

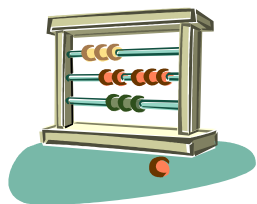
"So many math charts in one convenient place! How handy!" --TPT Purchaser



elementary

MATH CHARTS PACKET

Kids can learn a lot about numbers just using these! Just print, laminate and display as classroom poster or have students cut out place/glue in their math journals for their own reference throughout the entire school year. Very convenient for busy teachers and students alike. Includes math journal version, classroom poster/demonstration version, and suggestions for use.



By: Mrs. Lane

Includes 7 Different Charts!



Addition Chart

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |

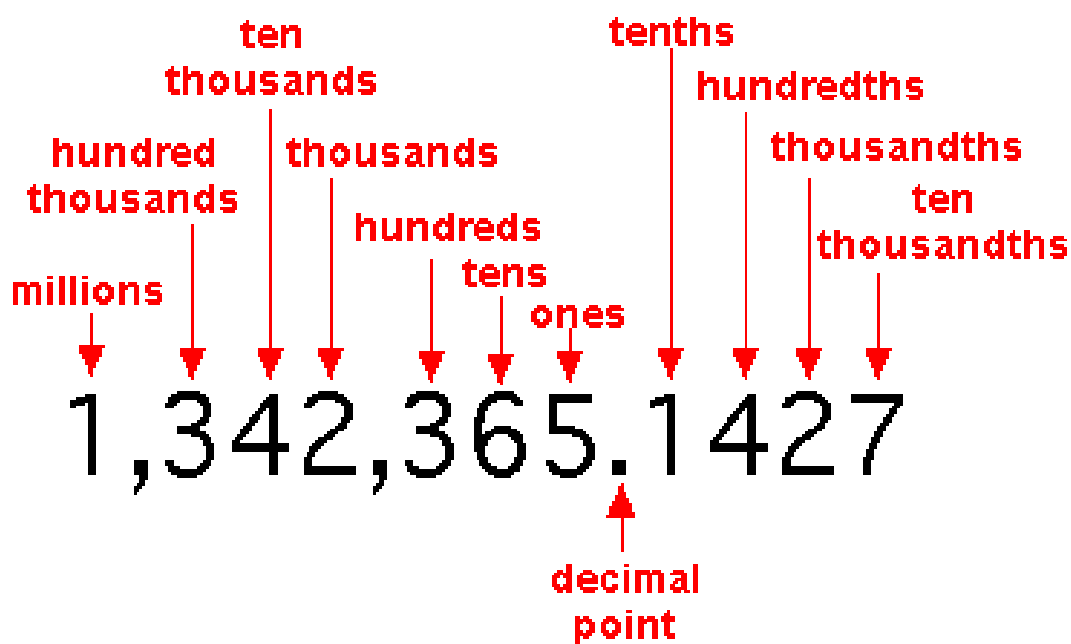
Hundreds Chart

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 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 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Multiplication Chart

| X | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|---|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 0 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 0 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 0 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 0 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 0 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 0 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

Place value Chart



Fraction Equivalents Chart

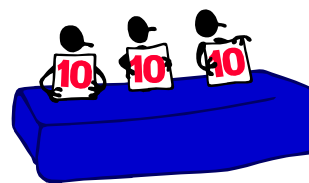
| 1/1 | 2/2 | 3/3 | 4/4 | 5/5 | 6/6 | 7/7 | 8/8 | 9/9 | 10/10 |
|------|------|------|------|------|------|------|------|------|--------|
| 1/2 | 2/4 | 3/6 | 4/8 | 5/10 | 6/12 | 7/14 | 8/16 | 9/18 | 10/20 |
| 1/3 | 2/6 | 3/9 | 4/12 | 5/15 | 6/18 | 7/21 | 8/24 | 9/27 | 10/30 |
| 1/4 | 2/8 | 3/12 | 4/16 | 5/20 | 6/24 | 7/28 | 8/32 | 9/36 | 10/40 |
| 1/5 | 2/10 | 3/15 | 4/20 | 5/25 | 6/30 | 7/35 | 8/40 | 9/45 | 10/50 |
| 1/6 | 2/12 | 3/18 | 4/24 | 5/30 | 6/36 | 7/42 | 8/48 | 9/54 | 10/60 |
| 1/7 | 2/14 | 3/21 | 4/28 | 5/35 | 6/42 | 7/49 | 8/56 | 9/63 | 10/70 |
| 1/8 | 2/16 | 3/24 | 4/32 | 5/40 | 6/48 | 7/56 | 8/64 | 9/72 | 10/80 |
| 1/9 | 2/18 | 3/27 | 4/36 | 5/45 | 6/54 | 7/63 | 8/72 | 9/81 | 10/90 |
| 1/10 | 2/20 | 3/30 | 4/40 | 5/50 | 6/60 | 7/70 | 8/80 | 9/90 | 10/100 |

