**Subitize and Battle**

|  |
| --- |
| **Students use conceptual subitizing while playing a comparison game called Battle.**  *Perceptual subitizing: instantly recognizing “how many” in a set*  *Conceptual subitizing: efficiently finding “how many” by recognizing and combining subgroups within a set.* |

**NC Mathematics Standard:**

**Understand addition and subtraction.**

**NC.K.OA.6:** Recognize and combine groups with totals up to 5 (conceptual subitizing).

**Additional/Supporting Standard:**

**Compare Numbers.**

**NC.K.CC.6:** Identify whether the number of objects, within 10, in one group is greater than, less than, or equal to the number of objects in another group, by using matching and counting strategies.

**Standards for Mathematical Practice:**

6. Attend to precision.

7. Look for and make use of structure.

**Student Outcomes:**

* I can use subitizing to help find “how many”.
* I can use compare sets of objects.

**Math Language:**

|  |  |
| --- | --- |
| * Set * More * Less * Equal | *Students should be exposed to, but not held accountable for using:*   * Subitize * Flexible * Efficient |

**Materials:**

* *Conceptual Subitizing Cards*, one set per pair of students

**Advance Preparation**:

* Print *Conceptual Subitizing Cards* on cardstock, and cut.

**Launch:**

1. Review the term *subitize*. Say:
   * Subitize means to instantly know an amount without counting. We can subitize a whole set, or parts within a set.
   * When looking at small sets of objects, subitizing is easier and takes less steps than counting each item. Today, try to use subtizing as we play a game called Battle.
2. Introduce directions for the partner game Battle:
   * Partners place a deck of *Conceptual Subitizing Cards* face down between them.
   * Each partner takes one card. On the count of three, partners flip over their cards and compare them. Whoever has the greater amount, takes both cards. If both cards are equal, each partner keeps his or her own card.
   * Repeat until no cards remain in the deck.
   * The partner with more cards wins.

**Explore:**

1. Allow 5-7 minutes for partners to play Battle.
   * Observe strategies used to find “how many”. Ask questions to elicit thinking:

|  |  |
| --- | --- |
| **Strategy used…** | **Questions to ask…** |
| Count all items individually.  *1, 2, 3, 4* | * Is there an easier way to find “how many” without counting every item? * What parts do you see? |
| Count items individually,  then notice parts.  *1, 2, 3, 4…That’s 4! I see 2 and 2*. | * Rather than count every item, how could use the parts you saw to find “how many”? |
| Instantly see (subitize) a subgroup within the set, and count on.  *2…3, 4* | * You subitized part and counted on. Is this an efficient way to find “how many”? Explain. * Are there other ways to use subitizing to help you find “how many”? |
| Instantly see (subitize) subgroups and know a corresponding fact.  *2 and 2 makes 4* | * How could you teach a friend to use this strategy? * Is this an efficient way to find “how many”? Explain. |

* + Select students to share strategies for the “Discuss” phase of the lesson and determine a sequence in which they will share. In order to directly compare strategies, focus the sharing around one or two pre-determined cards.

**Discuss:**

1. Bring class together for a discussion about strategies used during the game. (10 minutes)
   * Show a *Conceptual Subitizing Card.*
     + Have pre-selected students share strategies for finding the quantity.
     + Ask: How were our classmates’ strategies the same? How were they different?
     + How did our classmates use subitizing to find the quantity?
   * The goal of this lesson is to use conceptual subitizing as an efficient way to finding “how many”. Highlight strategies that related to conceptual subitizing.

**Evaluation of Student Understanding:**

**Informal Evaluation:**

Repeat *Subitize and Battle* in a teacher-led small group or as a math center throughout the week. Observe to see if students count individually, subitize one part and count on, or subitize multiple parts and know the matching addition fact.

**Meeting the Needs of the Range of Learners:**

* If students struggle to use conceptual subiziting, it may be necessary to practice perceptual subitizing within 5 using familiar configurations (e.g., dots on a die or dots).
* Students may need additional support comparing sets of objects.

**Extensions:**

* Laminate and use the conceptual subiziting cards in math centers/stations. Students may play Battle, play Go Fish, sort cards by quantity, or match cards to written numerals.

