



Teacher's Guide for

1 + 1 = 5 and Other Unlikely Additions

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Summary:

Who says $1 + 1 = 2$? With a mix of math and creativity, this book demonstrates that $1 + 1$ can equal 3, 13, or even 110. It all depends on what you're counting!

Sharing the book with your class:

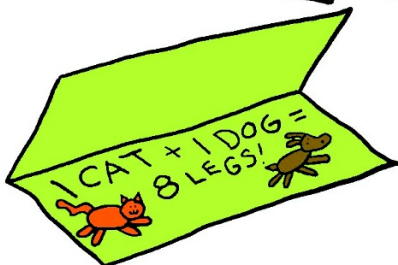
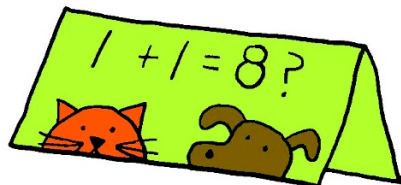
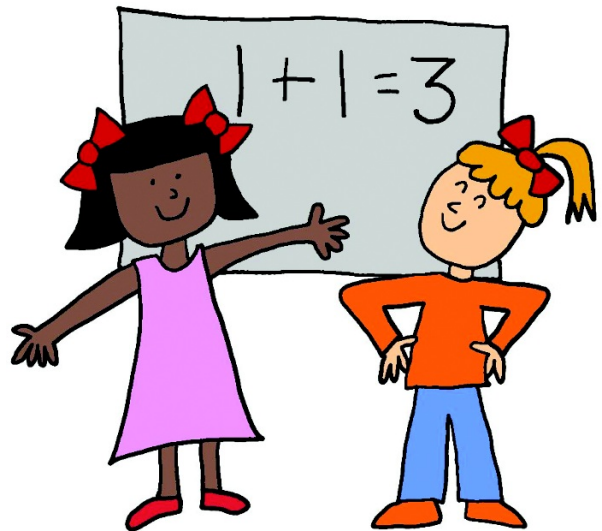
Read the title and ask your students if they agree that $1 + 1 = 5$. Can they guess why this might be the title?

Open the book and read the first equation, $1 + 1 = 3$. Turn the page and reveal that the answer involves counting the horns of the unicorn and goat. Students will quickly catch on to the structure of the book. Encourage them to predict what is being counted in each equation before turning the page.

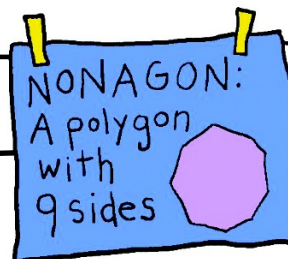
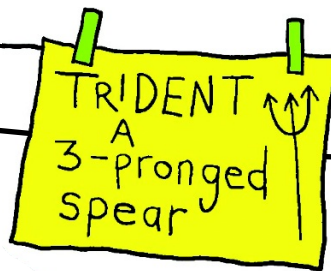
When you've read the last equation, flip the book over and show the back cover. Point out the note the cat is holding. Ask your students if they would agree now that $1 + 1 = 5$. Why or why not?

Creating your own equations:

Ask for two student volunteers. On the board write a $1 + 1$ equation that relates to these particular children such as $1 + 1 = 4$. Can the rest of the class give a reason why the equation might be true? Be sure to accept any answer that fits, even if it is not the one you had in mind (1 Sam + 1 Sara = 4 hands / 4 eyes / 4 lungs, etc.). Try other equations with new volunteers: $1 + 1 = 20$ (fingers), $1 + 1 = 9$ (buttons), $1 + 1 = 0$ (mustaches!).



In groups or individually, your students may wish to come up with other $1 + 1$ equations: 1 table + 1 desk = 8 legs, 1 aquarium + 1 gerbil cage = 6 classroom pets, etc. Students can share their puzzles by folding a sheet of construction paper in half, writing the equation on the outside and the solution on the inside. Add illustrations that hint at the puzzle's theme. The finished puzzles can be hung in the hallway for other classes to solve.



Vocabulary power!