Mathematics Chart

| LENGTH | |
|-------------------------------|-----------------------|
| Metric | Customary |
| 1 kilometer = 1000 meters | 1 mile = 1760 yards |
| 1 meter = 100 centimeters | 1 mile = 5280 feet |
| 1 centimeter = 10 millimeters | 1 yard = 3 feet |
| | 1 foot = 12 inches |
| CAPACITY AND VOLUME | |
| Metric | Customary |
| 1 liter = 1000 milliliters | 1 gallon = 4 quarts |
| | 1 gallon = 128 ounces |
| | 1 quart = 2 pints |
| | 1 pint = 2 cups |
| | 1 cup = 8 ounces |
| MASS AND WEIGHT | |
| Metric | Customary |
| 1 kilogram = 1000 grams | 1 ton = 2000 pounds |
| 1 gram = 1000 milligrams | 1 pound = 16 ounces |
| TIME | |
| 1 year = 365 days | |
| 1 year = 12 months | |
| 1 year = 52 weeks | |
| 1 week = 7 days | |
| 1 day = 24 hours | |
| 1 hour = 60 minutes | |
| 1 minute = 60 seconds | |



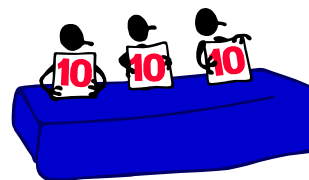
Tens Frame



| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |



Tens Frame



| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |

Addition Chart

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |

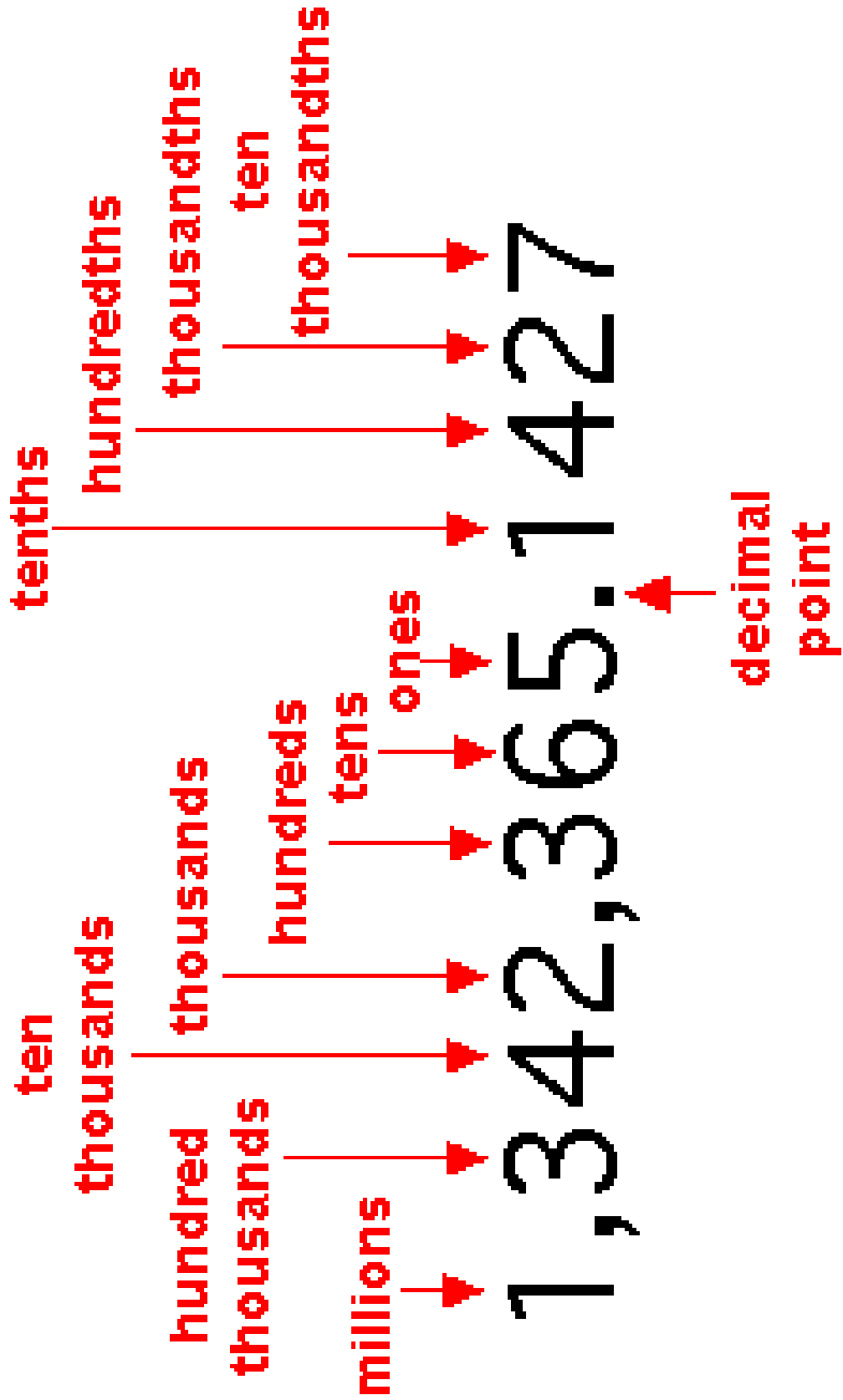
Hundreds Chart

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 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 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Multiplication Chart