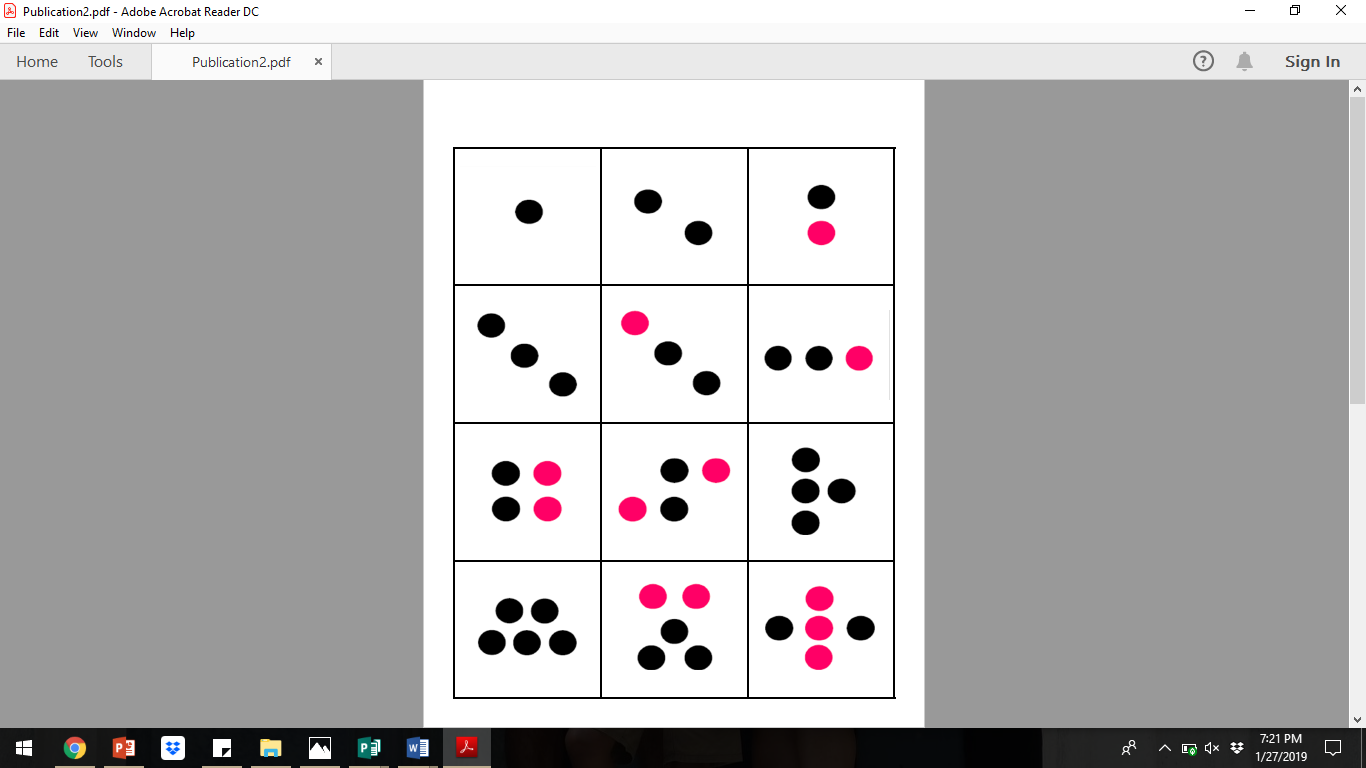
**Possible Misconceptions/Suggestions:**

|  |  |
| --- | --- |
| **Possible Misconception** | **Suggestion** |
| Students may want to say they are subitizing when they are actually counting items individually. | Be aware of the strategies students are using, and help articulate them. Nudge students toward subitizing one or more subgroups in order to find the total amount. |

**Special Notes:**

* Perceptual subitizing means to instantly see “how many”. Conceptual subitizing means to find “how many” by recognizing and combining subgroups within a set. For example:
  + Subitize part and count on from there.
  + Subitize multiple parts and know a corresponding addition or multiplication fact.
  + Subitize multiple parts and use skip counting.
* Because conceptual subitizing requires the application of perceptual subitizing, students must have many experiences with perceptual subitizing prior to this lesson.

**Conceptual Subitizing Cards (page 1)**



**Conceptual Subitizing Cards (page 2)**

