Size, 15 inches high. Ship 25¢ per weight. 1.25. Price, 25¢

OUR WONDER VALUE STEEL WALKING PLOWS

OTHERS ASK \$12.00 TO \$15.00 FOR NO BETTER.

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SHARE, MOLD BOARD AND LANDSIDE MADE OF SOFT CENTER STEEL.

These plows are equal in every way to any plows you can possibly buy elsewhere, and we guarantee them to give you perfect satisfaction. We furnish them in either stubble or top and stubble shape. Be sure to specify which you want. These are high grade plows in every sense of the word.

| | | | | |
|------------|-----------------------|--------------|------------|--------|
| No. 32K401 | 12-inch Walking Plow. | Wt. 95 lbs. | Price..... | \$7.73 |
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STRONG AND RIGID. SMOOTH RUNNING. PERFECT SCOURING.

FANCY PATENT.



No. 15K119 \$1.27 PER PAIR

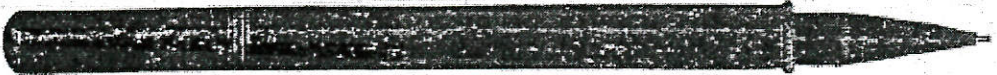
DON'T FAIL TO STATE SIZE

A graceful little shoe impossible to equal at this price. Patent leather stock, diondora kid top and fancy inside figured velvet lace stay. Carries a Cuban heel, light sole and reliable counter and inner sole. Sizes and ball sizes, 2 1/4 to 8. Widths, D, E and EE. Weight averages 26 ounces.

If you are in debt, somebody owns a part of you.

OUR STYLOGRAPHIC, OR INK PENCILS

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Does not leak or blot. Each packed in a separate box, with glass fiber and directions.