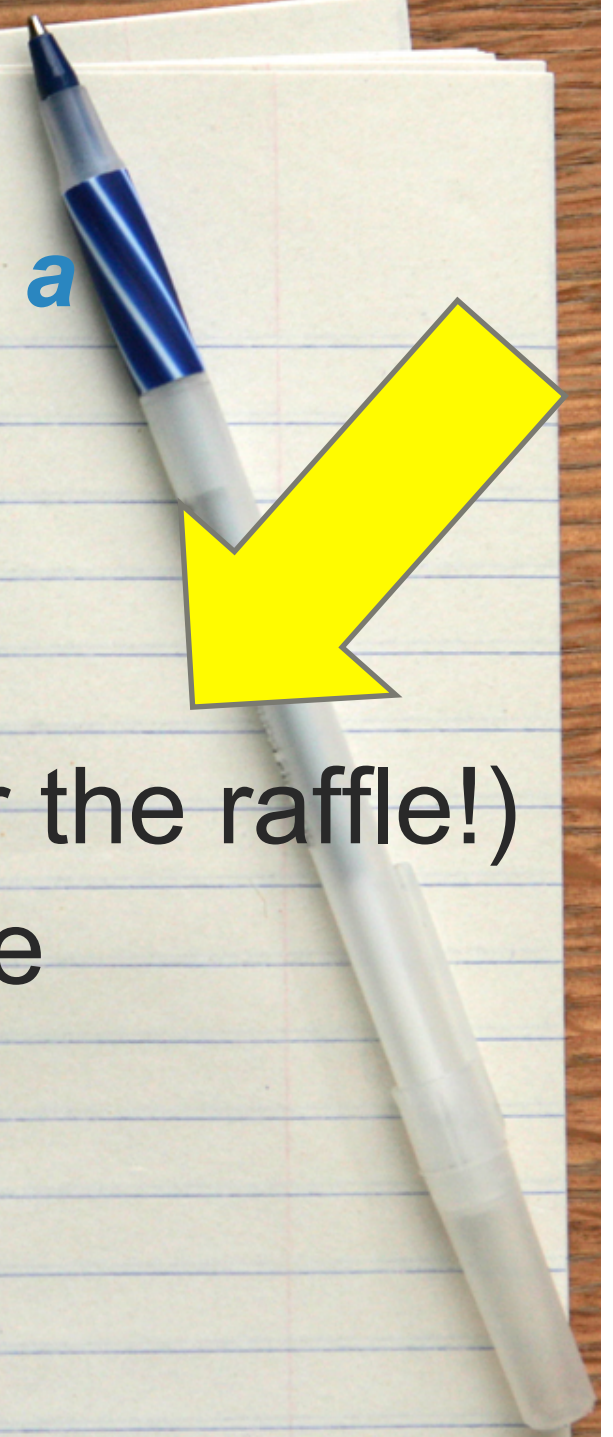
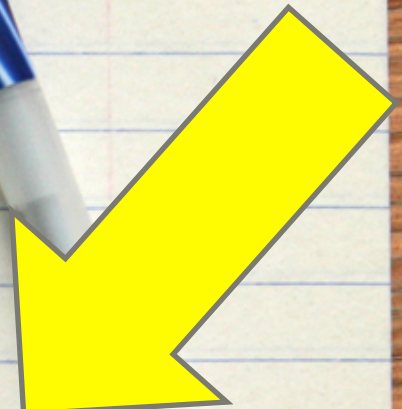
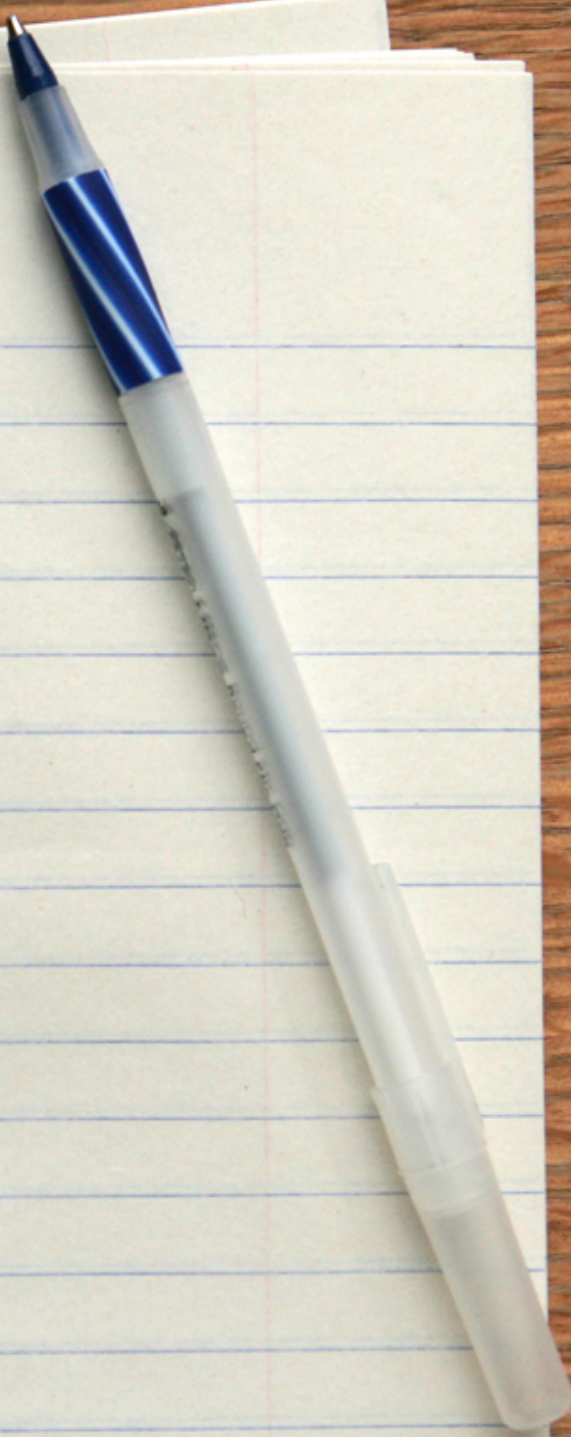


