more AT is in the mATh

fppt.com

http://bit.ly/adeaztech

http://tinyurl.com/AzTechFB

http://bit.ly/aztechsymbaloos

Introductions

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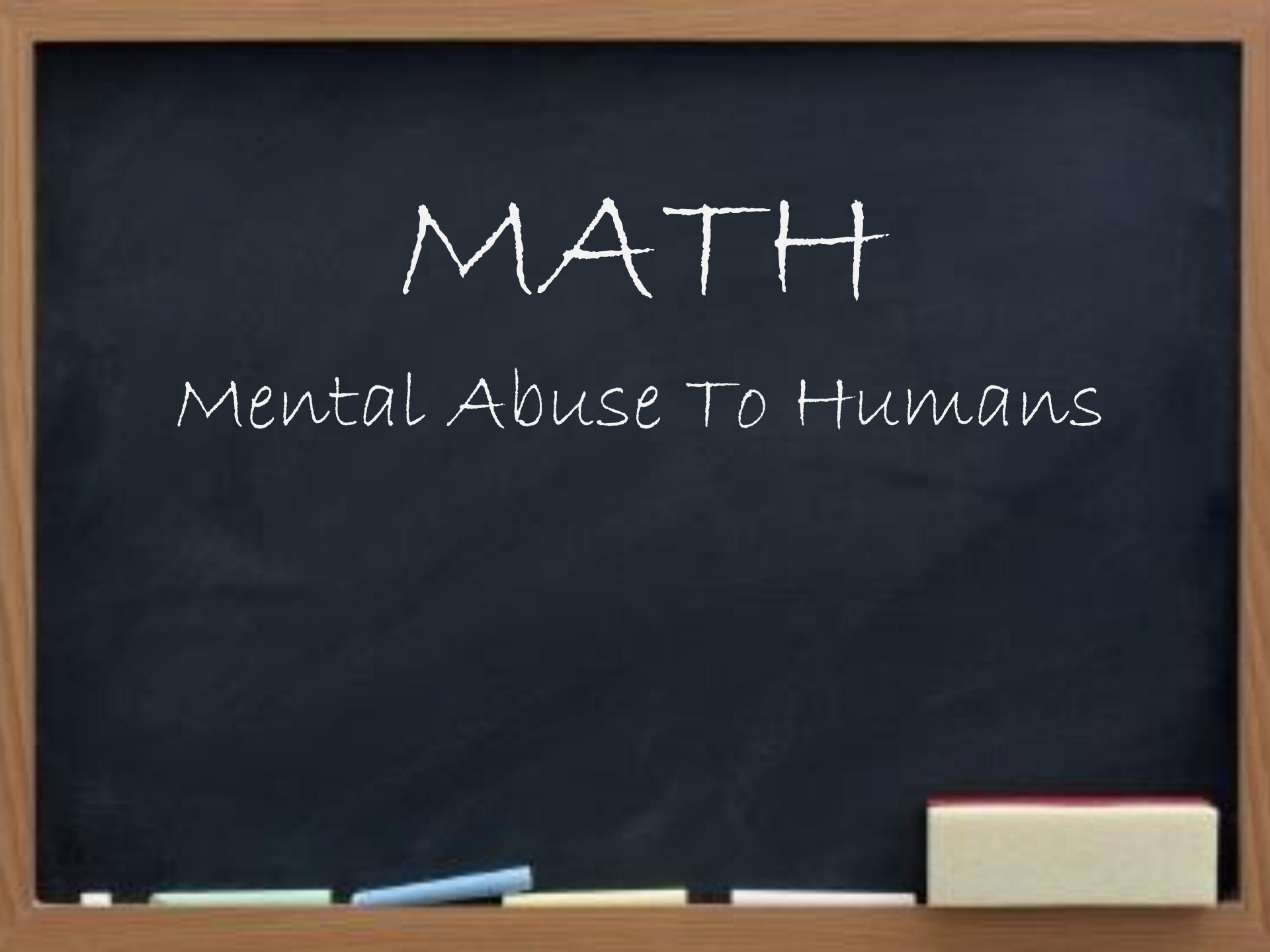
If you would like to access previous presentations of: **AT is in the mATh**

http://1drv.ms/1NQfm1Q

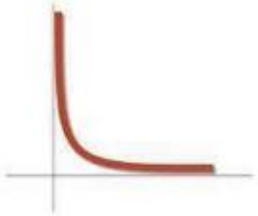
Learning Outcomes

- Identify assistive strategies to support students in the math curriculum
- Identify assistive technology tools, devices, and software to support students in the math curriculum
- Support the alignment of assistive strategies and technology to the AZCCRS
- Incorporate universal design for learning (UDL) strategies and tools into the classroom