| X | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|---|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 0 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 0 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 0 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 0 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 0 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 0 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

Place value Chart



Fraction Equivalents Chart

| 1/1 | 2/2 | 3/3 | 4/4 | 5/5 | 6/6 | 7/7 | 8/8 | 9/9 | 10/10 |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|--------------|
| 1/2 | 2/4 | 3/6 | 4/8 | 5/10 | 6/12 | 7/14 | 8/16 | 9/18 | 10/20 |
| 1/3 | 2/6 | 3/9 | 4/12 | 5/15 | 6/18 | 7/21 | 8/24 | 9/27 | 10/30 |
| 1/4 | 2/8 | 3/12 | 4/16 | 5/20 | 6/24 | 7/28 | 8/32 | 9/36 | 10/40 |
| 1/5 | 2/10 | 3/15 | 4/20 | 5/25 | 6/30 | 7/35 | 8/40 | 9/45 | 10/50 |
| 1/6 | 2/12 | 3/18 | 4/24 | 5/30 | 6/36 | 7/42 | 8/48 | 9/54 | 10/60 |
| 1/7 | 2/14 | 3/21 | 4/28 | 5/35 | 6/42 | 7/49 | 8/56 | 9/63 | 10/70 |
| 1/8 | 2/16 | 3/24 | 4/32 | 5/40 | 6/48 | 7/56 | 8/64 | 9/72 | 10/80 |
| 1/9 | 2/18 | 3/27 | 4/36 | 5/45 | 6/54 | 7/63 | 8/72 | 9/81 | 10/90 |
| 1/10 | 2/20 | 3/30 | 4/40 | 5/50 | 6/60 | 7/70 | 8/80 | 9/90 | 10/100 |

