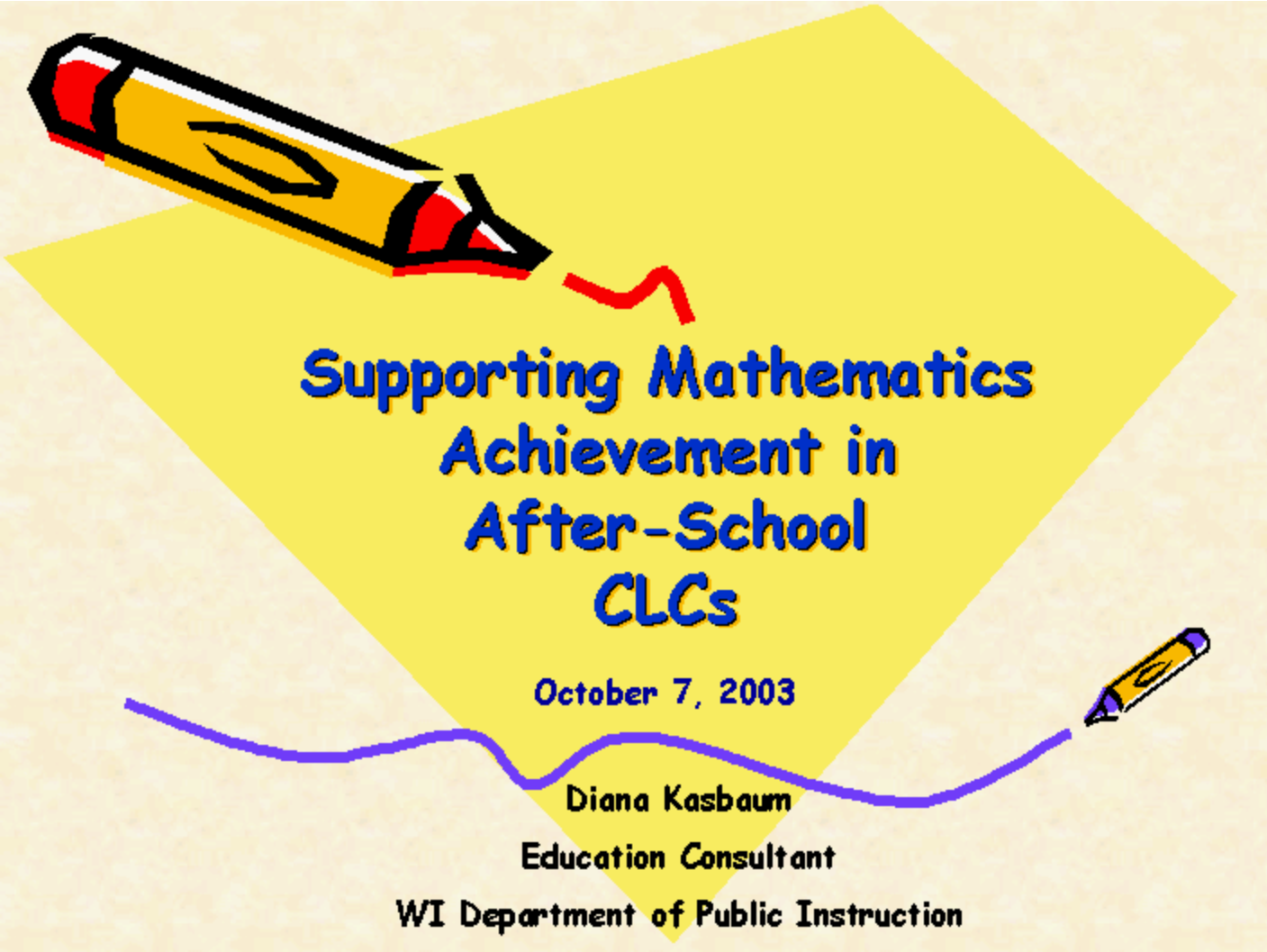
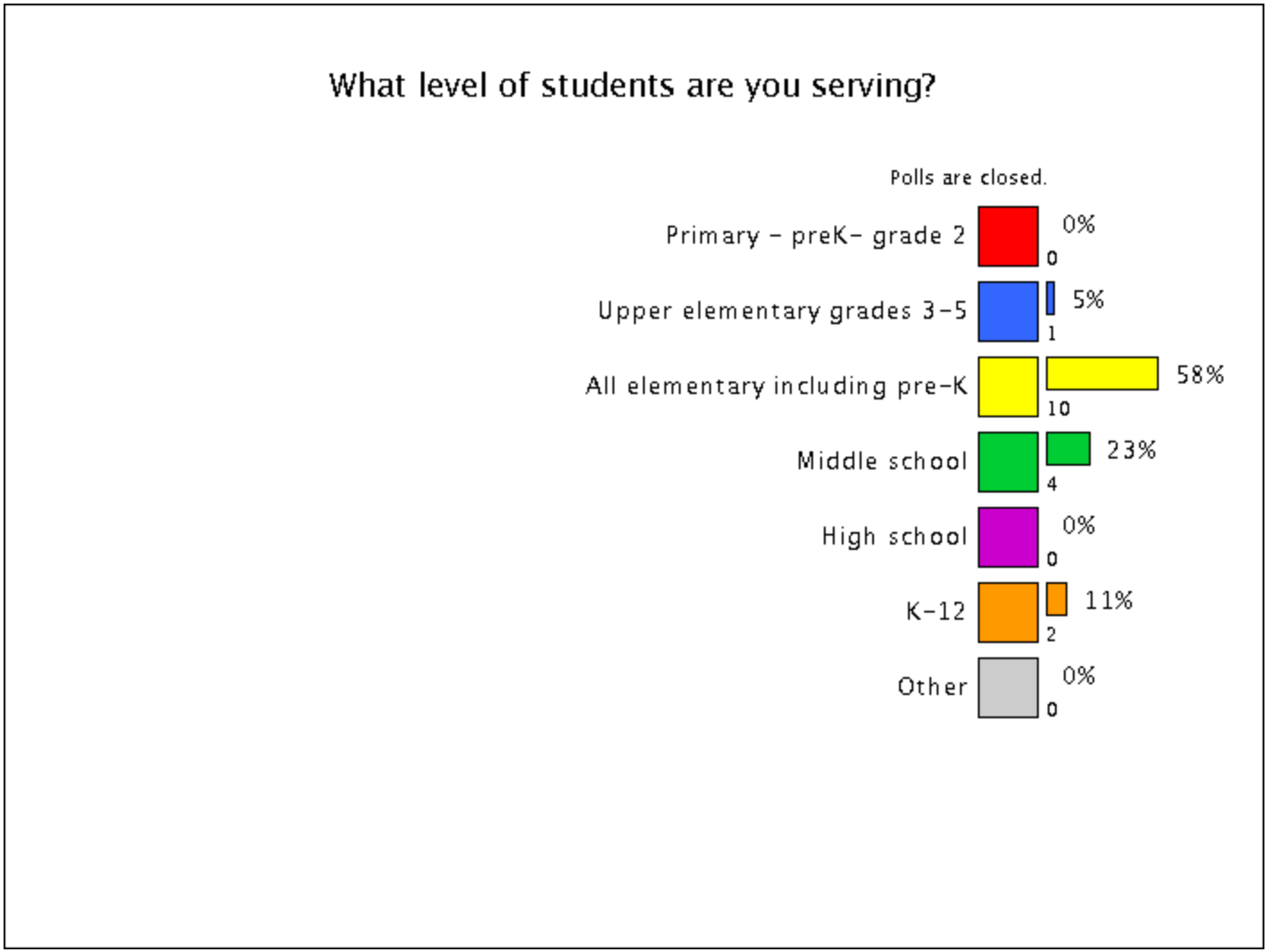
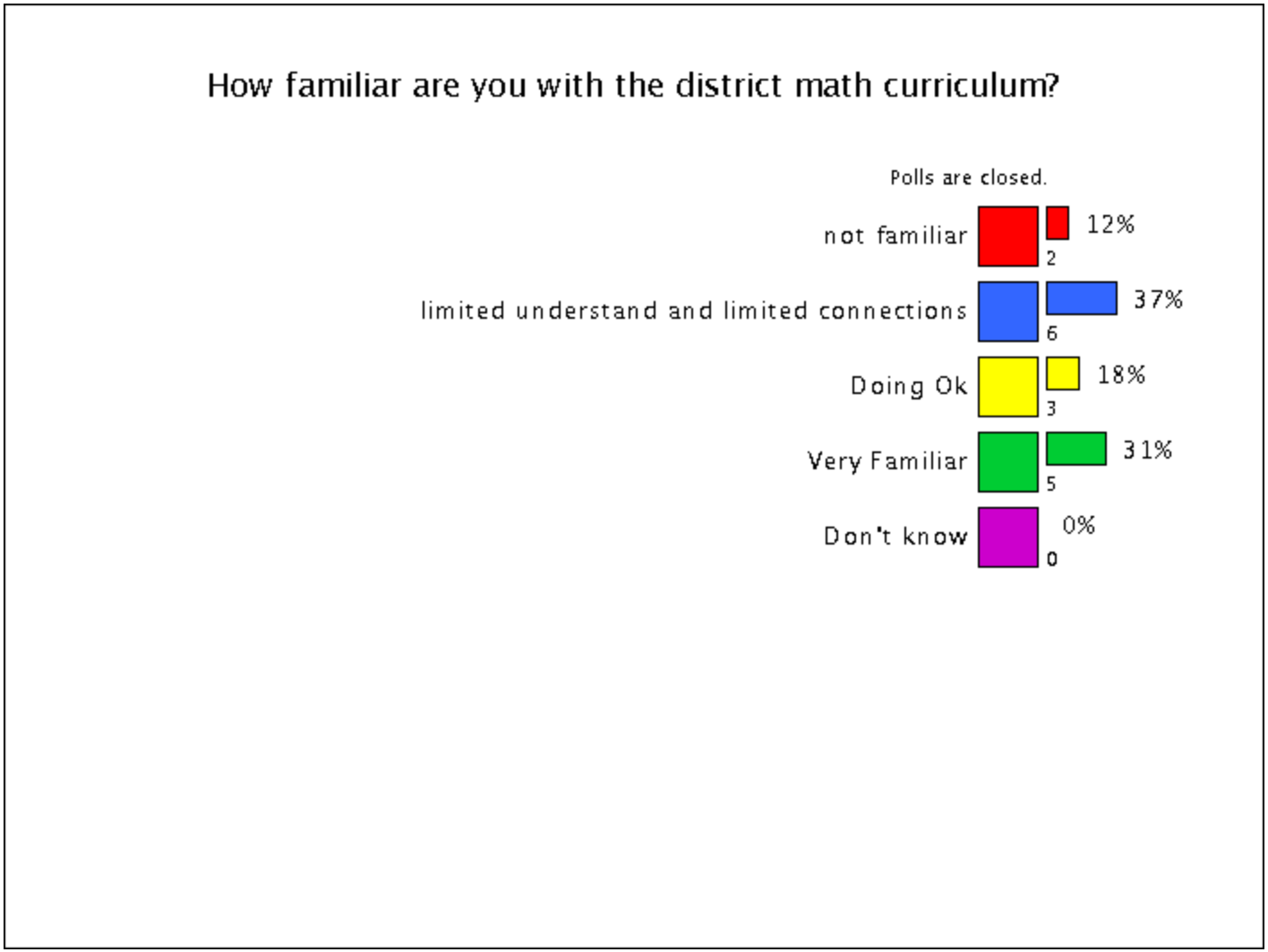