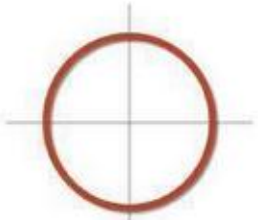

MATH
Mental Abuse To Humans

ALL YOU NEED IS

$$y = \frac{1}{x}$$



$$x^2 + y^2 = 9$$



$$y = |-2x|$$

$$x = -3|\sin y|$$

Disclaimer

- The Arizona Department of Education/Exceptional Student Services (ADE/ESS) does not prescribe, endorse, or provide advertising space for textbooks, software, devices, or curriculum materials. The ADE/ESS does not evaluate textbooks, software, devices, or curriculum materials for compliance with meeting the state minimum curriculum standards and does not recommend any specific textbooks, software, devices, or curriculum materials. Each public education agency (PEA) is responsible for selecting curriculum materials that will meet the minimum state curriculum standards. PEAs may also establish their own policies for textbook, software, and curriculum materials' selection and adoption.

- The ESS−Assistive Technology (AT) team does frequently review software, devices, and curriculum support items to determine if they may be used to assist students with disabilities in accessing and benefiting from the general education curriculum. These supports may be considered assistive technology, as defined in the Individuals with Disabilities Education Act (IDEA). The ESS−AT team may procure, demonstrate, and provide training on a wide range of assistive technology items and may compare and contrast the features of these items, but the team is precluded from making any recommendations for one product over another.

Assistive Strategies:

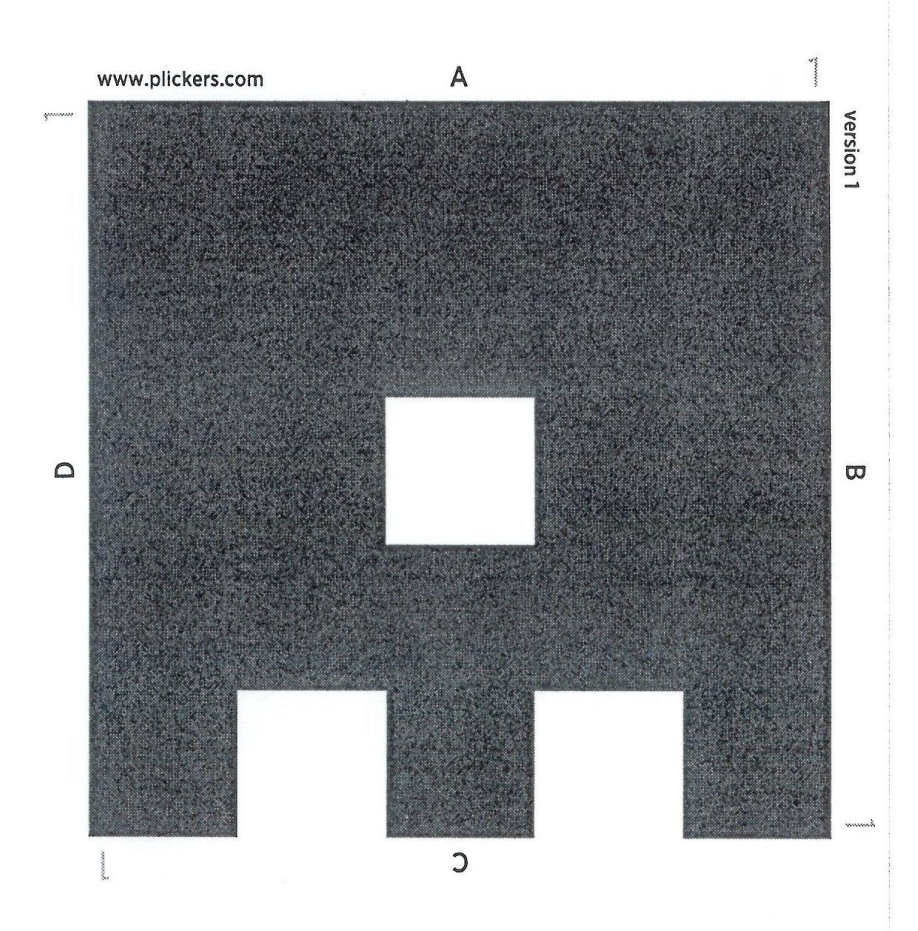
Various methods of instruction and organization to enhance individual understanding of concepts

Assistive Technology:

“Any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities”

IDEA 2007

Plickers



A free app available for Android and iPad/iPhone Devices

https://plickers.com/

Plickers

Question: Which mATh concept supports are you most interested in?

