

Serving Our Strongest Students

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What about all the other students?



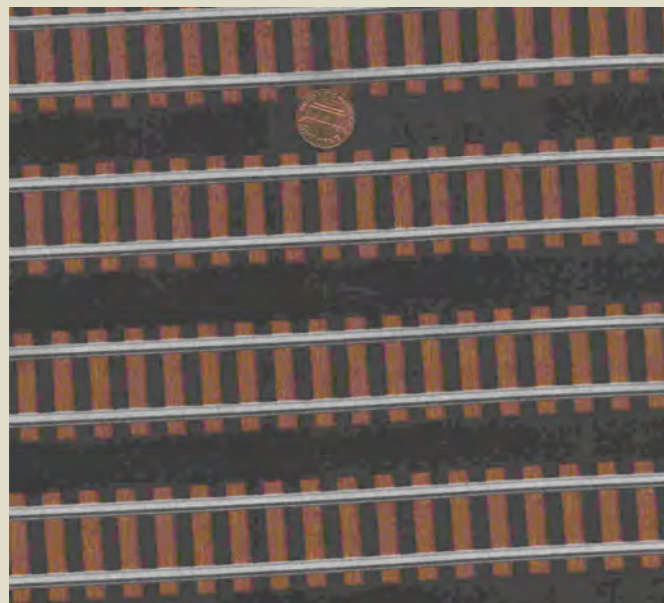
Access

Importance of strong students

◇ Politically

◇ Philosophically

Tracking



← this is great!

← where's the engine?

not so easy for a student to switch to a higher track

Acceleration



The Power of Culture

- ◇ societal expectations
- ◇ standard curriculum
- ◇ school tradition
- ◇ parental pressure
- ◇ strong students themselves



Racers vs. Diggers



Other approaches

Access and challenge can coexist



Some techniques for heterogeneous classes

(All classes are heterogeneous)

