Teaching with
Math Card Games
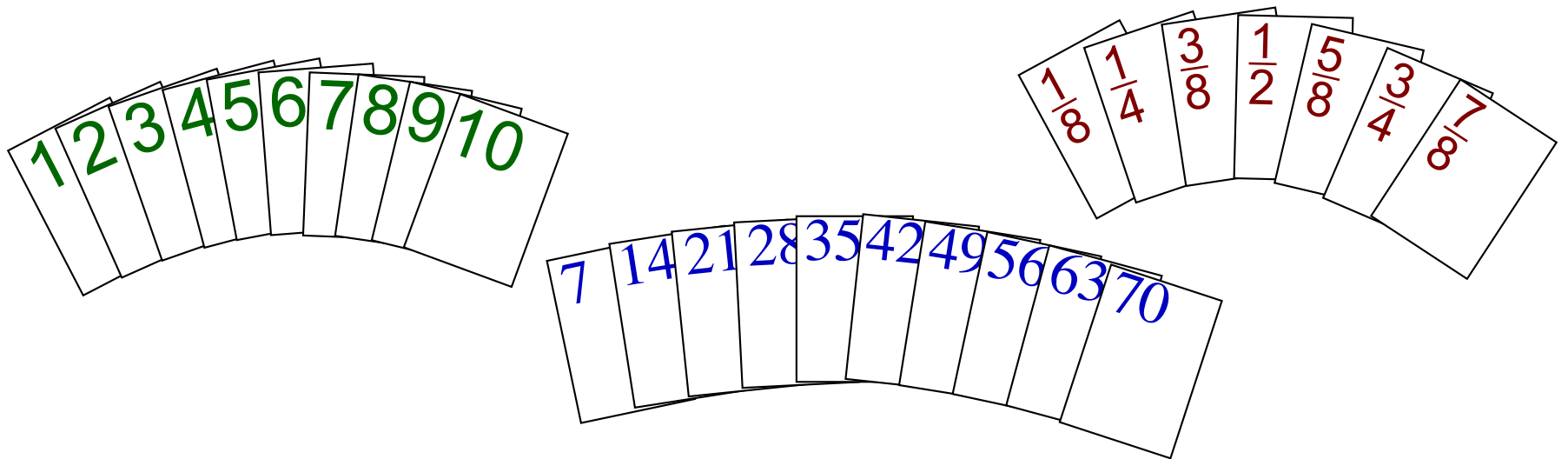
presented by Kathleen Cotter Clayton

based on the work of Dr. Joan A. Cotter

Battle of the Worksheets

Battle of the Flashcards
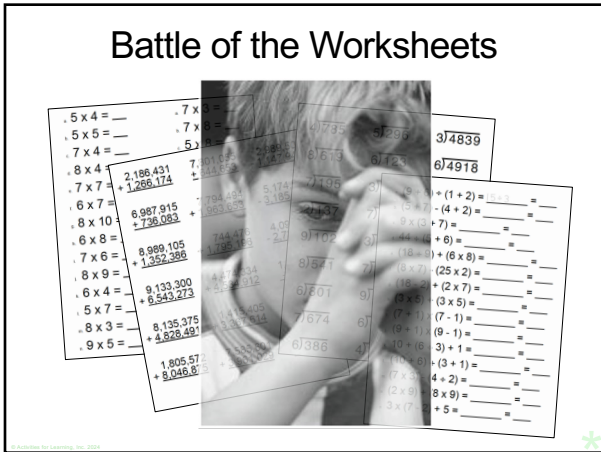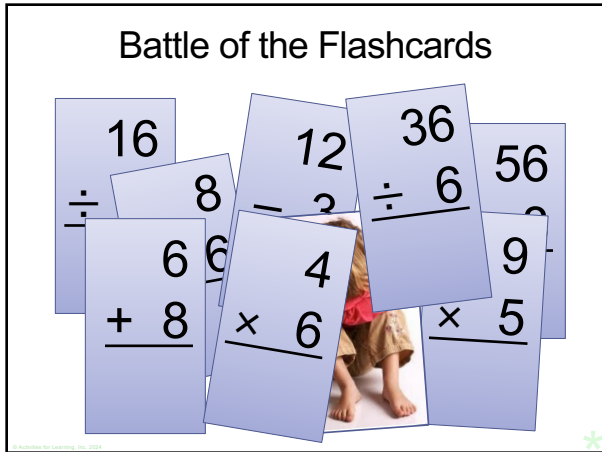
Rote Memorization

