An illustration featuring a woman with curly hair on the left, holding a small octopus in her hand. Below her is a large, stylized face of an octopus with prominent eyes and a beak. The background is a teal color with wavy lines and small circles, suggesting an underwater environment.

Like Me?
A Journey into
the Octopus
Visual System

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Illustrated by Finn Hamilton



Hundreds of millions of years ago,
there was no life.

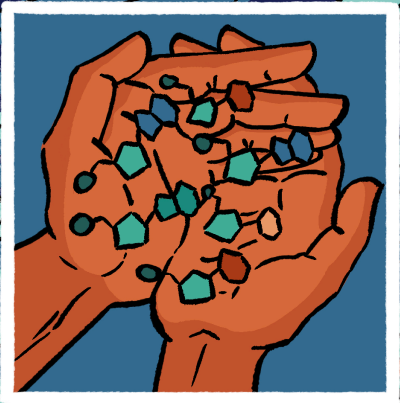
The world was still, except the
wind blowing the dust and the
waves crashing on the shore.

But, there was no one
to listen to the wind,

or watch the waves
crash.

Until there was.

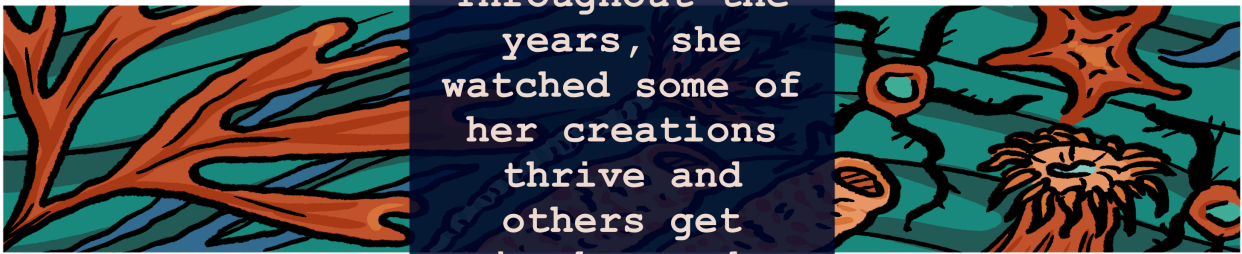
One day, there was a creative mind with the power to slowly change the world around her.




Over the course of millions of years, she tweaked, she tinkered, and she fell in love with creating novel solutions.



Throughout the years, she watched some of her creations thrive and others get wiped away by the elements.

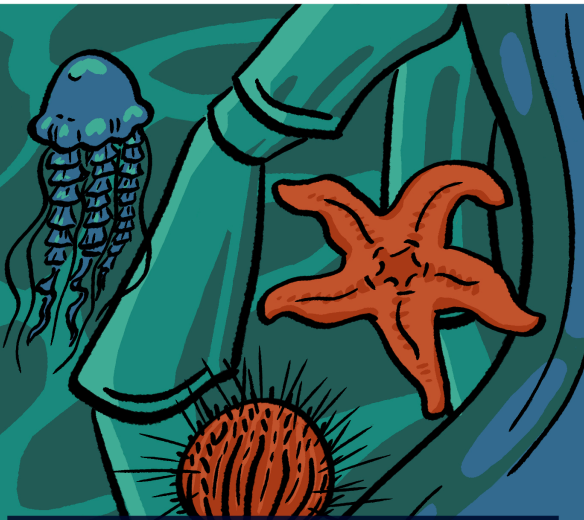


A woman with curly hair and a fringed necklace is looking through a telescope on a boat. The background shows a sunset or sunrise over the ocean with birds flying in the sky.

Some creations dove beneath the waves, while others soared in the sky.

Each had unique traits that allowed them to thrive wherever they found space and resources.

Once she had made her way around the world and brought an uncountable number of creations to life, she had the urge to understand them.

