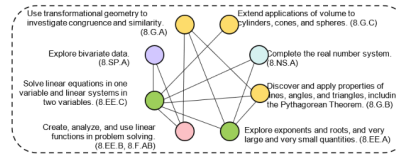


MathLinks Highlight THE POWER OF BIG IDEAS



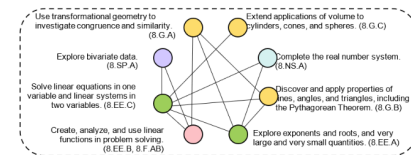
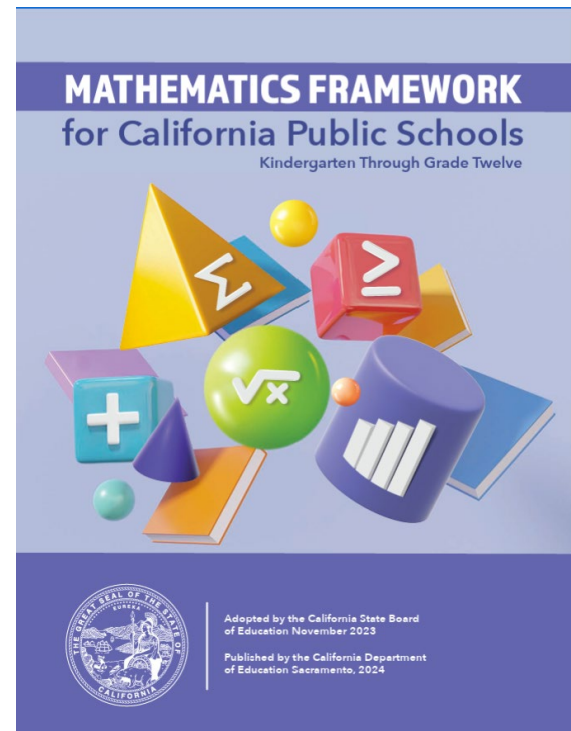
Efficiency



Big Ideas

BIG IDEAS

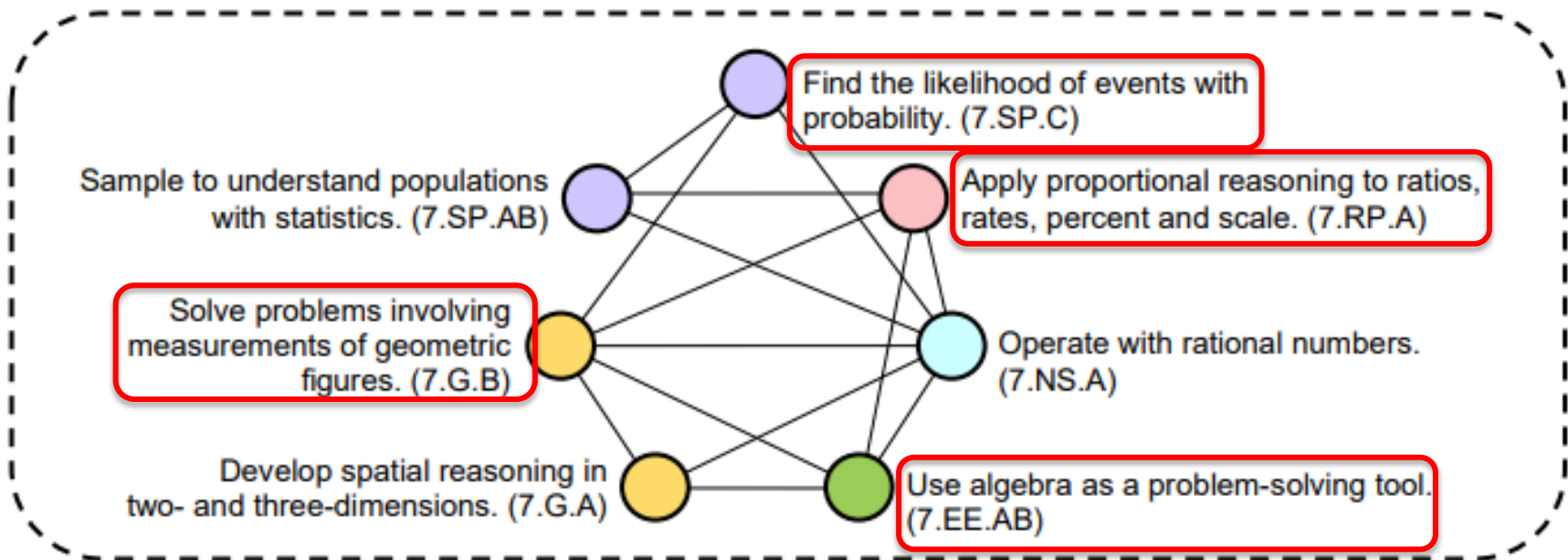
Big ideas are crucial for fostering deep, conceptual understanding of mathematics. They act as organizing principles that connect mathematical concepts, enabling students to grasp the interconnectedness of the subject and apply their knowledge in various contexts.



