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LET'S INVESTIGATE


# SHARKS



# WHAT IS A SHARK ?







**WHOA! Sharks  
are fish too!**





**SHARK FIN CARTILAGE**

**FISH BONE**



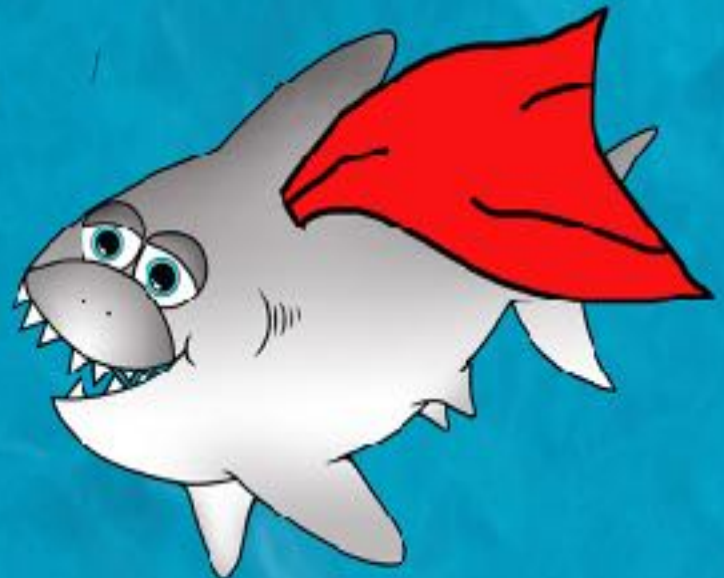
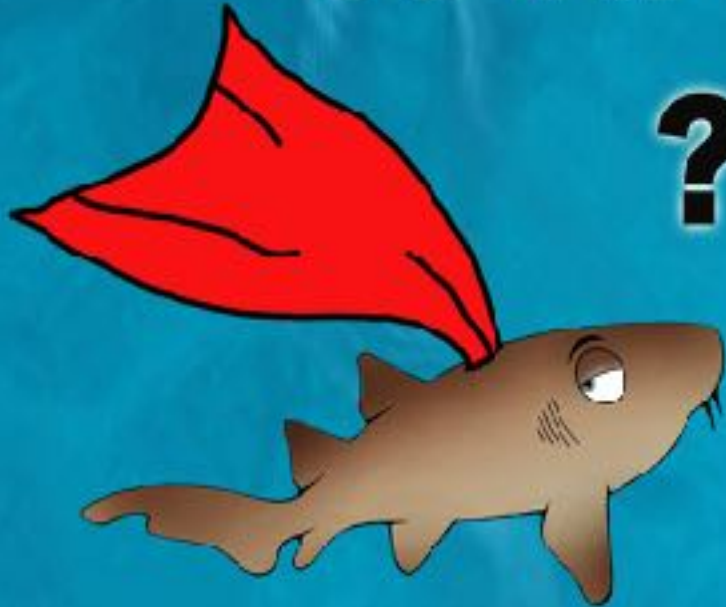
**SKIN**



**SCALES**

# WHY ARE SHARKS SO IMPORTANT

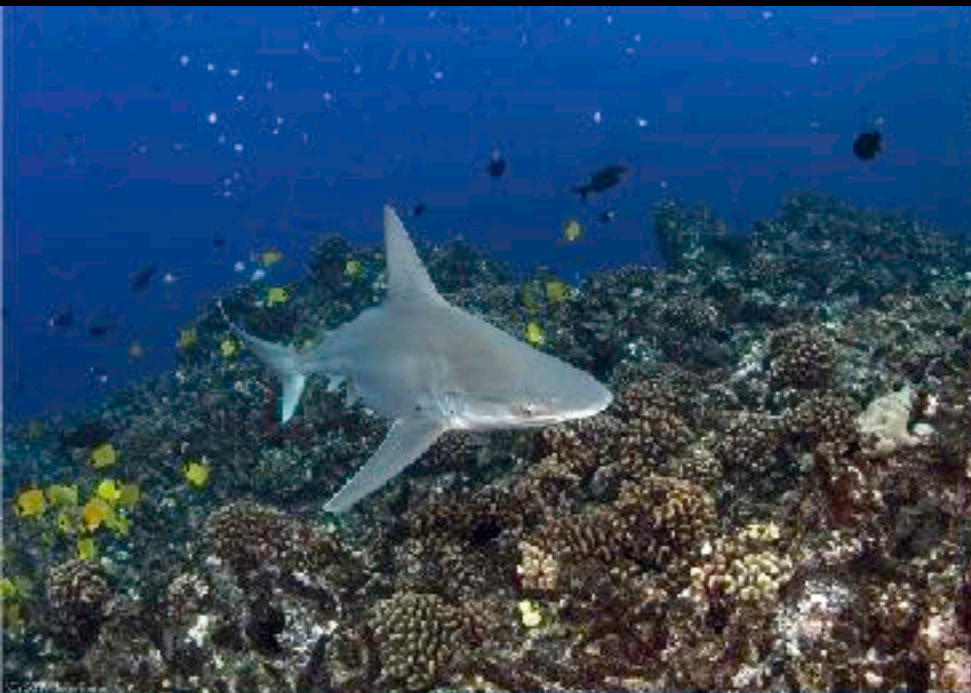
??





# FOOD PYRAMID





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# BIODIVERSITY

100 MILLION





**WHERE DO WE FIND**



**SHARKS ?**







BRONZE WHALER

**TIGER**

?

*ornate wabbegong*

**COOKIE  
CUTTER**

Horn

?

?

**LEMON**

porbeagle

MAKO



**leopard**

???