A: Early numeracy and mATh concepts.

B. Addition, subtraction, multiplication, division.

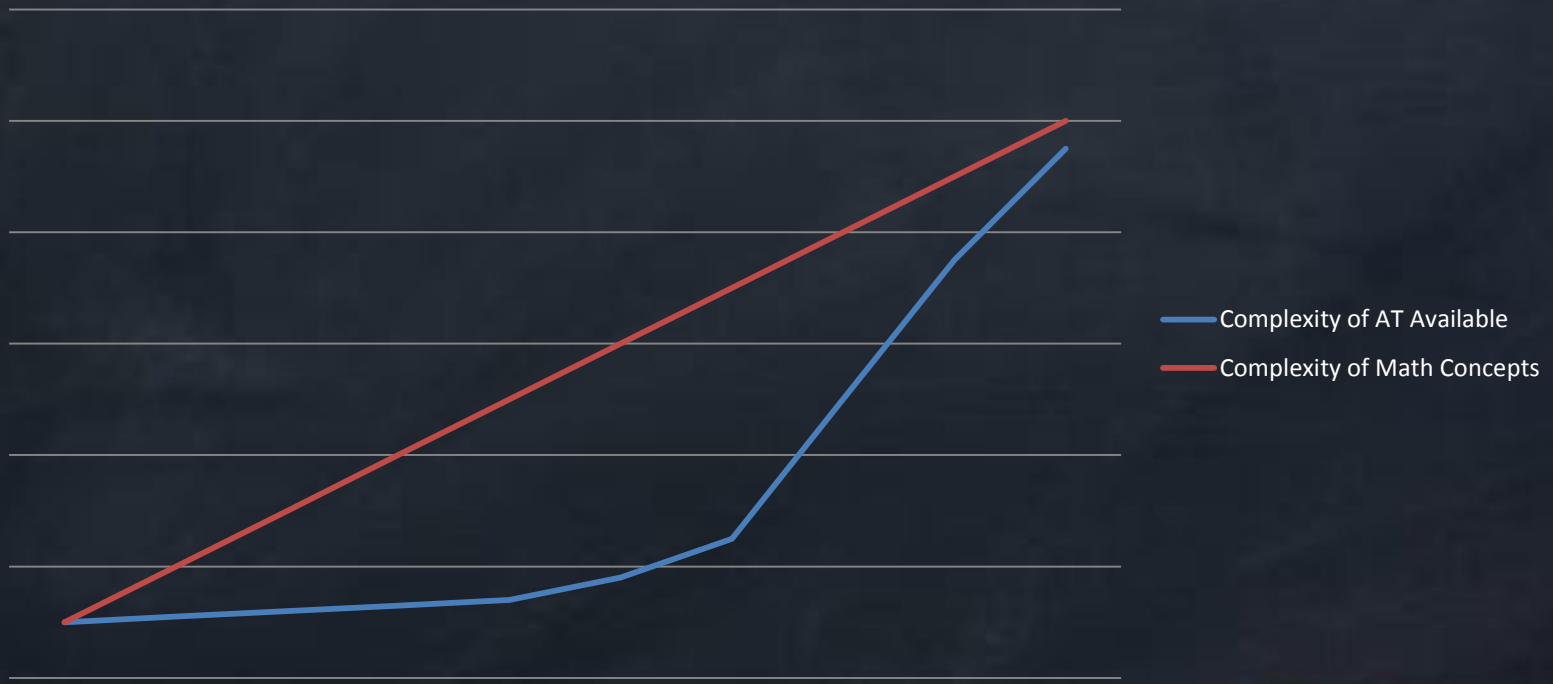
C. Higher order mATh concepts.