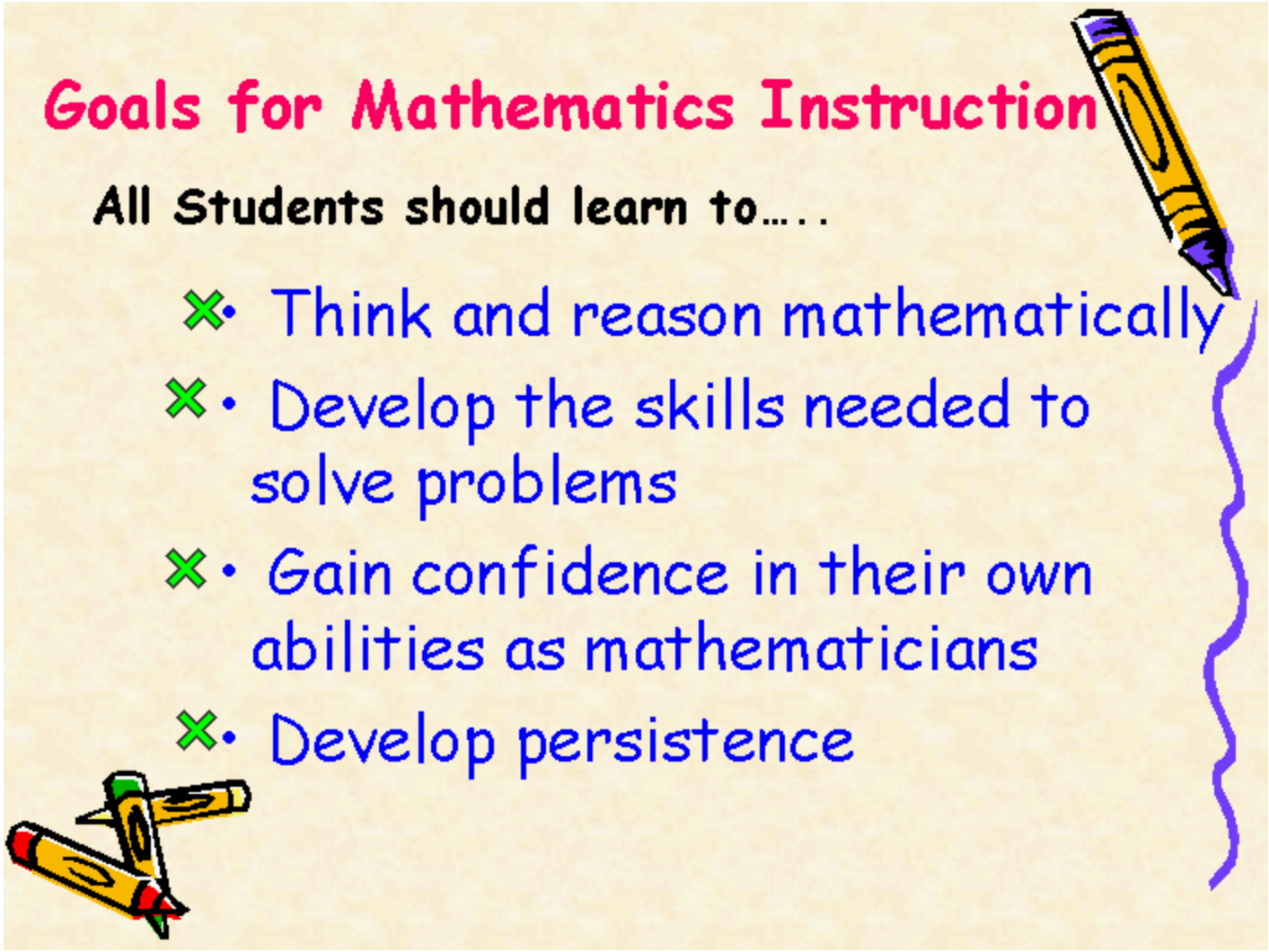
Supporting Mathematics Achievement in After-School CLCs


What level of students are you serving?
Polls are closed.
Primary - preK- grade 2
0%
0
Upper elementary grades 3-5
5%
1
All elementary including pre-K
58%
10
Middle school
23%
4
High school
0%
0
K-12
11%
2
Other
0%
0

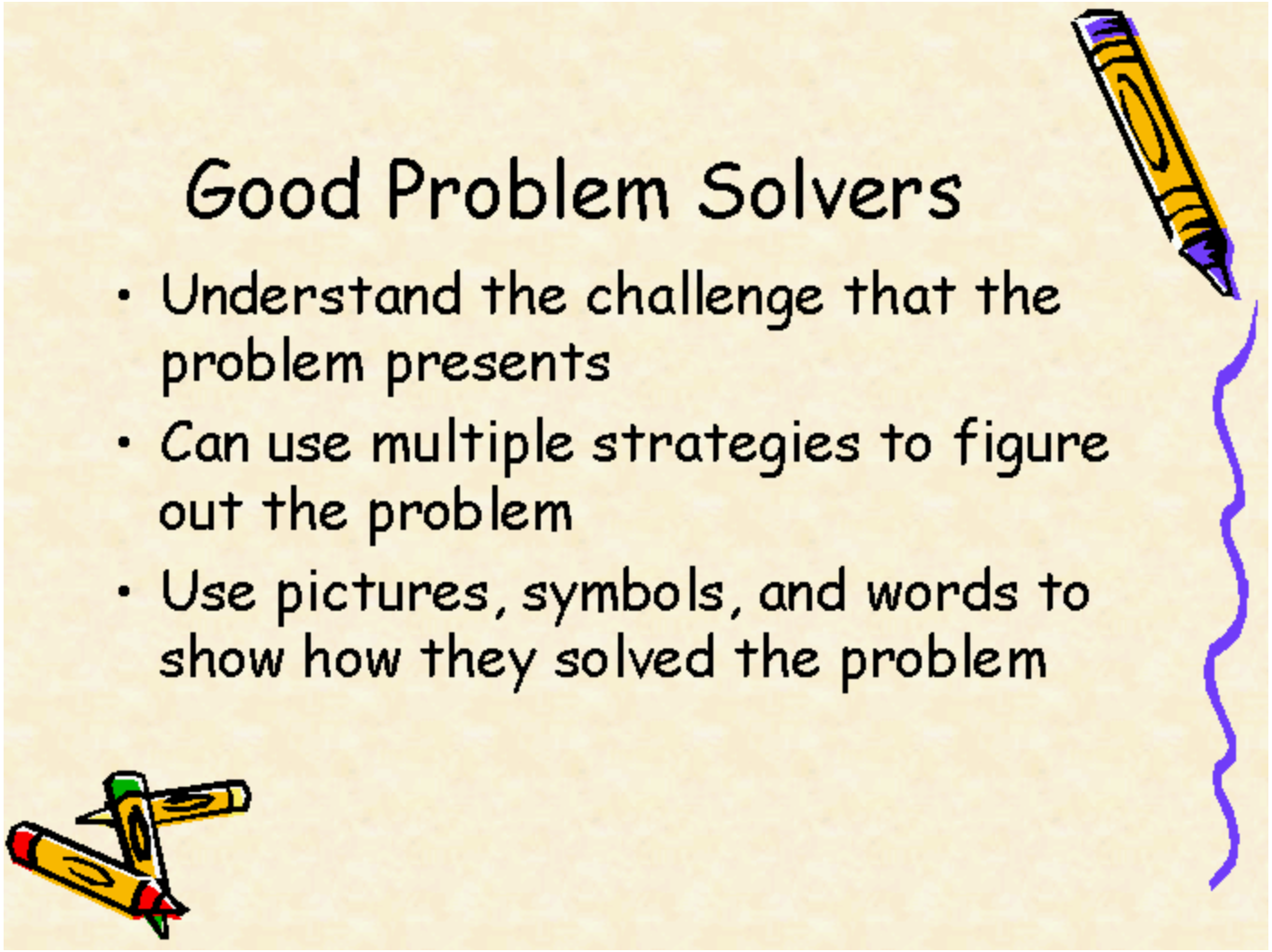
[Poll A]


