Composing your Classroom to Build Fluency
Grades K – 2

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November 7, 2015

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**

- **K**: K.OA.5 Add/subtract within 5
- **1st**: 1.OA.6 Add/subtract within 10
- **2nd**: 2.OA.2 Single-digit sums and differences (sums by memory by end of grade), 2.NBT.5 Add/subtract within 100
- **3rd**: 3.NBT.2 Add/subtract within 1000
- **4th**: 4.NBT.4 Add/subtract within 1,000,000
- **3rd**: 3.OA.7 Single-digit products and quotients (products by memory by end of grade)
- **5th**: 5.NBT.5 Multi-digit multiplication
- **6th**: 6.NS.2, 3 Multi-digit division Multi-digit decimal operations
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.

Which card is greater?

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
**Snap It**

- 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.

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**High Roller**

- Students take turns rolling two dice.
- During each turn, a student rolls both dice.
- Then the students 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 begin 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
Race to The Top
(Roll and Total)

- 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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Double It

- 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.

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

Salute

- 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

“Enriching Addition and Subtraction Fact Mastery Through Games” by Gina Kling and Jennifer Bay-Williams
Race to the Top Addition 6 – 16 (Numeral Die 5 – 10, Regular Dot Die)

http://illustrativemathematics.org/standards/k8, “Enriching Addition and Subtraction Fact Mastery Through Games” by Gina Kling and Jennifer Bay-Williams
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.
**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.

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**PLAYER 1**

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**PLAYER 2**