◇ Alliance with the strongest students

◇ Support for the weakest

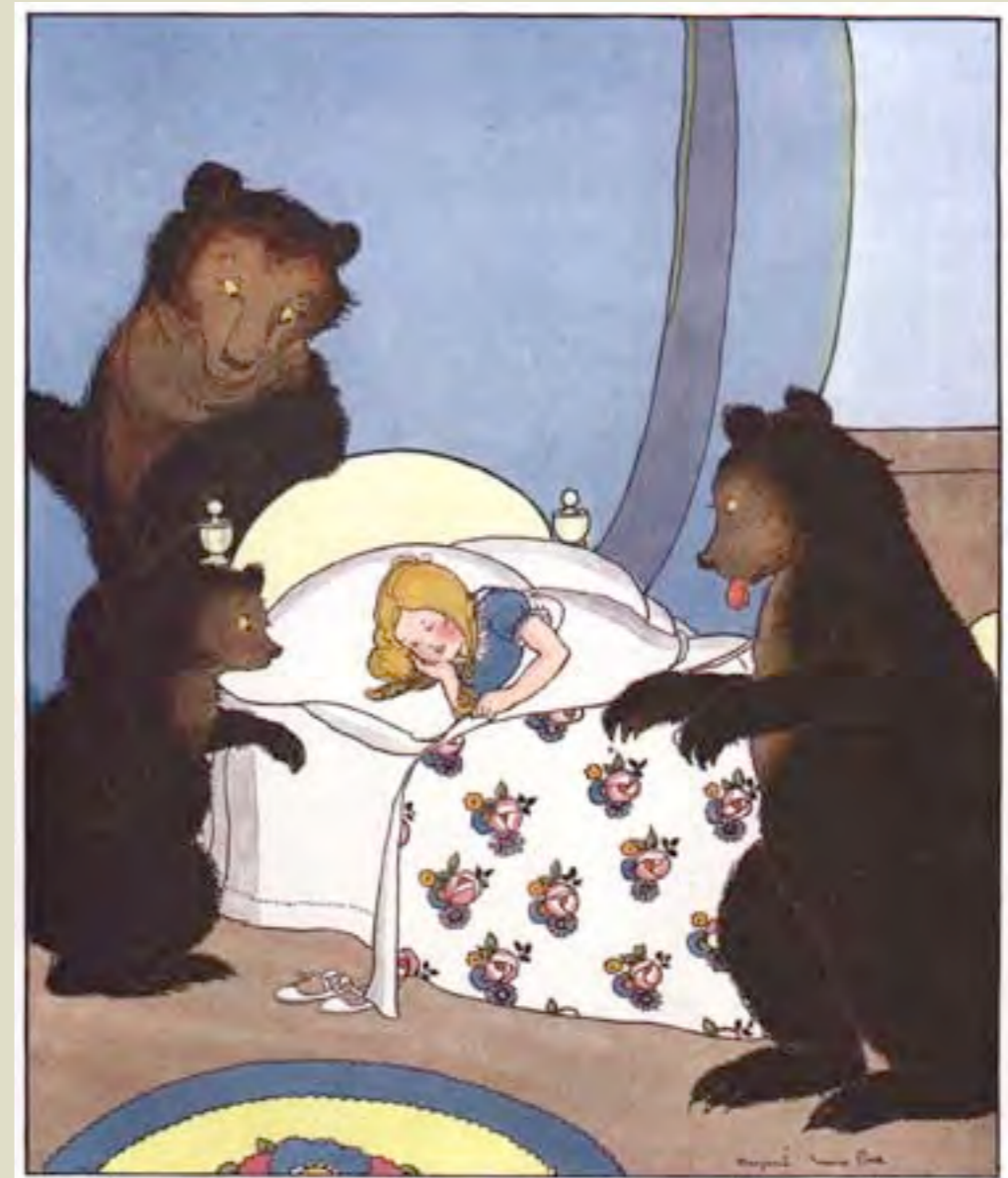
The Elevator Strategy



Stop on all the floors!

Every day...

- ◇ Something too difficult
- ◇ Something too easy
- ◇ Something “just right”



Pacing

◇ Constant forward motion



◇ Eternal review



Importance of strong students

◇ Politically

◇ Philosophically

◇ Pedagogically

Curriculum

“No threshold, no ceiling”
activities in core classes


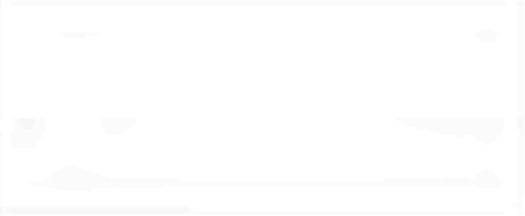

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Center for Innovative Teaching
summer courses

