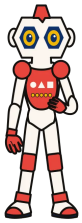
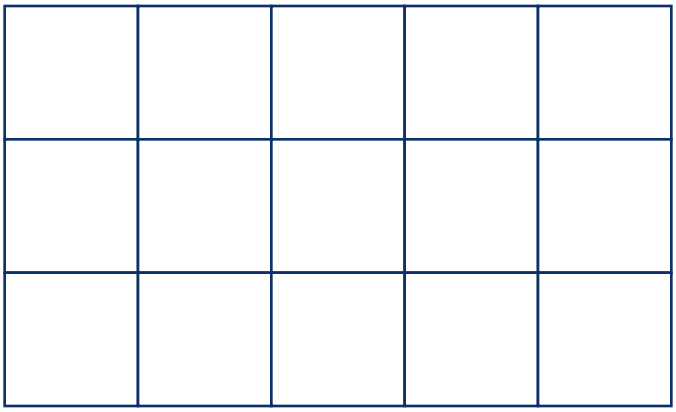
Area isn't perimeter



Choose the unit, then measure

How much floor? How much fence? Choose a square tile or a length of tape for each question. Mark the inside and the outside differently.



Floor: ____

square units

Fence: ____

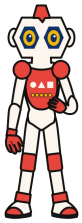
units

For floor, I choose: _____

For fence, I choose: _____

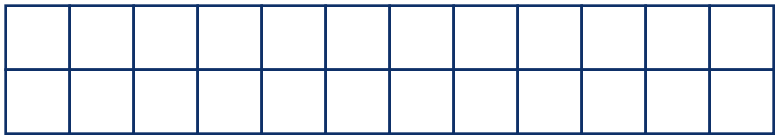
Emmy: "I counted fifteen units of fence." Leo: "Show why." Trace every outside length and test the claim.

Three floors, twenty-four tiles



Same floor area, different fences

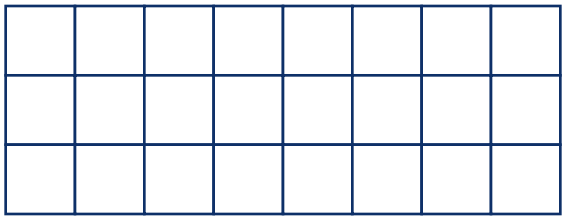
Each rectangle covers twenty-four square units. Choose your measuring tool. Find each fence length and circle the shortest.



12 by 2

Area: 24 square units

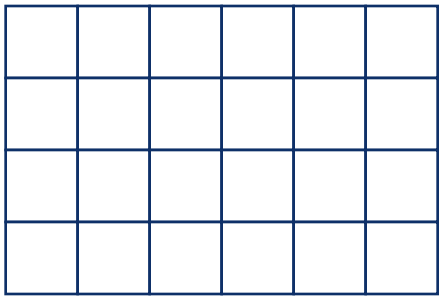
Fence: ____ units



8 by 3

Area: 24 square units

Fence: ____ units



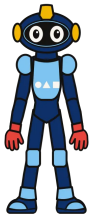
6 by 4

Area: 24 square units

Fence: ____ units

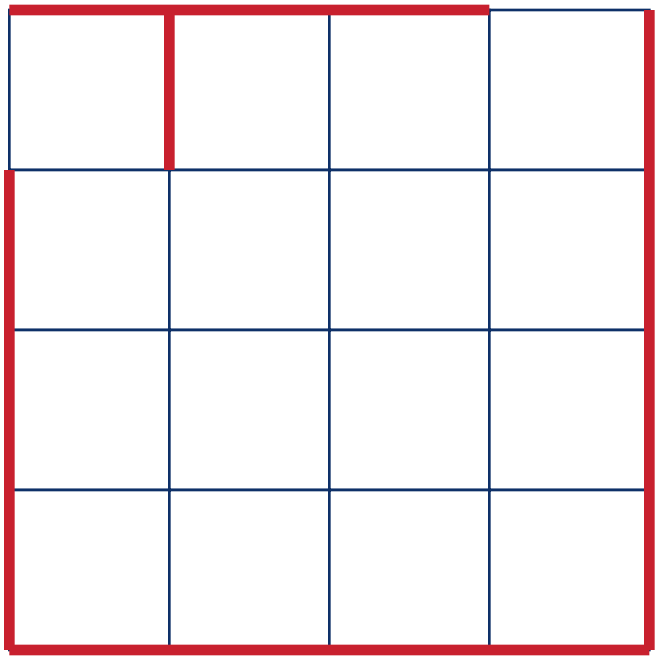
Turning a rectangle around does not make a new design.

Repair the fence



Keep the outside; remove the inside line

How much fence? Choose a tool. Two outside unit lengths are missing. One line was placed inside. Repair the model, then measure.

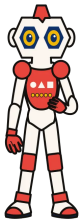


Fence: ____ units. My tool: _____

Floor: ____ square units. _____

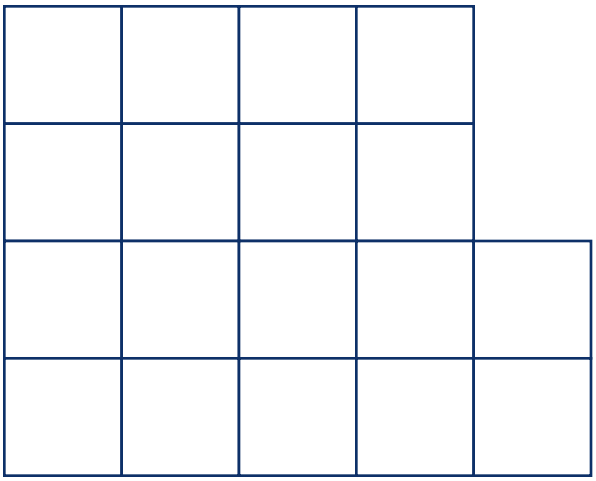
The two measurements can have the same number. Explain why their units still mean different things.