Combine math and language arts by creating a classroom collection of words with number-related prefixes. Here are a few to get you started. Can your class find others in $1 + 1 = 5$?

unicycle
unify

monocle
monologue
monorail

bicycle
bicuspid
binoculars

triceratops
trident
trillium
trilogy
triple
tripod

quadrilateral
quadruple
quarter

pentagon
pentathlon

hexagon

septet
septuplets

octagon
octave

nonagon
nonagenarian

decapod
decathlon

centennial
centigrade
centipede
centurion

Students can practice their research/dictionary skills by choosing a word then creating a mini-poster that shows its definition and an illustration. Display the words on a wall, or hang them like banners on a string stretched across your classroom. Add to your collection all year long.



Number monsters:

Once your students are familiar with common number prefixes, ask them to invent a monster with a number-related name (The Purple Trifoot, The Quad-eyed Bi-toothed Hexahorn, Octahead, etc.). After they've drawn pictures of their creatures, display the monsters on one side of a bulletin board and the names on the other side. Can your students match the monsters to their appropriate names?

About the author:

David LaRochelle is a former fourth grade teacher and the author or illustrator of many books for young people. For over twenty years David has worked with the creative thinking competitions Odyssey of the Mind and Destination Imagination. When he is not writing, illustrating, or visiting schools, he enjoys carving fancy pumpkins which can be viewed at his website, davidlarochelle.net.

About the illustrator:

Brenda Sexton has illustrated eighteen books for young readers and has won four Emmy awards for her work in sports television. She enjoys painting, dancing, and playing tennis. She also loves animals, especially cats. You can see more of her illustrations at newshoesdesign.com.

Exploring other languages:

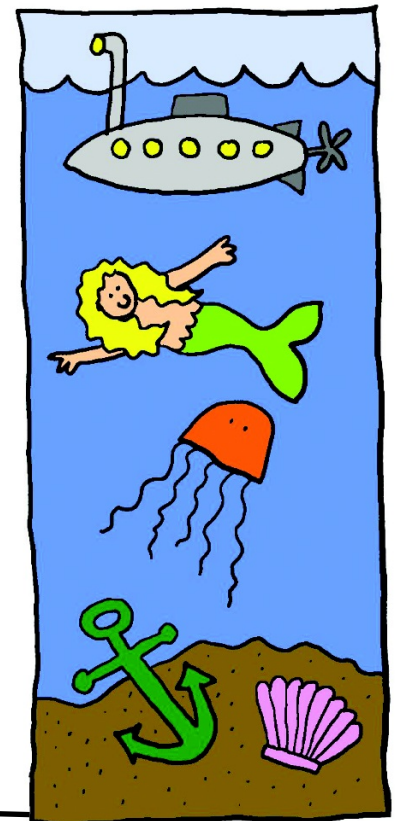
Numbers are a fun and easy way to sample a new language. Try reading $1 + 1 = 5$ by replacing the English numbers with their foreign counterparts. Better yet, have one of your ESL students read the numbers in his/her native language.

	English	Spanish	Japanese	French	Mandarin Chinese	Hindi
0	zero	cero	rei	zéro	ling	shunya
1	one	uno	ichi	un	yi	ek
2	two	dos	ni	deux	er	do
3	three	tres	san	trois	san	teen
4	four	cuatro	shi	quatre	si	char
5	five	cinco	go	cinq	wu	panch
6	six	seis	roku	six	liu	chesh
7	seven	siete	shichi	sept	qi	saat
8	eight	ocho	hachi	huit	ba	aath
9	nine	nueve	kyu	neuf	jiu	nau
10	ten	diez	jyu	dix	shi	das
11	eleven	once	jyu ichi	onze	shi yi	gyaarth
12	twelve	doce	jyu ni	douze	shi er	baarh

Divergent thinking:

Successful problem solvers know that there can be multiple answers to a question. $1 + 1 = 5$ celebrates this type of thinking. Here are some activities to try with your students that encourage creativity. As they tackle these problems, remind your students (and yourself!) that there are many answers to each question. From the simple to the complex, from the obvious to the totally wild, the more ideas your students can generate, the better!

- At the top of the blackboard draw some waves. Have your students take turns coming to the board and drawing something that might be found underwater. How many different ideas can your class add? Try this challenge again and ask your students to draw things that might be found in the sky.
- Challenge your students to "make something that changes color when you pull a string." Encourage students to be creative, but don't give any directions beyond that! Students can make their inventions at home then share them at school. You and your class will be surprised at the variety of solutions.
- Encourage open-ended discussions across all subject areas:
 - How is Minnesota like Hawaii?
 - If Wilbur hadn't made friends with Charlotte the spider, how could the other farm animals have saved his life?
 - What are different ways to measure an apple tree?