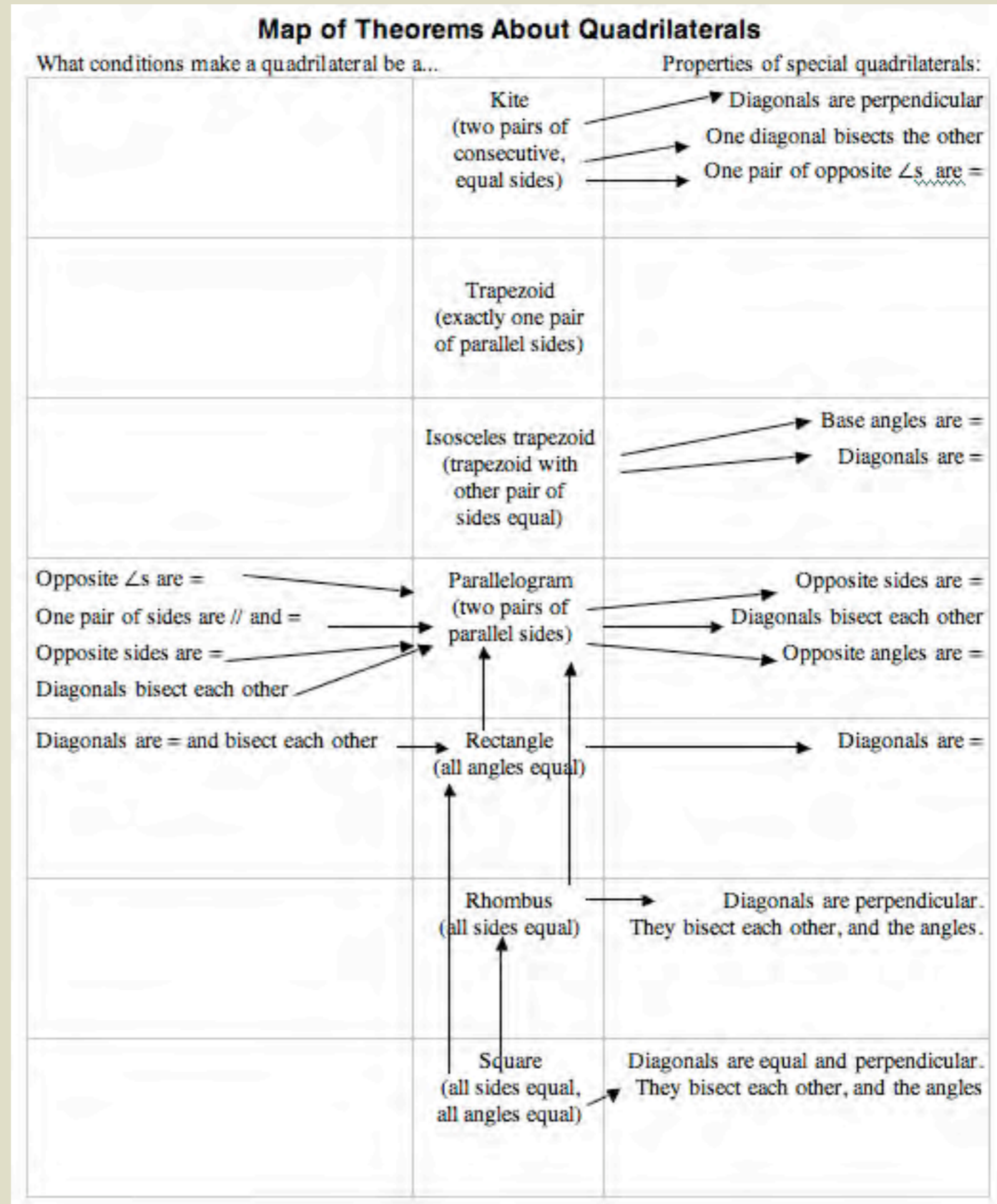
Curriculum

more depth

Example:

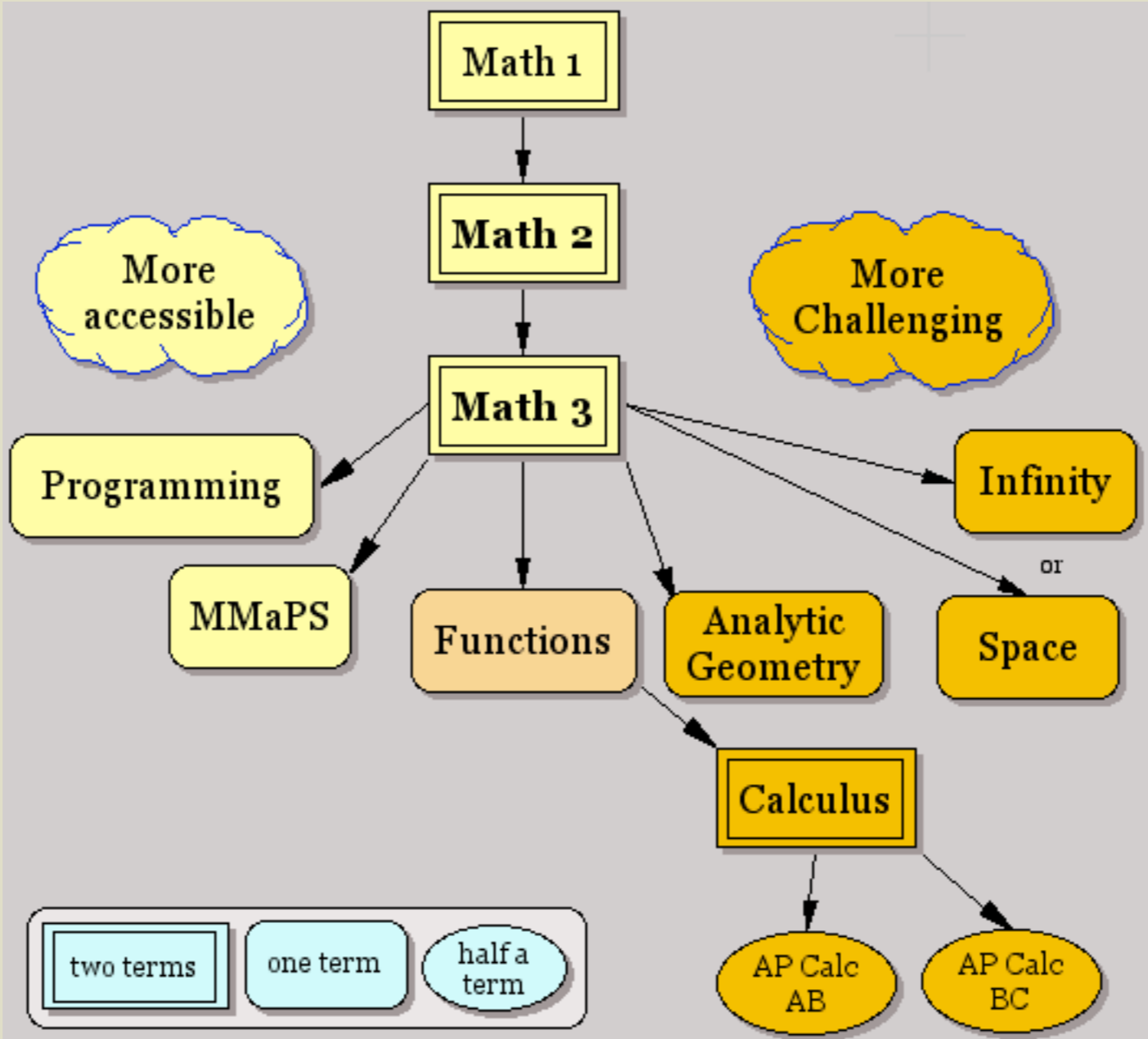
Map of Theorems About Quadrilaterals		
What conditions make a quadrilateral be a...		Properties of special quadrilaterals:
	Kite (two pairs of consecutive, equal sides)	
	Trapezoid (exactly one pair of parallel sides)	
	Isosceles trapezoid (trapezoid with other pair of sides equal)	
	Parallelogram (two pairs of parallel sides)	
	Rectangle (all angles equal)	
	Rhombus (all sides equal)	
	Square (all sides equal, all angles equal)	

Example:



Curriculum

more electives



Space

- ◇ Transformational geometry
 - Matrices
- ◇ Symmetry
 - Abstract algebra
- ◇ Dimension
 - 3D: polyhedra
 - 4D: introduction

Infinity

◇ Infinite sets

- Cantor

◇ Proof

- by contradiction
- by mathematical induction

◇ Dynamical systems

- iteration and chaos

◇ Fractals:

- self-similarity
- recursion and programming

Summary

- ◇ Elevator strategy
- ◇ Constant forward motion
- ◇ “No ceiling” activities
- ◇ Some topics in depth
- ◇ Breadth through electives