Making group smartness a goal and a reality in your math classroom

- On an index card
 - Write your name (for the raffle!)
- Also write how you are
 - smart in math and
 - group smart





***Making group smartness
a goal and a reality in
your math classroom***

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Session Overview

- Introductions
- Group Smartness?
- Task1: No one is an island
- Debrief 1
- Task 2: Number ordering
- Debrief 2
- Take Away + Book Raffle!

Smarter Together!

Collaboration and Equity in the
Elementary Math Classroom



NATIONAL COUNCIL OF
TEACHERS OF MATHEMATICS

Our Book

*Smarter Together!
Collaboration and Equity in
the Elementary Classroom,
Reston, Va: NCTM.*



Smarter Together

- What does it Mean to be Smart in Math?
- Teaching Norms and Roles...
- Addressing Status Issues ...
- Selecting and Designing Groupworthy Tasks
- Three Teachers' Stories
- Resources for Groupworthy Tasks
- Adapting Textbook Problems

Group Work

Research on group work: positive relationship between student interaction in small groups and average learning gains.

Cohen & Lotan, 1997




Growth Mindset

- Carol Dweck's Research
- Fixed and Growth Mindset

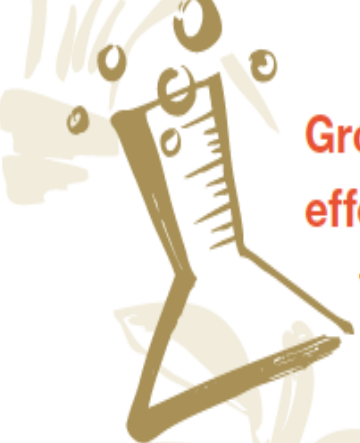
Mind-Sets and Equitable Education



Students perform better in school when they and their teachers believe that intelligence is not fixed, but can be developed.