How familiar are you with the district math curriculum?
Polls are closed.
not familiar
12%
2
limited understand and limited connections
37%
6
Doing Ok
18%
3
Very Familiar
31%
5
Don't know
0%
0

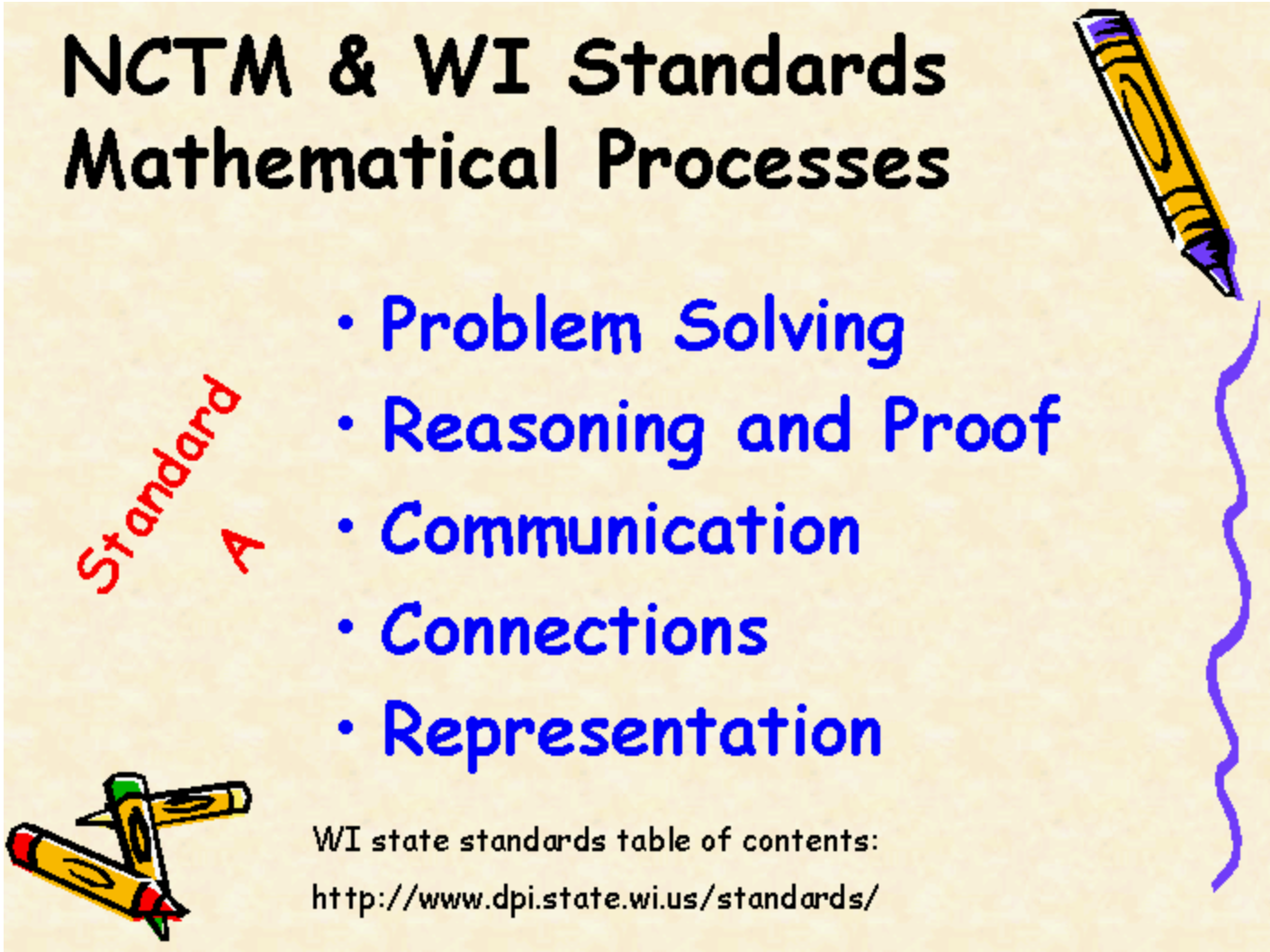
[Poll B]



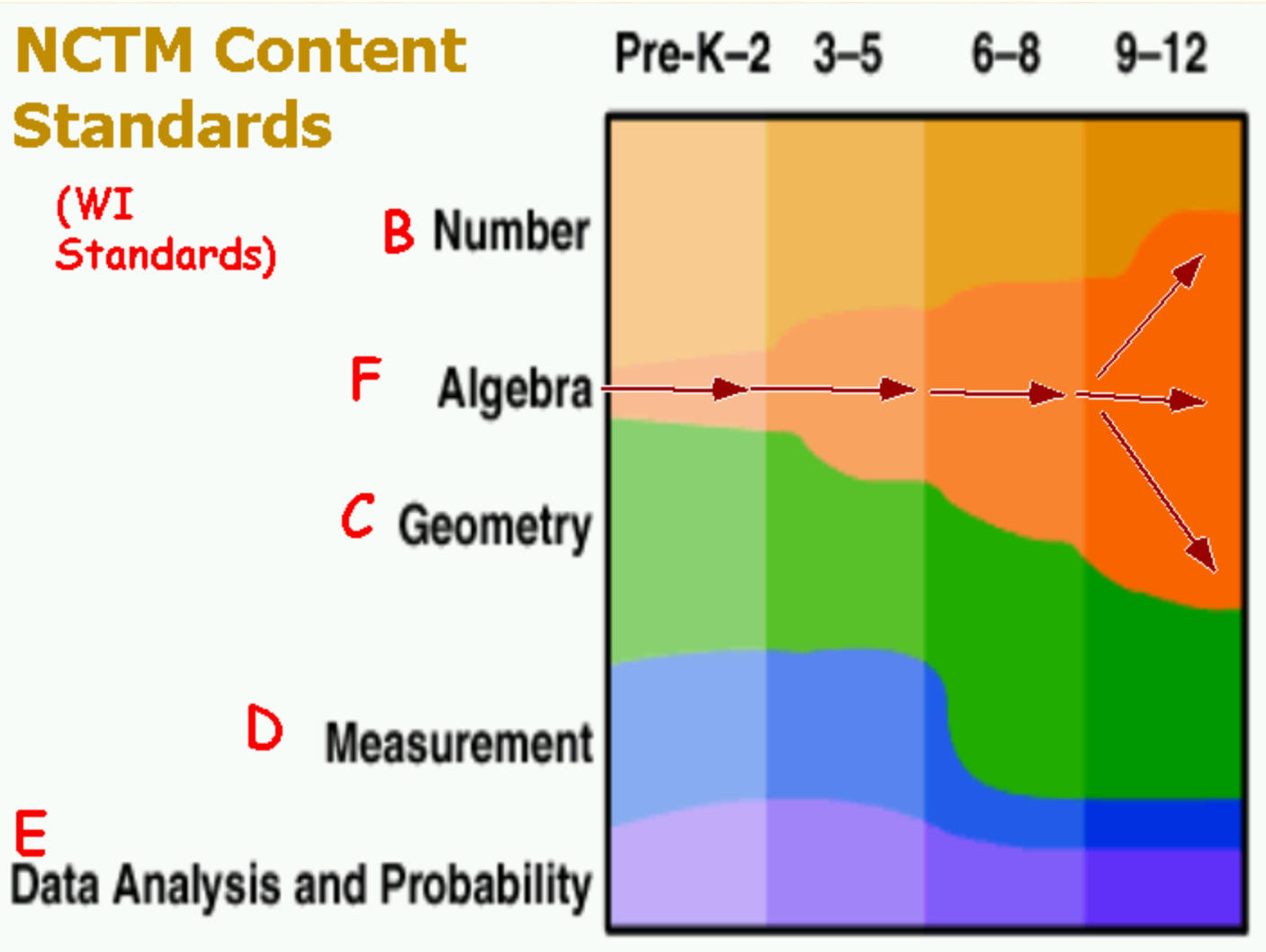
Goals for Mathematics Instruction


Good Problem Solvers
• Understand the challenge that the problem presents
• Can use multiple strategies to figure out the problem
• Use pictures, symbols, and words to show how they solved the problem

Slide 3



NCTM & WI Standards Mathematical Processes


NCTM Content Standards
(WI Standards)
Pre-K–2
3–5
6–8
9–12
B Number
F Algebra
C Geometry
D Measurement
E
Data Analysis and Probability