D. Accessibility for people with physical and sensory impairments.

The inverse proportion of Math Curriculum Complexity to Available Assistive Technology

NOTE: This representation is anecdotal only

The complexity of available AT to the complexity of mATh concepts.



NOTE: This representation is anecdotal only

Universal Design for Learning (UDL)

Multiple means of representation: Present information and content in different ways.

Multiple means of expression: Use different ways for students to express what they know.

Multiple means of engagement: Stimulate interest and engagement.

Assistive technology is part of a UDL classroom environment.

All assistive strategies and assistive technology can be used to enhance learning for all students.

www.cast.org

Making Math Meaningful

- No naked numbers:
  - Use real-life problems.
    - How big? How much? How far?

- Everyone does not need to use the same method to arrive at the correct answer.

- Picture it, draw it, show it.

- A new math mantra:
  - Why? How do you know? Can you explain?

Steven Leinwand
Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement

Accessible Mathematics

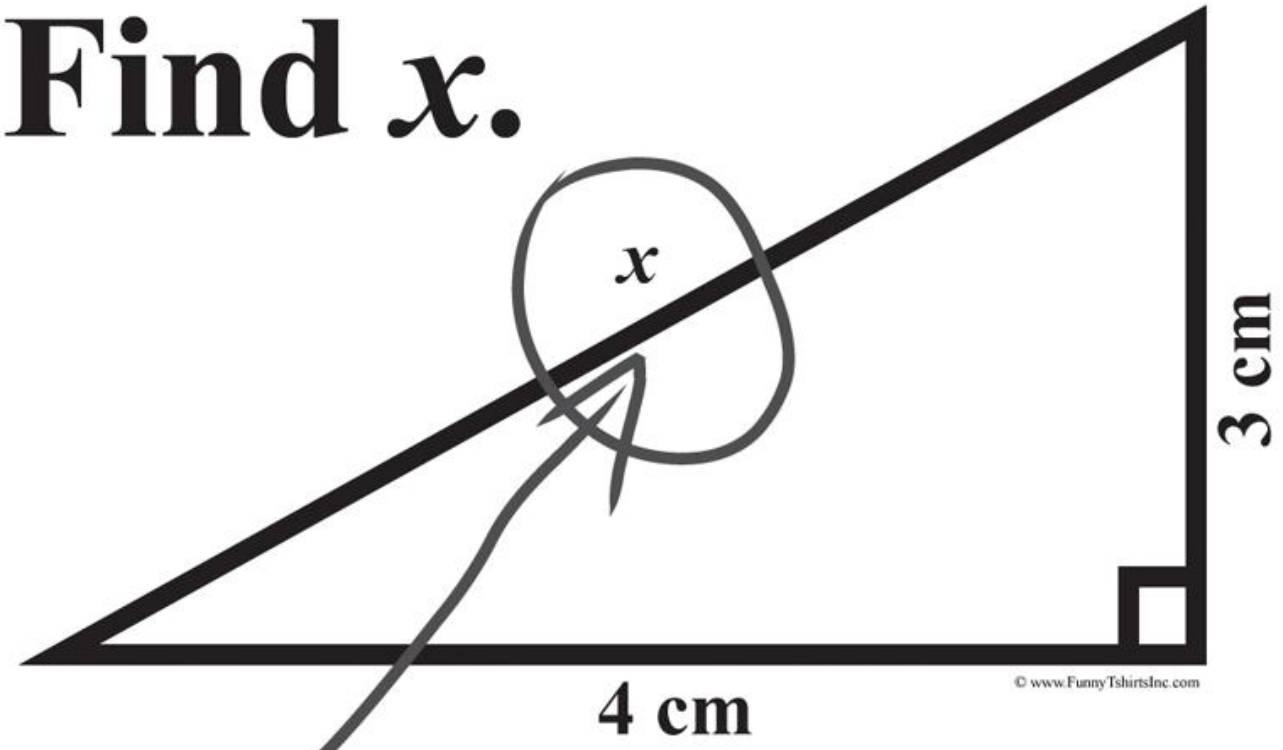
10 Instructional Shifts That Raise Student Achievement

Steven Leinwand

Heinemann

Dedicated to Teachers™

Find x.



Here it is

Mixed Modality Learning

Mixed-modality presentations (for instance, using auditory and visual techniques) improve results in a variety of subjects. Instruction that stimulates more than auditory learning (for example, kinesthetic learning) is more likely to enhance learning in a heterogeneous student population.