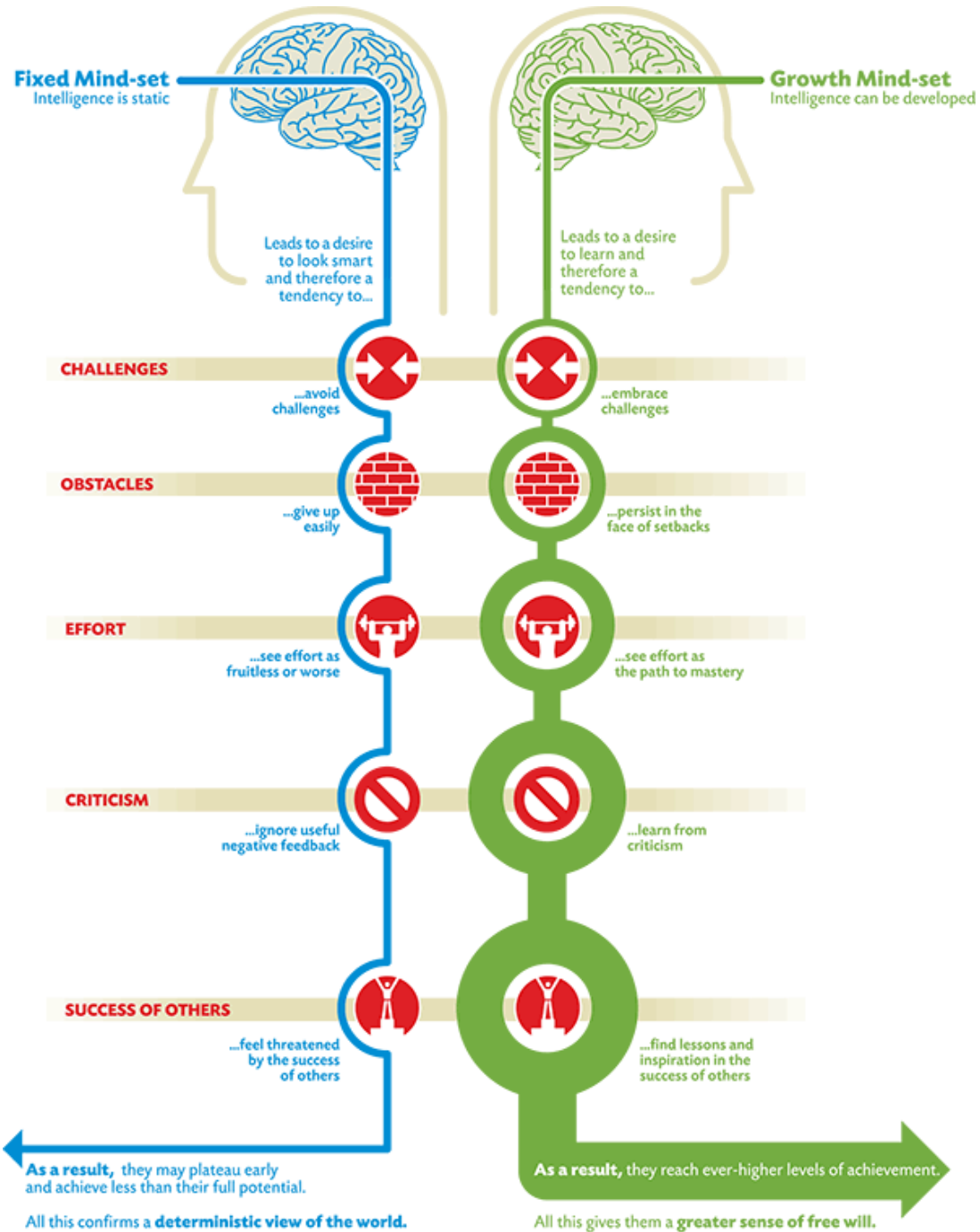


Teaching students that intelligence can be “grown” is especially powerful for students who belong to typically stereotyped groups.



Growth mind-sets focus on effort and motivate students to overcome challenging work.