Memorizing 390 math facts is daunting.

Sadly, whatever is learned by rote needs frequent review to stay learned.

Games

$$\frac{\text{Games}}{\text{Math}} = \frac{\text{Books}}{\text{Reading}}$$

Games provide instant feedback.

Games provide interesting repetition needed for automatic responses in a social setting.

More importantly, games provide an application for the new information!

Go to the Dump

Objective: To learn and master the facts of 10.

Number of Players: 2 to 4.

Cards: Basic number cards from 1 to 9.

Goal: To collect the most pairs.
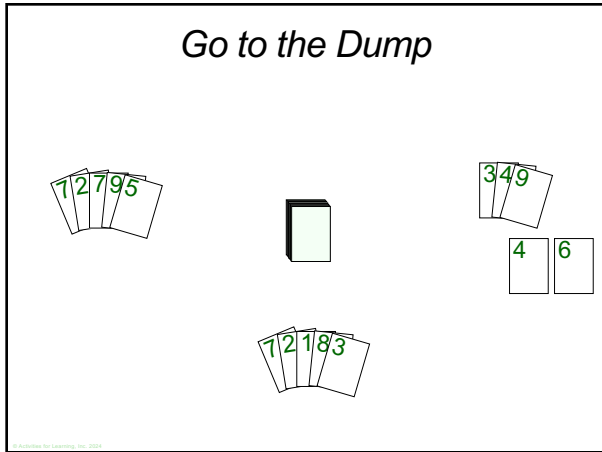
Go to the Dump

Go to the Dump

Go to the Dump

Go to the Dump

Go to the Dump

Go to the Dump

Game app for your devices!

Go to Ten

Go to the Dump with Elevens

Objective: To learn and master the facts
of 11.

1 + 10
2 + 9
3 + 8
4 + 7
5 + 6

Play: Same as Go to the Dump.

Go to the Dump with Nines

Objective: To learn and master the facts of 9.

$$1 + 8$$
$$2 + 7$$
$$3 + 6$$
$$4 + 5$$

Note: Make sure that the facts of 10 are solid before playing these variations.

Short Chain Solitaire

Objective: To provide reinforcement of addition facts.

Goal: To build the following four chains:

1	3	9	7
8	4	2	6
9	7	1	3
7	1	3	9
6	8	4	2
3	9	7	1
9	7	1	3
2	6	8	4
1	3	9	7

Short Chain Solitaire

A chain is composed of links.

Each link (after the first two) is formed by adding the previous two numbers, while disregarding any 1s in the tens place.

1	3	9	7
8	4	2	6
9	7	1	3
7	1	3	9
6	8	4	2
3	9	7	1
9	7	1	3
2	6	8	4
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Short Chain Solitaire

A chain is composed of links.

Each link (after the first two) is formed by adding the previous two numbers, while disregarding any 1s in the tens place.

There are some interesting patterns.

1	3	9	7
8	4	2	6
9	7	1	3
7	1	3	9
6	8	4	2
3	9	7	1
9	7	1	3
2	6	8	4
1	3	9	7

Short Chain Solitaire

Objective: To provide reinforcement of addition facts.

Goal: To build the four chains.

Cards: 36 specific cards.

Layout: Lay cards in fans of three.