Estimate, then check



Predict before measuring

How much floor remains? Write an estimate before choosing your tool and measuring. The open corner is not part of the floor.

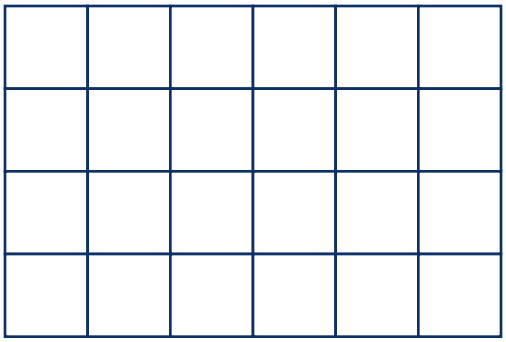


Estimate: ____

Measured: ____

square units

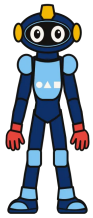
A different rectangle covers twenty-four square units. Six square units fit in each row. Find the missing side, then the fence length.



Missing side: ____ units

Fence: ____ units

Jump to the hour first



Clock Jumps · elapsed time

Use the hour as a stepping stone. Show both jumps, then write the finish time. Remember noon and midnight.

Start 9:45 AM + 30 minutes

9:45 AM	→	10:00 AM	→	Finish: ____
		+ ___ min		+ ___ min

Finish time, AM/PM and day if needed: _____

Start 11:50 AM + 25 minutes

11:50 AM	→	12:00 PM	→	Finish: ____
		+ ___ min		+ ___ min

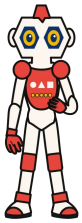
Finish time, AM/PM and day if needed: _____

Start 11:45 PM + 30 minutes

11:45 PM	→	12:00 AM	→	Finish: ____
		+ ___ min		+ ___ min

Finish time, AM/PM and day if needed: _____

Eighteen squares and a string



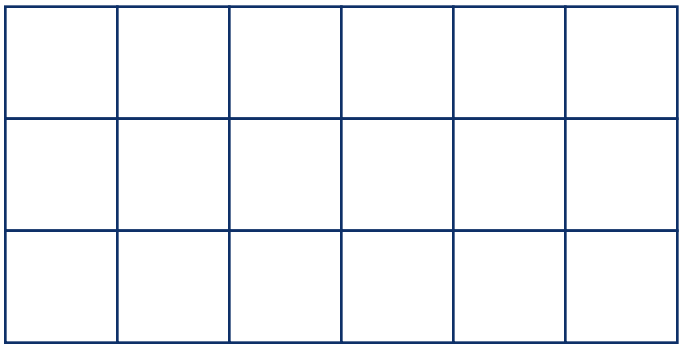
Kitchen Table · a shared investigation

You need eighteen equal paper squares and a piece of string. One square represents one square unit; one square side represents one unit.

1. Build a 2 by 9 rectangle. Choose how to measure the floor and how to measure the fence. Record both.

2. Keep all eighteen squares. Make a 3 by 6 rectangle. Measure its fence. What stayed the same? What changed?

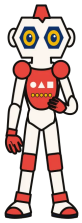
3. Now keep the fence length at sixteen units. Compare a 2 by 6 floor with a 3 by 5 floor. Do they cover the same area?



2 by 9 fence: _____

3 by 6 fence: _____

One floor, three designs



Lab Project · make your reasoning visible

Cover exactly twenty-four square units. Both side lengths must be at least two units. Find three different rectangular designs. A turned copy is the same design.

Sides: ___ by ___

Area: ___ square units

Fence: ___ units

Sides: ___ by ___

Area: ___ square units

Fence: ___ units

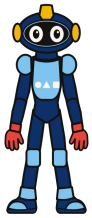
Sides: ___ by ___

Area: ___ square units

Fence: ___ units

Show a grown-up: "I kept the floor area the same. I used the least fence for _____ because _____."

Check the models



Grown-up key

Card 1

Floor: 15 square units. Fence: 5 + 3 + 5 + 3 = 16 units. Tiles measure floor; tape measures fence. Emmy counted floor squares instead of boundary lengths.

Card 2

2 by 12: fence 28. 3 by 8: fence 22. 4 by 6: fence 20 units, the least. All areas are 24 square units.

Card 3

Replace the top-right and upper-left outside lengths; remove the inner vertical line. Floor: 16 square units. Fence: 16 units. Equal numbers do not make equal kinds of measurement.

Card 4

Cut-out floor: 18 square units. Estimates are predictions, not scored answers. Other rectangle: missing side 4 units; fence 20 units.

Clock Jumps

9:45 AM: +15 then +15, finish 10:15 AM. 11:50 AM: +10 then +15, finish 12:15 PM. 11:45 PM: +15 then +15, finish 12:15 AM the next day.

Kitchen Table

Area stays 18 square units. 2 by 9: fence 22 units; 3 by 6: fence 18 units. Same-fence comparison: 2 by 6 covers 12, 3 by 5 covers 15 square units; both fences are 16 units.

Lab Project

With sides at least two units: 2 by 12, 3 by 8, 4 by 6, allowing rotations. Areas: 24 each. Fences: 28,22,20 units. Accept drawings or models with clear units.