2016 NCTM Regional Conference

Wacky & Wild Workstations for K-2

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Goals of Session

- Provide workstation ideas and activities for **place value**, **number operations**, and **algebraic reasoning** that can easily be incorporated into classrooms

- Meet the needs of <u>**ALL**</u> students while incorporating higher level thinking skills, problem solving, student accountability, and fun!

That's True About Me!

- I flew to Philadelphia!

- I'm a 1st Grade teacher!

- I enjoyed Halloween last night!

- I'm a Pre-K/Kindergarten teacher!

- I'm a football fan!

- I'm a 2nd Grade teacher!

- This is my first NCTM conference!

- I'm an instructional coach or specialist!

Research States Games...

- Provide rich contexts for mathematical learning and thinking (Fosnot, 2001)

- Explore certain mathematical ideas (Fosnot, 2001)

- Help students use strategies to construct an understanding of numbers

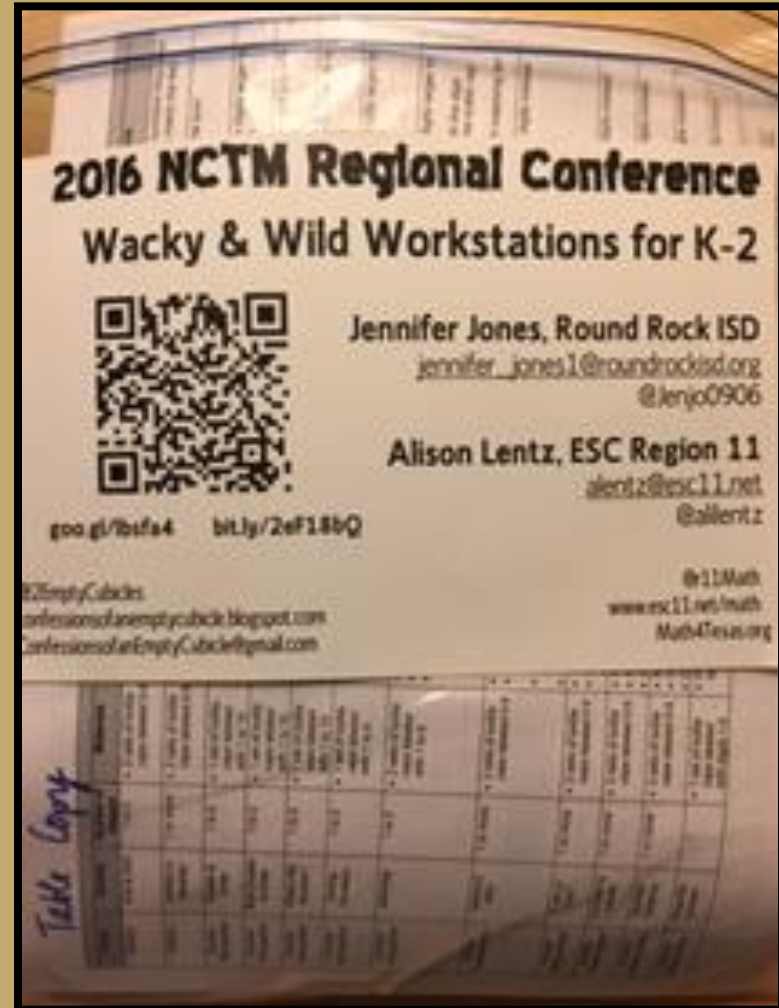- Learn to apply computational skills to problem-solving situations (Burns, 2007)

Research States Practice...