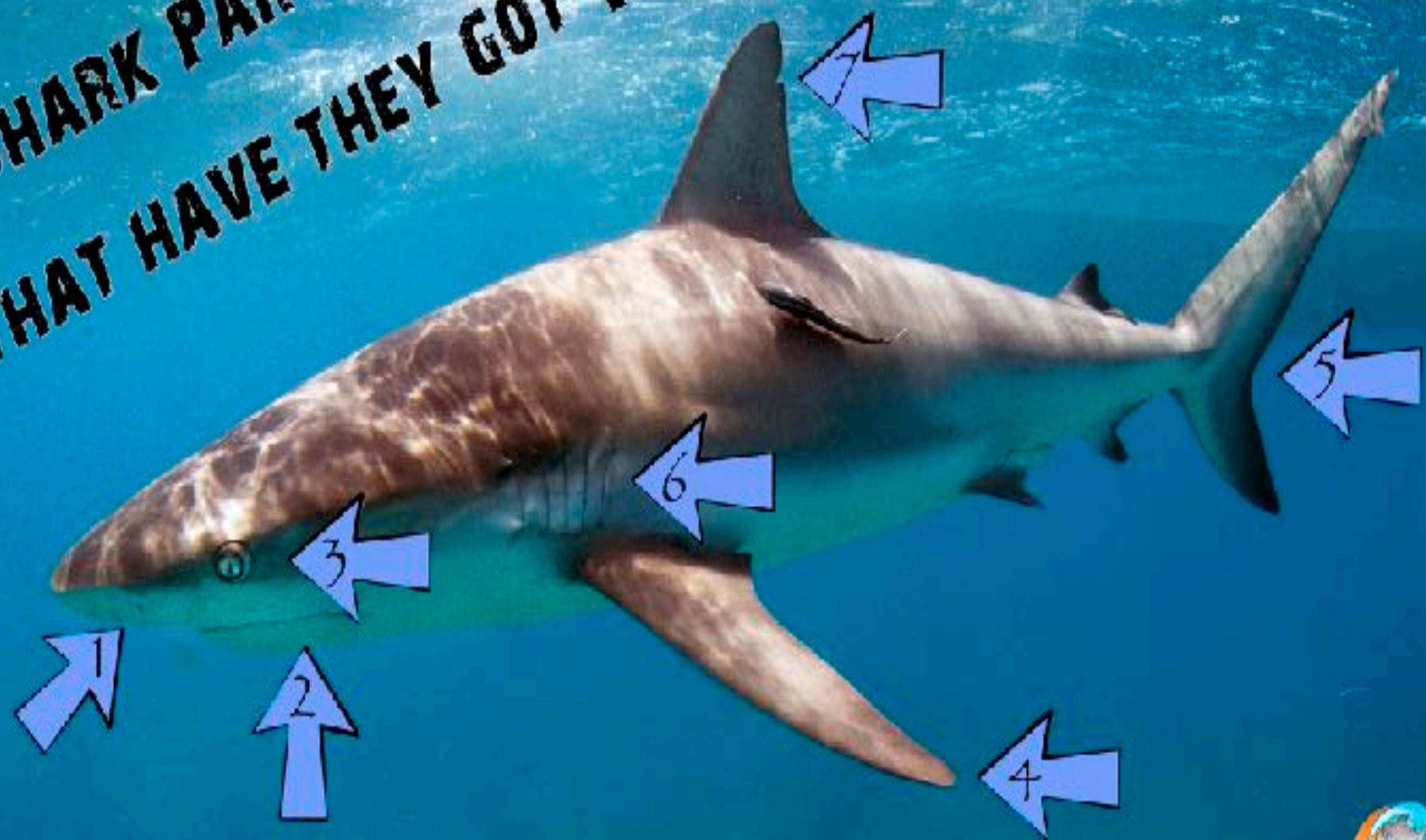
**bonnethead**

*Oceanic  
Whitetail*



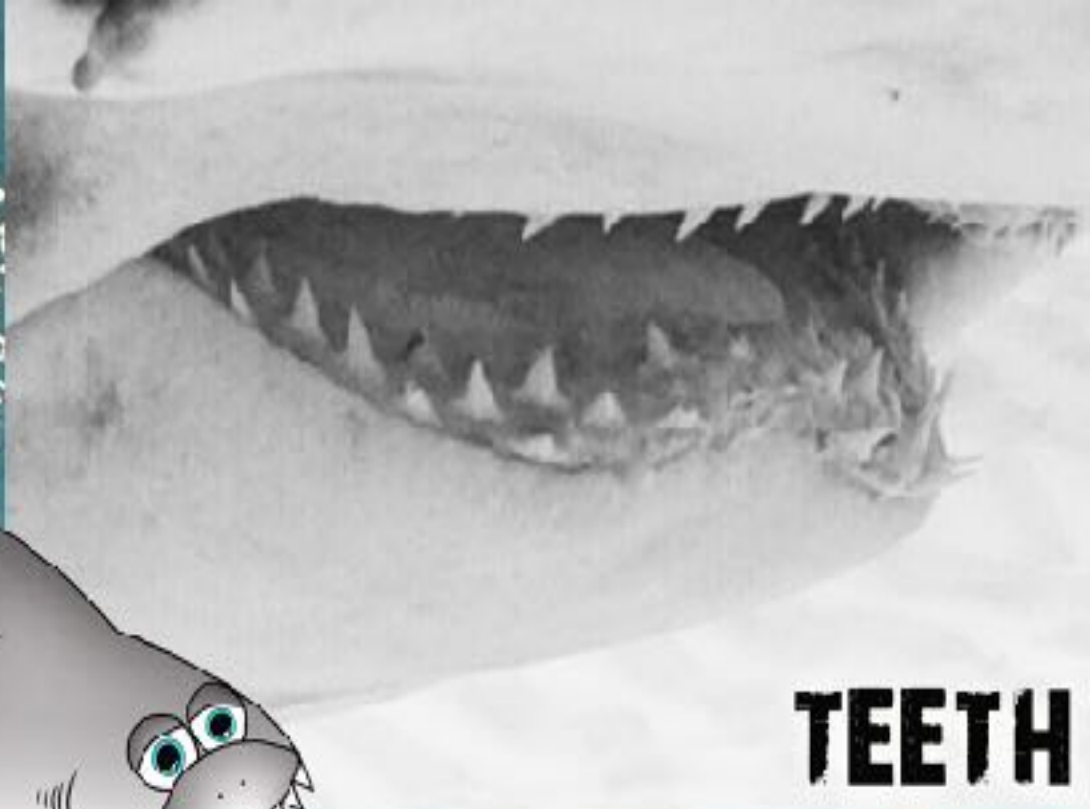