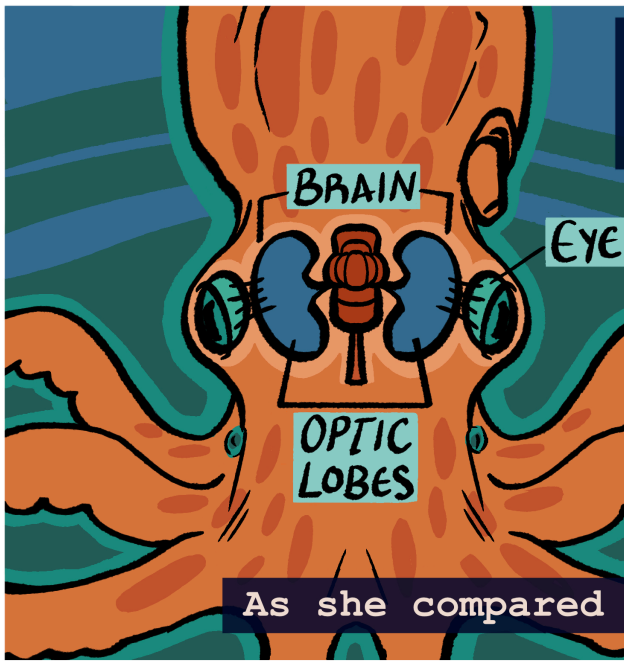


She started by investigating animals with simple behaviors and nervous systems, building the tools to learn how they work.