- Provides opportunities to develop conceptual ideas and more elaborate and useful connections

- Provides opportunities to develop alternative and flexible strategies

- Provides greater chance for ALL students to understand

- Sends the message that math is about figuring things out and making sense

Van de Walle, 2006

Manipulatives & Handouts

• Table Bags

Manipulatives & Handouts

- Table Bags
  - 1 Table Copy of Games

Manipulatives & Handouts

- Table Bags
  - 1 Table Copy of
  - 10 Half Sheets

Manipulatives & Handouts

- Table Bags
  - 1 Table Copy of Games
  - 10 Half Sheets
  - 5 sets of Bottle Caps

Manipulatives & Handouts

- Table Bags
  - 1 Table Copy of Games
  - 10 Half Sheets
  - 5 sets of Bottle Caps
  - 5 sets of 3 Suits of Cards

Manipulatives & Handouts

- Table Bags
  - 1 Table Copy of Games
  - 10 Half Sheets
  - 5 sets of Bottle Ca
  - 5 sets of 3 Suits of
  - 5 sets of 2 Dice

Bottle Caps

- Addition in Reverse
- Know My Number

Addition in Reverse

Players	Materials	Directions
1+	2 sets of bottle caps labeled 0-9	• Draw a digit. • Use this number as the sum in a number sentence and find all the combinations of numbers that make up the drawn number.

Variations
• Use two digits to make the sum. • The drawn number becomes the difference (Subtraction in Reverse).

Know My Number

Know My Number

My Number is _____   Is it odd or even? _____

1 More	1 Less	10 More	10 Less	100 More	100 Less

Word Form	Expanded Form

Hundreds	Tens	Ones	Picture Form

Ways to Make with Addition	Ways to Make with Subtraction

With Tally Marks	Skip Count to Me

Greater Than and Less Than	Strip Diagram

Show on a Number Line

Players	Materials
1	1 set of bottle caps labeled with digits 1-9

Directions
• Draw 2 digits. • Use the number to fill in the Know My Number template.

Variations
?

Make a Number

K.2B

1. Pull a bottle cap from the bag and say the number written on the bottle cap.
2. Write the number and the word that represent the number written on the bottle cap.
3. Use counters to show the quantity of the bottle cap number.
4. Draw tally marks to represent the quantity of the bottle

Deck of Cards

- 15
- 31
- Salute
- Snap
- Pyramid

15

Players	Materials	Directions
2 to 4	2 decks of cards per pair of players	• Pass out cards evenly and flip over 3 cards. • Players take turns to show their 3 cards and add the value of the cards. • If the total is 15, the player can keep their cards. • If it is not 15 the cards are returned to the dealer and shuffled into the deck for the next round. • Play continues for a set time. The winner is the player with the most cards when play finishes.

Variations

?

31

Players	Materials	Directions
2 to 4	2 decks of cards per pair of players	• The cards are shuffled and each player will receive three cards face down. • Once dealt, the players will look at their cards. They will then take a turn picking up a card from the pile in the middle and discarding a card. • The object of the game is to have a sum of 31 in your hand before the other players. • The card face value is used for counting; however Aces can be used as either 1 or 11.

Variations

• Change 31 to a different number.

Salute

Players	Materials	Directions
3	1 deck of cards (Jacks represent 11, Queens represent 12, Kings represent 13, and Aces represent 14)	• Two players will face each other and the cards are dealt evenly to them. The third person will sit where they can see the other two players. • The third player will say "Salute" and the two players will turn over the top card, holding it to their forehead so the other person can see. • The third player announces the sum and the other two players try to be the first one to guess their own number. • The winner takes both cards. Players will rotate positions so everyone plays every position.

Variations

• Students can write their own word problem using a set of numbers from the game. These could be put in another workstation for students to solve or be used as a warm up.
• Change operation to multiplication, subtraction, or division.

Snap

Players	Materials	Directions
2	1 deck of cards with face cards removed	• Two players sit side-by-side and divide the cards evenly between themselves. • The player on the left will deal the cards for the tens place, and the other player will deal the cards for the ones place. • Players will turn over one card from their stack and the same time. • The first player to call out the correct number gets to keep both cards. • If both players call out the number at the same time, players leave their cards in the tie pile. • The tie pile builds until one player gives a correct answer before the other. That player will take the two cards just turned over plus all of the cards in the tie pile. • Play continues until one player has collected all of the cards.