**SHARK PARTS**  
**WHAT HAVE THEY GOT ??**



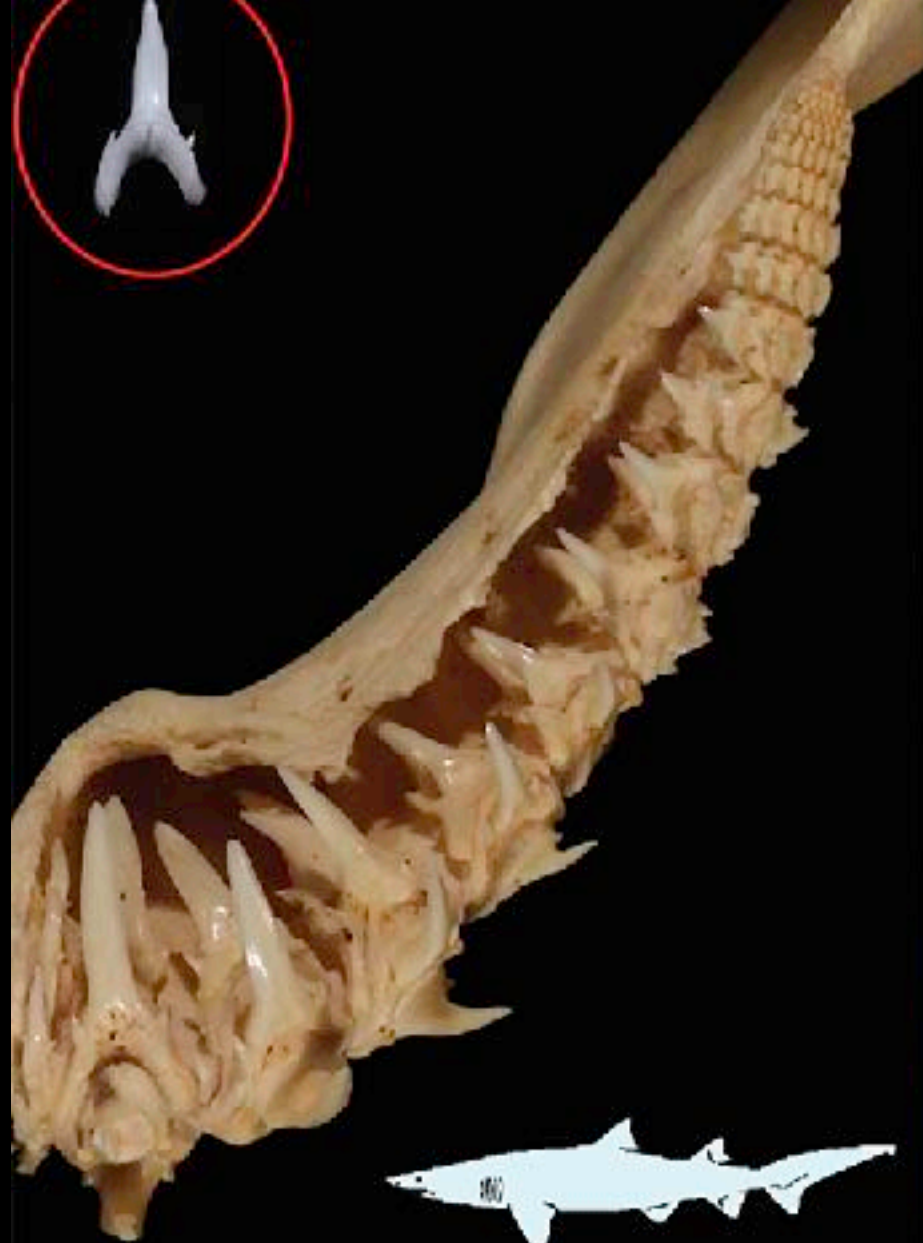
**LET'S DIVE IN AND TAKE A CLOSER LOOK**