Big Ideas

A “BIG IDEA WHEEL”

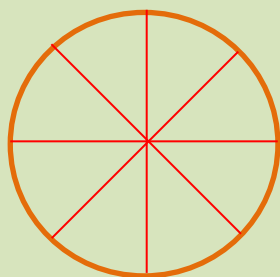
Grade 7: Big Ideas and Connections



CONCEPT DEVELOPMENT

A Grade 7

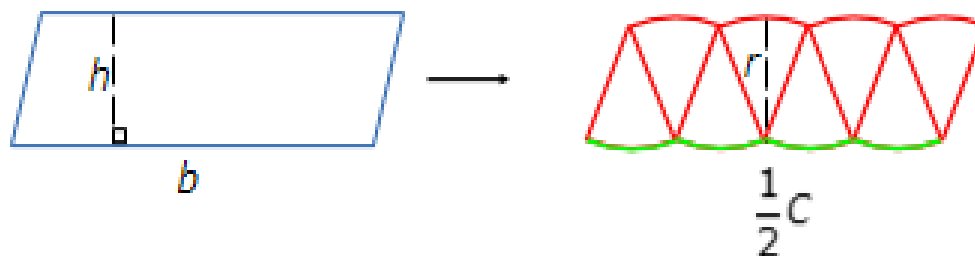
Hands-on investigation



Engaging

AREA OF A CIRCLE

(4) Start with the area formula of a parallelogram.
Substitute expressions to find the area of a circle.



$$A = bh \longrightarrow A = \left(\frac{1}{2}C\right)(r)$$

$$A = \left(\frac{1}{2} \cdot 2\pi r \cdot r\right)$$

$$A = \pi r^2$$

PRACTICE

Pizza sizes are given in diameter length. Solve each problem about Frida's Pizza. Use $\pi = 3.14$.

7. Frida makes 12-inch medium pizzas and 14-inch large pizzas. By what percent is the large pizza bigger?

$$A_{\text{large}} = 153.86 \text{ in}^2$$

$$A_{\text{medium}} = 113.04 \text{ in}^2$$

The large is about 36.1% bigger.

8. Frida uses $14.5'' \times 14.5''$ boxes for the large pizzas. What percent of the bottom of the box will a large pizza cover?

$$A_{\text{large}} = 153.86 \text{ in}^2$$

$$A_{\text{box}} = 210.25 \text{ in}^2$$

The large pizza covers about 73.2% of the box.