Variations

?

2

SnaP

1.2B

1. Two players sit side-by-side and divide evenly between themselves.

2. The player on the left will deal the card tens place, and the other player will d for the ones place.

3. Players will turn over one card from t the same time.

4. The first player to call out the correc to keep both cards.

Pyramid
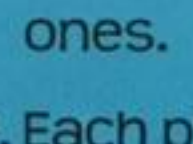
Players	Materials	Directions
2-3	1 deck of cards with 10s and face cards removed	• Remove the 10s and face cards from the deck. Jokers will count as zeros and Aces will count as ones. • Each player will lay out ten cards face down making a pyramid. One card should be in the top row, two cards in the second row, three cards in the third row, and four cards in the fourth row like a pyramid. • Players begin by turning over the top card. The player with the highest card wins a point. If there is a tie, players each win a point. • Players then turn over their second row of two cards. • These cards represent two-digit numbers. The player with the highest two-digit number wins two points. • Turn over the third row of cards. The player with the highest three-digit number wins three points. • Turn over the last row of cards. The player with the highest four-digit number wins four points. • Shuffle the cards and play another round. • The first player to reach 25 points wins the game.

PYRAMiD
2.2B

1. Remove the 10s and face cards from the
   Jokers will count as zeros and Aces will co
   ones.

2. Each player will lay out ten face down ma[l]
   pyramid. One card should be in the top row
   cards in the second row, three cards in th
   row, and four cards in the fourth row like
   pyramid.

2+

Dice

- Create a Problem
- Roll & Make
- Battle of the Facts

Create a Problem

Players	Materials
1	Decahedron dice
Directions	
•Roll to make 2 or 3 digit number. •Use the digits and one symbol to create a number sentence and word problem.	
Variations	
?	

UPS ✓

1) Question

2) Understand

3) Plan

4) Solve

5) Check

Roll & Make

Roll & Make

My Number	In Picture Form
In Word Form	**In Expanded Form**
With Money	**Represent It a Different Way**
Make a Comparison Statement with a Number Greater than Your Number	**Make a Comparison Statement with a Number Less than Your Number**

Show Your Number as a Number Bond

Show Your Number on a Number Line

Show Your Number as a Strip Diagram

Players	Materials
1	6 Ones (0-9) Place Value Dice or regular dice

Directions

- Each player will roll the dice to make a number.
- Each player will use that number to complete the Roll & Make activity sheet.

Variations

Change the number of dice rolled to make a larger or smaller number.

Battle of the Facts

Players	Materials
2	• 2 regular dice or 2 place value dice • Paper • Pencil

Directions

- Each player will roll to make a two-digit number and then roll again to make another two-digit number.
- Each player will add their numbers and the largest sum wins and receives a point.
- The player to get 15 points wins.

Variations

- Change the number of digits rolled.
- Change the operation to subtraction.
- Have students make a word problem using one of the sets of dice rolled.

Egg Cartons

- Number Shake (Shake It!)
- Shake & Subtract

Number Shake

Players	Materials	Directions
1	• Number Generator (Spinner, Digit Cards, Die, etc.) • 6 dimple Egg Carton • Token (Chip, Bean, Counter, etc.)	• Label each dimple with the words: word, picture, ten frame, number line, number bond, and tally marks. • Students generate number using the number generator. • Place the token in the egg carton and shake to determine the representation that will be used. • Continue shaking until the number has been shown with all the representations OR • Generate a new number and make one representation.

Variations

• Place three tokens in the egg carton to randomly select three multiple representations at one time.

• After generating a representation for 3 to 4 numbers, have students order and/or compare using the representations.

• Make two or three digit numbers.

• Draw representations on index cards to make Memory, Matching, or Concentration game.

Shake It!