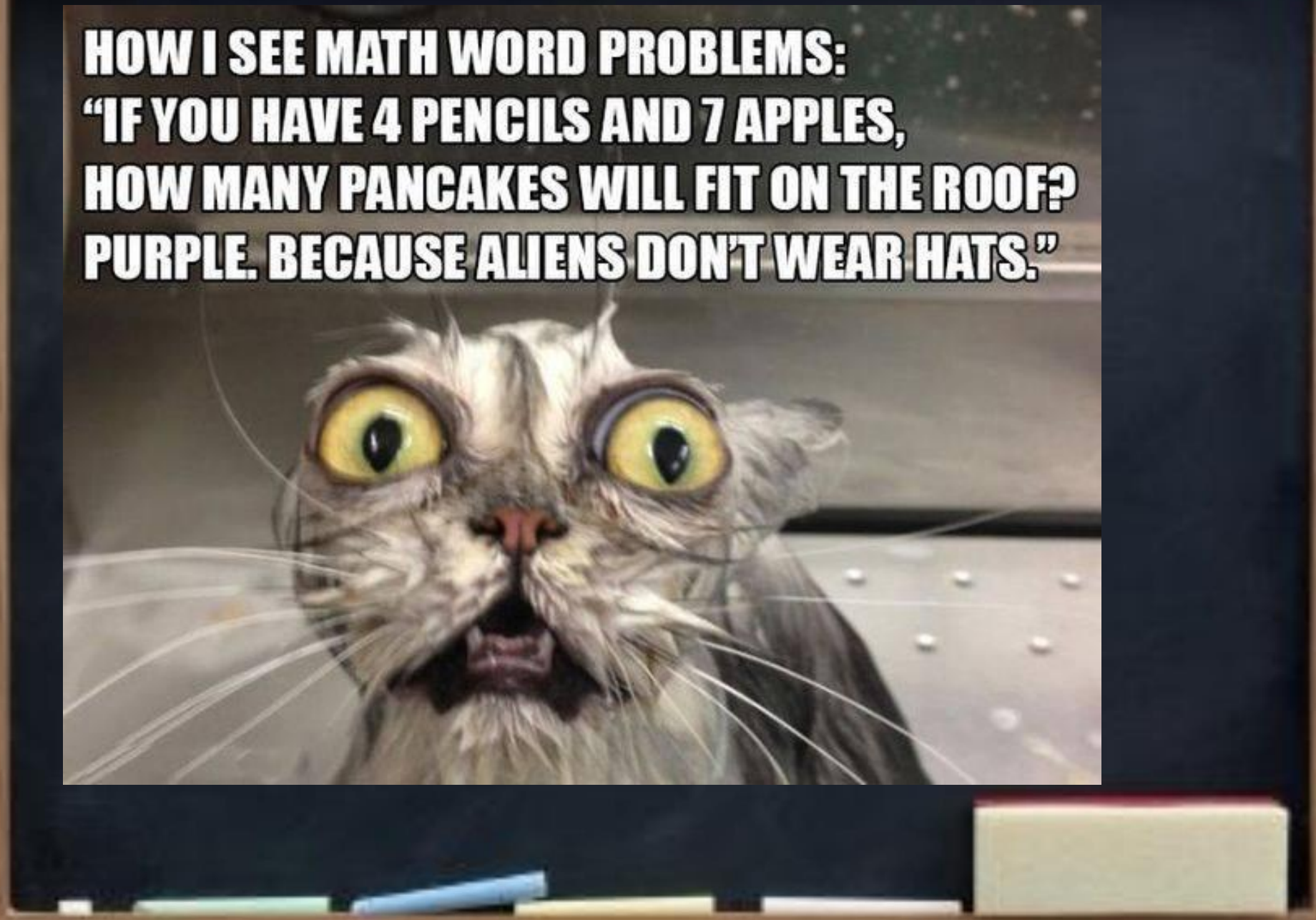
Coffield, F., Moseley, D., Hall, E., Ecclestone, K. (2004). *Learning styles and pedagogy in post-16 learning. A systematic and critical review*. London: Learning and Skills Research Centre.

BenZion, Galeet (2010). Does a change in mathematics instructional strategies lead struggling third grade students to increase their performance on standardized tests?. Master's thesis. University of Maryland at College Park.

Why should we explore different ways to teach math?