Carol Dweck (2010) in *Principal Leadership journal*

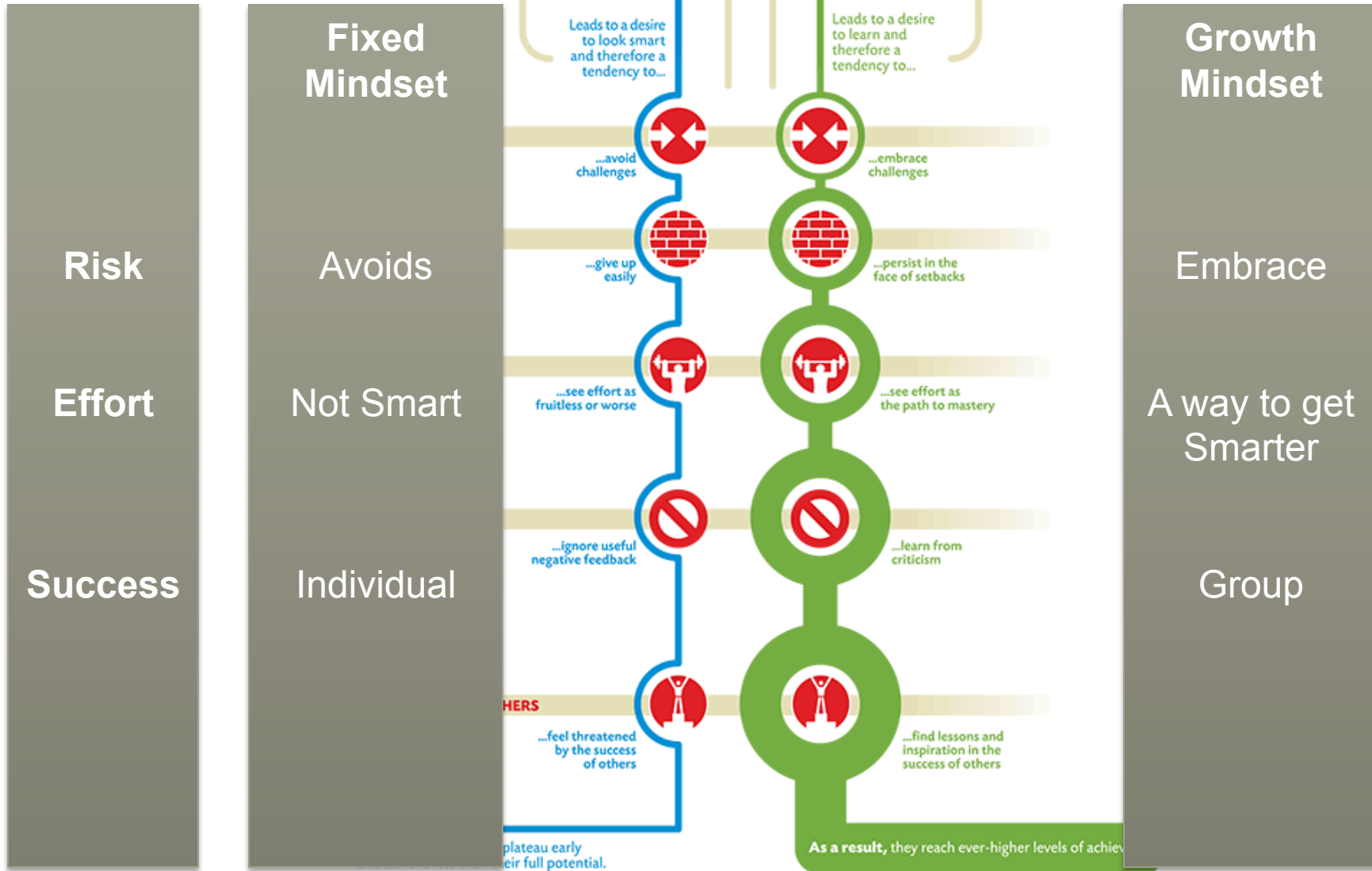


From Individualistic Smart

To Group Smart

Fixed Mind-set
Intelligence is static

Growth Mind-set
Intelligence can be developed



All this confirms a **deterministic view of the world.**

All this gives them a **greater sense of free will.**

**From
Individualistic
Smart**

Risk
Effort
Success

**Fixed
Mindset**

Avoids

Not Smart

Individual

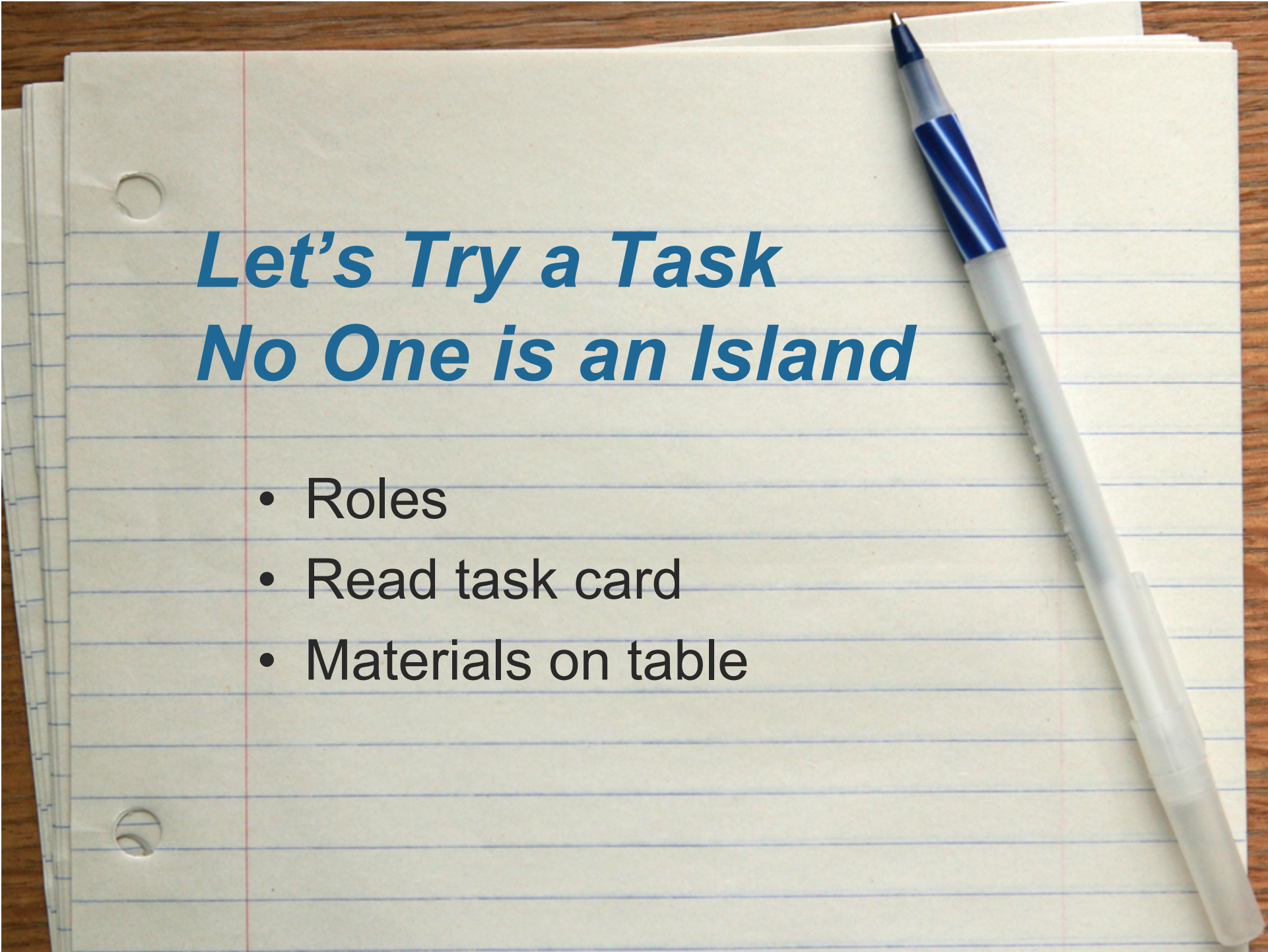
