

Minds On

-setting the context for the problem,
probing for understanding of the
term "estimation"

Students said:

- it is an educated guess
- it is a prediction
- the short side is width and the long side is length

Working On It

-students were given many directions about how to choose the locks, so I am wondering if they will all choose cubes instead of rulers?

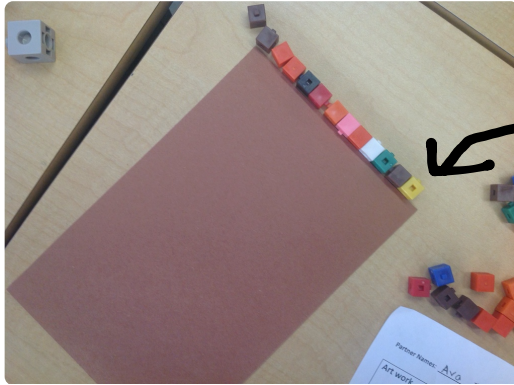
One group is using their pencil to estimate how long a cube is and then go along the edge of the paper counting out their measurement with their pencil?



Are students connecting estimates to
measurements and being more
reasonable as they go?

Not flush with edge

Alignment of objects?



"Write down 12" (there are gaps)

-the orange paper is a square, some groups have not recognized this and have different estimates for the lengths...AHA would be that there are no short or long sides

Partner Names: Rayneer A.J. Measuring for the Art Show

Art work	Unit of Measurement	Estimate Long Side	Measurement of Long Side	Estimate Short Side	Measurement of Short Side
White paper	cube	5	5	3	3
		6	5	4	3
Brown paper	cube	10	11	8	7
	small cube	10	11	11	7
Orange paper	cube	5	6	4	5
	small cube	5	6	5	5

Partner Names: Ava Jergh Measuring for the Art Show

Art work	Unit of Measurement	Estimate Long Side	Measurement of Long Side	Estimate Short Side	Measurement of Short Side
White paper	small cubes	7	9	4	4
Brown paper	small cubes	14	21	10	12
Orange paper	small cubes	6	9	9	9

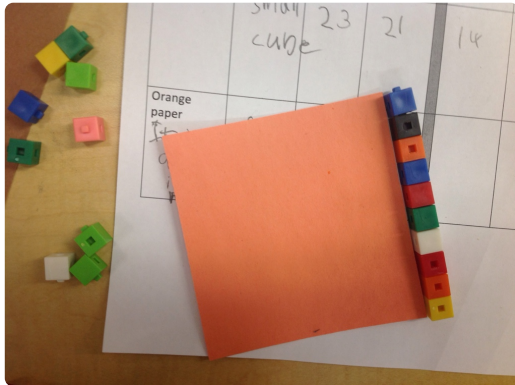
Did this group figure it out?

Partner Names: Hargun and Rana Measuring for the Art Show

Art work	Unit of Measurement	Estimate Long Side	Measurement of Long Side	Estimate Short Side	Measurement of Short Side
White paper	big cubes	6	5	2	3
	small cubes	4	10	5	5
Brown paper	big cubes	10	11	5	6
	small cubes	10	10	12	12
Orange paper	big cubes	4	5	5	5

Partner Names: Arjun and Rana Measuring for the Art Show

Art work	Unit of Measurement	Estimate Long Side	Measurement of Long Side	Estimate Short Side	Measurement of Short Side
White paper	big cubes	8	10	4	5
	small cubes	8	10	4	5
Brown paper	big cubes	10	11	5	6
	small cubes	10	10	12	12
Orange paper	big cubes	4	5	5	5
	small cubes	4	5	5	5



"It's basically 10 and an inch"

Counting strategies

- one to one, counting by one

Misconceptions

- how to accurately measure

Great discussion by some kids around what a unit of measure is.

Debrief

- strategies for estimation? (benchmarks like their fingers, using previous measurements

- explicit teaching of how to use the ruler

- dealing with the misconception of the accuracy of measuring using the non standard units

- how does modelling using technology help students to learn?

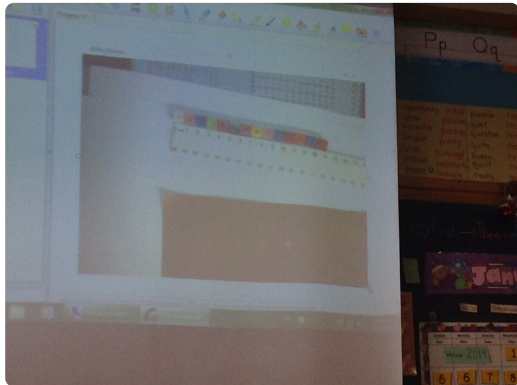
"We can measure the cubes on the ruler to find out how many centimetres there are"

1 cube is one centimetre

- try to use turn and talk as a communication strategy

Tatum- started counting by ones, then counted by twos and modelled this faster strategy

-using the ruler to find out how long the small cubes are



If