Mathematics Chart

LENGTH

Metric

1 kilometer = 1000 meters

1 meter = 100 centimeters

1 centimeter = 10 millimeters

Customary

1 mile = 1760 yards

1 mile = 5280 feet

1 yard = 3 feet

1 foot = 12 inches

CAPACITY AND VOLUME

Metric

1 liter = 1000 milliliters

Customary

1 gallon = 4 quarts

1 gallon = 128 ounces

1 quart = 2 pints

1 pint = 2 cups

1 cup = 8 ounces

MASS AND WEIGHT

Metric

1 kilogram = 1000 grams

1 gram = 1000 milligrams

Customary

1 ton = 2000 pounds

1 pound = 16 ounces

TIME

1 year = 365 days

1 year = 12 months

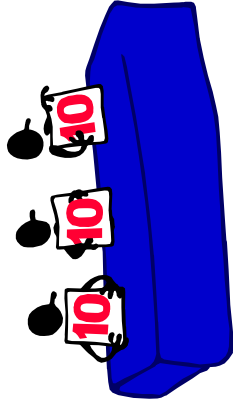
1 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds



| | |
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| | |

Teaching Addition With Tens Frames

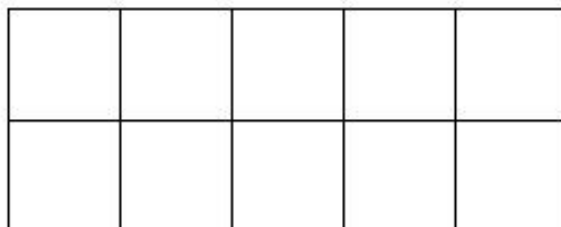
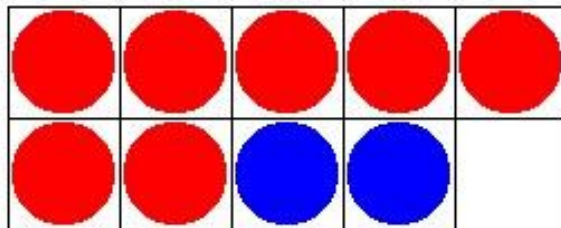
Tens frames are excellent learning tools for primary addition. Students can conceptualize the concept of tens and ones. Using manipulatives to fill the tens frame, students learn that making ten and then counting the remainders is a valuable tool in solving addition problems between 10 and 20.

The attached tens frame can be reproduced on heavier paper and even laminated for use from year to year.

- Mount on a colored piece of construction paper and laminate for durability.
- Great for addition AND subtraction of numbers between 10 and 20.
- Use any kind of manipulative. It is always a good idea to familiarize students with manipulatives first.

Use frames to find $7+2$

Example:



Now combine  and  to help find $7+2$

Teaching Addition With Hundreds Charts

Hundreds charts are a powerful math learning tool. There are numerous activities that can be done with hundreds charts to strengthen a student's number concepts and counting patterns. Hundred chart activities can be run off and used individually by students or even made into overheads for whole group activities. The charts can be colored or markers can be laid on them for designated counting patterns.

- Use to practice addition (and subtraction), counting on and counting back.
- Count 1 more, 1 less, 10 more, 10 less, and so on.

Example:

Hundreds Chart

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 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 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Suggestions For Use



ADDITION AND SUBTRACTION

- (1) Use the hundred chart as a number line to do addition and subtraction beyond what your student normally can handle. Take turns making up problems for each other to solve. Develop mental math skills by showing how to add or subtract the tens first (counting up or down) then the ones (counting left or right.)
- (2) Look for addition and subtraction patterns. $3+9=?$ Now go to $23+9$, $33+9$, $63+9$. What do you notice? What do $15-7$, $25-7$, $45-7$, etc. have in common? Find other patterns.
- (3) Count by whatever number you want, but start at an unusual place. Count by 5, starting at 18. Or count by 2, but start with 37. Or for a tougher challenge, practice your mental subtraction skills: count *down* by the number of your choice.

