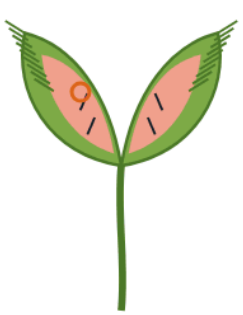
That is why

How does a Venus flytrap count?

Each touch adds a wave of calcium. Two close together cross the line and the trap shuts; five start digestion.

A One touch: nothing happens



Trigger hairs

Touching one turns the movement into an electrical signal (an action potential).

A wave of calcium

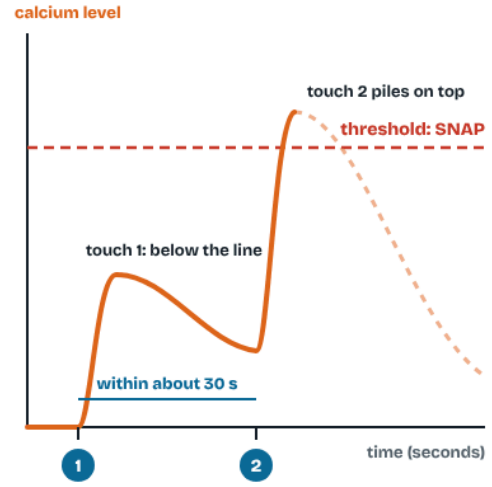
rises in the trap's cells, peaks within seconds and has mostly faded after a minute.

A short-term memory

If no second touch comes within about 30 seconds, the first one is erased, and the trap stays open. A single bump, like a raindrop, is ignored.

Why bother counting? Closing and making digestive enzymes is expensive.

B Two touches: the calcium adds up



The trap snaps shut

in the blink of an eye, and the plant ramps up the touch-and-wound hormone jasmonic acid.

C Counting on

1 1 signal

No reaction. Erased if nothing follows.

2 2 signals

The trap closes.

5 5 signals

Digestive enzyme genes switch on in all 37,000 glands, plus transporters to absorb the meal.

A struggling insect sends some 60 signals an hour; the plant keeps count for at least four hours. If the prey stays still, the trap opens again after about half a day.

Two touches to close, five to digest: a plant that counts with calcium.

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Diagram: https://thatiswhy.com/diagrams/why-venus-flytrap-counts/ · Full guide: https://thatiswhy.com/why-venus-flytrap-can-count/