- 78% of adults cannot explain how to compute the interest paid on a loan.
- 71% cannot calculate miles per gallon on a trip
- 58% cannot calculate a 10% tip for a lunch bill

Phillips, G. 2007


HOW I SEE MATH WORD PROBLEMS:
"IF YOU HAVE 4 PENCILS AND 7 APPLES,
HOW MANY PANCAKES WILL FIT ON THE ROOF?
PURPLE. BECAUSE ALIENS DON'T WEAR HATS."

Web links to many resources from this presentation are available here

http://bit.ly/aztechsymbaloos

Show & Tell

Arizona Department of Education Assistive Technology Loan Library

www.adeatloan.org

AzTAP ARIZONA Technology Access Program

A Statewide, Phoenix-based program of the
Institute for Human Development at
NORTHERN ARIZONA UNIVERSITY

Home | About Us | AT Devices | AT Reuse | AT Funding | AT Education | AT Conference | AT Resources | Contact Us

Arizona Department of Education AT Short Term Loan Library

Please note: The equipment inventory via this program is only available for loan to personnel from public education agencies (i.e., districts, charters, and other public schools), as defined in Arizona state statute and recognized by the Arizona Department of Education. If you are not affiliated with a public education agency, please visit the Arizona Technology Access Program's loan program, which is available to all residents of Arizona.

Arizona Department of Education

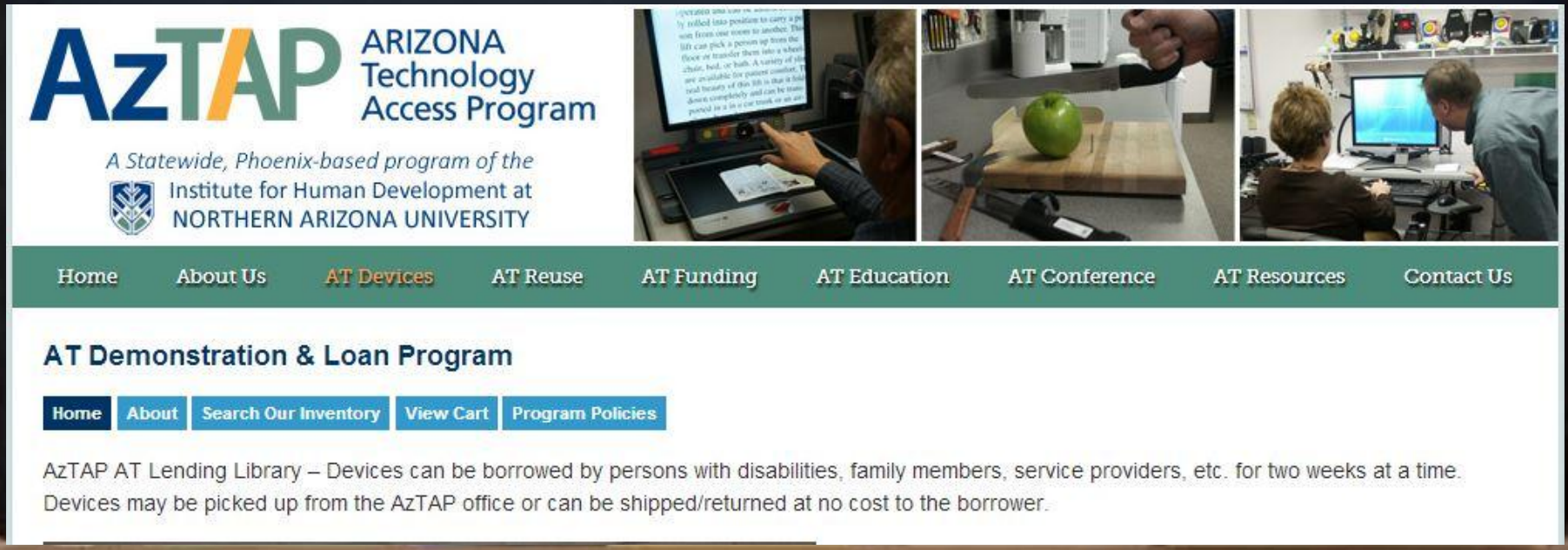
Home | About Program | Search Our Inventory | FAQs | Forms | Contact Us

Welcome

Use the tabs above to find out more Assistive Technology Short Term Loan Library, Exceptional Student Services at the Arizona Department of Education, search our inventory of equipment, review our frequently asked questions, download forms, or contact us.