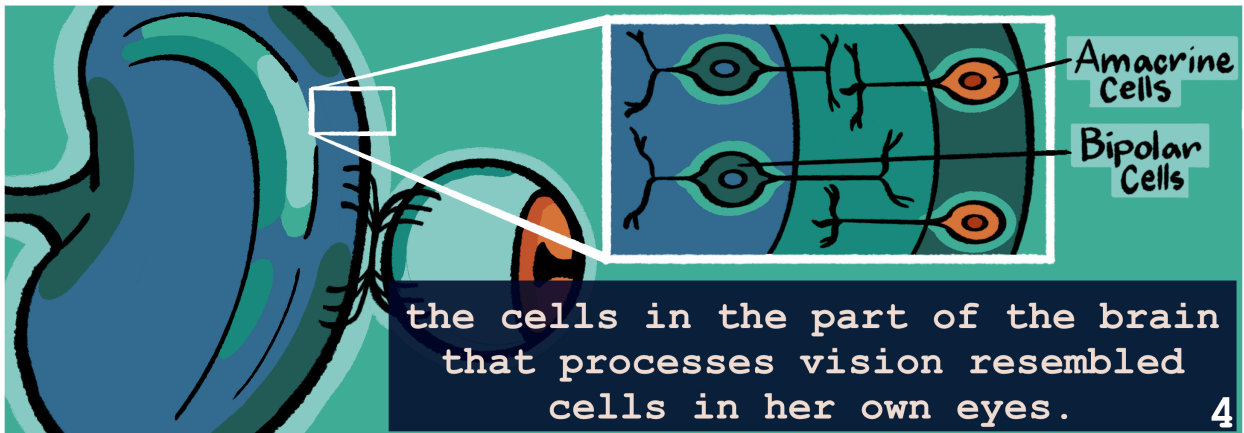
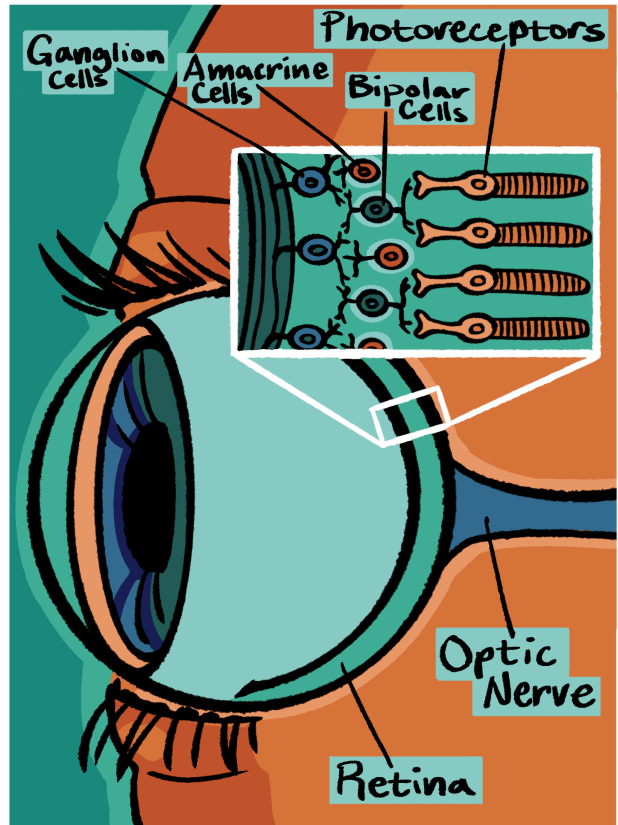
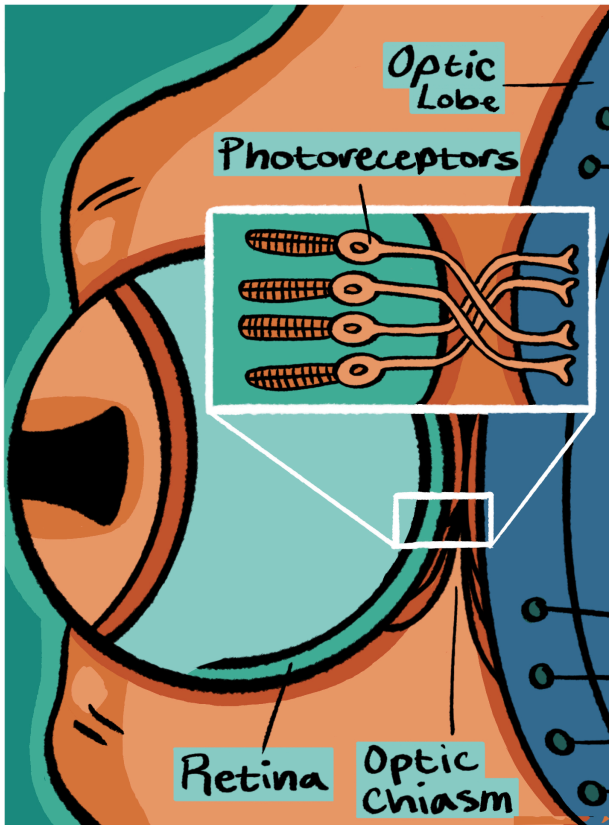
The more she learned, the more curious she became. Over time, she became fascinated by one of her most unique creations.

It lived underwater, but transformed into colors not found at depth.



It didn't have any bones. But, its brain was similar in size to some creations with a spine, and their eyes appeared alike.

As she compared her findings, she noted:

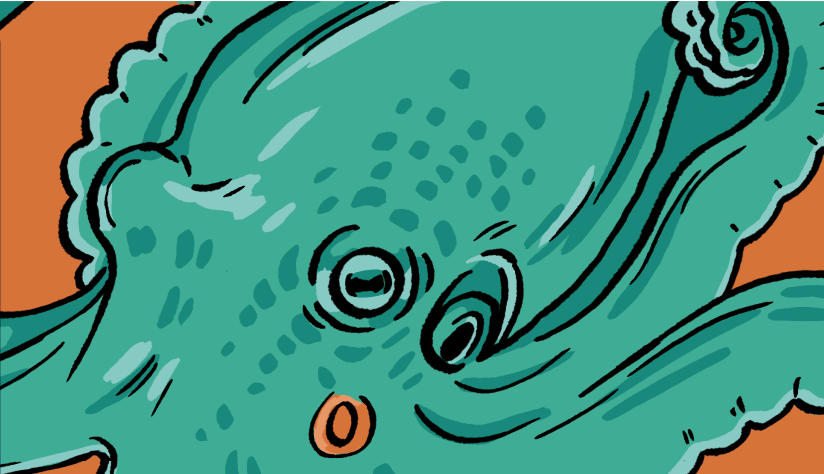


the cells in the part of the brain that processes vision resembled cells in her own eyes.