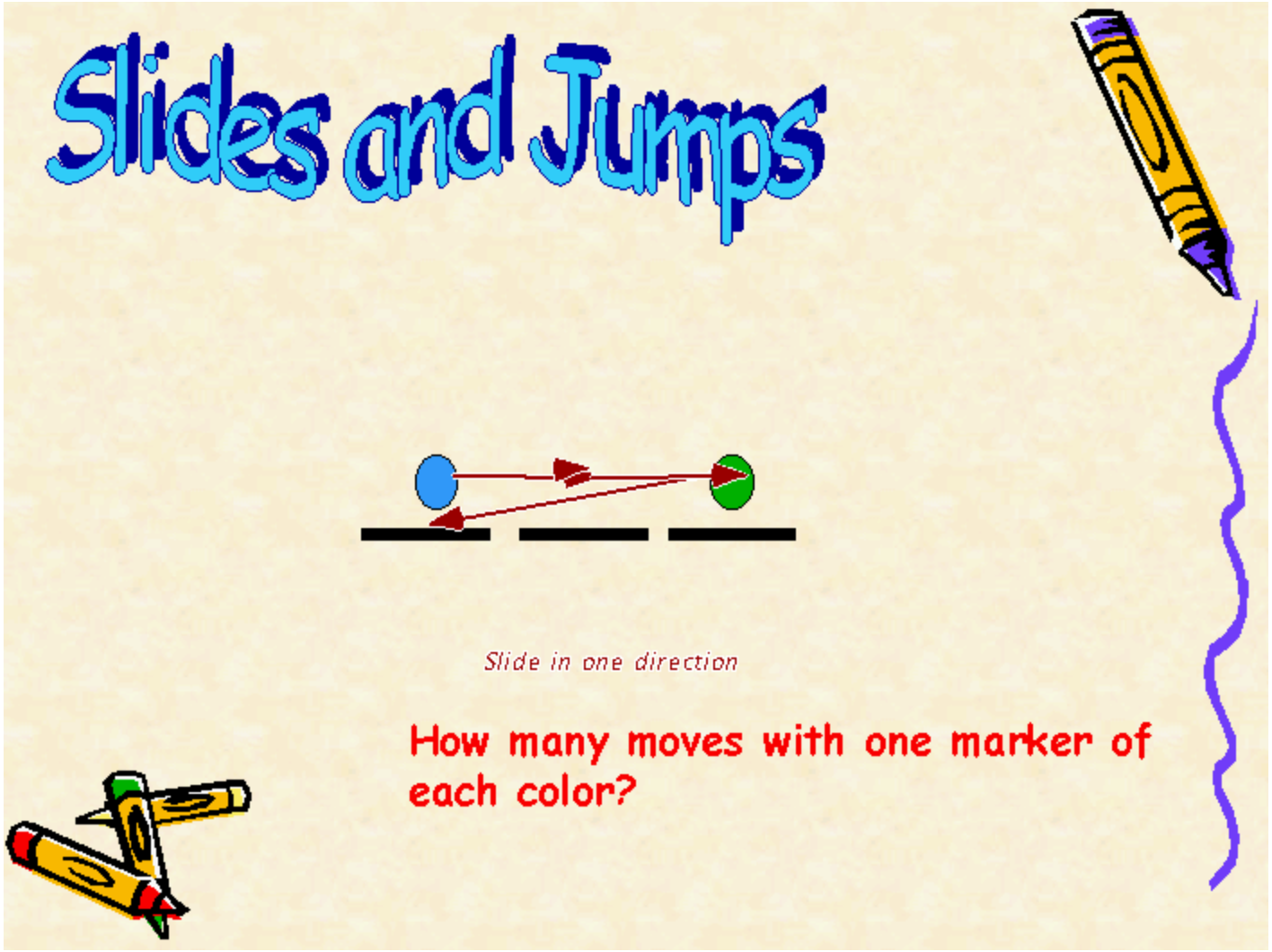
Slide 5

Slides and Jumps

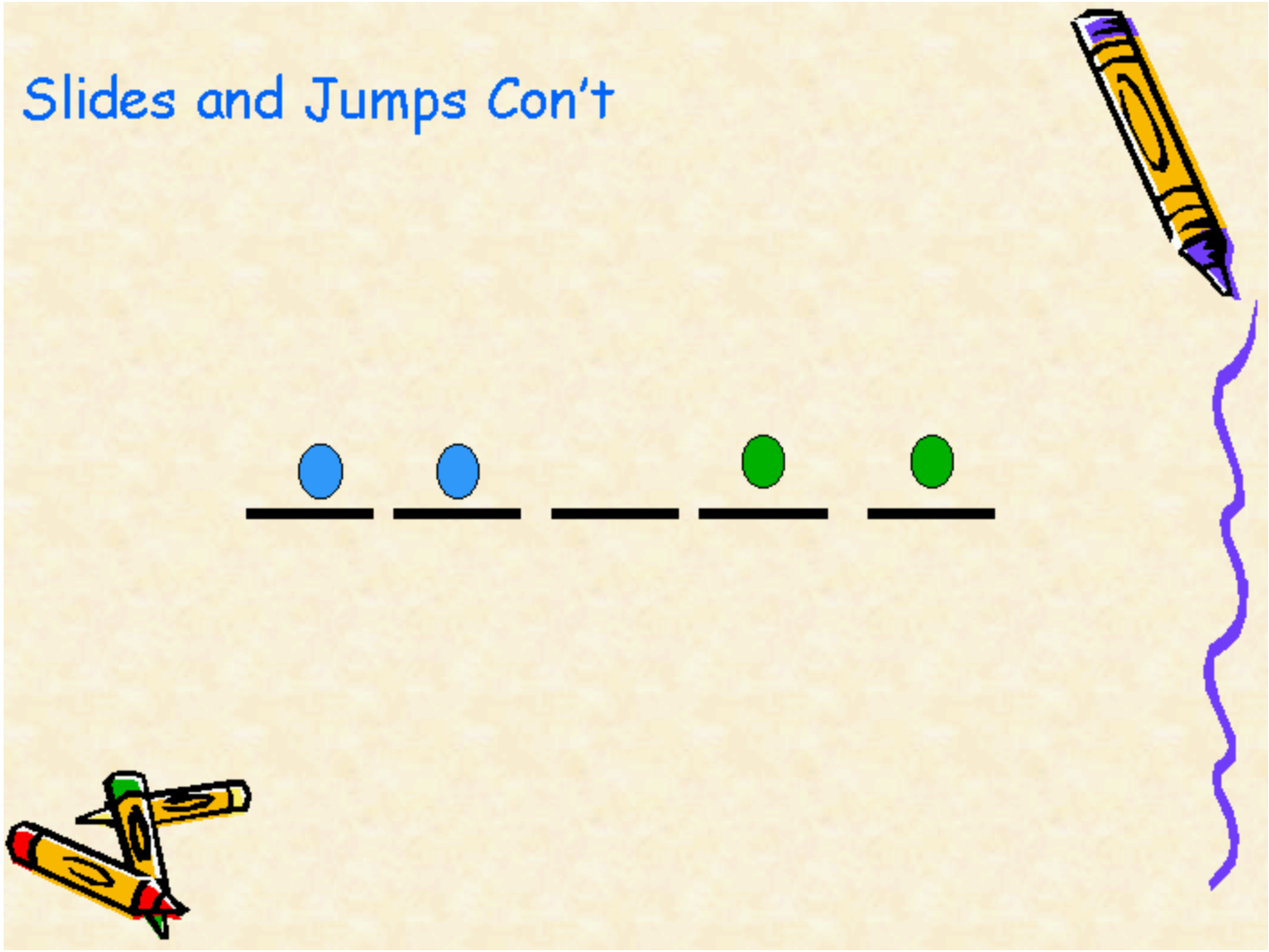
- Object: Move all pieces to the opposite side
- Rules
  - Only slides or jumps in one direction
  - Markers cannot move backwards
  - Slide one space
  - Jump only one piece of opposite color
  - Record # of slides and jumps

Adapted from Just for the Fun of It AIMS (pages: 117-125)

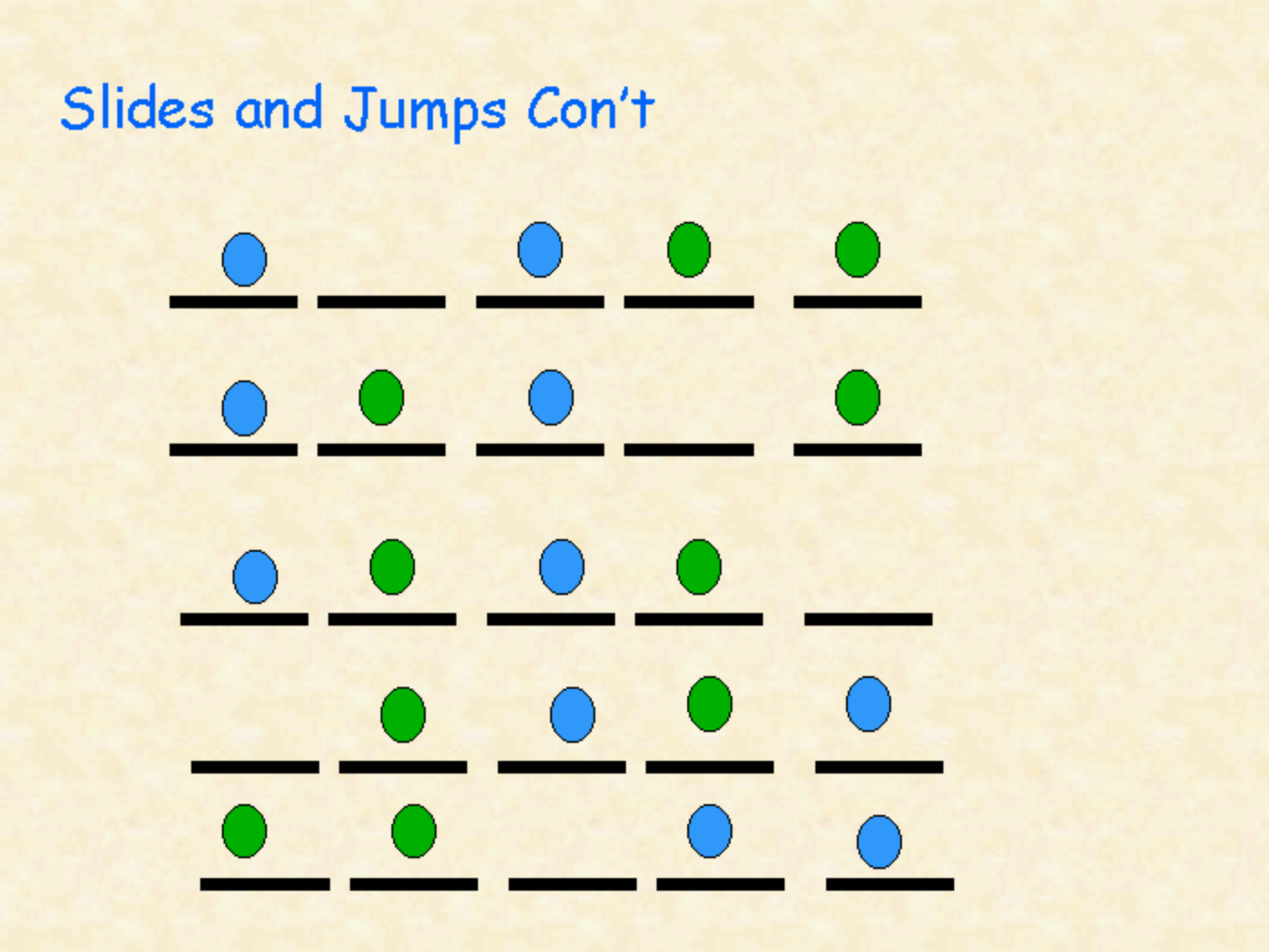
Slide 6


Slides and Jumps
Slide in one direction
How many moves with one marker of each color?

