

# Developing Early Number Concepts & Number Sense.

Van de Walle, Chapter 8  
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# Big Ideas & Goals

- If you're working in primary (PK-3)
  - I hope you'll feel empowered to spend more time on early number concepts and number sense before moving on to formal operations, computations, and larger numbers!
- If you're not working in primary (3-12)
  - I'm guessing you already know the struggles of friends who come to you without a strong number sense! I hope that you'll still be able to gain some ideas and adapt them for your classroom. And that you'll support your primary teachers in spending time on teaching number concepts and number sense!

# Counting

- To count accurately you must:
  - Learn the number words
  - Learn one-to-one correspondence
  - Learn that the last number counted represents the total number in the set.
- Counting on:
  - Activity: 8.6 & 8.7 (first grade)
  - Deck of cards, die, cup, counters.

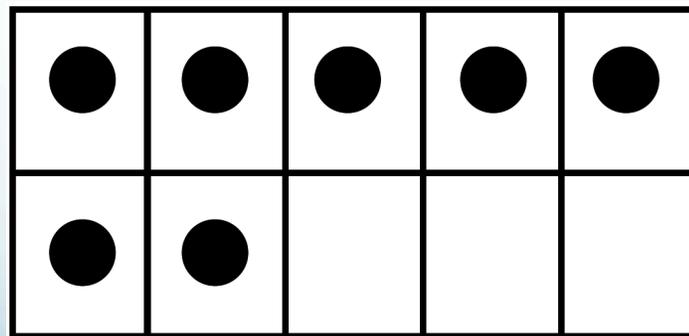
Our ideas: What is Number sense?

# Number Sense 1 - 10

- “...flexibility in thinking about numbers, which is a hallmark of number sense.” (NCTM standards, referenced in Van de Walle p. 129)
- Five/Ten Frames
- Dot Arrangements
  - Activity 8.9 (elementary grades)
- Part-Part-Whole Relationships
  - Number trains, name boxes, switch partners, etc.

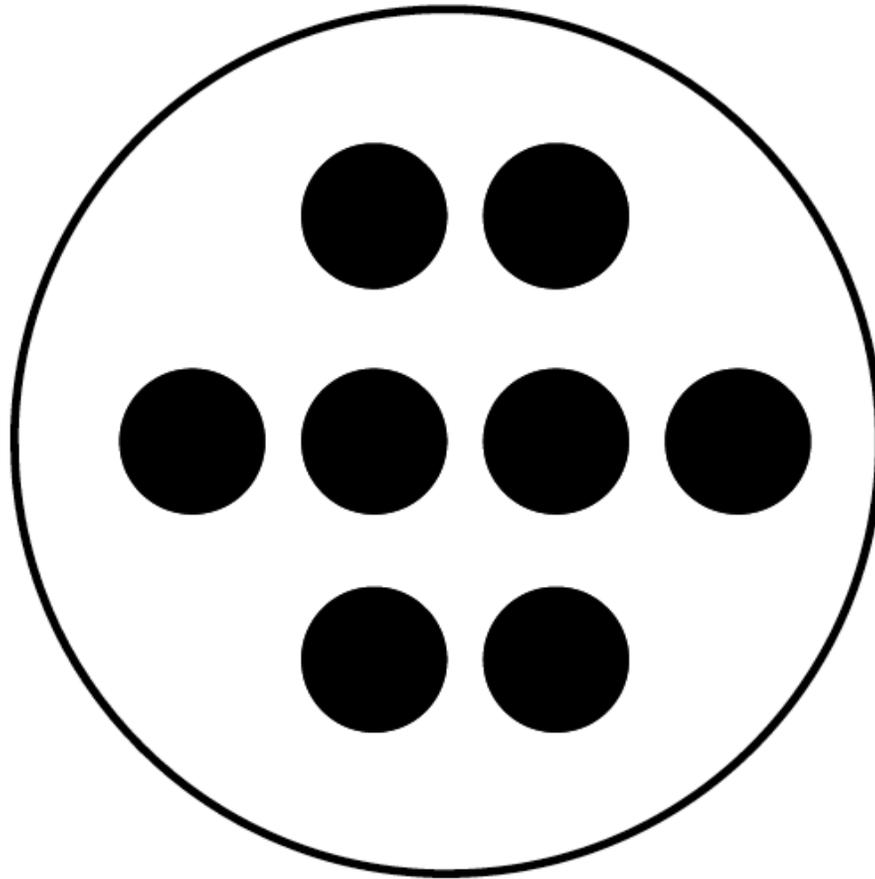
# Five & Ten Frames

- It can be useful for children to think of numbers and their relationships to the anchor numbers of 5 and 10.
  - 7 is 5 and 2 more
  - 7 is 3 away from 10
- Application: What is  $7 + 4$ ? Well 7 and 3 more is 10 and 1 extra is 11.