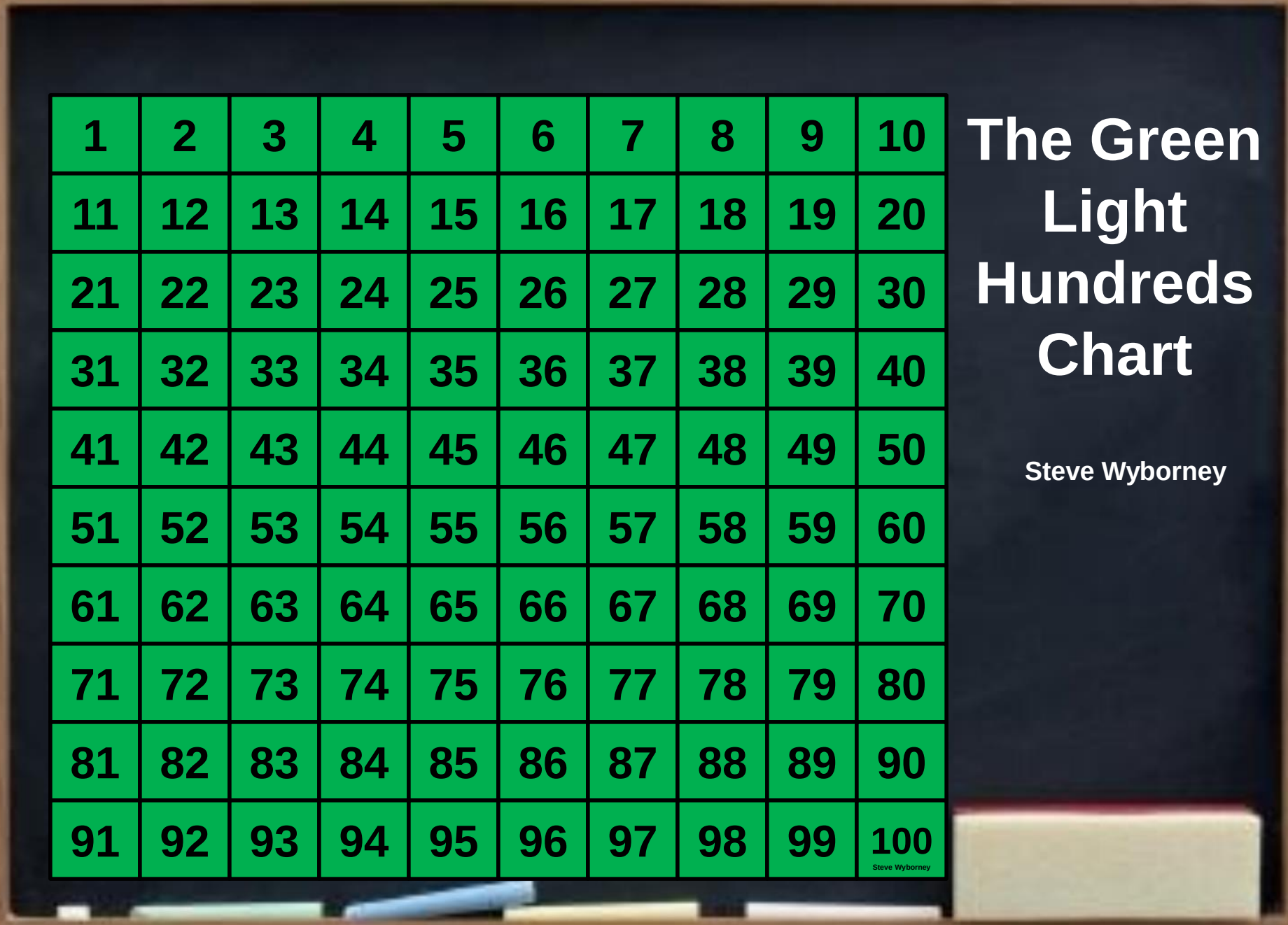
Arizona Technology Access Program
AT Demonstration & Loan Program

http://azatdemoloanprogram.org



Video Self Modeling

Video Self Modeling at ADE-ESS


1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100
Steve Wyborney
The Green Light Hundreds Chart
Steve Wyborney

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

@stevewyborney

Tools
Apps
Strategies