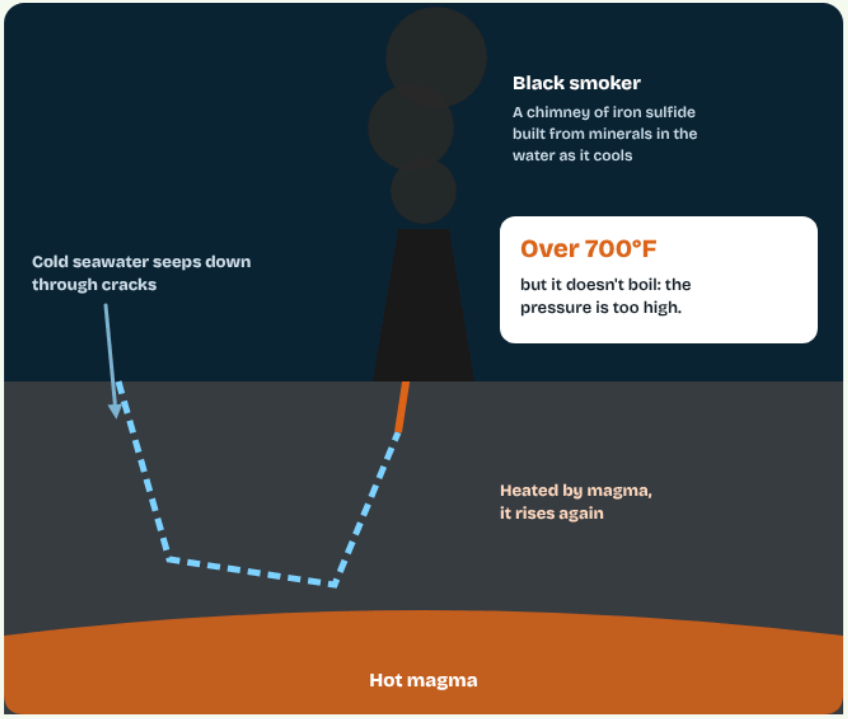
That is why

Why are hydrothermal vents full of life?

Bacteria make food from the vent's chemicals instead of sunlight, and whole communities feed on them.

A How a vent works



B Food without sunlight

Chemosynthesis

Vent bacteria combine:

- hydrogen sulfide
- oxygen
- carbon dioxide

→ sugar, sulfur, water

Giant tubeworm

Red plume: takes in oxygen and hydrogen sulfide

Trophosome: bacteria inside make its food

No mouth, no gut.

Grows ~80 cm of tube a year, up to 6 feet long.



C Found by surprise

1 February 1977

Near the Galápagos, warm water for under 3 minutes: 13 photos of white clams on bare lava.

2 Born with a gut

Larvae eat, then bacteria enter through the skin and the mouth disappears.

3 Other oases

Cold seeps, whale carcasses and even sunken ships.

Sunlight is one battery for life. Chemistry is another.

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Diagram: https://thatiswhy.com/diagrams/why-hydrothermal-vents-teem-with-life/ · Full guide: https://thatiswhy.com/why-hydrothermal-vents-are-full-of-life/