You can find more classroom activities at: davidlarochelle.net

Read more about it:

Check out these other books that take a fresh, playful look at creative ways to count:

One Is a Snail, Ten is a Crab by April Pulley Sayre and Jeff Sayre, illustrated by Randy Cecil

Zin! Zin! Zin! A Violin by Lloyd Moss, illustrated by Marjorie Priceman

Pizza Counting by Christina Dobson, illustrated by Matthew Holmes

And take a look at these titles that encourage students to think outside the box:

Not a Box and *Not a Stick* by Antoinette Portis

A box and a stick become all sorts of fanciful items in the hands of an imaginative rabbit and pig.

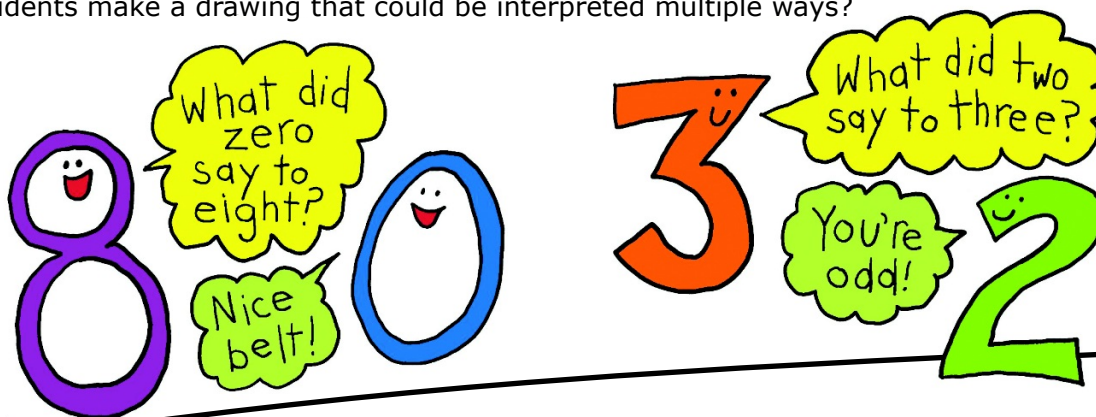
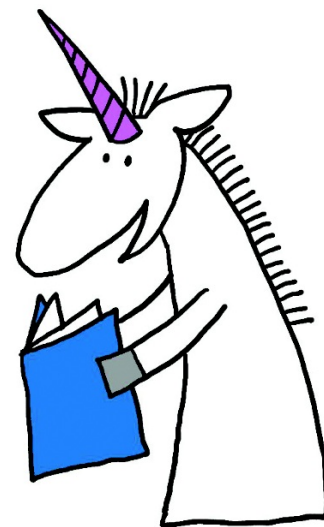
After reading these two simple books challenge your students to turn a shoebox or stick into something new. Display their creations in a classroom "Not-a-Box" or "Not-a-Stick" museum.

A House is a House for Me by Mary Ann Hoberman, illustrated by Betty Fraser

This bouncy rhyming text lists different dwellings for various people and objects. Encourage your students to brainstorm even more houses and the things that live there. Or perhaps they'll want to create a list of different types of transportation. What could be transportation for a human? A cow? A seed? A word?

Duck! Rabbit by Amy Krouse Rosenthal and Tom Lichtenheld

Two unseen narrators argue about whether they are looking at a duck or a rabbit. Can your students make a drawing that could be interpreted multiple ways?



Did you know?

The author brainstormed over 150 subtitles for this book before he came up with one that the editor thought was "just right." Some of the rejected subtitles include *A Pack of Perplexing Puzzlers*, *Tricky Twisted Math Teasers*, and *Addition Gone Crazy*. What would you have chosen for a subtitle?

Revisions are a part of every book ...

and $1 + 1 = 5$ was no exception. Several of the original equations had to be changed, including $1 \text{ dime} + 1 \text{ nickel} = 15 \text{ cents}$ and $1 \text{ quart} + 1 \text{ pint} = 6 \text{ cups}$. Why do you think these equations were replaced? (Hint: books are often translated into other languages. Why might other countries have had trouble with these equations?)