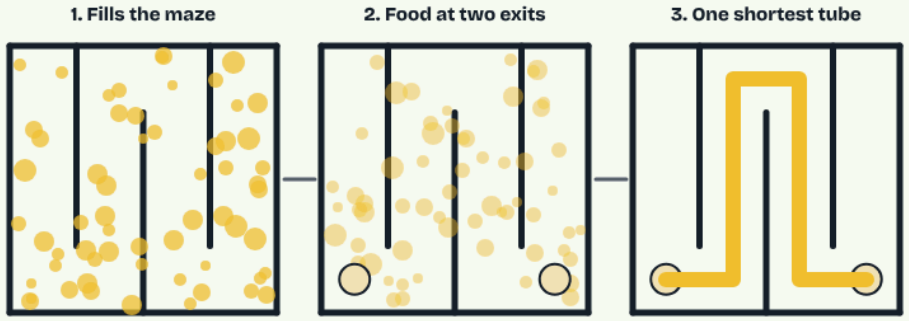
That is why

How does a slime mold solve a maze?

It spreads everywhere, then strengthens the tubes that carry the most flow between food and lets the others fade.

A The maze experiment



In 2000, researchers filled a maze with one slime mold and put food at two exits. Over time it pulled back from dead ends and kept a single tube along the shortest route between the two food sources.

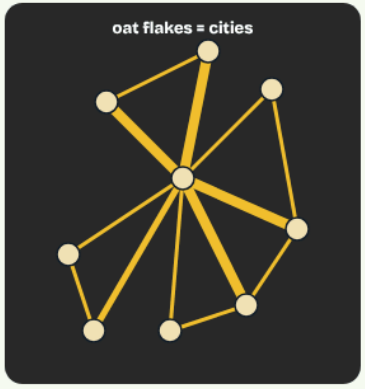
The simple rule behind it

More flow → the tube widens

Little flow → the tube thins and vanishes

No brain needed: the network rebuilds itself from this feedback.

B The Tokyo rail test



In 2010, oat flakes were placed like 36 cities around Tokyo, and bright light marked mountains and lakes, which the mold avoids.

Its network was comparable to the real rail system for cost, efficiency and fault tolerance.

C Key facts

1 One single cell

Physarum polycephalum is one giant cell.

2 Slime memory

It avoids ground it has already slimed.

3 No brain

It has no nerves at all, only flowing tubes.

Engineers study it to design networks that are cheap, efficient and hard to break.

No brain, no plan: just tubes that grow where flow is strongest.

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Diagram: https://thatiswhy.com/diagrams/why-slime-mold-solves-mazes/ · Full guide: /why-slime-mold-is-smarter-than-engineer/