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Teaching subitizing to PreK-2 students in fun and engaging ways

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What is subitizing?

The ability to see how many instantly.

- Increases understanding of number
- Usually numbers under 5 to start



Perceptual versus conceptual Subitizing

- Perceptual is the ability to recognize a number without using a process.
- Conceptual is when a person can see the number pattern as a composition of parts and as a whole.
 - They “Just know” the answer.



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What does the NCTM say about subitizing?

Pre-K–2 Expectations: Count with understanding and recognize "how many" in sets of objects



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What does the Common Core say about subitizing?

CCSS.Math.Content.K.CC.B.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.



What is the value in teaching subitizing?

- Builds a foundation for number sense
- Beginning of addition and subtraction
- Helps with counting by multiples of #'s



How do we teach subitizing?

- Use quick images
 - 3 seconds to discourage counting
 - Ask class for answers
 - Show a second time asking again
- How do we teach the related topics from the CCSS?
 - Leads to part-part-whole thinking
 - Addition and subtraction ideas
- Give me your ideas...



Considerations

- Spatial arrangement
 - Use rectangular array first
 - Next on to circular, etc arrangements
- Show 4 to 5 images to begin with for kindergarten
 - Move on to more objects after mastery
 - Group items for addition



Manipulatives to use

- Ten Frames
- Pattern Cards
- Dice
- Jacks
- Quick image arrays
- Technology



Technology

- iPad apps
 - Subitize Tree
 - Okta's Rescue
 - Little Monkeys: Friends of Ten



Links to websites

- [Math Coach Corner](#)
- <http://www.pinterest.com/paelly/subitizing-activities/>
- [Okta's Rescue](#)
- [Fuel the Brain](#)
- <http://illuminations.nctm.org/Activity.aspx?id=3563>



References

- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: National Council of Teachers of Mathematics.
- National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010) *Common Core State Standards (Mathematics)*. Washington D.C.:National Governors Association Center for Best Practices, Council of Chief State School Officers.
- Clements, D. H. (1999) Subitizing: What is it? Why teach it? *Teaching Children Mathematics*, 5(7), 400-405.