Group Mindset



Elizabeth Cohen's Groupwork

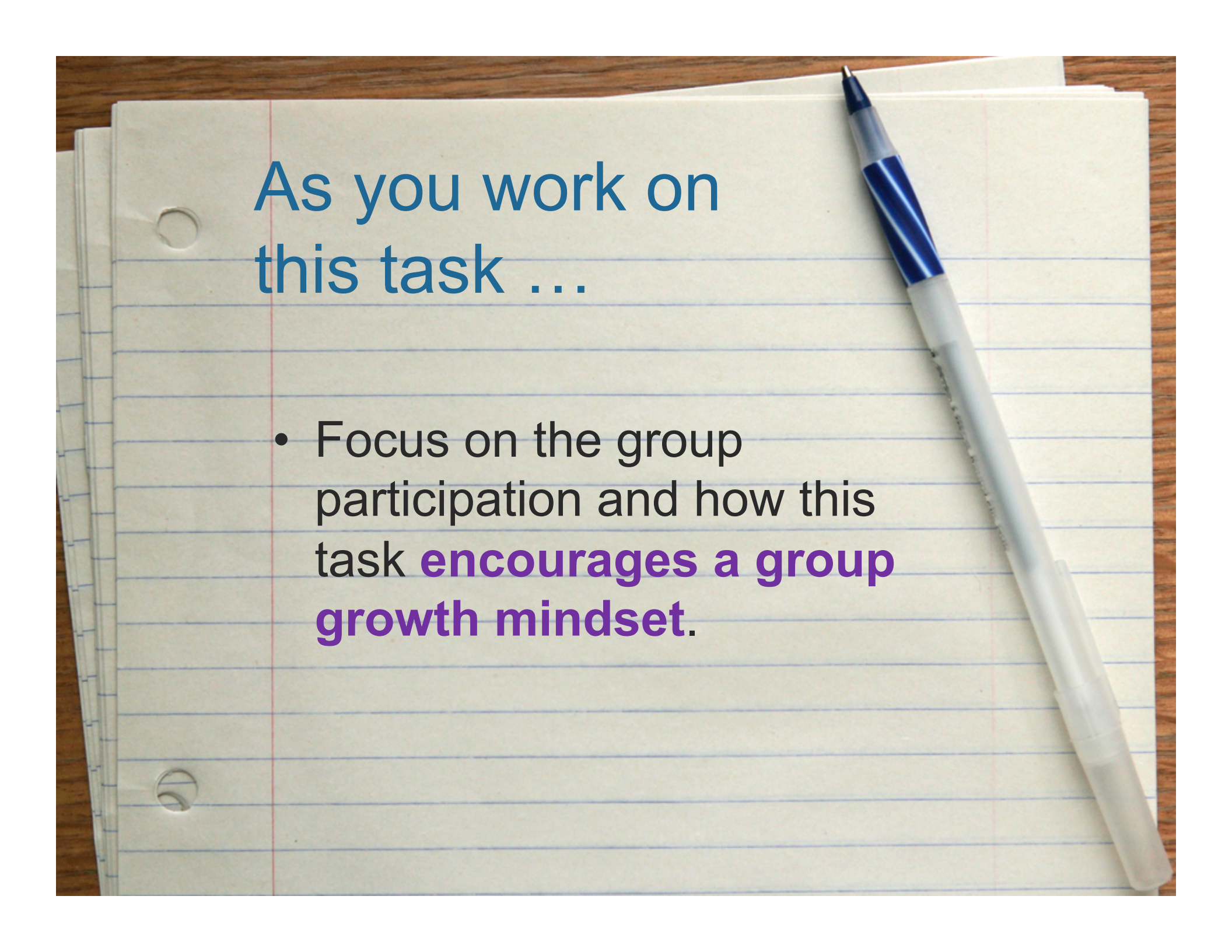
**To
Group
Smart**

Growth
Mindset
Embrace
A way to get
Smarter
Group



Let's Try a Task
No One is an Island

- Roles
- Read task card
- Materials on table

A stack of lined notebook paper is shown on a wooden surface. A blue and white pen is resting on the top sheet of paper. The text is written on the paper in blue and purple.

As you work on
this task ...

- Focus on the group participation and how this task **encourages a group growth mindset.**

To be group smart in this task your group will need to:

- Use words to describe pictures
- Notice details and attributes
- Communicate visual reasoning
- Make comparisons and notice differences
- Be precise
- Devise a plan
- Listen carefully
- Learn from making mistakes
- Ask questions
- Persevere by generating alternative

Together your group has the abilities to solve this task.

