

Tulare County
Office of Education

Jim Vidak, County Superintendent of Schools

Composing your
Classroom to Build Fluency
Grades K – 2

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Tulare County Office of Education

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TCOE Common Core Connect Website:
<http://ccss.tcoe.org/>



Mastering Basic Facts

Phase 1: Counting
(Counts or counts on with objects or mentally)

Phase 2: Deriving
(Reasoning strategies based on known facts)

Phase 3; Mastery
(Efficient production of answers)

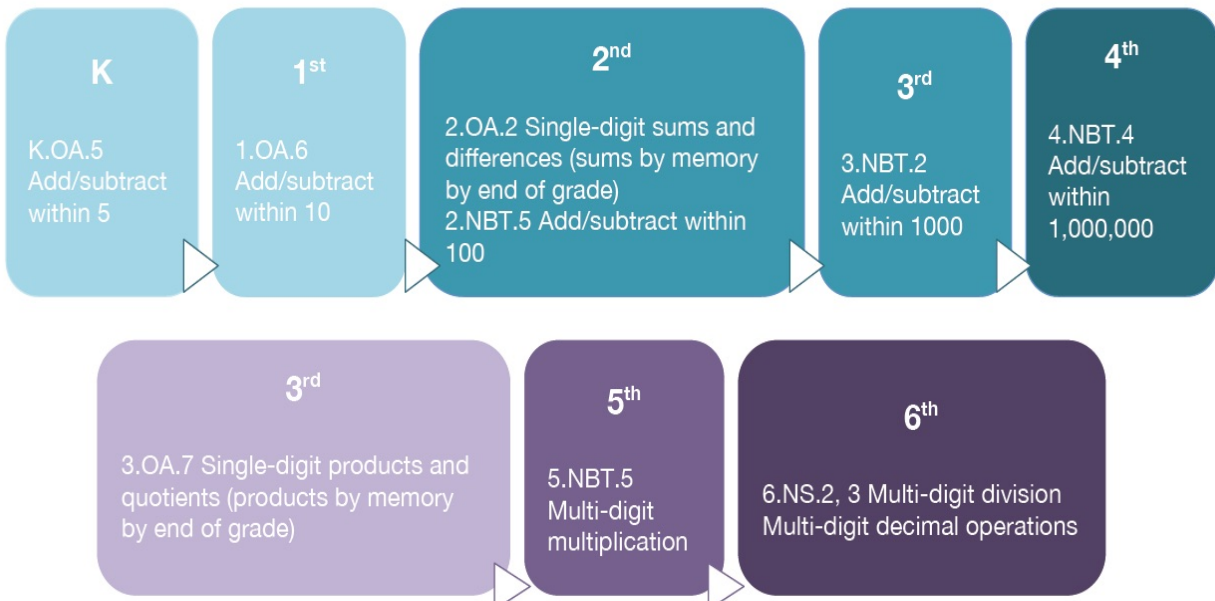
Adapted from Baroody, 2006

“Enriching Addition and Subtraction Fact Mastery Through Games” by Gina Kling and Jennifer Bay-Williams, Teaching Children Mathematics Volume 21, No. 4, November 2014

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CCSSM Standards for Fluency



Fluency Games

Why use games?

- Are engaging.
- Provide opportunities for strategy discussion and assessment.
- Should be sequenced developmentally.
- Can be targeted practice or general practice.
- Lend to differentiation.

Developing and Assessing Fact Fluency, Amanda Ruch and Gina Kling, NCTM 2015

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Which card is greater?

Phase 1

1. Each player shuffles their cards.
2. Each player turns over the top card from their deck.
3. The player with the most dots on it wins the round and gets the cards. If there is a tie, players keep their own cards.
4. Play continues until there are no remaining cards in the stack.
5. Players count the total number of dots on the cards (or cards) they have at the end of the game, and the player with the largest number wins.



Variation: Players could compare and the player with the least amount of buttons wins the round.

Card options: 10 frames (without number), 10 frames (with numbers), Deck of cards (face cards removed), Digit Cards

Building Conceptual Understanding and Fluency Through Games, for the CCSSM, Grade K Tulare County
North Carolina Department of Public Instruction, <http://www.ncpublicschools.org/curriculum/mathematics/> Office of Education
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Snap It

Which phase?

- All students start with a given number of linker cubes in a train.
- On the signal "Snap," children break their trains into two parts and hold one hand behind their back.
- Children take turns going around the circle showing their remaining cubes. The other children work out the full number combination.



Fluency Without Fear: Research Evidence on the Best Ways to Learn Math Facts By Jo Boaler

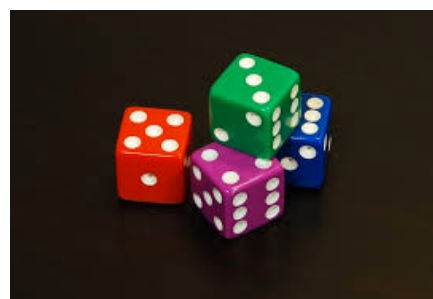
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High Roller

Phase 1

- Students take turns rolling two dice.
- During each turn, a student rolls both dice.
- Then the student selects the die with the greater number rolled and puts it to the side.
- The student rerolls the second die.
- The student finds the sum of the two dice counting on from the first number to find the total.
- The student records the total and the other student begins his/her turn.