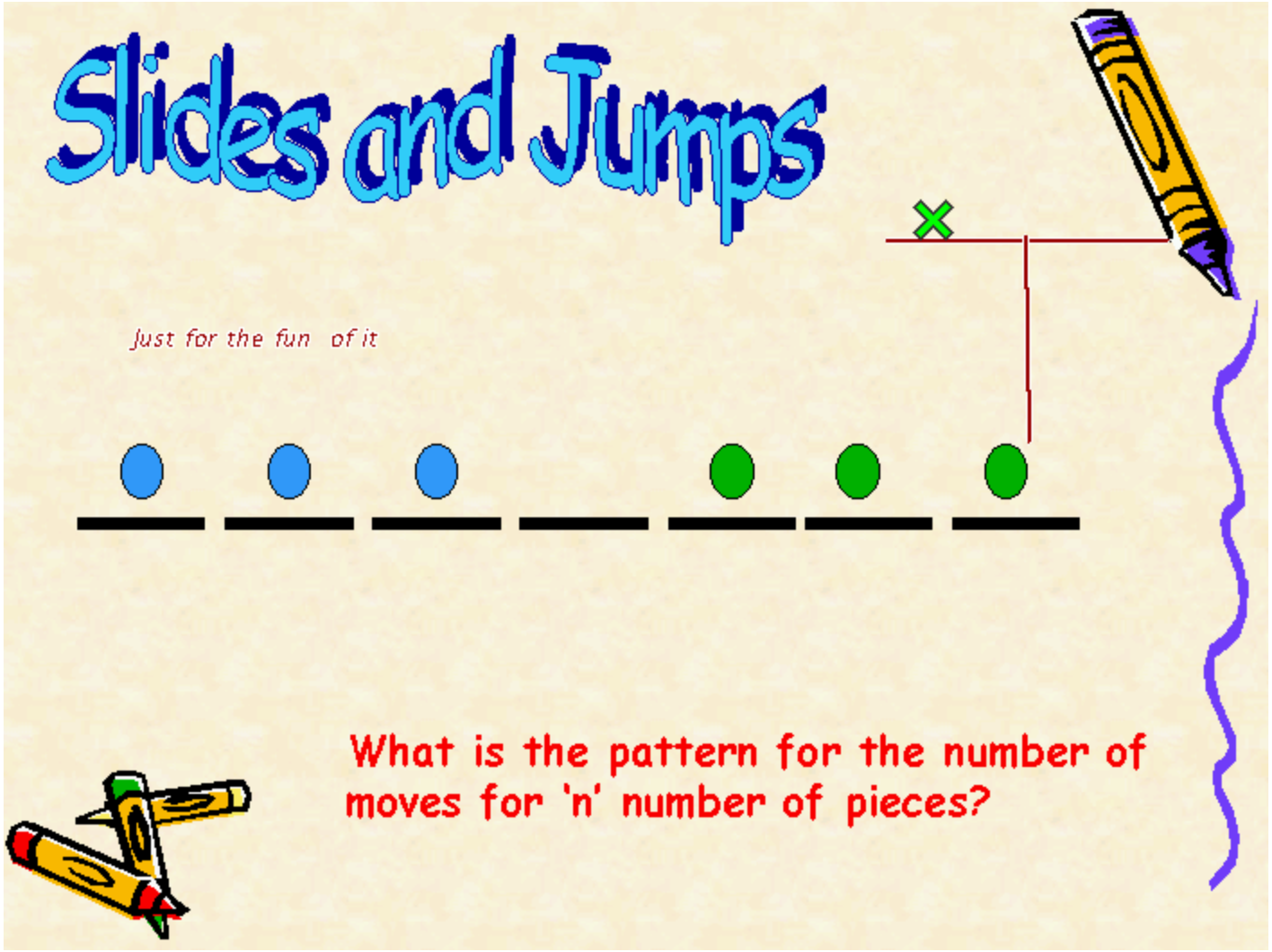
Slide 7



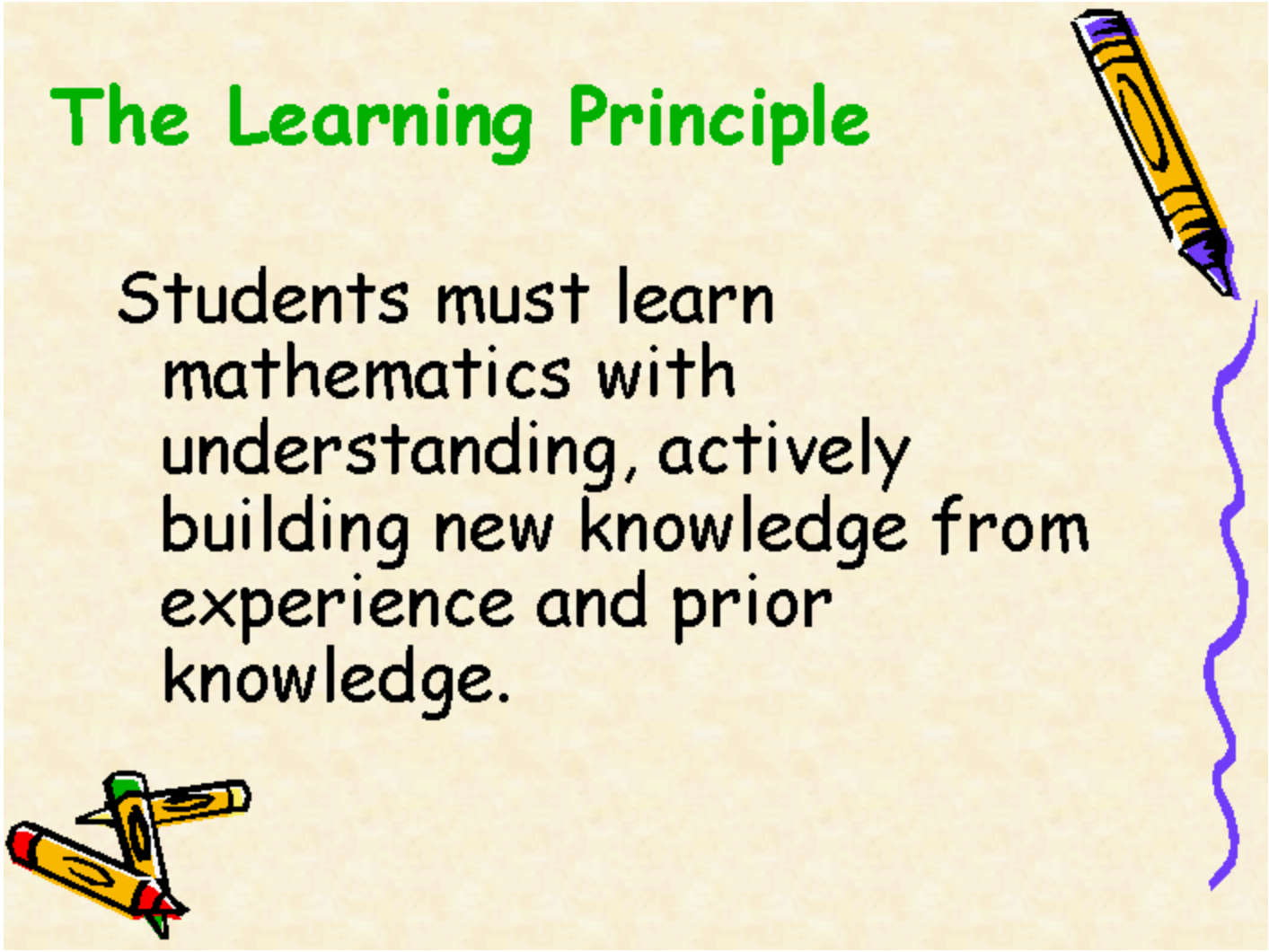
Slides and Jumps Con't



Slides and Jumps Con't


Slides and Jumps
Just for the fun of it
What is the pattern for the number of moves for 'n' number of pieces?

Slide 10


The Learning Principle
Students must learn mathematics with understanding, actively building new knowledge from experience and prior knowledge.