K.2B

1. Pick a number card from the bag.
2. Shake the egg carton to determine the representation of the number card by where your token lands. Write it on your paper if it says to do so.
3. Repeat step 2 three times by shaking the carton for three more representations of your number card.
4. Pick a new number card and repeat steps 2 and 3.
5. Pick a new number card and repeat steps 2 and 3.

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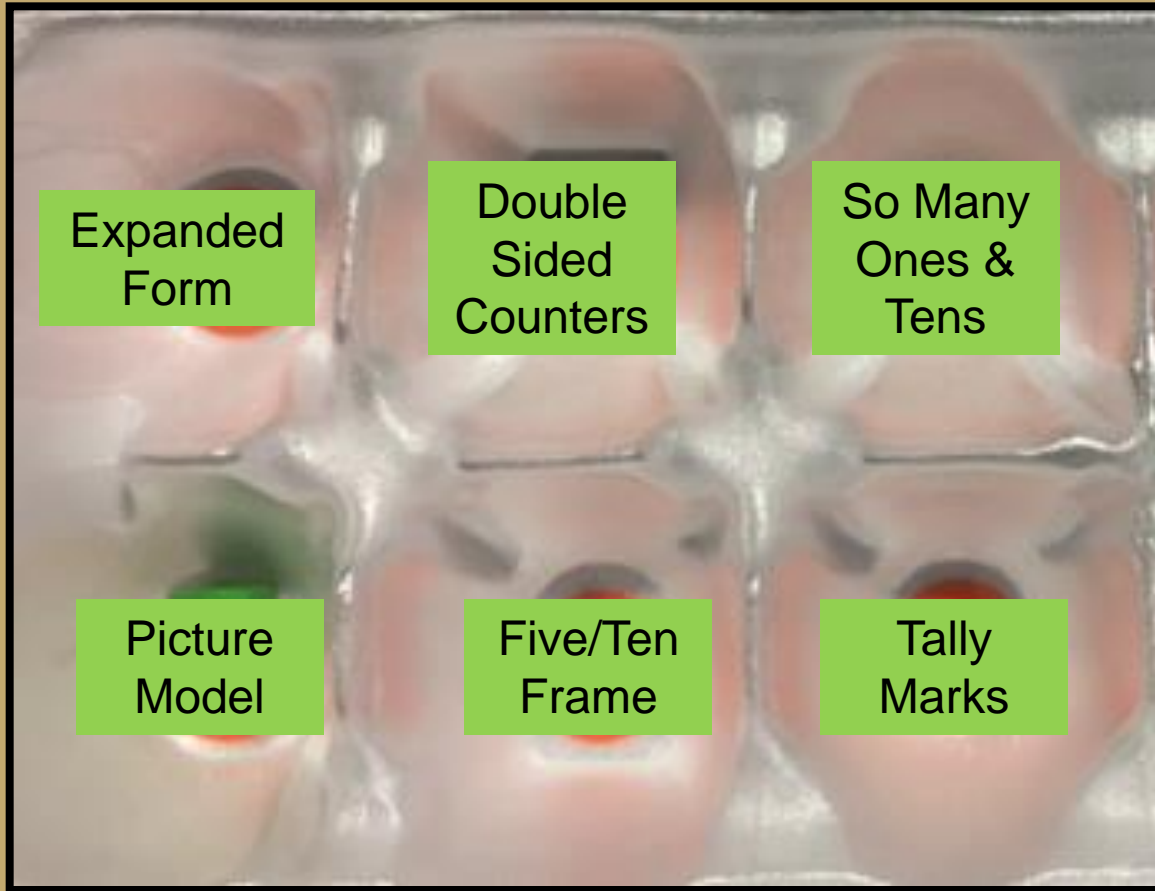
Expanded Form