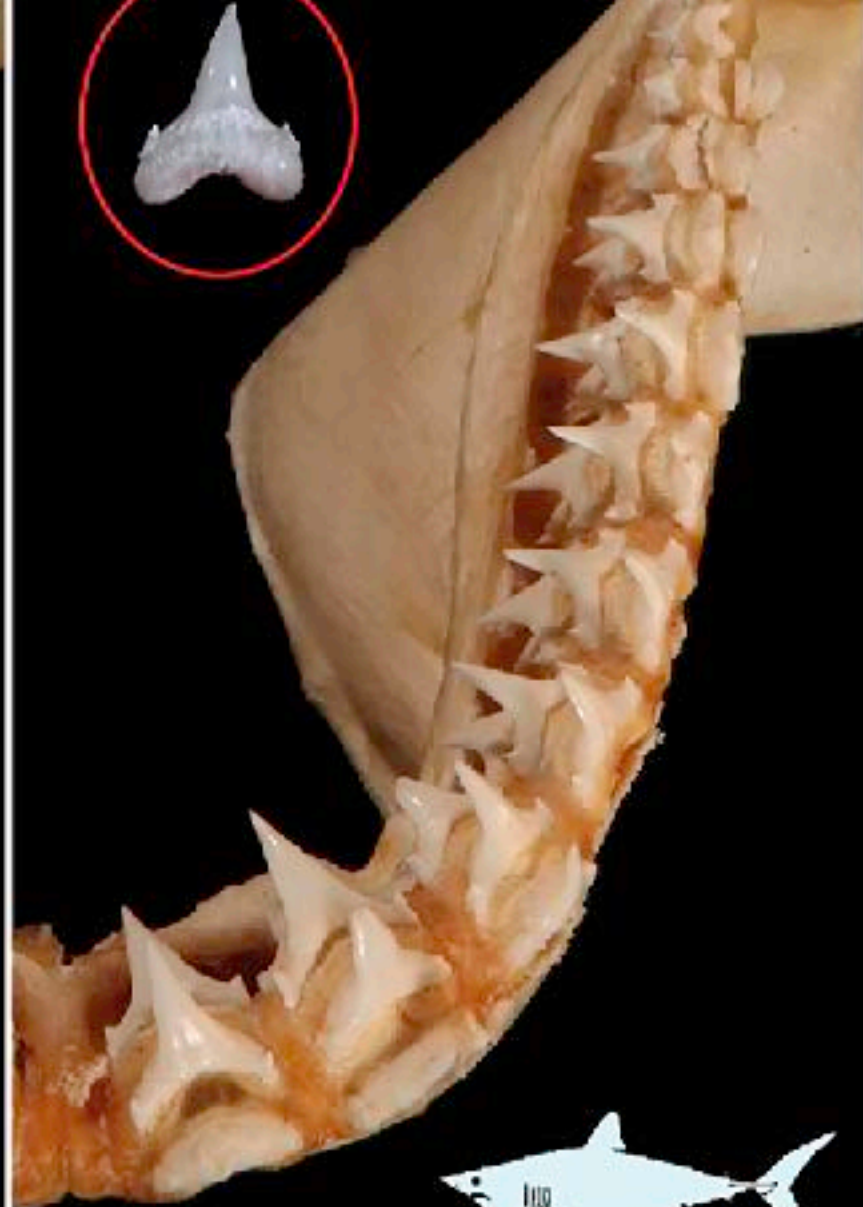


**TEETH**





Sand Tiger Shark



Porbeagle Shark



**TAKE A DEEP BREATH**

**GILLS**





PECTORAL FINS



CAUDAL FIN



DORSAL FINS



PELVIC FINS



ANAL FIN



# FIN TASTIC ADAPTATIONS



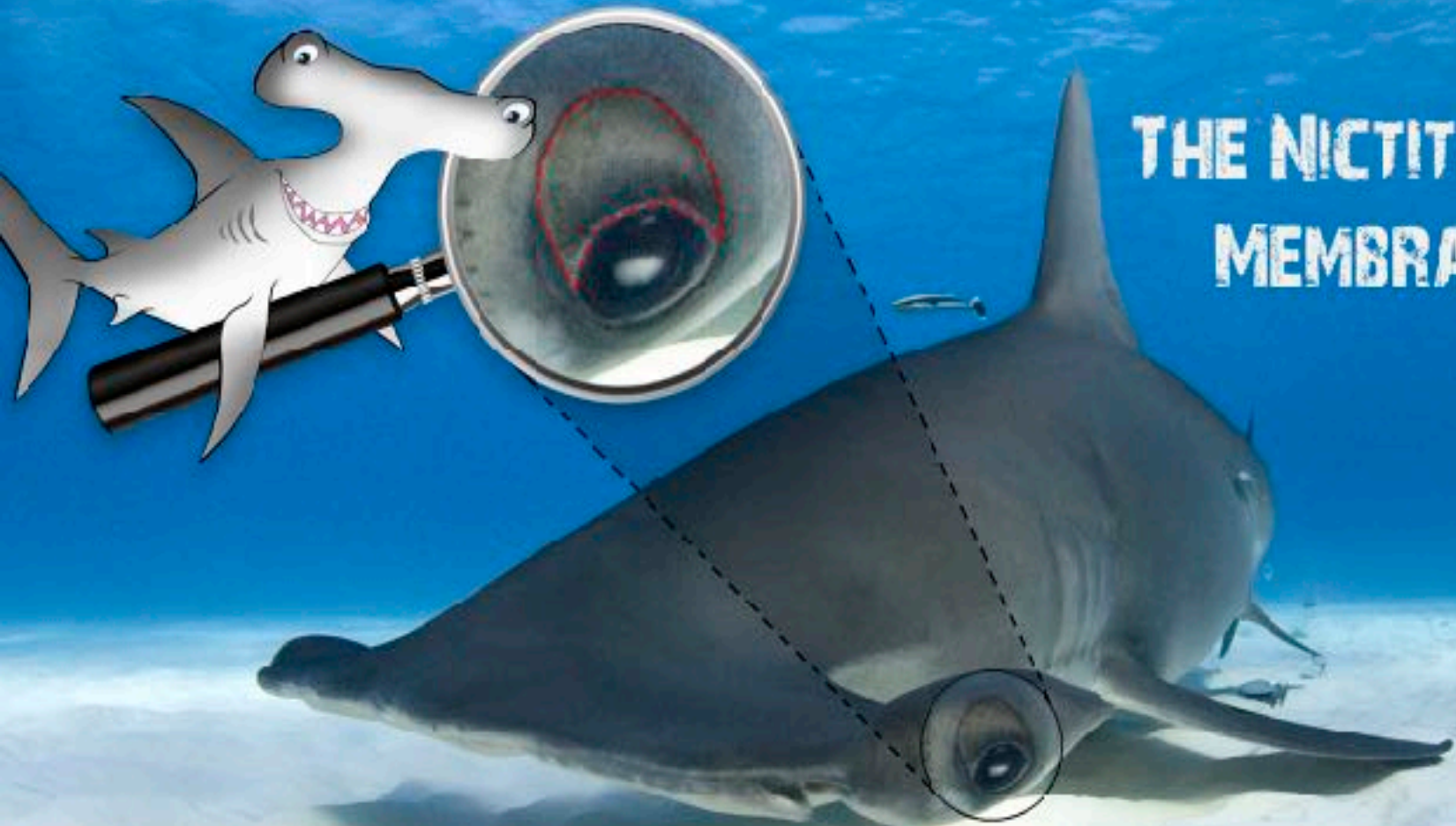
Image: Alex Mustard

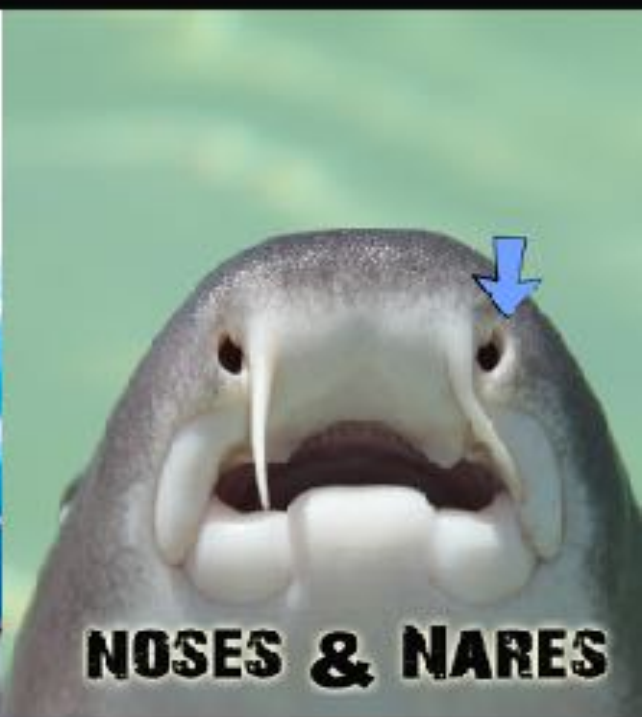


**EYE SEE YOU**



# THE NICTITATING MEMBRANE

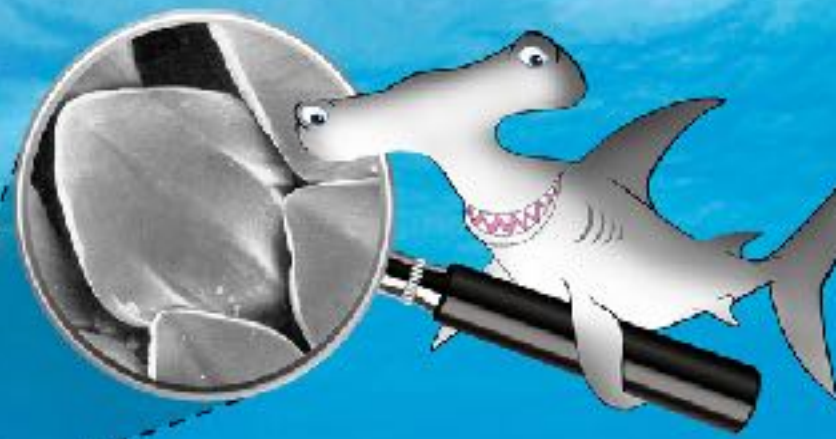




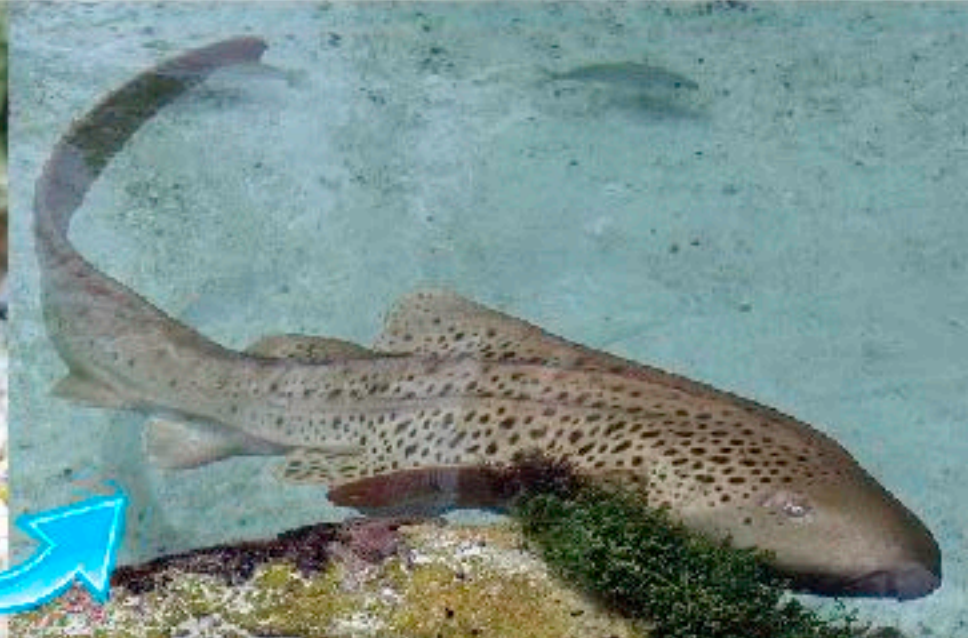
# SKIN



# THE DERMAL DENTICLES

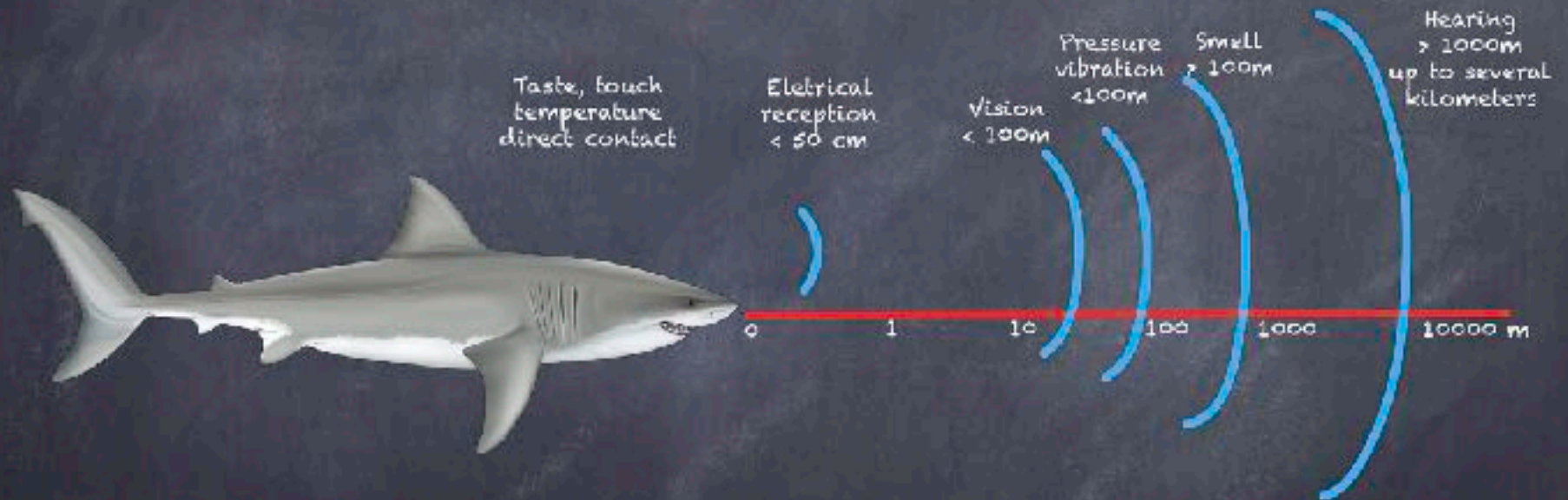