MathLinks: Grade 7 (2nd ed.) ©CMAT
Unit 9: Teacher Edition



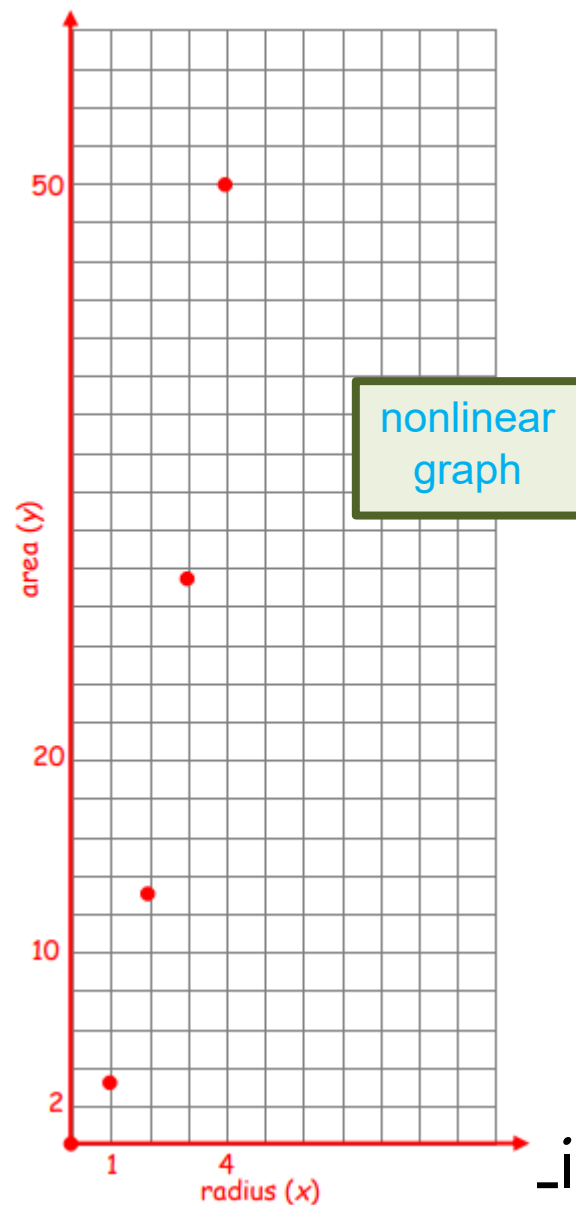
11

MULTIPLE REPRESENTATIONS & CONNECTIONS

Table and graph
Area of a circle
Proportional reasoning

Radius (x)	Area (y)
0 units	0 u^2
1 unit	3.14 u^2
2 units	12.56 u^2
3 units	28.26 u^2
4 units	50.24 u^2

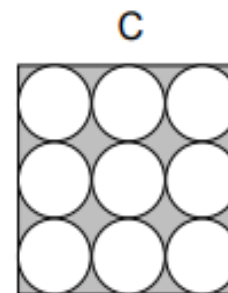
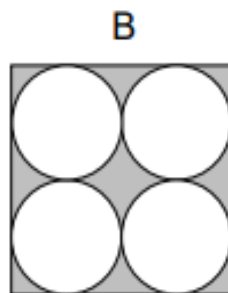
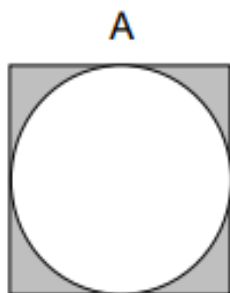
non-
constant
rate of
increase.



PROBLEM SOLVING & CONNECTIONS

Area of a circle and probability

PENNY DROP PROBABILITIES



In the Penny Drop Game, a player drops a penny on a board on the floor. If the penny does not land on the board, the player drops it again. If the penny lands on the board and is at least half way in a white space, the player wins. If not, the player loses.

- Figures A, B, and C above represent boards for the Penny Drop Game.
- All three are squares that have side lengths equal to 1 foot.
- All the circles within board B have the same diameter length.
- All the circles within board C have the same diameter length.

REFLECTING ON BIG IDEAS

At the end of every unit, students connect ideas with the *MathLinks* “Big Idea Wheel.”

REFLECTION

Answers will vary. Some possible answers:

1. **Big Ideas.** Shade all circles that describe big ideas in this unit. Draw lines to show connections that you noticed.

Give an example from this unit of one of the connections above.

- Used algebra equations to solve geometry area and volume problems
- Sliced a prism to get new prisms and used algebra (formulas) to find surface area and volume
- Decided if graphs of circumference, area, and volume were in proportional relationships
- Used probability concepts and area measurements to determine if a game was fair

Making these connections leads to meaningful learning and program efficiency

THE POWER OF BIG IDEAS

COMPONENT	CLASS HOURS
The CORE Lessons	100
Review, Extra Practice, Intervention, Enrichment	40
Formative, Summative Assessment	40
TOTAL	180

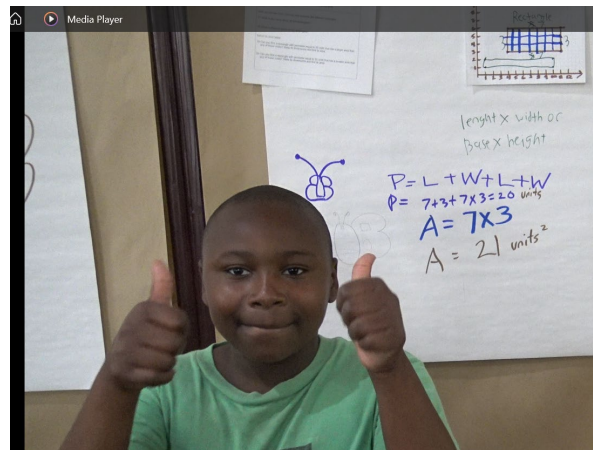


Efficiency

The Core lessons alone address 100% of all content and practice standards

A TEACHER IN CALIFORNIA

"This program gets results!
Last year (in a different program),
only 18% of our 5th grade students
met or exceeded standards in math.
This year (using *MathLinks*)
45% of the 6th grade students
met or exceeded standards."



GET EXCITED! NEXT STEPS



PREVIEW – PILOT - PRESENTATIONS

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info@mathandteaching.org

Contact me:
shelley@mathandteaching.org



Preview/Pilot/Presentation