NUMBER AND PATTERN ACTIVITIES

- (4) Make picture puzzles: You give the clues — either a description of a number (*"It's two less than 26"*) or an equation that equals that number — and your student colors in the appropriate square. Repeat to make a design. Now, let your student make up a puzzle for you to color.
- (5) Cut up a hundred board into irregular pieces to make a puzzle. For more of a challenge, cut a blank chart into puzzle pieces, writing in one or two numbers per piece. Can your student fill in the rest of the numbers?
- (6) Make a hundred chart pattern with your name.
- (7) Play "Arrow Games": Starting at the number given, each arrow means to move one square in the direction shown. What number is $45 \leftarrow \leftarrow \uparrow \rightarrow \uparrow$? How would you use arrows to say, *"Start and 27 and move to 59"*? Make up your own arrow code for someone to follow.
- (8) Try money activities on a hundred chart. Count by dimes or by quarters, or use the chart to make change for a dollar.

hundred chart games

(9) Play "Race to 100." Take turns rolling one or two dice and moving that many spaces on the hundreds chart. If you correctly predict your landing place before you move (without counting squares!), then you can go one extra space as a bonus. The first person to reach or pass 100 wins the game.

(10) Play a number bonds game. Take turns pointing to any number. The other player has to say how many more it takes to make 100.



multiplication and factors

(11) Look for counting-by (multiplication) patterns. Colored disks are nice for this, or use pinto beans. Mark the numbers you hit when you count by 2. What pattern do they make? Make the counting-by-3 pattern, or mark the 7s, etc. You may want to print several charts so you can color in the patterns and compare them. Why does the counting-by-5 pattern go down the way it does? Why do the 9's move diagonally across the chart?

(12) Look for factors: Mark the multiplication patterns by putting colored dots along one edge or corner of each square. (That is, all the multiples of 2 get a yellow dot, for instance, and the multiples of 3 get green dots...) Which numbers have the most dots—that is, have the most factors? Which numbers have just one dot? Which don't have any?

(13) Rounding to the nearest 10 — say a number and have the child put a marker on that number. Then let him decide which 10 that number is closer to and put a marker on it (or, if you're using a paper chart, draw an arrow to the nearest 10).

(14) The Factors & Multiples game: The first player marks an even number less than 50 on the hundred board. His opponent marks a factor or multiple of that number. Players alternate, each time marking a factor or multiple of the last number played. The player who marks the last number, leaving his opponent with no move, wins the game.

(15) Factors and Multiples Solitaire: Try to find the longest possible chain of factors and multiples. Keep track of the order in which you mark the numbers. Can you find a way to mark 50 or more without breaking the chain?

fractions and decimals

(13) What number is $\frac{1}{2}$ of 100? How do you know? What number is $\frac{3}{4}$ of 100? Are you sure? How can you show it is true? (What does the fraction $\frac{3}{4}$ mean? What does any fraction mean?) What other fractions of 100 can you find? $\frac{1}{10}$? $\frac{2}{5}$? Can you find a number that is $\frac{1}{3}$ of 100?

(14) The hundred chart can help you convert between fractions, decimals, and percents. Do you see how? "Percent" means "out of 100." So 30% means "30 out of 100"—which is how much of the whole chart? If we say that the chart is one whole unit, then how much is each row (in decimal notation)? What size is each box? Can you color 0.47 of the chart? What decimal would mean the same as $\frac{1}{5}$ of the chart? And what percent of the chart would that be?



Logic and Strategy

(15) A Cross pattern is a square plus the four squares directly up, down, left, and right from it. An X pattern is a square plus the four touching it diagonally. Choose any square that is not on an edge of the hundred board. Find its Cross and X patterns, and add up their sums. Can you explain why they add up to the same number? Can you find any other patterns that work that way? [Hint: Think *symmetry*.] Can you figure out how to predict the Cross or X pattern sum for any number?

(16) Find the Cross and X patterns for a date on this month's calendar. How are these the same as on a hundred board? How are they different?

(17) Play Gomoku, also known as Five-in-a-Row, on a printed hundred chart. Use a wide-tip marker to make Xs and Os, or use pennies and nickels to mark the squares. On each turn, the player must make up a calculation that equals the number in the square he wants to mark.

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