# Shark Senses



# Shark Senses

## Sight



Great Vision in Low Light.

Sharks can dilate their irises.

Bony fish can not.

Some sharks have a Nictitating membrane.

Some sharks can roll their eyes.

Protection whilst feeding.

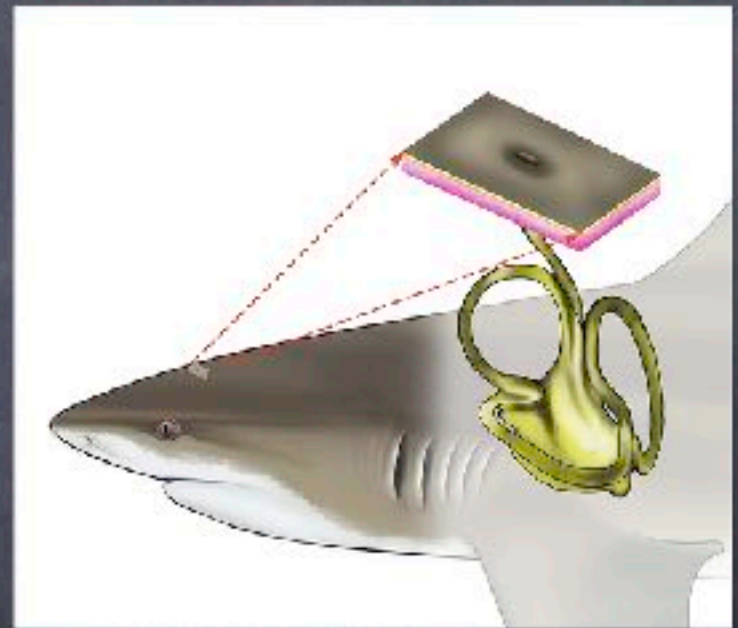


# Shark Senses

## Hearing / Sound

Sound travels underwater four times faster than on land.

Lower frequencies dissipate slower than higher ones.



Some species can locate their prey over several hundred meters.

An injured or struggling fish gives off a frequency around 20 Hertz.

