Building Collective Mathematical Knowledge

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and
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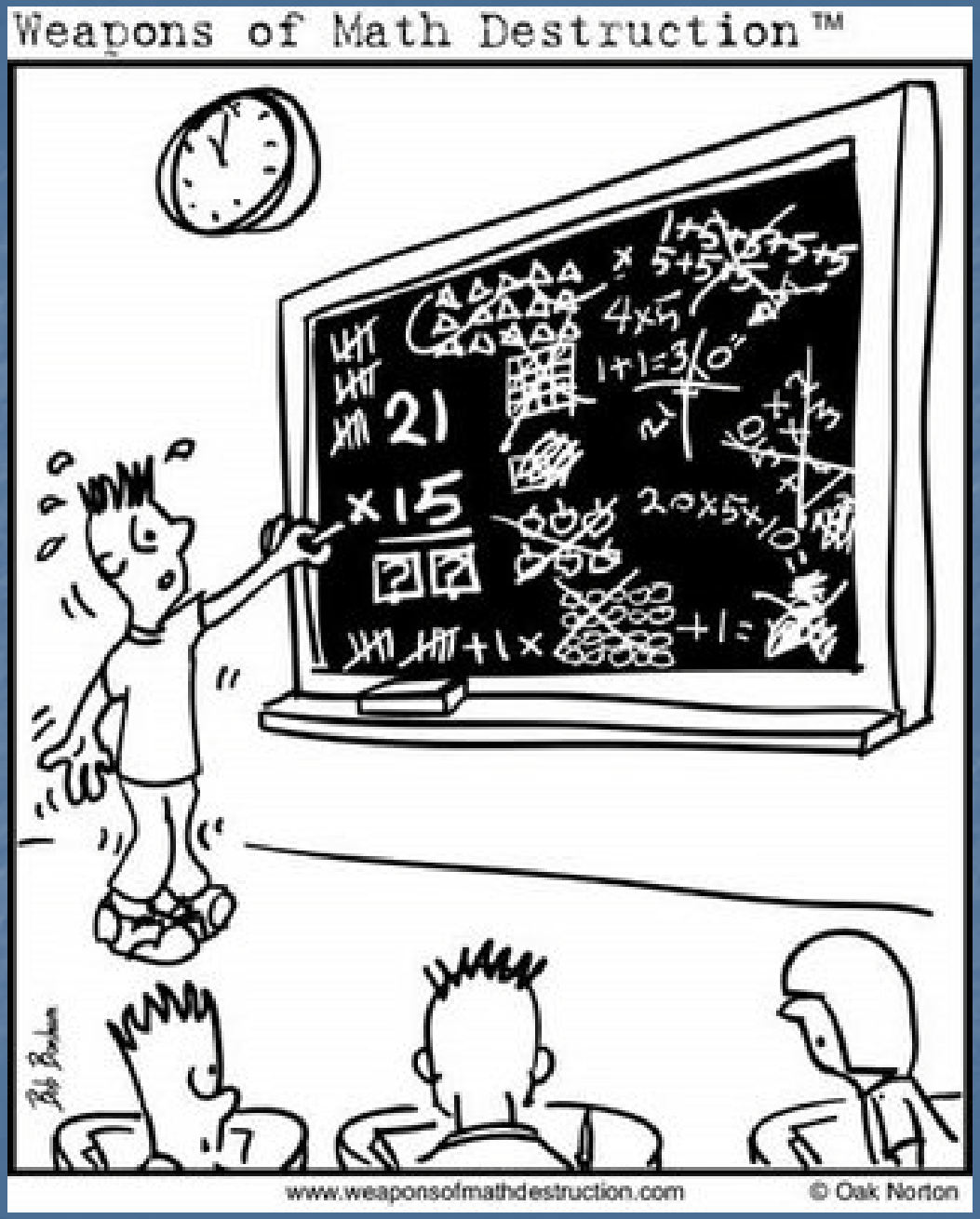
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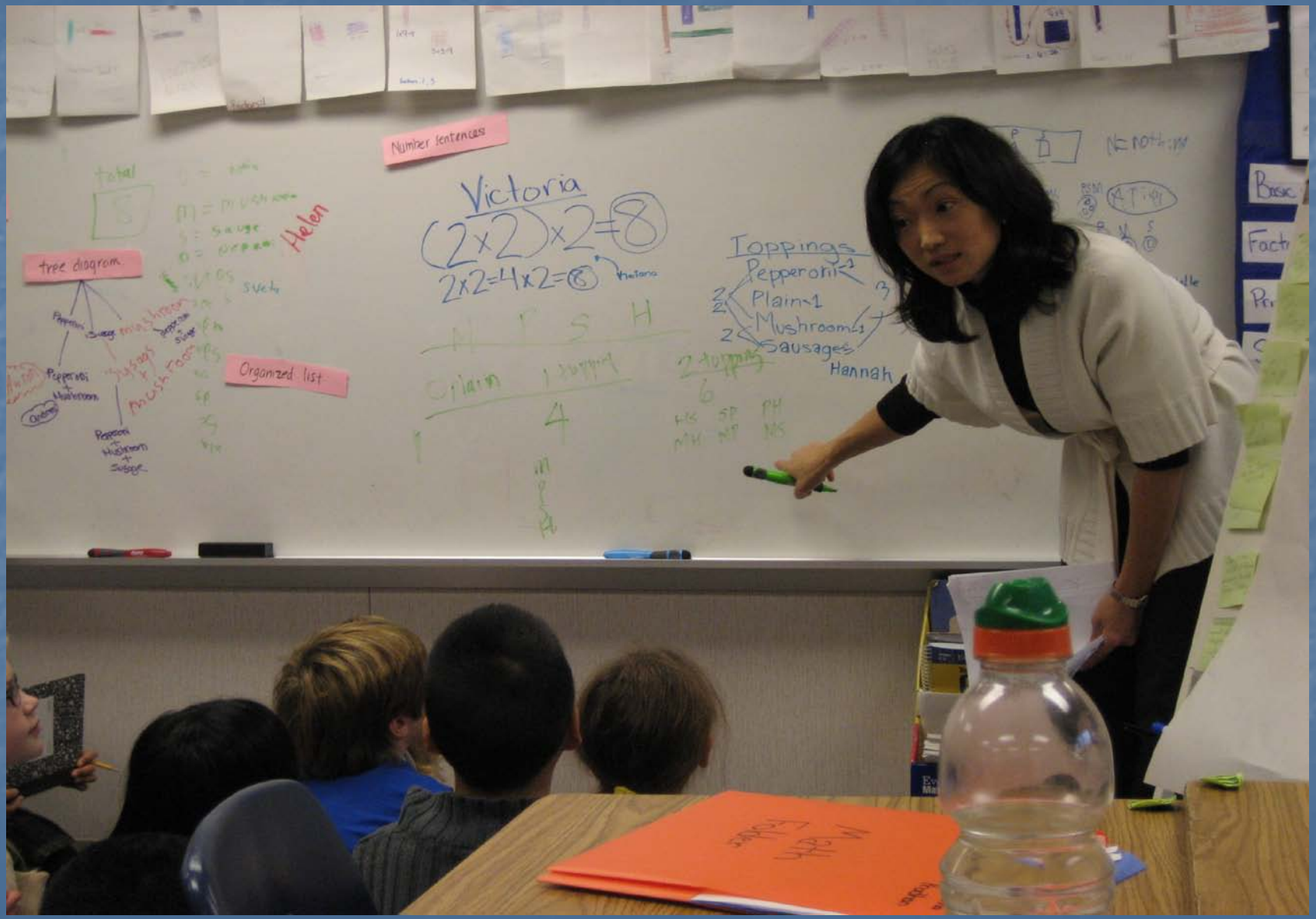
Collective Workspace