Slide 11

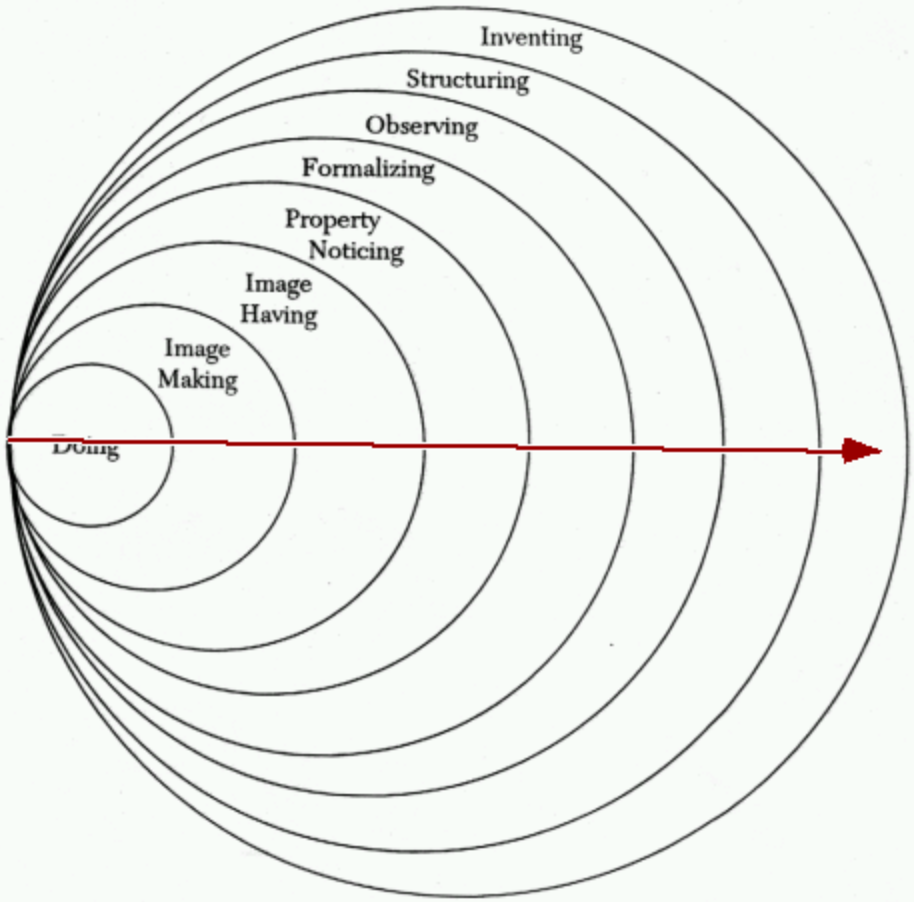


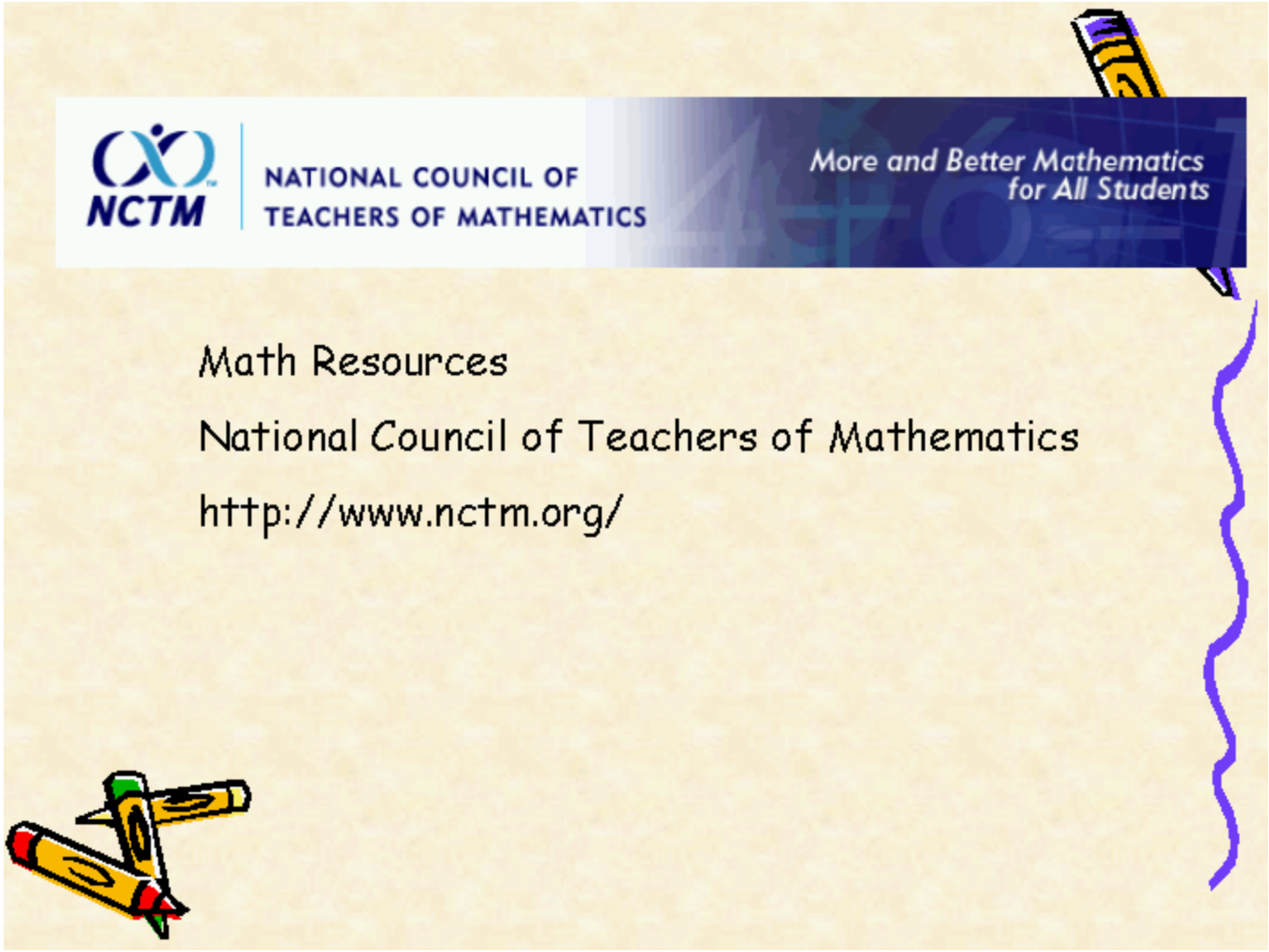
FIGURE 3.2 **A Model for the Recursive Theory of Mathematical Understanding**

From "Rational and Fractional Numbers: From Quotient Fields to Recursive Understanding," by

Slide 12

- Understanding is generative.
- Understanding promotes remembering
- Understanding reduces the amount that must be remembered.
- Understanding enhances transfer.
- Understanding influences beliefs.

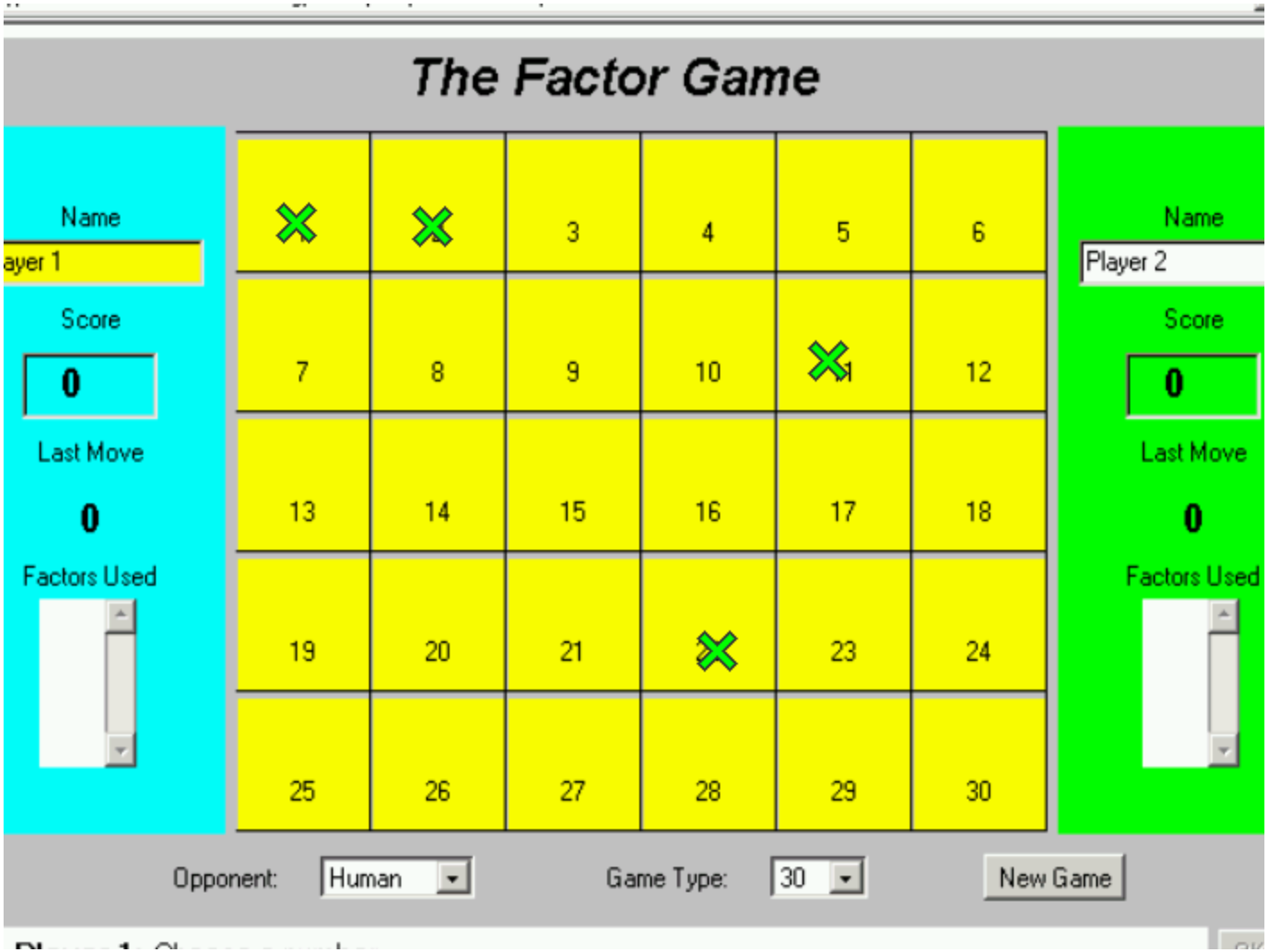
Slide 13


NCTM
NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS
More and Better Mathematics
for All Students
Math Resources
National Council of Teachers of Mathematics
http://www.nctm.org/