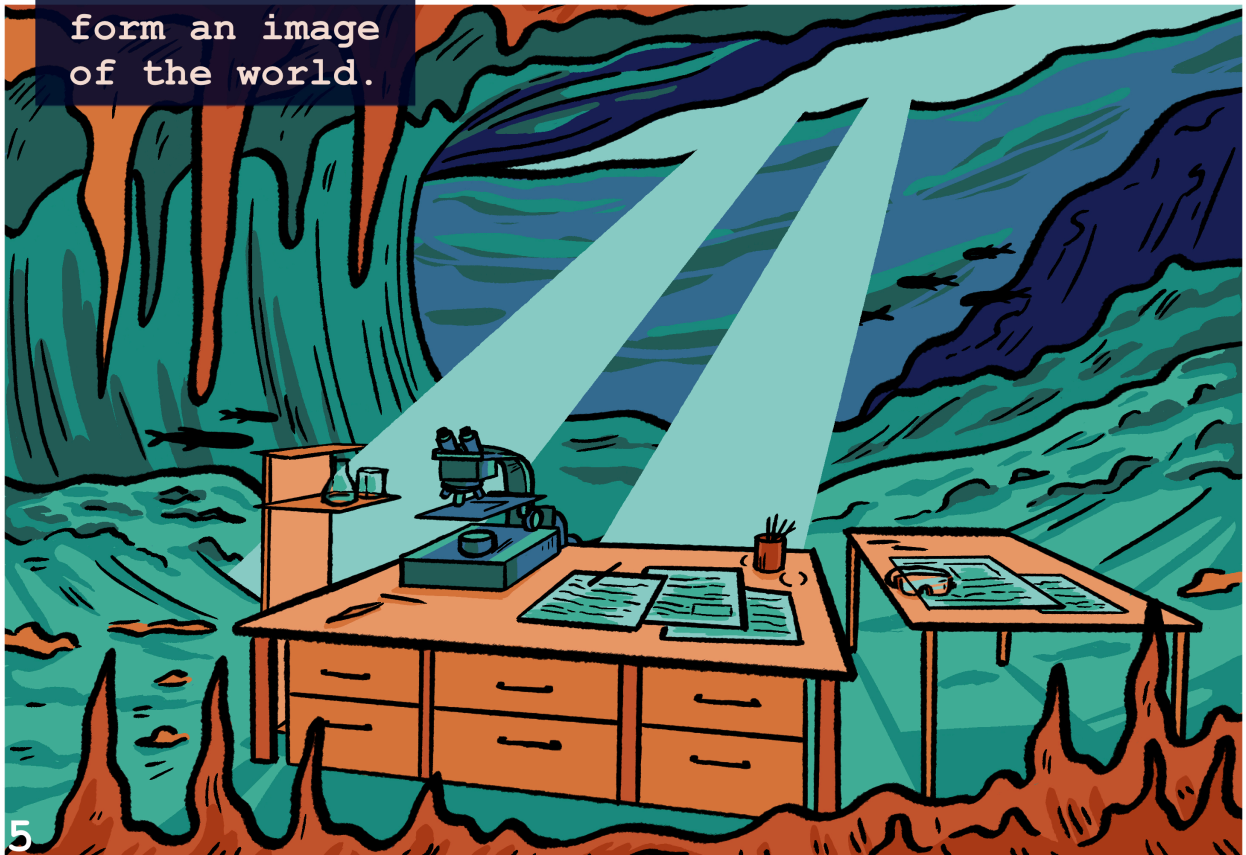
While the shapes of the cells were similar, she knew there was no way she had accidentally modeled them after her own.