Group Mindset

“the path less traveled”

**From
Individualistic
Smart**



**To
Group
Smart**



Elizabeth Cohen's Groupwork

Complex Instruction (CI)

- Rigorous task
- Multiple abilities
- Open-ended
- Something to talk about

Multiple-ability Curriculum

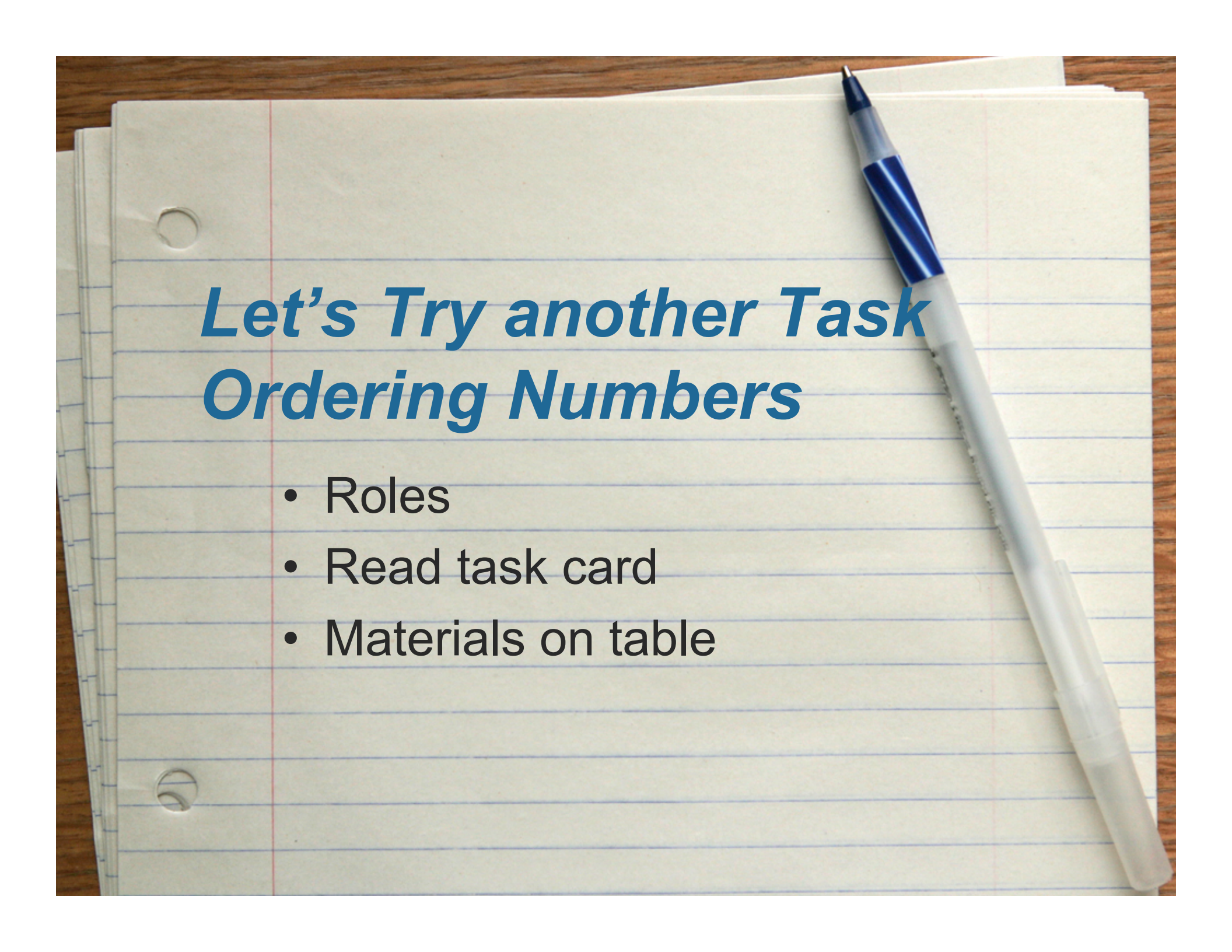
Norms and Roles

Status and Accountability

- Expectations and responsibilities for participation

- Multiple Abilities Orientation
- Assigning competence
- Final product

✘ Cohen (1994)

A stack of lined notebook paper with a blue and white pen resting on it. The paper has two punch holes on the left side. The text is written in a blue, bold, italicized font.