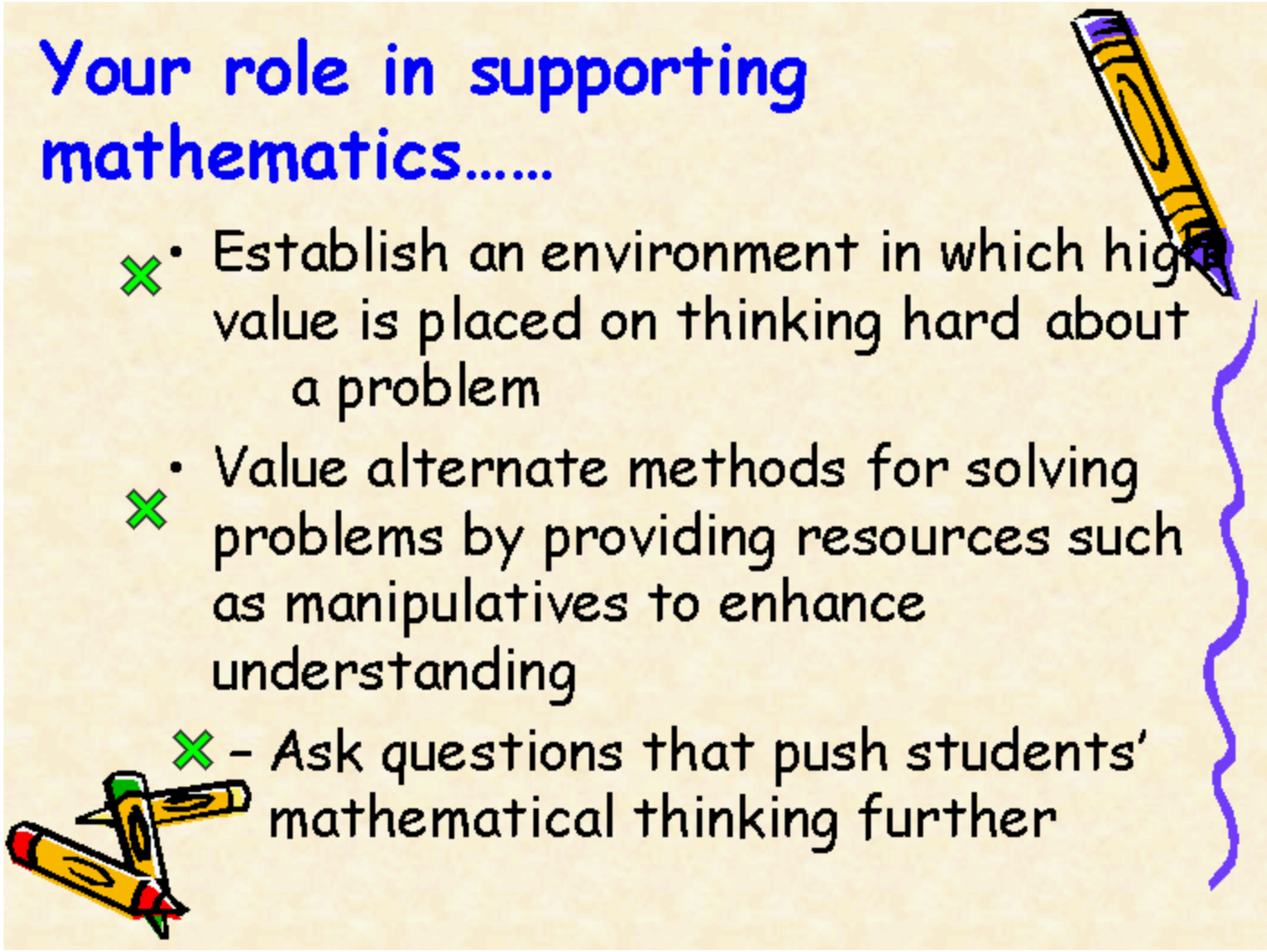
Slide 14

A Sharing slide

[Share A]


The Factor Game
Name
ayer 1
Score
0
Last Move
0
Factors Used
3
4
5
6
7
8
9
10
12
13
14
15
16
17
18
19
20
21
23
24
25
26
27
28
29
30
Name
Player 2
Score
0
Last Move
0
Factors Used
Opponent:
Human
Game Type:
30
New Game

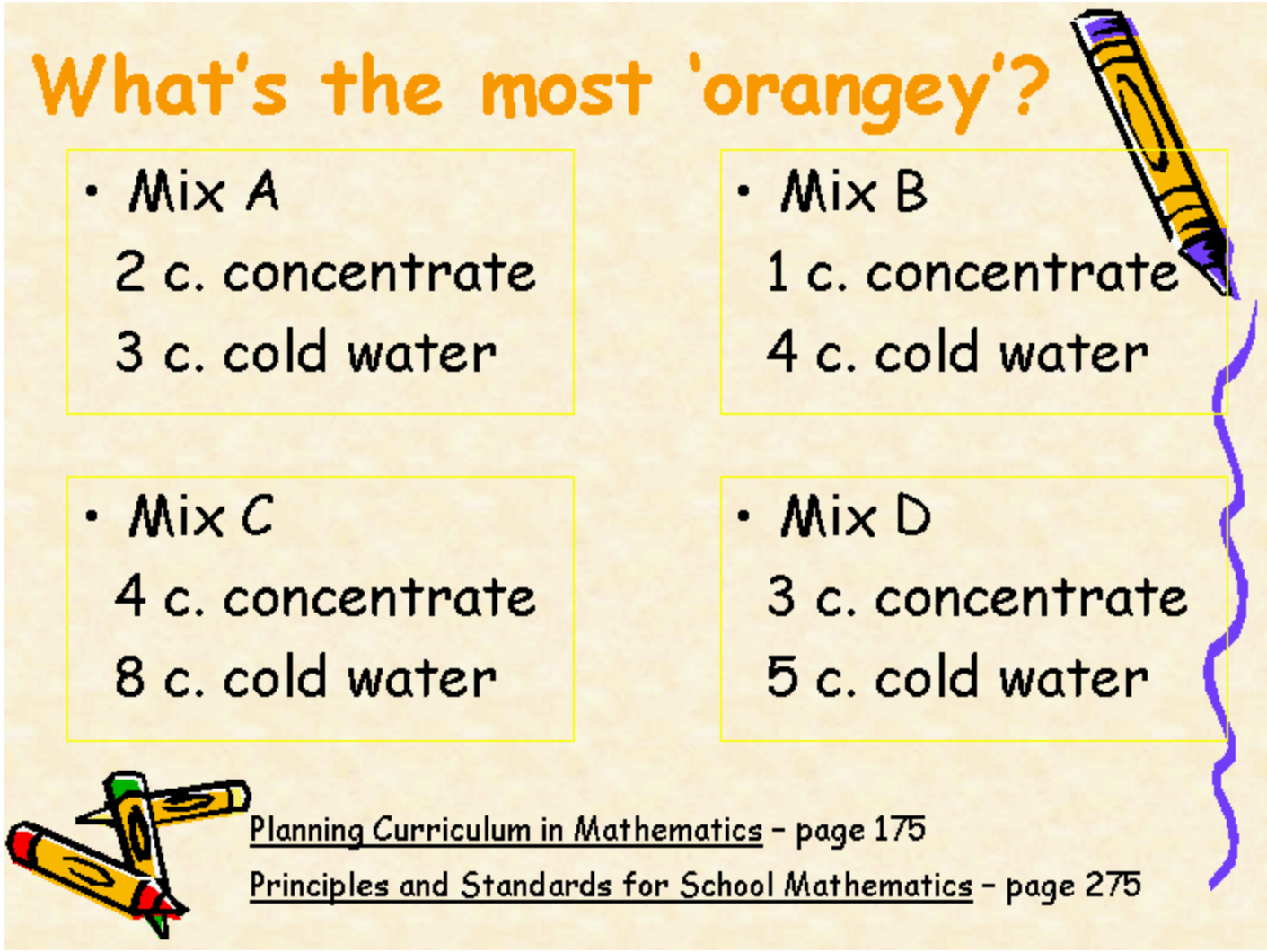
Slide 15



Your role in supporting mathematics.....

- Insist that students show their thinking
- Facilitate discussions between students about mathematical ideas
- Create a positive, encouraging, and exciting mathematics environment
- Work collaboratively with the day program to develop a cohesive program and meet the needs of all students

Slide 17



What's the most `orangey'?

What's the most 'orangey'? Con't

- **How do students approach this problem?**
  - Some look at ratios of concentrate to water
  - Some look at ration of concetrate to whole mixture
  - Some use equivalent fractions
  - Some use decimals and percents
  - Some use pictures
- **What mathematics is involved?**

- Fractions	- Problem Solving
- Ratios	- Reasoning
- Proportions	- Representation
- Operations	- Communication
- Number sense	

- **Next Question:** For each mixture, how much concentrate would you need for 1 cup of juice?

What's the most `orangey'? Con't

Asking Good Questions

- Tell me how you solved that problem. How do you know?
- Can you convince the class that this makes sense?
- Do you see a patterns?
- Can you predict the next one?