Collective Workspace



Collective Workspace

The Definition:

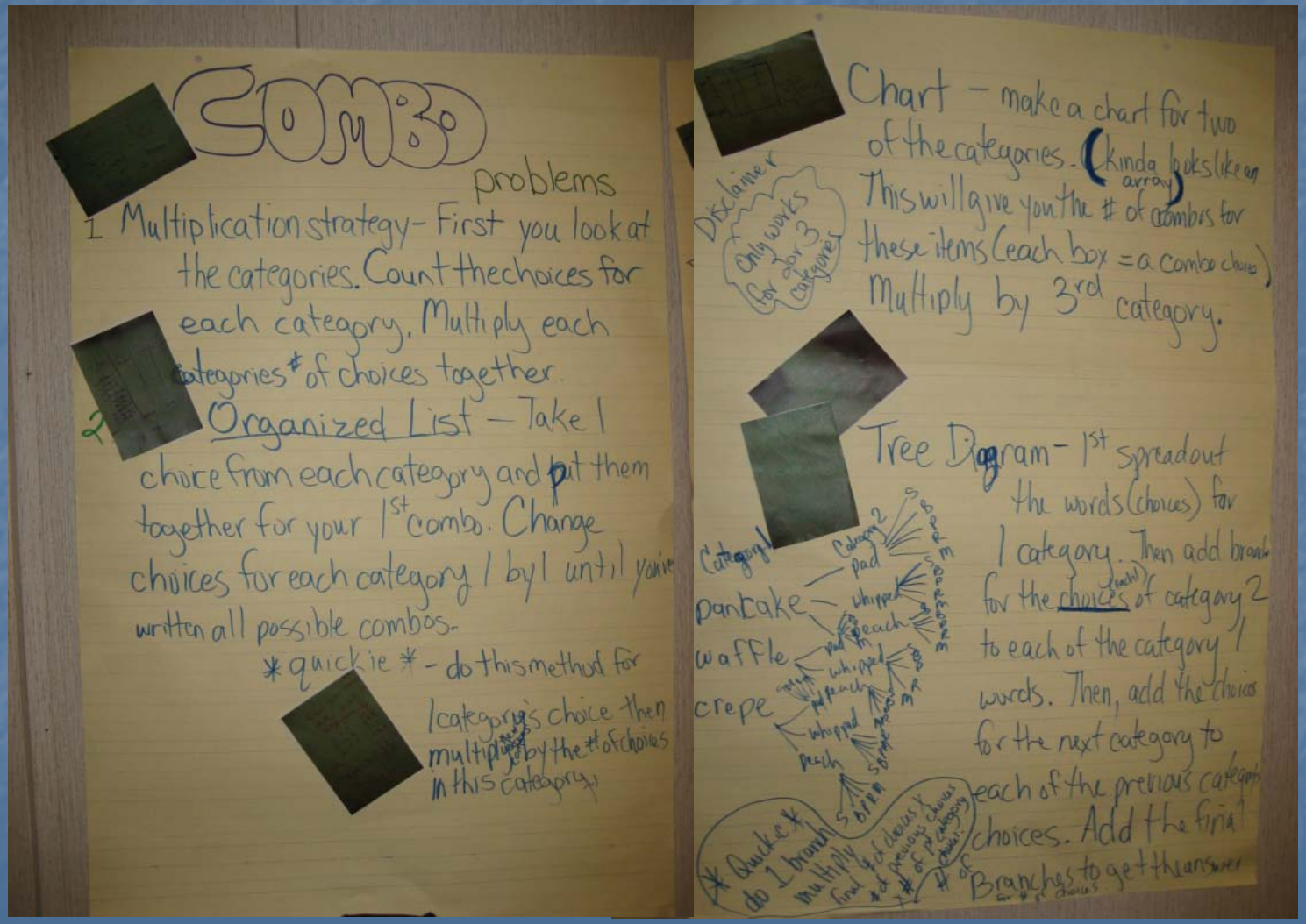
Collective Workspace was a method for students to bring their individual work to their group and discuss different solution strategies and compare.

Collective Workspace

Student Responsibility:

- look for connections, efficiency, multiple representations and generality
- connect their way of knowing to other strategies
- debate which strategy was most efficient and effective to broader classes of problems

Poster Proofs



Poster Proofs

The Definition:

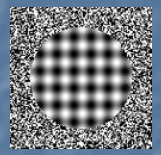
Poster Proofs were created to summarize the essential mathematical learning.

Poster Proofs

Student Responsibility:

- build on each other's ideas so that every student has ownership of the collective thinking
- engage in building collective knowledge