Let's Try another Task Ordering Numbers

- Roles
- Read task card
- Materials on table

To be group smart in this task your group will need to:

- Pick a common representation
- Asking questions
- Listen carefully to everyone
- Think about different strategies
- Build on each other's ideas
- Come to consensus
- Use consensus to influence thinking
- Think flexibly about numbers (think about fractions, decimals, and percents)
- Encourage each other
- Ask why (justify answers)

To rather your group has the abilities to solve

A stack of cream-colored lined notebook paper with two punch holes on the left side. A blue and white ballpoint pen is resting diagonally on the top sheet of paper. The text "What about this activity supported group smart?" is written in the center of the page.

What about this activity
supported group smart?

Being group smart in math...

Is about DEVELOPING
EXPERTISE

- There is no math gene
- 10,000 hours to expert

To help more students succeed at math...

Need to change perceptions of smartness

- Broaden what it means to be smart in school
- **Value students' strengths!**
Everyone is smart, has something to contribute, and has something to learn from others.

Group Growth Mindset

Messages That Promote a Growth Mind-Set

- We believe in your potential and are committed to helping everyone get smarter.
- We value (and praise) taking on challenges, exerting effort, and surmounting obstacles more than we value (and praise) “natural” talent and easy success.
- Working hard to learn new things makes you smarter—it makes your brain grow new connections.
- School is not a place that judges you. It is a place where people help your brain grow new connections.

Norms for Group Smart

- ...Yet
- Group questions only
- No one is done until everyone understands
- No talking outside our group
- No one takes over and everyone contributes
- Giving up will not make us smarter!
- What more can we learn here?
- ...

Conclusion

- Individualistic growth mindset is not enough
- Smart is never Individual, it is distributed and collaborative
- Developing group growth mindset requires student and teacher persistence
- Embracing RISK, EFFORT, and Rethinking SUCCESS
- Complex Instruction gives us tools for developing group growth mindset
 - *No one is as smart as all of us together.*

Please stay in touch!

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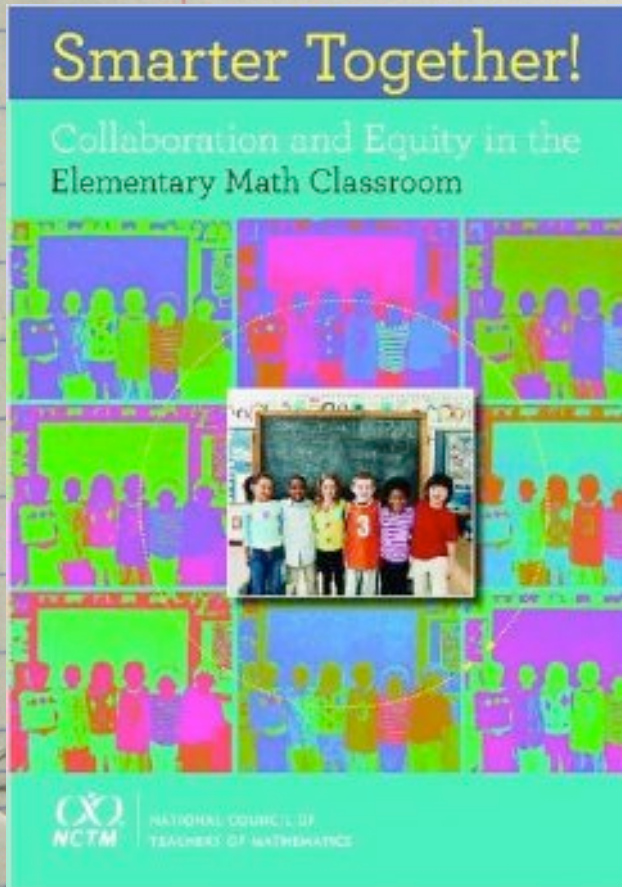
University of Arizona

Complex Instruction Math webpage

CIMath.org

CImath@CIMath.org

Raffle!



Featherstone, Crespo, Jilk,
Oslund, Parks, & Wood (2011).

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