Slide 20

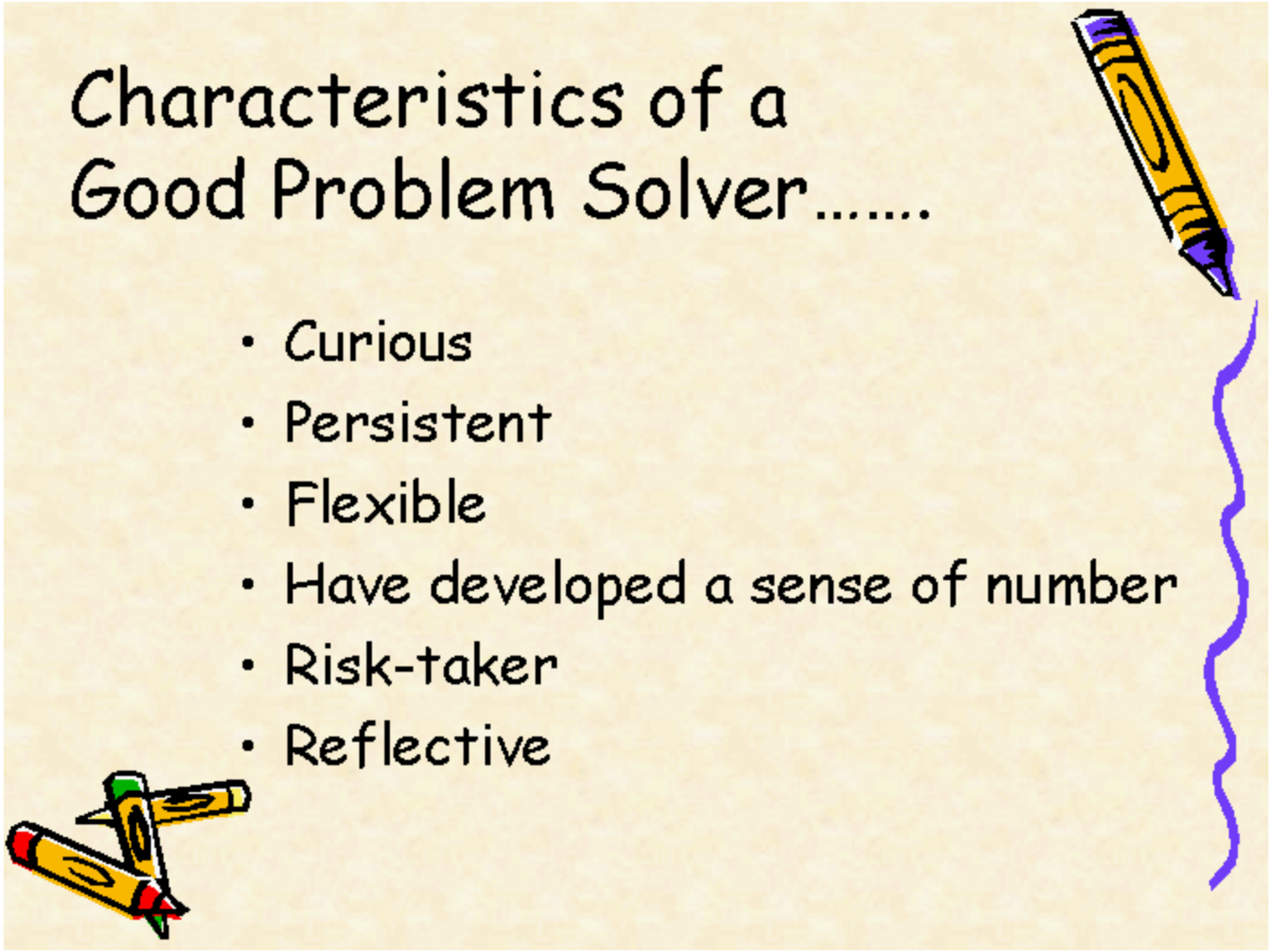
Reaching ALL students
• Engaging activities
• Hands-on
• Promoting discourse
• Multiple solution paths
• Rich assessment tasks

Slide 21

Resources

- NCTM – Principles & Standards for School Mathematics
  - www.nctm.org
  - www.illuminations.nctm.org
- Planning Curriculum in Mathematics
  - ~~www.illuminations.nctm.org~~
- WI Mathematics Council
  - www.wismath.org
- AIMS Education Foundation
  - 1-888-733-2467

Slide 22


Characteristics of a
Good Problem Solver.....
• Curious
• Persistent
• Flexible
• Have developed a sense of number
• Risk-taker
• Reflective

Slide 23

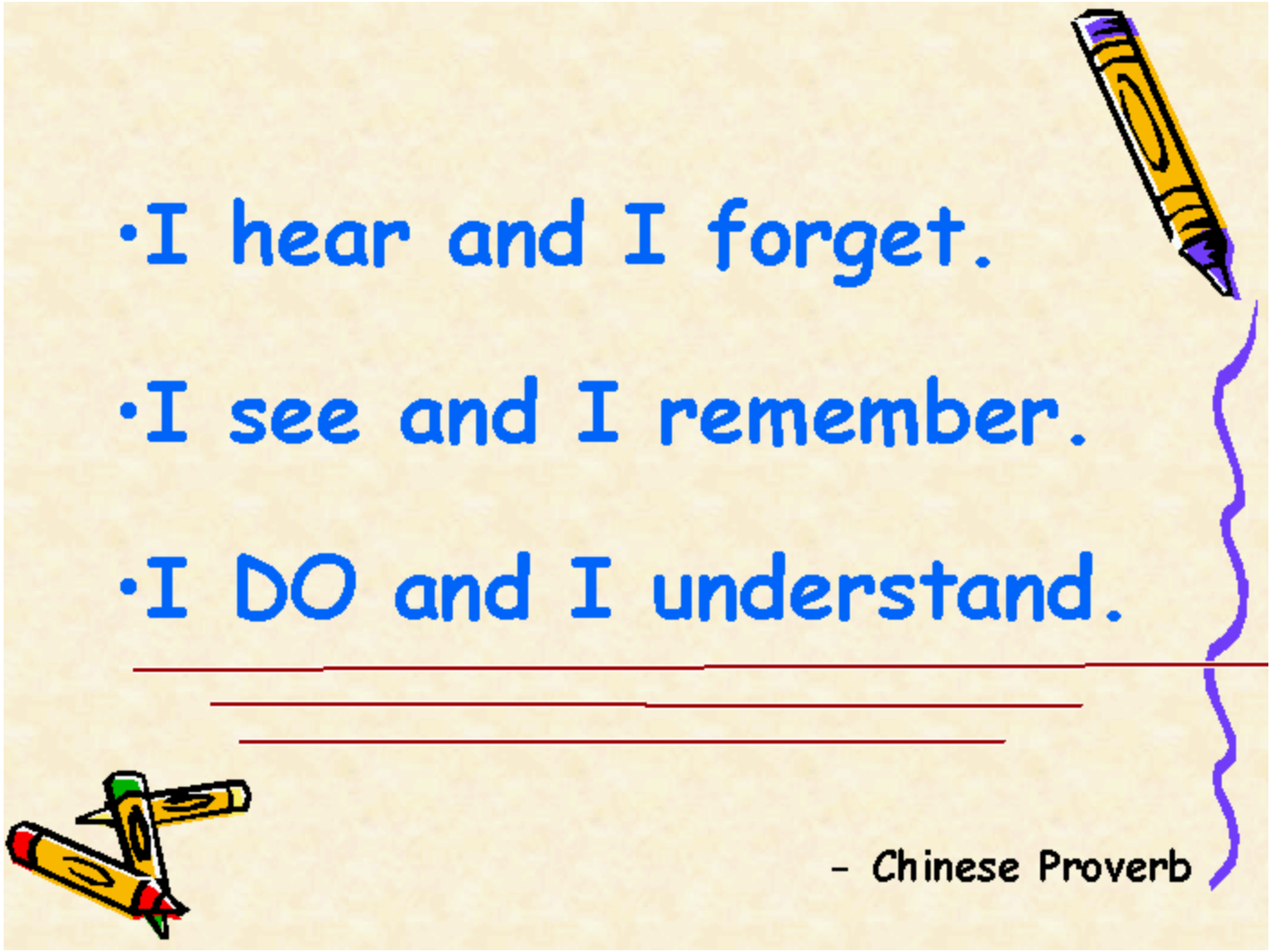
Best Practices

- Focused instruction
- Using manipulatives to build understanding
- Basic skills integrated
- Inquiry approach
- Oral and written discourse
- Open-ended, rich tasks
- Flexible grouping
- Assessment embedded in instruction

Slide 24

- Select engaging mathematical tasks
- Provide opportunities to deepen understanding
- Stimulate growth through discourse
- Use technology and manipulatives
- Build on prior knowledge
- Connect to real world
- Use individual, small group, and whole class settings

Slide 25


•I hear and I forget.
•I see and I remember.
•I DO and I understand.
- Chinese Proverb

Slide 26

[White Board B]

http://www.dpi.state.wi.us/dpi/dltcl/eis/pubsales/math.html

[Text Slide B]

Type in your comment

This was great would you do this again with Reading?

Regarding assessments: Here in Milwaukee we require our CLC sites to pre and post test

Thank you: good info!

Green Bay uses AIMS, it is a wonderful resource and reasonably priced.
Great stuff!

Aims has a great book for double/triple digit adding adn subtracting...it helps students tc

Kenosha uses Everyday Math and our Math Resource teachers have trained agency staff to p

Will all these slides be available when we are finished? Do we enter with the same website?

Has anyone usede KIDZMath? Or KidzLit?

What assessments does DPI recommend for CLCs to use in math?
diana.kasbaum@dpi.state.wi.us 608 267-7338
Kidzlit is used in Kenosha can we talk? Kris at 920 906 6516
I will call when we are finished - julie

[White Board C]

[White Board A]