Apps for Developing Number Sense

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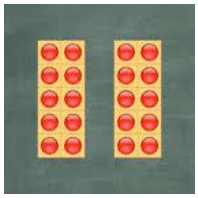
Subitizing Apps

To subitize is "instantly" seeing how many. The tasks in these apps are designed to flash a graphic on the screen for a limited amount of time before vanishing. This constraint makes counting all objects a much less efficient strategy for the child. Subitizing fosters the development of number sense by facilitating progression towards flexibility with number. In particular, children compose and decompose numbers in various ways. Subitizing also helps develop the ideas of addition and subtraction.*

*Clements, Douglas. (1999, March) Subitizing: What Is It? Why Teach It? *Teaching Children Mathematics.*

	Little Monkey-Subitizing Flashcards, ten frames, number match, dice, double dice for addition and a teacher tool. https://itunes.apple.com/app/subitising-flash-cards/id515943889?mt=8&ign-mpt=uo%3D4
	Quick Images - Dot patterns, ten-frames, rekenreks, and finger patterns. https://itunes.apple.com/us/app/quick-images/id560877283?mt=8
	Subitize Tree - Subitize using many different images. Easy to differentiate using different speeds and options. https://itunes.apple.com/us/app/subitize-tree-hd/id634880139?mt=8
	Number Flash - Subitize using the ten frame with numbers up to 20. Allows you to differentiate based on the numbers chosen for the student. https://itunes.apple.com/us/app/number-flash/id610929803?mt=8
	Concentration – Played alone or in pairs. Use for matching numbers, dots, ten frames and words. This app has options for matching shapes, fractions and multiplication representations. https://itunes.apple.com/us/app/math-concentration/id458437534?mt=8

Ten Frame Apps

Ten frames are an excellent tool to develop children's number sense. It allows children to benchmark numbers to 5 and 10 and help develop the ideas of addition and subtraction. It is a foundational skill for more advanced addition and subtraction in later grades.

	Little Monkey Friends of Ten - A variety of activities that work on the partner numbers to 10. This app also has a teacher tool. https://itunes.apple.com/us/app/friends-of-ten/id488573871?mt=8
	Ten Frame Fill - This app asks children how many more to make 10? It has numerous options including showing the equation that goes along with the 10 frame. https://itunes.apple.com/us/app/10-frame-fill/id418083871?mt=8
	Find Sums - Practice making any number between 5 and 20, or for a challenge make 100. You can also track student progress. https://itunes.apple.com/us/app/mathtappers-find-sums-math/id353582286?mt=8
	Magic 10 - This app has different ways to match 10 in either a one player or two player game. Representations include the 10 frame or just the number. https://itunes.apple.com/us/app/magic-10/id628570386?mt=8
	Make 10 Plus – A more abstract way to practice number combinations to 10. This app has many options including changing numbers, level, and speed. https://itunes.apple.com/us/app/make-10-plus/id630033796?mt=8
	Franklin's Friends of Ten - Practice partner numbers to 10 in a missing addend style game with fireworks! https://itunes.apple.com/us/app/franklins-friends-of-10/id832658979?mt=8
	Ten Frame Mania – Students develop number sense and understanding of cardinality as they play this fast paced game. https://itunes.apple.com/ru/app/ten-frame-mania/id1018365345?l=en&mt=8

Rekenrek Apps

The structure of the Rekenrek – highlighting groups of 5 – offers visual pictures for young learners at the beginning stages of understanding that one number may be a combination of two or more other numbers. With the Rekenrek, children quickly learn to "see" in groups of 5 and 10. Therefore, the child will see the number 7 as two distinct parts: one group of 5, and two more. Likewise, the child sees 13 as one group of 10, and 3 more.*

*Frykholm, Jeff. (2008) Learning to Think Mathematically with the Rekenrek.

	Number Rack - A free app that is just like a Rekenrek. You can add up to ten rows of ten to compose numbers up to 100! https://itunes.apple.com/us/app/number-rack-by-math-learning/id496057949?mt=8
	Garfield Mental Math – Make numbers on the Rekenrek and subitize numbers up to 20. Also has math fact and fact family practice. https://itunes.apple.com/us/app/garfields-mental-math-games/id619237356?mt=8

Addition and Subtraction Apps

These apps require students to compose and decompose small numbers. This is a much more challenging way to practice addition and subtraction and lays the foundation for the development of fact fluency.

	Hungry Guppy - Perfect for Pre-K and K children to compose numbers to 5 using dots and numbers. https://itunes.apple.com/us/app/motion-math-hungry-guppy/id542563075?mt=8
	Hungry Fish - Excellent practice for composing and decomposing numbers. Levels 1-18 allows for grades K-5 to use this app! https://itunes.apple.com/us/app/motion-math-hungry-fish/id483049169?mt=8
	Todo Math - Personalized math lessons aligned to CCSS. The early elementary curriculum is great for learning foundational math skills. There is a school edition that offers 30 seats and gives teachers a dashboard for tracking student progress. https://itunes.apple.com/us/app/todo-math-play-learn-from/id666465255?mt=8
	Quick Math Jr. - This app helps children develop their number sense with fun games that adapt to a child's current level of knowledge. https://itunes.apple.com/us/app/quick-math-jr./id926078360?mt=8

Great Websites that foster development of strong number sense

Illuminations is the NCTM website and offers excellent interactive apps. Four that target number sense are: *Concentration, 5 Frame, 10 Frame Fill and Under the Shell.*
http://illuminations.nctm.org/Activity.aspx?id=3565

Math Playground is a website filled with 100s of math games, logic puzzles and word problem. *Thinking Blocks Junior* is a game that helps children solve word problem using a bar diagram and systematic steps for solving problems. It has higher levels for addition/ subtraction, multiplication/division, fractions and ratios.
http://www.mathplayground.com/tb_addition_jr/thinking_blocks_junior.html
http://www.mathplayground.com/thinkingblocks.html

Greg Tang has an excellent website that has several online games including *Kakooma* and *Ten Frame Mania*. You will also find a wealth of resources to use in your classroom for developing number sense.
http://gregtangmath.com/

Thanks so much for coming to our presentation. We hope you walking away with something new that you can use in your classroom tomorrow! Below is our contact information should you have any questions or comments.

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