

# Salmon Superpowers

Imagine you're a salmon out in the Pacific Ocean. You spend your time hunting squid and herring and other fish, but the season is changing and you know it's time to return to the stream where you were born. How do you know where to go? The senses humans use to get around are not much use in a salmon's watery world. For a fish in the ocean, life happens in 3-D and that means there is a lot to keep track of. Predators could come from any direction and food could be miles away...how do you sense all that? Salmon and other fish have senses that are so different from ours they seem like superpowers!

## magnetoreception

Some salmon have been found to have a tiny bit of magnetite in their skulls. It is thought that these can enable them to have an innate sense of direction, kind of like having a compass embedded in your brain to help you navigate.

## mechanoreception

Fish can feel movement in the water around them using a sense organ called the lateral line. Pores along this line contain tiny hair cells which feel vibrations and pressure changes. Why do you think this is useful?

## electroreception

Normal body processes of many living things produce weak electrical currents. Some fish such as sharks can detect these currents using a sense organ called the ampullae of Lorenzini, located throughout the face. Researchers are looking into whether salmon have these.

Salmon and lamprey are known to be able to see infrared, a color on the spectrum that we humans can't detect with our eyes.

**Infrared vision** could be helping them find their way in dark environments.

Which superpower would you want to have?

**Chemoreception** is the ability to sense chemicals in the water, even at very low concentrations. That's how sharks can sense prey from far away, and how salmon find their way home to spawn. When salmon first hatch, they imprint in their brains the memory of what the water smells like in that part of the stream. As they grow and make their way downstream to the ocean, they are also filing away information about the chemicals they sense along the way. When it's time to return, they can use all these senses to find the best place to put the next generation of salmon—where they came from, of course!

# Salmon Superpower Scramble

Salmon have some super senses that help them survive in their watery world, and also navigate upstream. They swim hundreds of miles to the Hanford Reach to spawn. Can you unscramble each word to find the name of a salmon superpower?

1

NOECCREIPETMOH

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Sensing (smelling) chemicals in the water

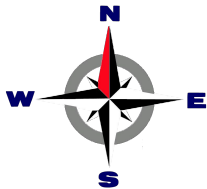
2

LEECTTOORRCEEPNI

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Sensing electrical currents in the water

3



PAGNETEROCETIMON

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Sensing magnetic forces, like having a biological compass

4



NFIRDAER NSIIVO

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Seeing an extra light frequency or color

5



COPHANERECMEITNO

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Sensing vibrations and changes in water pressure, usually with an organ called the lateral line