Double Sided Counters

So Many Ones & Tens

Picture Model

Five/Ten Frame

Tally Marks

Shake & Subtract

Players	Materials	Directions
1	• Egg carton • Pencil • Paper	• Place 3 coins labeled with a "10", "100" and "1,000" (one each in the egg carton). • Shake carton, open, and record the number. • Repeat, and subtract the digits.
Variations		
• Change the place value to two places. • Write a real life problem situation.		
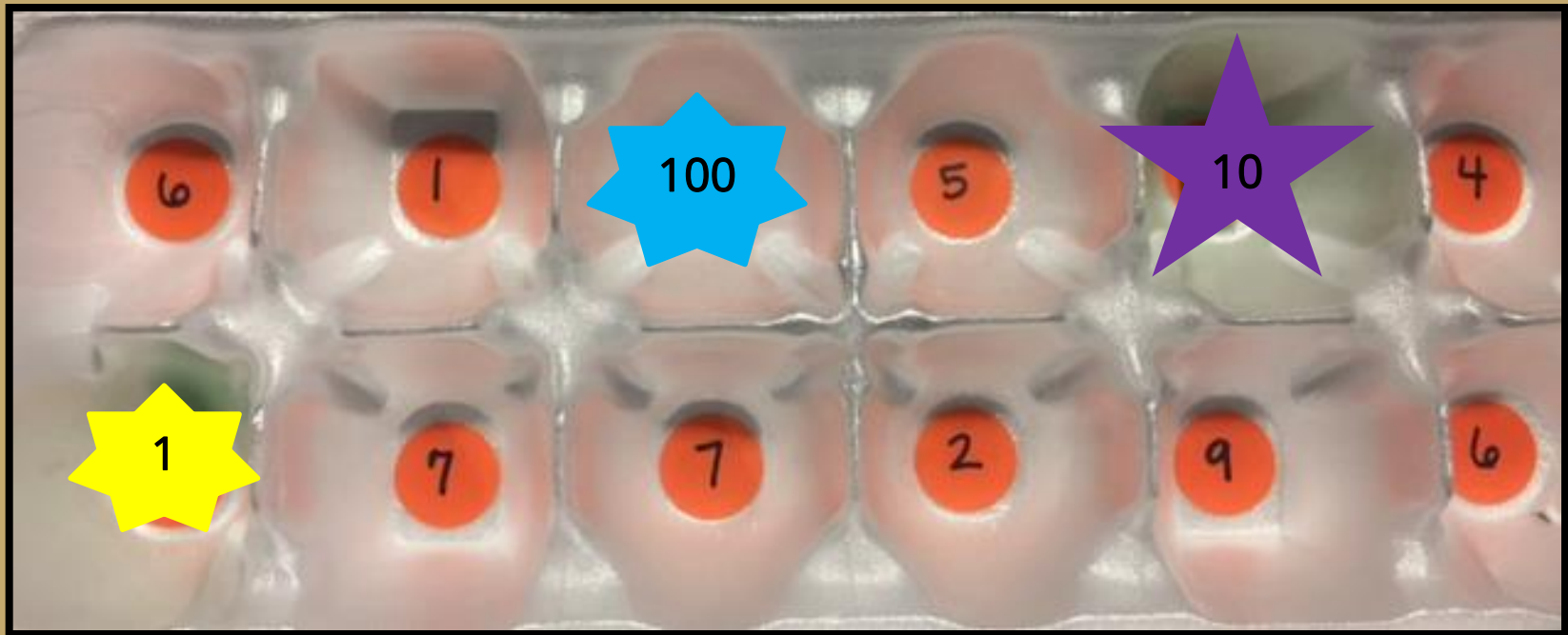
1 landed in the 3 = 3
10 landed in the 8 = 80
100 landed in the 2 = 200
283

1 landed in the 9 = 9
10 landed in the 8 = 80
100 landed in the 0 = 0
89

$$283$$
$$-\quad 89$$

Look for us at the 2017 NCTM Annual Conference & Exposition in San Antonio!

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