

# STANFORD SCOPE



SKETCHNOTES BY  
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## EQUITABLE MATHEMATICS CLASSROOMS

WHAT DO THEY LOOK LIKE & WHY ARE  
THEY SO DIFFICULT TO ACHIEVE ?

*Lo  
Boaler*

PROF. OF MATHEMATICS EDUCATION  
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# STUDENT MATHEMATICAL PATHWAYS

RELYING ON RULES MAKES PROBLEM SOLVING MORE COMPLICATED.



STUDENTS DON'T FEEL SAFE EXPLORING THEIR OWN IDEAS

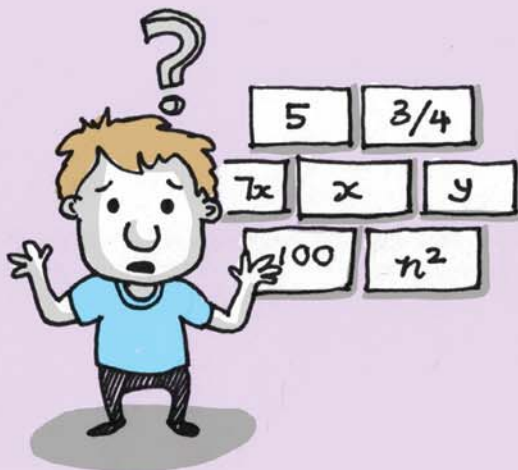


## LOW ACHIEVING STUDENTS...

LEARNING A HARDER FORM OF MATH



LESS LIKELY TO VIEW MATH AS A SET OF NUMBERS OR SHAPES THAT THEY CAN USE FLEXIBLY.



COMPRESS IDEAS LESS



SEE MATH AS AS A SET OF RULES.





# EXPLORATORY

## ALGEBRA CLASS - 5 WEEKS

### ALGEBRA AS A PROBLEM SOLVING TOOL

### 4 TEACHING PRINCIPLES

- 1 ENGAGE STUDENTS AS ACTIVE & CAPABLE LEARNERS.
- 2 TEACH MATH PRACTICES
  - REASONING • REPRESENTING • GENERALIZING
- 3 DEVELOP A COLLABORATIVE MATH COMMUNITY
- 4 GIVE OPPORTUNITIES FOR EXPLORATION



SUPPORTIVE IN GROUPS.

LEARNING MORE DEEPLY THROUGH COLLABORATION

VISUAL REPRESENTATION IN MATH

"I'VE NEVER SEEN A MATH PROBLEM".

WHY ARE  
EQUITABLE MATH  
CLASSROOMS SO  
DIFFICULT TO ACHIEVE?

# RESULTS

-ACHIEVEMENT

ENGAGEMENT  
& ENJOYMENT

FUTURE  
SUCCESS

- DAMAGING MATH PATHWAYS
- FIXED MINDSET THINKING
- PARENTS & SOCIETY
- WIDESPREAD CONSERVATISM (EG. KHAN VIDEOS)
- COCOONING OF RESEARCH KNOWLEDGE