"Enriching Addition and Subtraction Fact Mastery Through Games" by Gina Kling and Jennifer Bay-Williams, Teaching Children Mathematics Volume 21, No. 4, November 2014

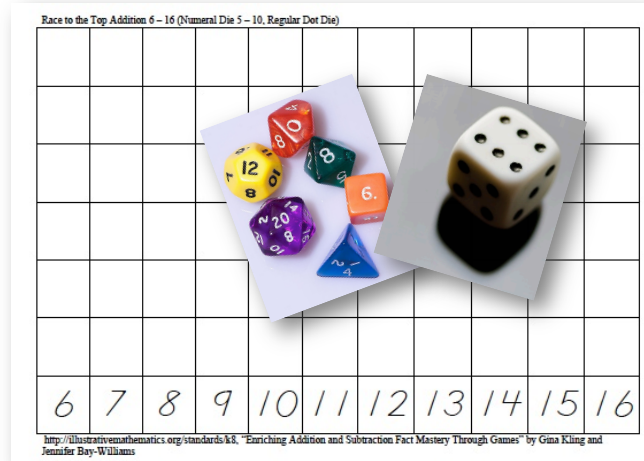
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Race to The Top (Roll and Total)

Phase 1

- A student rolls the number die and then rolls the dot die.
- The students adds the two by starting with the numeral die and counting on for the number rolled using the dot die.
- The student records the total (sum) in the column.
- Play continues until one sum column reaches the top.



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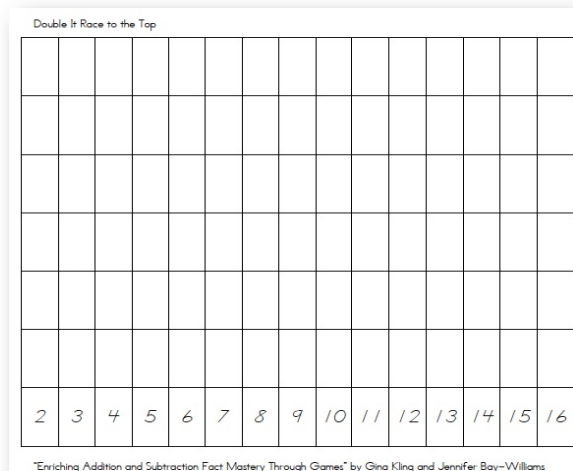
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Double It

Phase 2

- Students take turns selecting a number card or rolling a die 1 – 10.
- The student doubles the number selected/rolled.
- The student records the total (sum) of the double in the correct column.
- Play continues until one sum column reaches the top.



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Nutty Buddies

1. Each player places all of their game markers on any number on their gameboard. There may be more than one marker on a number.
2. Each player takes a turn rolling the dice and finding the sum.
3. The player may remove one cube from the sum that was rolled.
4. If there is not a marker to take off the gameboard, the player loses the turn.
5. The player that clears their gameboard first is the winner.

Variation/Extension: Players can roll the dice and subtract the sum from 14.

Nutty Buddies 1

Building Fluency: adding within 20


Materials: gameboard, pair of dice, 15 game markers per player


Number of Players: 2

Directions:

1. Each player places all of their game markers on any number on their gameboard. There may be more than one marker on a number.
2. Each player takes a turn rolling the dice and finding the sum.
3. The player may remove one cube from the sum that was rolled.
4. If there is not a marker to take off the gameboard, the player loses the turn.
5. The player that clears their gameboard first is the winner.

Variation/Extension: Players can roll the dice and subtract that sum from 14.

PLAYER 1	2	3	4	
5	6	7	8	
9	10	11	12	

	PLAYER 2	2	3	4
	5	6	7	8
	9	10	11	12

Building Conceptual Understanding and Fluency Through Games, for the CCSSM, 1st Grade Tulare County
North Carolina Department of Public Instruction, <http://www.ncpublicschools.org/curriculum/mathematics/> Office of Education
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Salute

Phase 2 – 3

- Digit Cards 0 – 9, with ten-frames
- 3 students: 1 leader, 2 players
- The leader hands each player a card.
- The leader says “Salute!”
- The players put their cards on their foreheads.
- The leader says the sum/total of the two cards.
- The players work to determine the number on their forehead. Once both players have done so, they look at their cards and then students rotate roles.



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Double It Race to the Top

2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Race to the Top Addition 6 - 16 (Numeral Die 5 - 10, Regular Dot Die)

6	7	8	9	10	11	12	13	14	15	16

Nutty Buddies 1

Building Fluency: adding within 20

Materials: gameboard, pair of dice, 15 game markers per player

Number of Players: 2

Directions:

1. Each player places all of their game markers on any number on their gameboard. There may be more than one marker on a number.
2. Each player takes a turn rolling the dice and finding the sum.
3. The player may remove one cube from the sum that was rolled.
4. If there is not a marker to take off the gameboard, the player loses the turn.
5. The player that clears their gameboard first is the winner.

Variation/Extension: Players can roll the dice and subtract that sum from 14.

PLAYER 1	2	3	4
	5	6	7
	9	10	11
	8	12	



PLAYER 2	2	3	4
	5	6	7
	9	10	11
	8	12	

Nutty Buddies 2

Building Fluency: adding within 20

Materials: gameboard, 3 die, 16 game markers per player

Number of Players: 2

Directions:

1. Each player places all of their game markers on any number on their gameboard. There may be more than one marker on a number.
2. Each player takes a turn rolling the dice and finding the sum.
3. The player may remove one cube from the sum that was rolled.
4. If there is not a marker to take off the gameboard, the player loses the turn.
5. The player that clears their gameboard first is the winner.

Variation/Extension: Players can roll the dice and subtract that sum from 21.

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



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