I wasn't identifying problems & coming up with the best solutions. I just created, left, & saw who was still there when I returned.



Driven by curiosity, she applied all the tools she had invented to understand how this brain area, the optic lobe, helped her creation form an image of the world.



To understand the brain,
she identified the building
blocks that make up the
cells in the optic lobe.



She started by identifying the
sequence of A, G, C, and Ts that
all her creations were made of.

Then, she tagged all the
different building blocks with
their own glowing, fluorescent
label. When she looked at the
building blocks, she realized:

dopamine



glutamate



acetylcholine

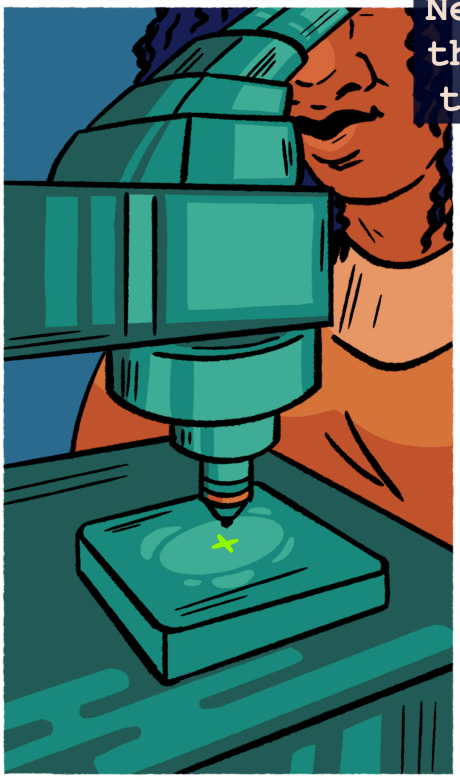


dopamine &
glutamate



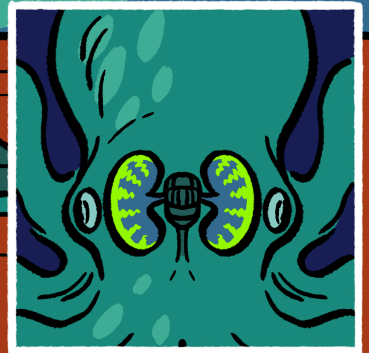
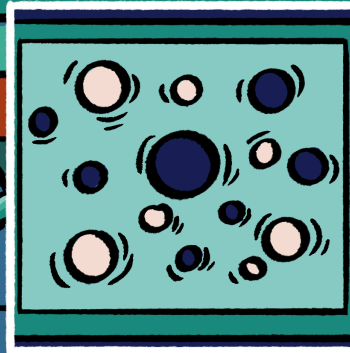
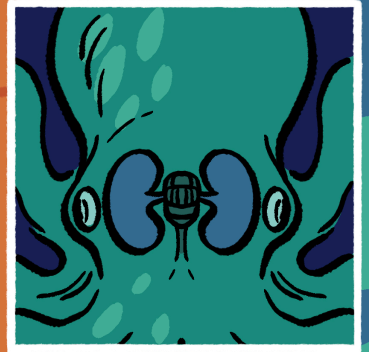
the optic lobe used some of the same
blocks that her own eyes used, but these
blocks were organized differently.

Next, she used lasers to see how the cells in the brain responded to different features they see.