# Shark Senses

## Smell



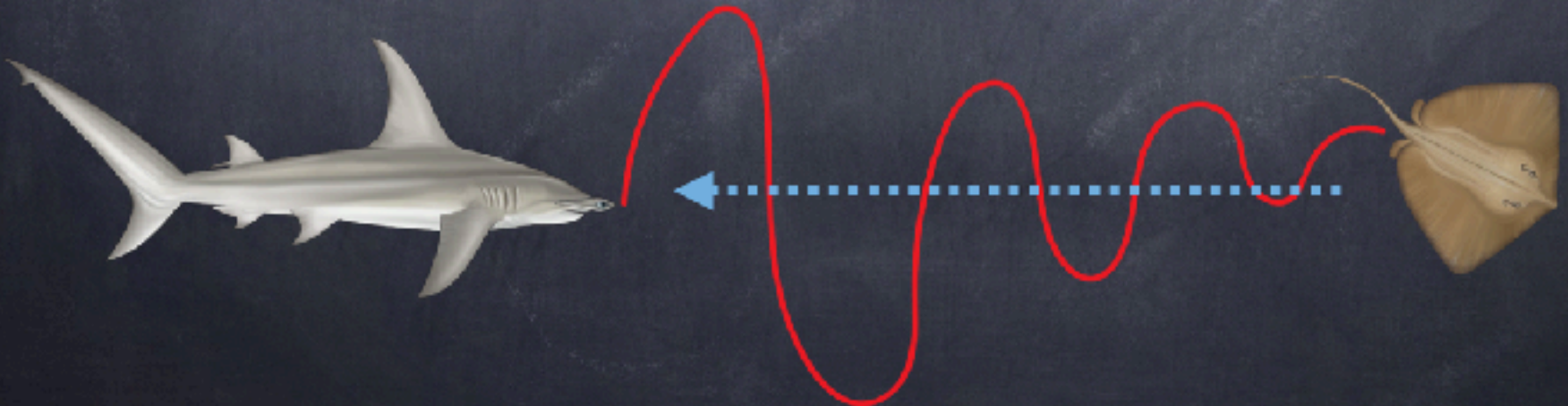
10,000 times better than humans

Nares look like our nostrils

Directionality

Can locate prey over hundreds of meters

S-shaped pattern

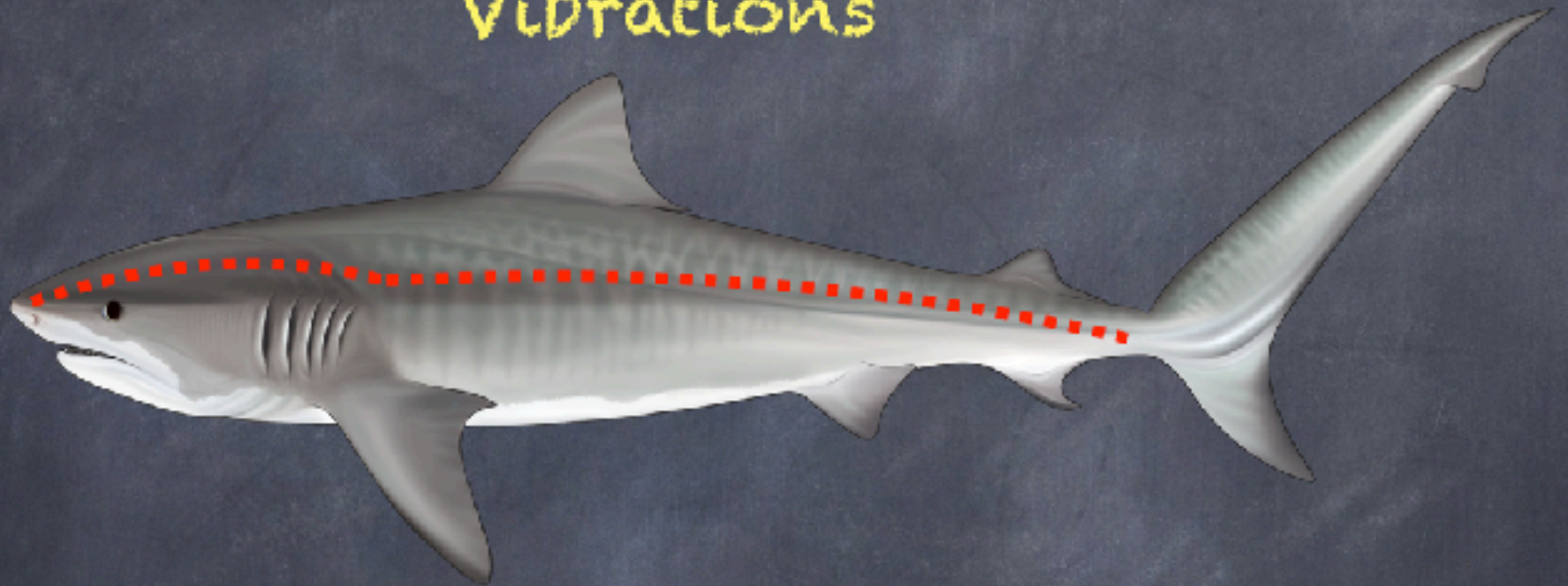




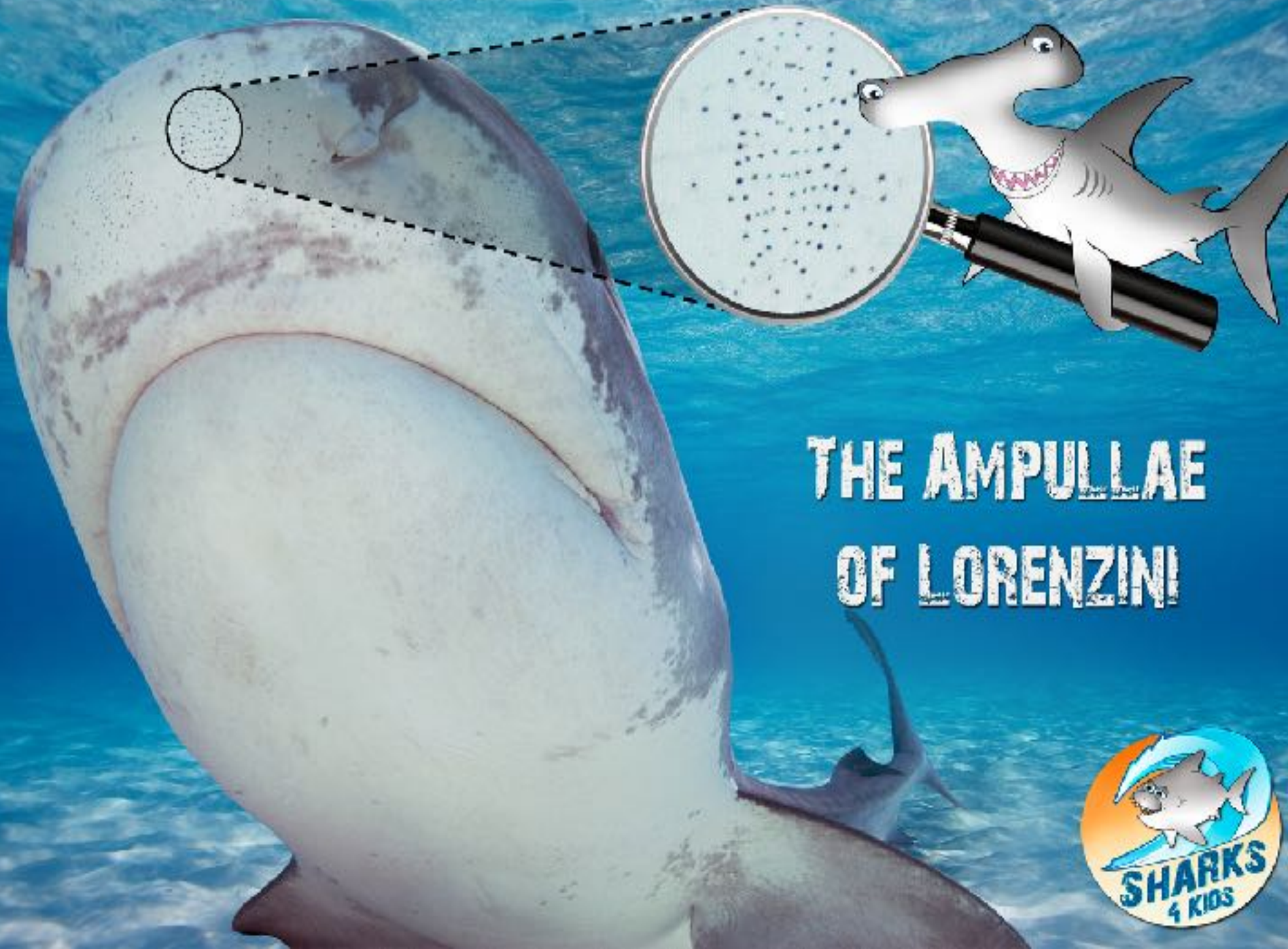
**TASTE**

# Shark Senses

## Vibrations



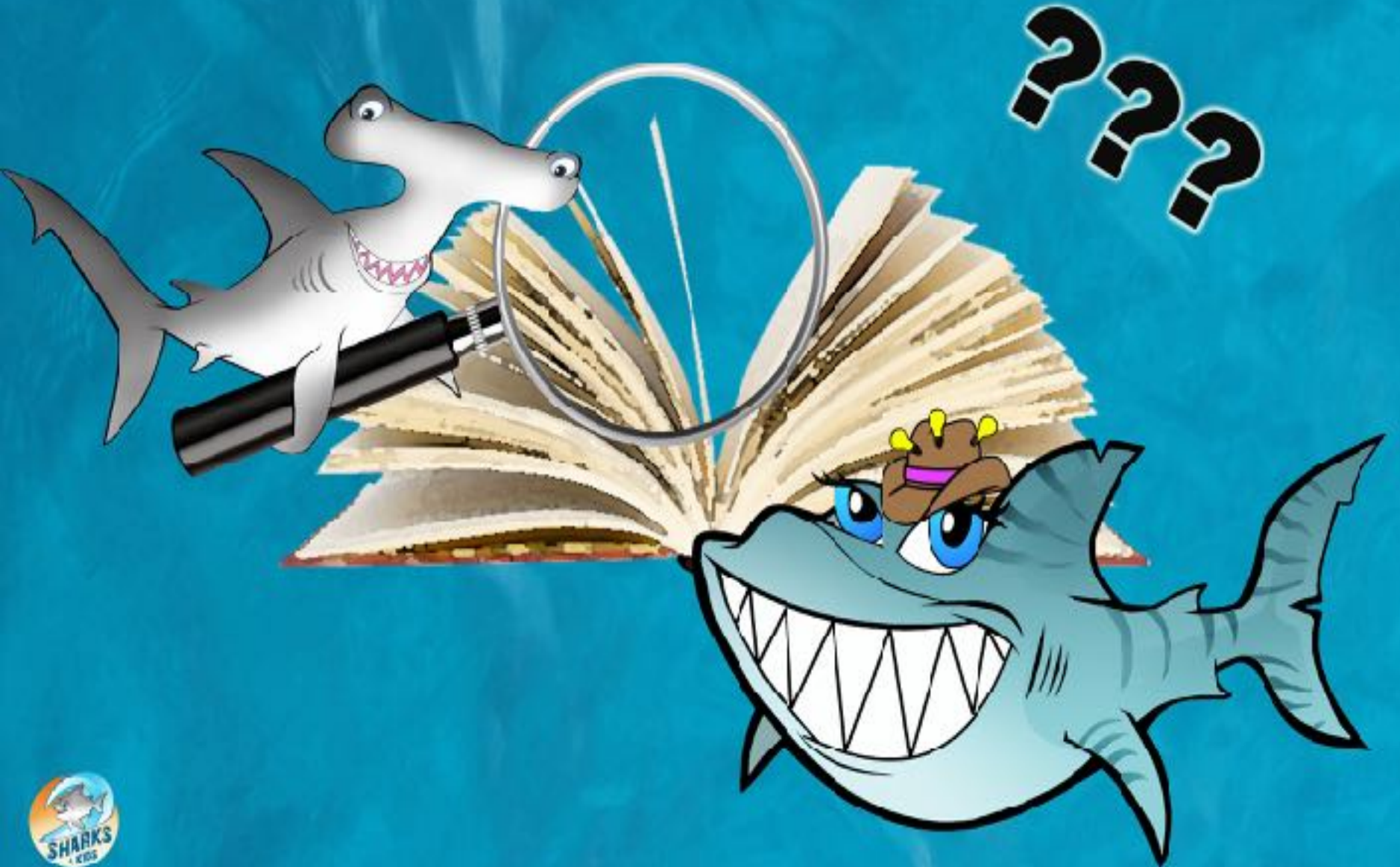
The Lateral Line - Detects movements and vibrations in the water. Canals filled with fluid with tiny modified epithelial (hair) cells. Vibrations cause these cells to move and sway within the liquid. Can detect odor plumes to locate prey or a potential mate. Sharks can detect frequencies as low as 25 Hertz.