PEDAGOGICAL MOVES and QUESTIONING



***Zooming in and zooming out*: making generalization**

***Connecting:* making connections among representations or algebraic concepts**

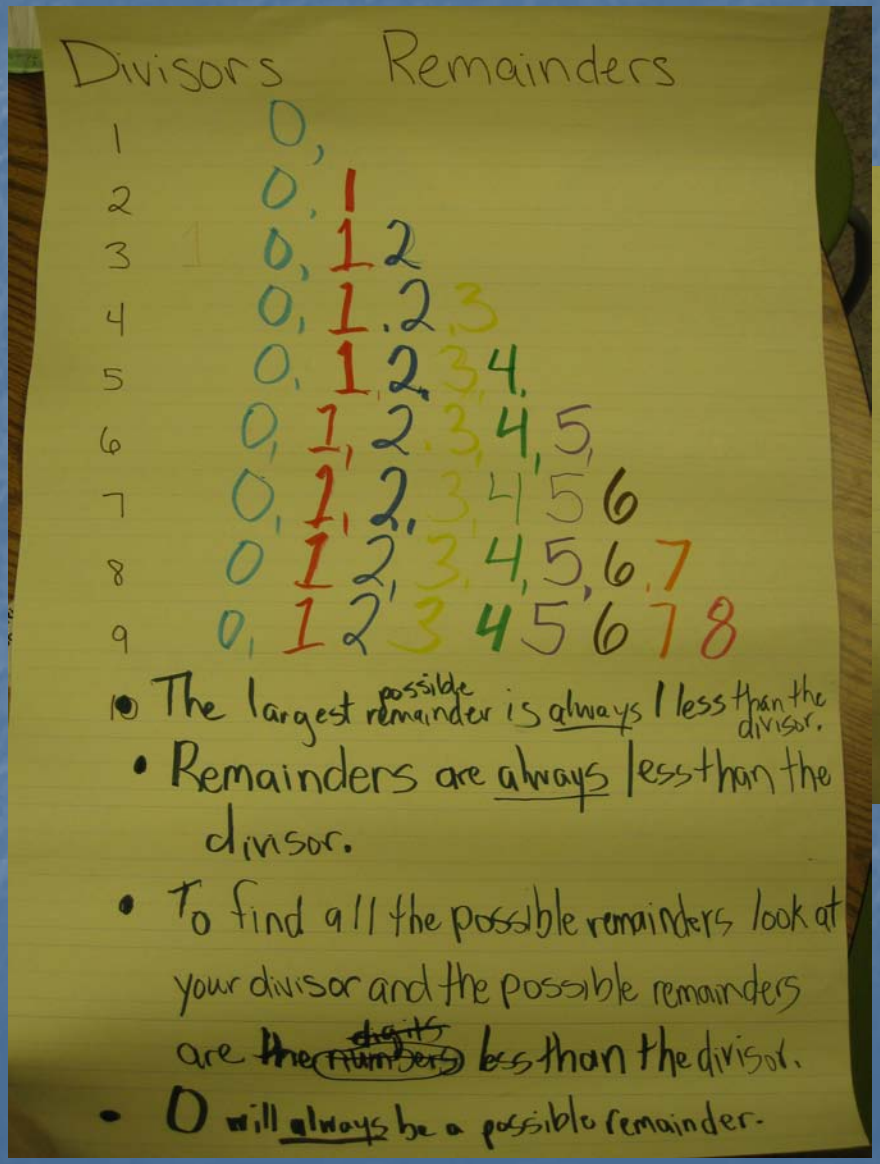
***Marking*: marking critical features which the students should pay attention to**

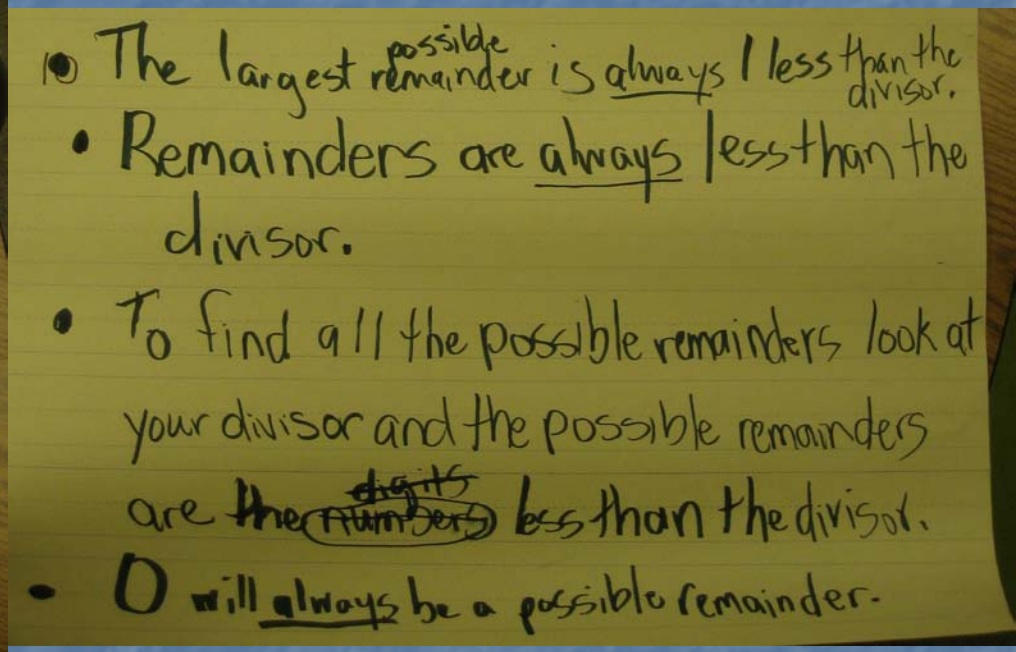
***Directing:* keeps the students on task and encouraged to persist**

***Extending*: Pressing on for justification**

***Scaffolding:* simplifying or clarifying**

Making Generalizations





Resources

- M^3 Mentoring Mathematical Minds
- Investigations
- Math 411- Modules