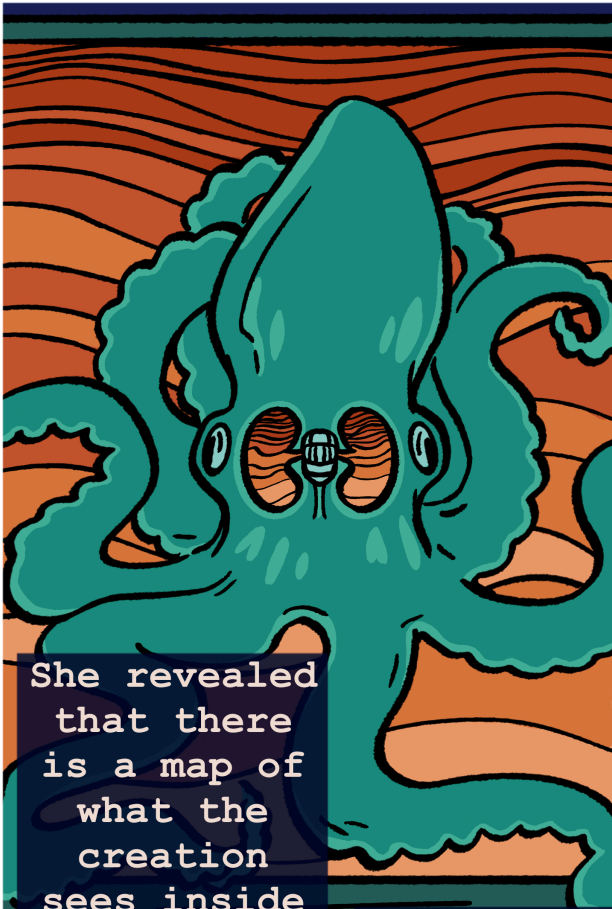


She relied on fluorescence again, this time tagging calcium to track when a cell activated.

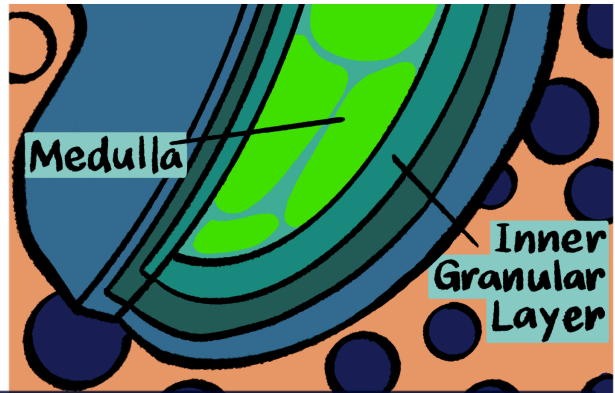
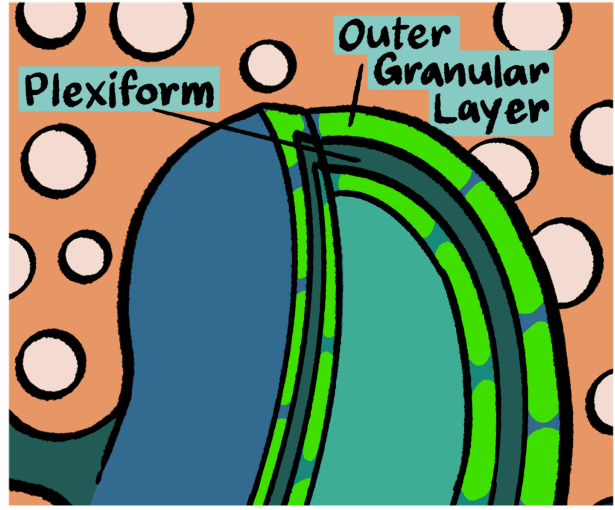
She played simple movies...



