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Today, we will be helping neuroscientists collect data on neuron structure and circuitry. EyeWire is 3D painting game where players trace the branches of dendrites as they wander throughout the retina of a mouse named Harold. Follow the instructions below to play!

1. Using a Google Chrome browser , go to <http://eyewire.org> and click “Sign Up”
2. Enter a username, email address and password.
3. The rotating colored animation is a neuron that is currently being mapped by players. It is incomplete, but the dendritic branches are slowly growing as players trace through them. Click “change cell” in the top left corner.
4. Scroll down to the “Completed Cells” section and explore some of the cells! Click+drag to rotate them yourself. The axons were taken out of the data but you’ll find cell bodies and dendrites. Check out how different cells have different dendritic branching patterns! These patterns are important for the function of the cell. As you’ll notice, some of the cells are called “Mystery Cells”. This is because we don’t yet know much about their function yet- we have so much more to research! Pick three completed cells and describe their dendrites below:

Cell Name Description

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1. Now check out the Neural Circuit. Here there are 3 cells. The Starburst Amacrine cell is big and wide, and the two small bipolar cells synapse with the Starburst Amacrine cell. You’ll notice the cell bodies of the bipolar cells were removed from the animation. Check out the question mark Macintosh HD:Users:ngfriedman:Desktop:Screen Shot 2015-02-19 at 5.51.19 PM.png in the bottom right to learn how to explore the circuit with the 3D tools!
2. Click Macintosh HD:Users:ngfriedman:Desktop:Screen Shot 2015-02-19 at 6.16.52 PM.png and we’ll bring you to a tutorial where you can practice mapping neurons! When you’ve completed the tutorial you’ll be helping neuroscientists solve the mysteries of the brain with every click.