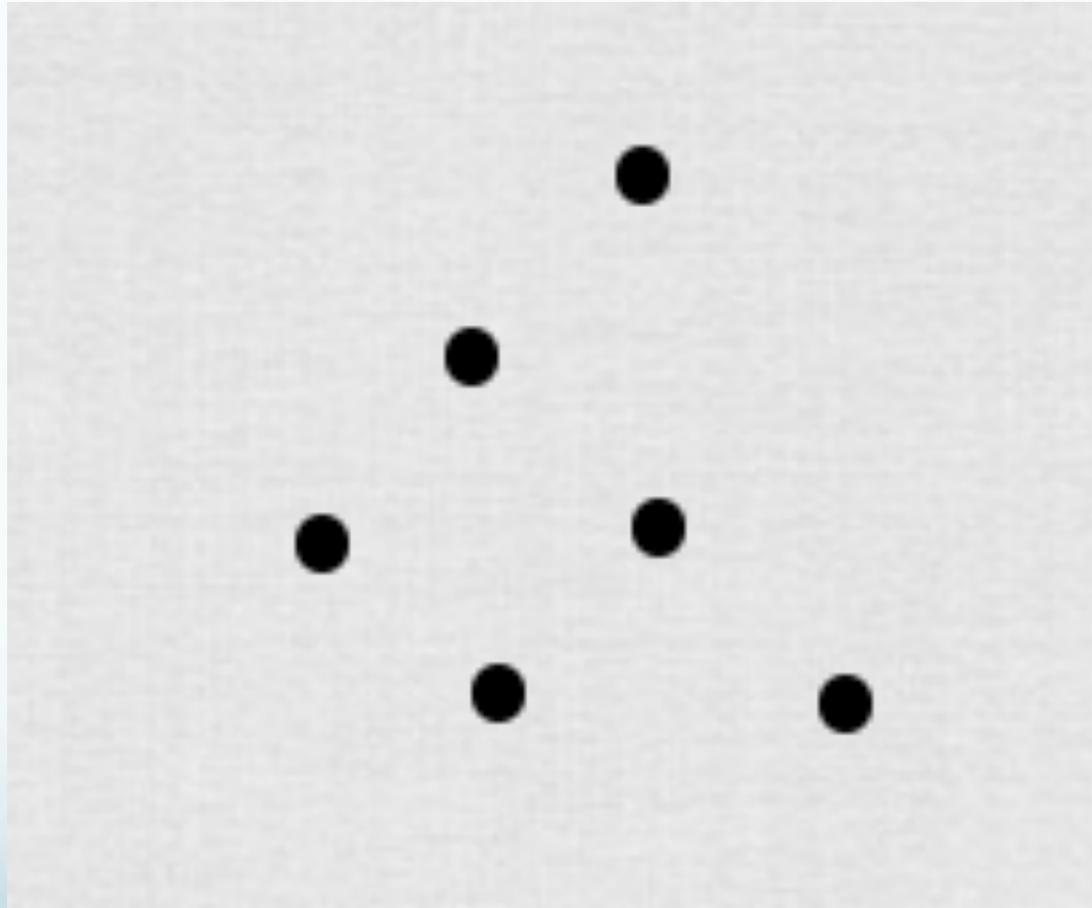
# Dot Arrangements

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# Part-Part-Whole

- How many ways can you make \_\_\_?

- [source](#)



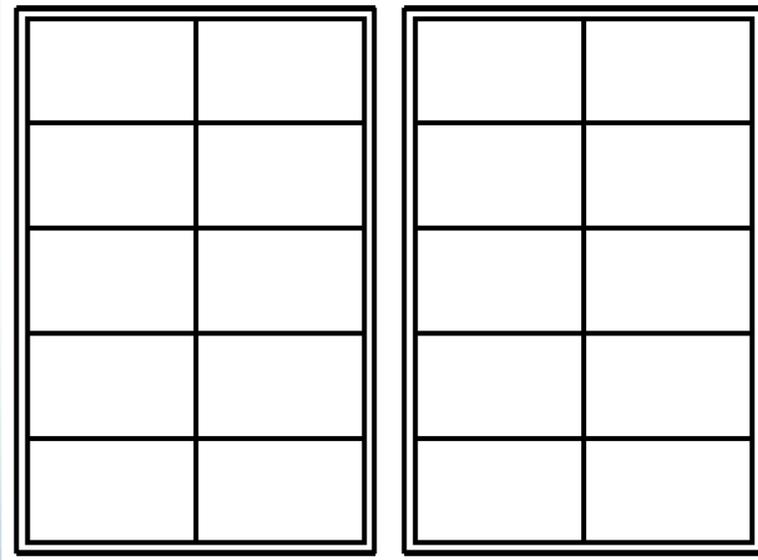
- Expand to “name boxes”

- Source: EDM site

<b>9</b>	<i>### IIII</i>
$7 + 2$	$3 + 4 + 2$
$9 - 0$	$10 - 1$
nine	

# Number Sense 11-20

- Ten and some more
  - Not obvious with our counting words
  - Multiple ten frames
  - Make-a-ten strategy



# Number Sense in the World

- Classroom Graphs
  - Yes/No Graphs during morning message
  - Weather Graph during calendar
  - Hot/Cold lunch graphs
    - Girl/Boy graphs

# Thanks for listening intermediate teachers!

- Why do you think it's important for little ones to come to you with a solid number sense?
- How does having a solid number sense help in upper level operations and mathematical thinking?

# Helpful Resources

- Article: "Teaching Number Sense", Education Leadership
- Book: Teaching Student-Centered Mathematics: Grades K-3 - Van de Walle
- Book: Number Sense Routines - Jessica Shumway
- Book: Teaching Number Sense, Grade 1 - Chris Confer