# THE AMPULLAE OF LORENZINI!



# HOW DO WE LEARN ABOUT SHARKS







**TAGGING**



**DIVING & SNORKELING**



**PHOTO & VIDEO**



**RESEARCH**

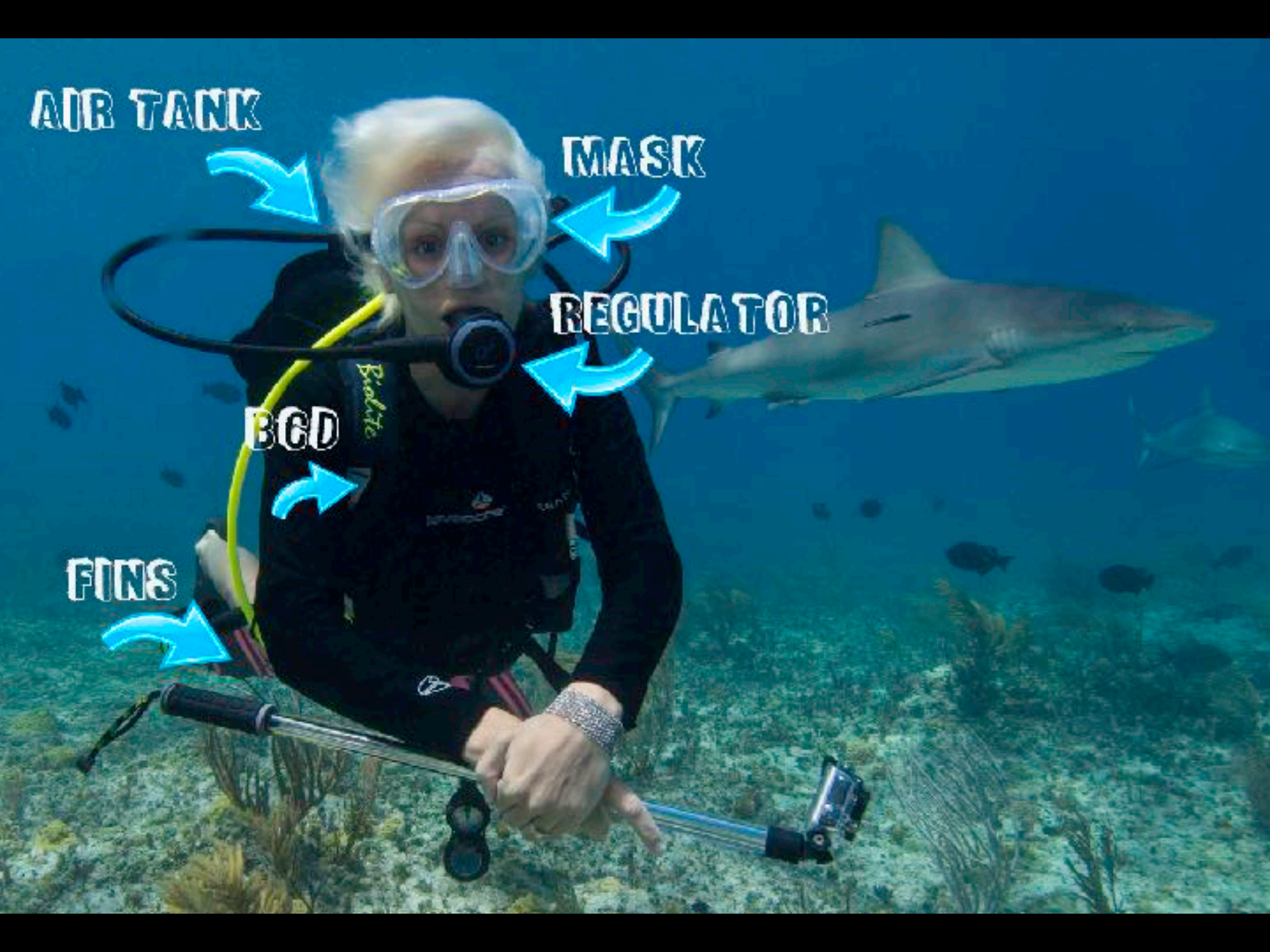
**AIR TANK**

**MASK**

**REGULATOR**

**BGD**

**FINS**



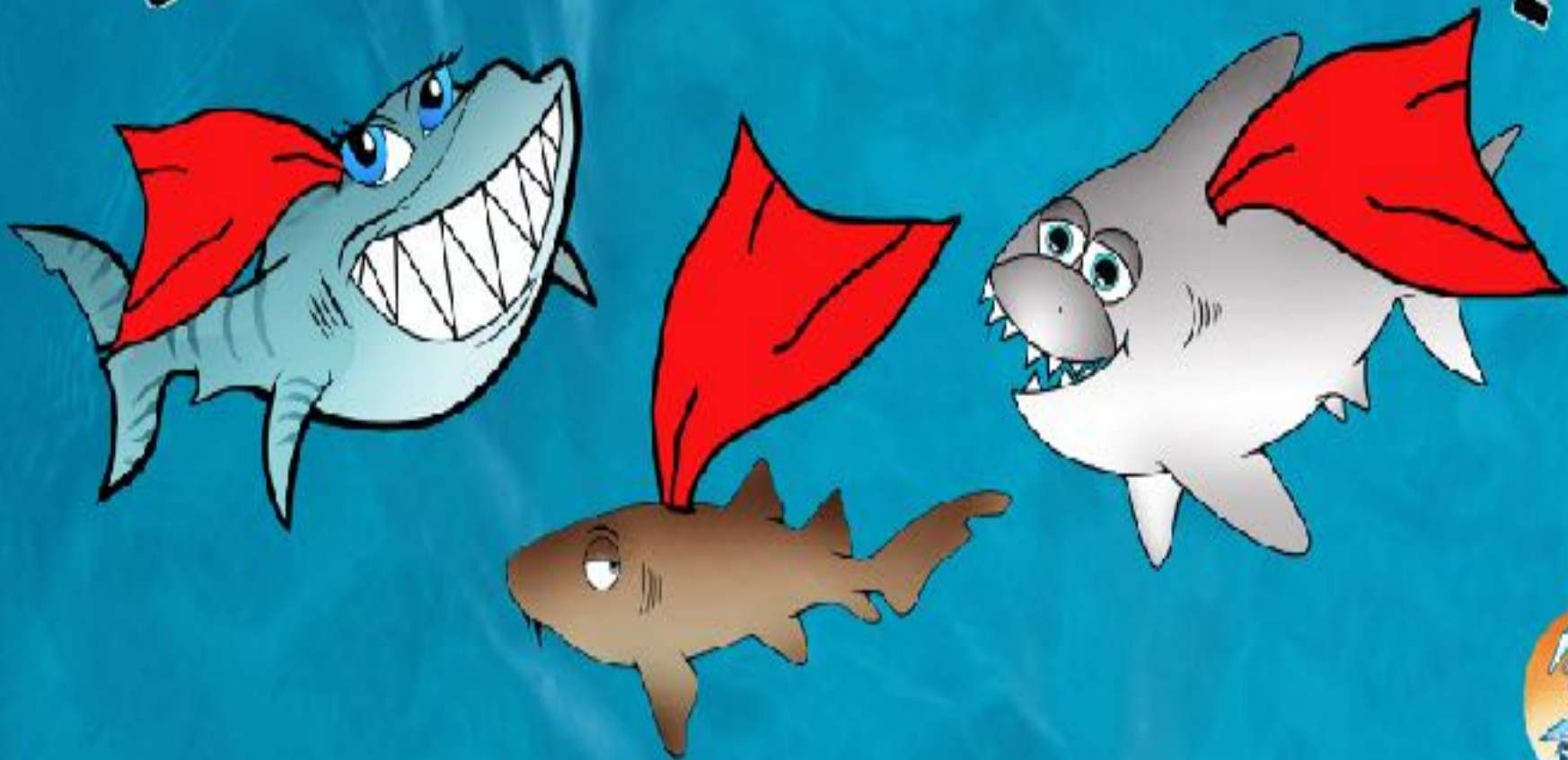






# SHARK TAGS

**WE NEED YOUR HELP!**





**THANKS FOR SWIMMING BY**

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