What We’re Learning About Volume

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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)
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

Volume of liquid in beaker

Volume after marbles are added to liquid in beaker
Volume in beaker A

Volume in beaker B
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