Short Chain Solitaire

Short Chain Solitaire

Short Chain Solitaire

Short Chain Solitaire

Short Chain Solitaire

Short Chain Solitaire

- Cannot be won if an error is made.
- Using some strategy, a player can win about three-fourths of the time. Several players can work together to win.
- Best of all, these Chain Solitaire games provide hours of fun!
- Nine variations available.
- 97 of the 100 addition facts are used. Only $0 + 0$, $5 + 0$, and $5 + 5$ are omitted.

Short Multiplication Chart

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

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Short Multiplication Chart

$6 \times 6 = 36$

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

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Short Multiplication Chart

$4 \times 8 = 32$

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

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Short Multiplication Chart

$7 \times 9 = 63$

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

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Ring Around the Products

Objective: To review the multiplication facts.

Number of Players: Two to four.

Cards: Multiplication cards and a deck of basic number cards without the 0s.

Goal: To collect the most multiplication cards.

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Ring Around the Products

2	6	3	5	1
8	54	12	42	7
5	50	15	9	8
9	1	6	8	3

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Ring Around the Products

2   3   5   1

8   12 42 7

5   50 15 9   8

1   6   8   3

6   9   54

Ring Around the Products

It is multiplication practice.

Can also be viewed as division practice.

Fractions

1									
$\frac{1}{2}$					$\frac{1}{2}$				
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$			
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$					
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$				
$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$		
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

Fractions

1									
$\frac{1}{2}$					$\frac{1}{2}$				
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$			
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$					
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$				
$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$		
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

How many fourths in a whole?

Fractions

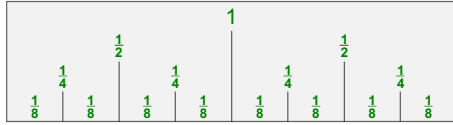| 1									
$\frac{1}{2}$					$\frac{1}{2}$				
$\frac{1}{3}$			$\frac{1}{3}$			$\frac{1}{3}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$			
$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$	$\frac{1}{5}$					
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$				
$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$	$\frac{1}{7}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$		
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$	
$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

How many fourths in a whole? How many fifths? Eighths?

Partial Chart

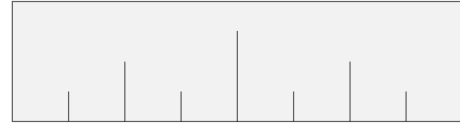| 1							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

Partial Chart

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Partial Chart

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Fraction War

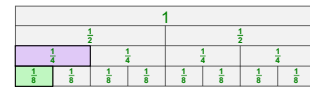Objective: To practice comparing fractions from the 1s, halves, fourths, and eighths.

Cards: 1s, halves, fourths, and eighths.

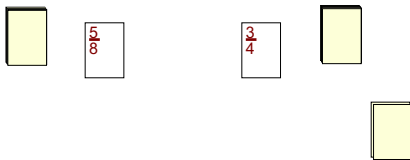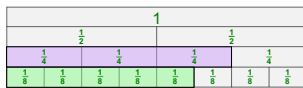Number of players: Two.

Goal: To capture all the cards.
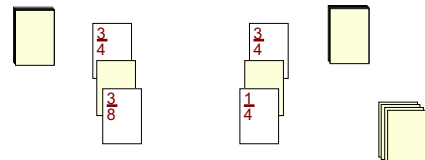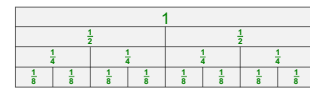
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Fraction War

41

Fraction War

42

Fraction War

43

Fraction War

App for your devices!

Fraction War

In Conclusion …

- Games provide instant feedback.

- Games provide interesting repetition needed for automatic responses in a social setting.

- More importantly, games provide an application for the new information!

In Conclusion …

Our goal as a teacher of mathematics
is to help our children transform,
expand, and refine these beginning ideas
into deeper mathematical thinking.

– Dr. Joan A. Cotter