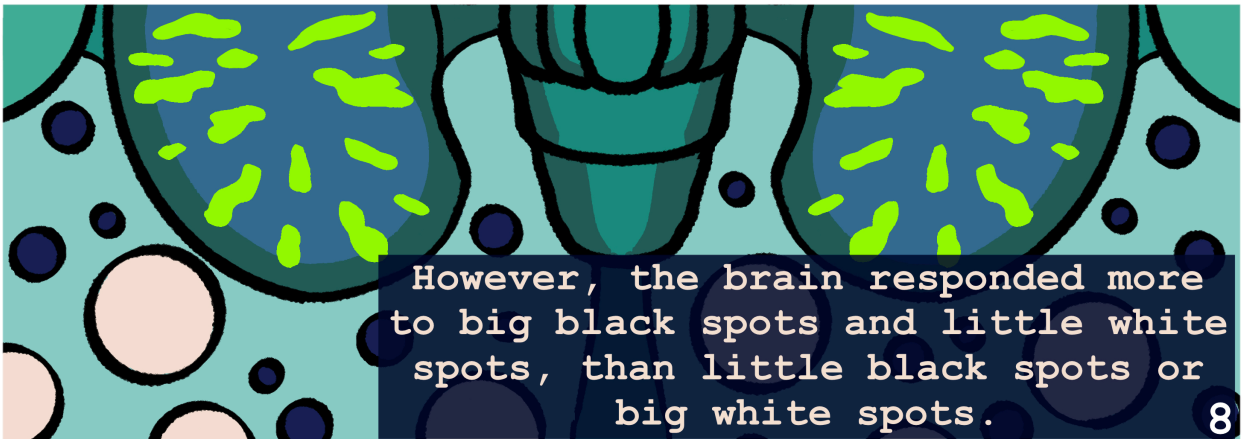
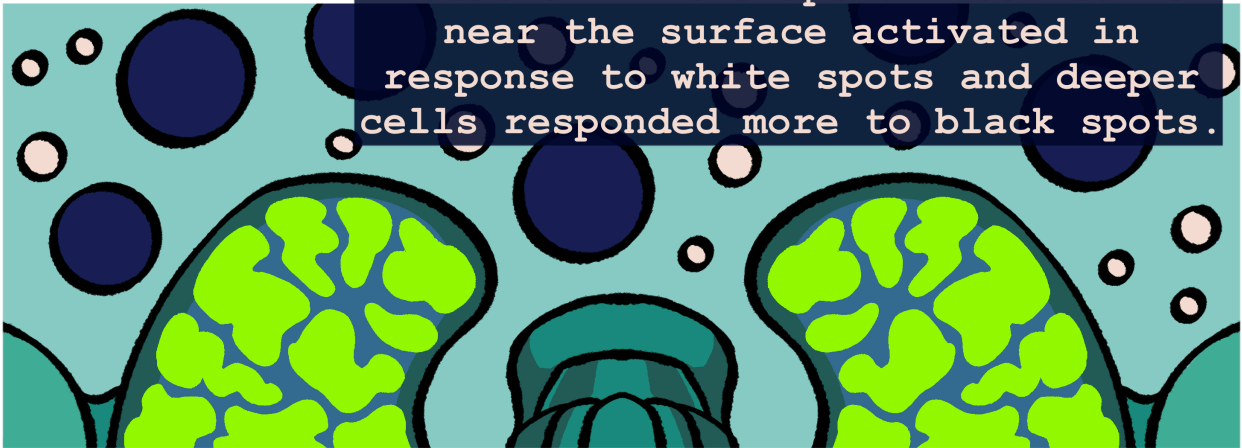
to test what movements, shapes, and brightnesses the optic lobe responded to.



She revealed that there is a map of what the creation sees inside its optic lobe.



She noticed cells responded differently depending on their location in the optic lobe. Cells near the surface activated in response to white spots and deeper cells responded more to black spots.



However, the brain responded more to big black spots and little white spots, than little black spots or big white spots.

While she was proud of her discoveries, it only raised more questions about what, and how, this creature sees.




She spent years following up on these questions.



She knows she won't ever discover exactly how she made it all, but she knows it is important to ask questions and follow her curiosity, in order to create with purpose.

Now, she splits her time between tinkering, engineering new tools, and revealing more about the world she created.

A stylized illustration featuring a person with voluminous, curly blue hair and a large, textured orange structure that resembles a shell or a piece of coral. The background is a teal color with wavy lines and small blue circles, suggesting an underwater or aquatic environment. The person is shown from the chest up, looking towards the left. The orange structure is positioned in the foreground, partially obscuring the person's torso.

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