

What We're Learning About Volume

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1 Volume Competes With Other Magnitudes

- Footprint [surface area required]
- Space “needed” or “used” [see film]
- Amount of stuff [differentiate from mass]

Do these have the same volume?”



“No...because one takes up more space than the other...One’s like more open...it’s stretched out.”



I agree...if you put them
both into a ball, they'd be
about the same



[One] has a much bigger space...the other one...rolled up in a ball...doesn't look like it has as much space.”



Teacher: "So this one is yours.
How many blocks did you
start with when you built the
structure?"

Student: 8

Teacher: "How about the
other structure?"

Other student: 8

2 Measurement

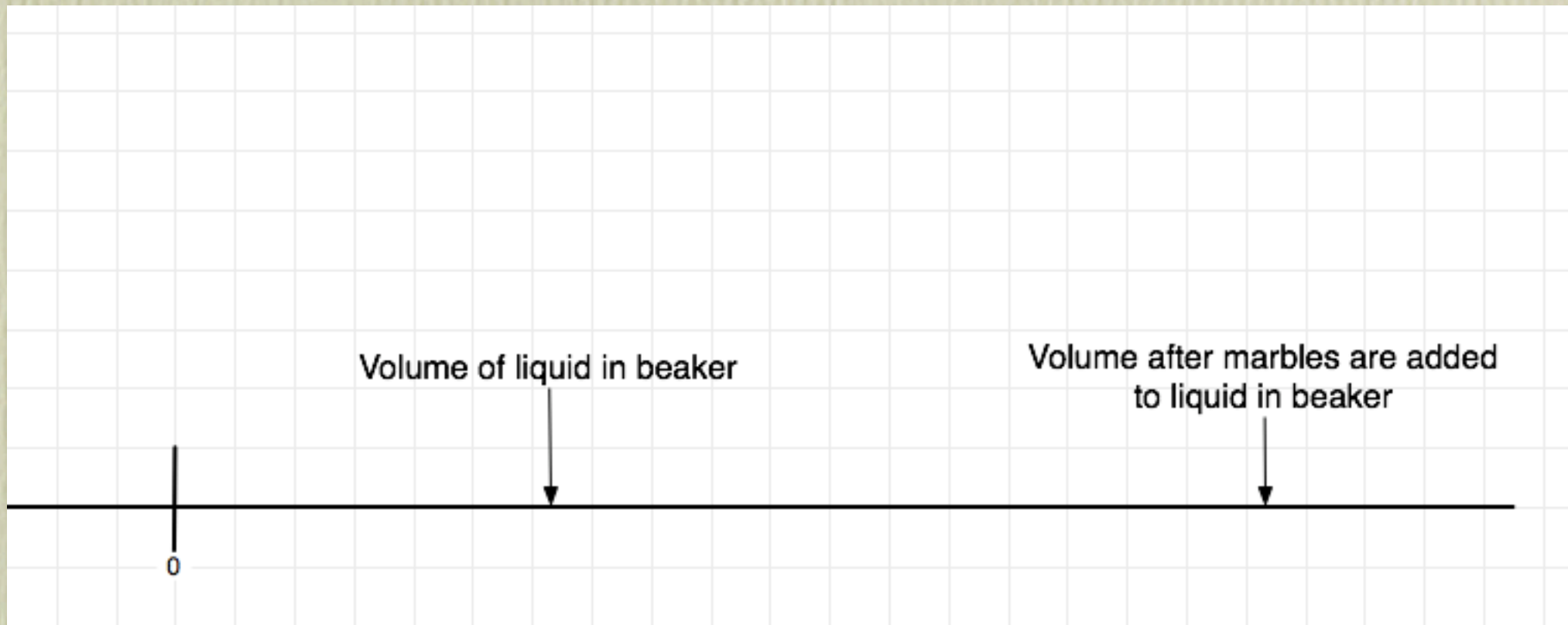
Conceptualization

- width
- perimeter or half-perimeter
- area of one or more sides (of a block)

3-The Concept of Volume

- Verbal definitions are ‘useless’ [“Amount of space”]
- Ostensive definitions are required
- Volume has multiple meanings even among scientists:
 - litre of sand
 - volume of a bottle of Coca-cola
 - bulk volume, particulate volume, displaced volume...

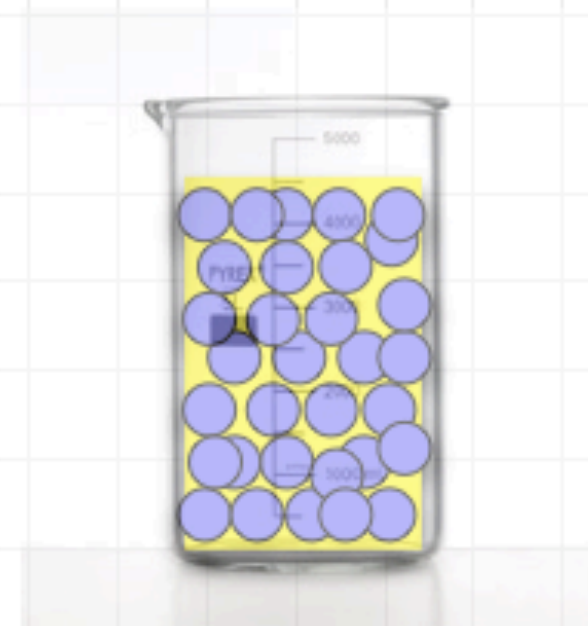
4-Operations and Relations





A

Volume in beaker A



B

Volume in beaker B



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NSF #0628245