DAY 46 · Part 5 · Looking Inside

What's inside an AI if you open it up? — Neural networks

Five-Minute AI Lessons · Oct 22, 2026

One dot can only multiply and add. Stack them in layers, and out comes judgment.

In a nutshell

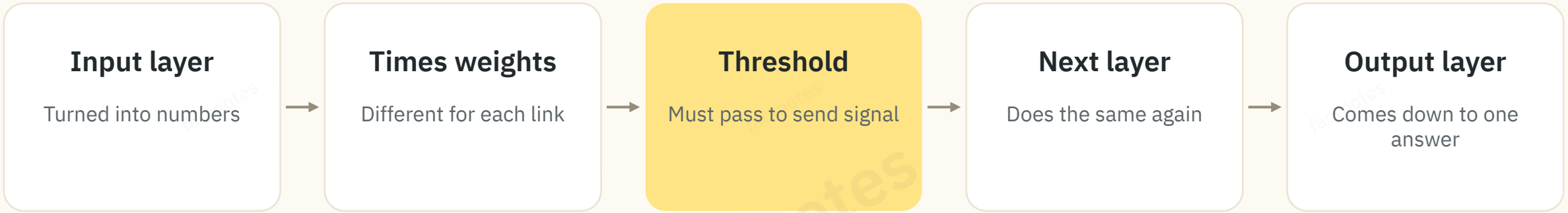
1. Inside an AI are **dots stacked in layers, passing numbers to each other**. That's called a neural network.

2. What one dot does is surprisingly simple. It **multiplies the incoming numbers by weights and adds them all up**, and if the total clears a threshold, it passes it on to the next layer.

3. The smarts aren't inside any one dot. **As the numbers pass through layer after layer**, simple math piles up into complex judgments.

In one picture

From input to output, through the layers



Without the threshold, no matter how many layers you stack, it all ends up the same as multiplying and adding once. This step that decides whether to pass or not is what makes stacking layers worth it.

Key idea: multiply, add, clear the threshold — the same bundle, repeated in every layer

Experiment · Put it in order

What happens inside a neural network, in order

What one dot does

1. Numbers come in
2. Multiply by weights
3. Add them all up
4. Check: over the threshold?
5. Send it to the next layer

Multiply, add, check the threshold, pass it on. That's all one dot in a neural...

Recognizing a cat photo

1. Turn the photo into numbers
2. First layer finds lines
3. Next layer finds eyes, ears
4. Last layer answers 'cat'

The first layer only sees small bits like lines and dots. The next layer puts t...

How the weights get set

1. Start weights at random
2. Try giving an answer
3. Fix weights by the error
4. Repeat countless times

At first they're nonsense values. Fix the weights a little every time it's wron...

Tap the mixed-up pieces in the right order. Three sets: what one dot does, the path through the layers, and how...

Try it yourself in the web lesson · next-token.net/en/learn/day-46/

Quick check

Just three questions

Q1

What's closest to what one dot in a neural network does?

① Multiplies by weights, adds, checks a threshold
② Memorizes whole sentences
③ Fetches answers from the internet
④ Writes down its own rules in words

Q2

Why can a neural network make complex judgments?

① Each dot is really smart
② Simple math builds up over many layers
③ People wrote the answers in advance
④ Its screen is big

Q3

What does a 'weight' decide?

① The size of the text
② Screen brightness
③ How strong a signal passes
④ Internet speed

Know the why, too

Q1

① One dot only multiplies, adds, checks the threshold and passes it on. The amazing part doesn't come from one dot — it comes from huge numbers of those dots stacked in layers.

Q2

② The first layer only picks up small bits like lines. Those bits become eyes and ears in the next layer, and a cat in the last one. Depth is what makes the judgment.

Q3

③ Each link has a different weight, so some signals pass on strongly and others weakly. Training is really just fixing these weight numbers, bit by bit.

One dot can only multiply and add.
Stack them in layers, and out comes judgment.



Tomorrow: Attention — let's turn the dial ourselves on how strongly words look at each other inside a layer.