That is why

Are cats liquid?

In physics, whether something flows depends on time. Given long enough, a bendy cat takes the shape of its container.

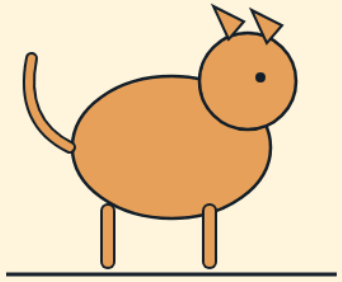
A Solid or liquid? It depends on time

Deborah number = relaxation time ÷ observation time

How long the material takes to adapt its shape, compared with how long you watch.

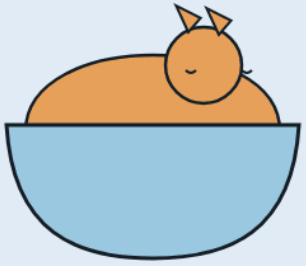
Bigger than 1: it acts like a solid. Smaller than 1: it acts like a liquid.

Watch for 1 second



Keeps its shape:
acts like a SOLID

Watch for a few minutes



Fills the bowl:
acts like a LIQUID

Glass and honey work the same way: what counts is how fast the material adapts compared with how long you watch. Physicists call this rheology.

B A body built to bend

Backbone (cat vs human)

Thoracic (chest)



cat: 13 human: 12

Lumbar (lower back)



cat: 7 human: 5

Extra vertebrae and cushioned discs let a cat twist and fold its spine more than most animals.

Free-floating collarbones



not locked to the shoulder

So if the head fits through a gap, the rest of the body can follow.

C Key facts

1 A prize-winning joke

The cat study won the 2017 Ig Nobel Prize in Physics.

2 1 second to 1 minute

Tongue-in-cheek estimate of how long a relaxed cat takes to fit its container.

3 An "active" material

Unlike water, a cat moves on its own, so it can flow uphill or refuse to flow.

Not truly liquid: just very patient, with a very bendy body.

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