Core Content

Cluster Title: Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standard 5: Fluently add and subtract within 5.

MASTERY Patterns of Reasoning:

Conceptual:

Students will have automaticity with addition facts to 5.

Students will have automaticity with subtraction facts to 5.

Students will understand when and how to use addition and subtraction appropriately, and have skill in performing them flexibly, accurately and efficiently.

Procedural:

Students can use the following strategies to attain fluency with facts to 5:

- Counting on (e.g., for 1 + 3 student will count on from 1 three more: "2, 3, 4")
- Counting back (e.g., for 3 2 students will count back from 3 two less: "2, 1")
- Counting up to subtract (e.g., for 4 2 students will say "two" first and then count up until they get to 4, keeping track of how many numbers they count up)
- Using doubles (e.g., for 3 + 2 students will say, "2 + 2 = 4 and 1 more is 5")
- Using commutative property (e.g., students may say, "I know that 3 + 1 = 4, so 1 + 3 = 4")
- Using fact families (e.g., students may say, "I know 1 + 3 = 4, so 4 1 = 3")

Students will, within a given amount of time, fluently solve addition and subtraction facts within 5. This can be done orally and or in written form.

Representational:

Represent addition and subtraction facts with in 5.

Supports for Teachers

Critical Background Knowledge

Conceptual:

Students will understand how to count forward from a given number within the known sequence (instead of beginning at 1) (K. CC2).

Students will understand how to write the numbers correctly from 0-20 (K. CC3).

Students will understand the representation of the symbols used in addition and subtraction.

Procedural:

Students can count forward from a given number. Students can write the numbers 0-20 correctly. Students can identify the correct symbols used in addition and subtraction equations. Students can perform the appropriate tasks indicated by addition and subtraction symbols.

Representational:

Students can place and use equation symbols when solving addition or subtraction word problems.

Academic Vocabulary and Notation

add, subtract, equation, sum, difference, equal sign, plus, minus

Instructional Strategies Used	Resources Used
Students need to be taught the following strategies to fluently add and	Arizona Academic Content Standards:
subtract within 5:	http://www.azed.gov/standards
 Counting on (e.g., for 1 + 3 students will count on from 1 three 	
more: "2, 3, 4")	Baker, Keith. Quack and Count. Sandpiper,
 Counting back (e.g., for 3 – 2 students will count back from 3 two 	2004.
less: "2, 1")	
 Counting up to subtract (e.g., for 4 – 2 students will say "two" first 	Pallotta, Jerry. The Hershey's Kisses
and then count up until they get to 4, keeping track of how many	Addition. Scholastic, 2001.
numbers they count up)	T
 Using doubles (e.g., for 3 + 2 students will say, "2 + 2 = 4 and 1 	Thompson, Lauren. Little Quack Hide and
more is 5")	Seek. Simon & Schuster Books for Young

- 1 = 3") (Do an Internet you are interes	search for these composers if ted in music for this standard.)
 To increase fluency, the teacher can use the following activities: 1. Teacher can give students a problem and have students write the answer on their whiteboards and flash their answers. 2. Students can practice matching the expression with the sum or difference (card games, teacher-made materials with magnets and flash card). 3. Teachers can use a practice sheet with addition facts or subtraction facts and a timer to familiarize students with timed testing. 4. During the day, teachers can use addition or subtraction problems (oral responses) as exit tickets. 	

Assessment Tasks Used	
Skill-Based Task: Ask the students to solve addition and subtraction problems within ten mentally. Then have them tell you the strategy they used. This can be done on an individual basis or as a whole group.	 Problem Task: Give the student a problem in context, such as the problem below, and ask him/her to solve it using mental strategies. Then have him/her tell you the strategies he/she used. Peter has 4 puppies and Marina has 2 puppies. How many puppies do they have together?