Ocean Teens

Water Quality Worksheet

QLD CURRICULUM LINKS: OC2.1, OC2.2 OC 2.3

SECTION 1

Tidal Touch Pools & Seahorse Sanctuary - Temperature

Feel the temperature of the water in the touch and tell tank. It is water from the ocean! Therefore it has the same temperature as the ocean. What is the temperature ?

The Sea Dragon exhibit is set at a constant 14-16˚C all year round. How does SEALIFE Sunshine Coast cater to cold water inhabitants?

How does SEA LIFE Sunshine Coast cater for animals that need warm water to survive

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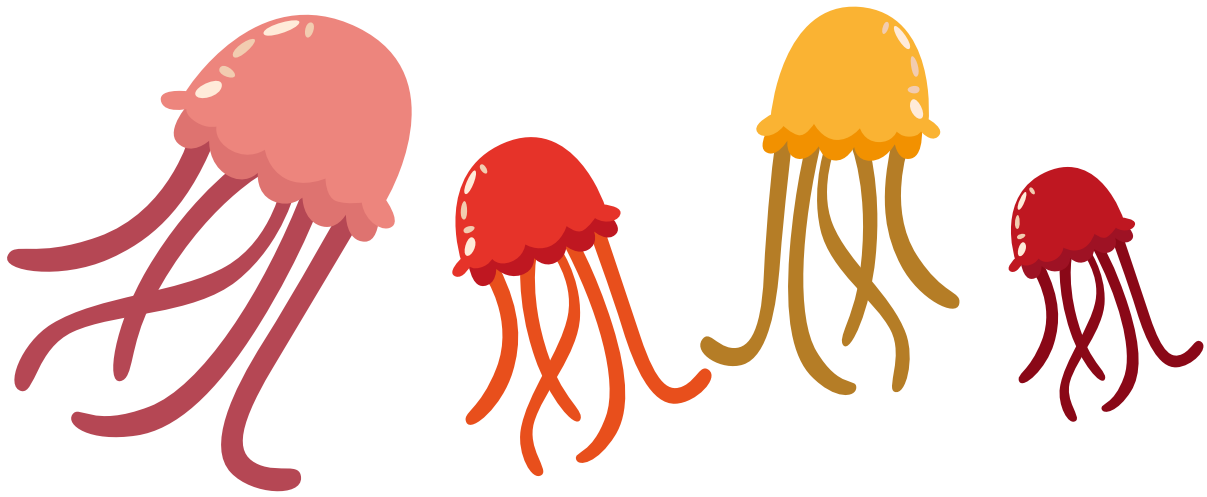
SECTION 2

Jellyfish Kingdom - Light

Many invertebrates such as corals and anemones need light to survive. But not just any light will do. They require light of the same intensity and wavelength as a shallow reef. Find the coral reef tank in Pacific Reef. What is the coral's source of light?

Find the anemone exhibit. What is the anemone's source of light?



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SECTION 3

Jellyfish Kingdom - Coral Chemistry

Hard corals have skeletons made of calcium carbonate. They are called reef-building corals. In the space provided, write what happens to hard corals when the following water quality parameters change.

Water Quality Parameter	Response
Light penetration decreates	
Temperature increases	
pH decreases	
Nutrient input increases	

SECTION 4

Seal Island - Waste Management

Seals, like people and other organisms, produce waste. Urine contains ammonia that is toxic to seals in high concentrations. How is ammonia managed in the seals stadium?

SECTION 5

Freshwater streams - Billabongs

Animals need oxygen to breathe. It is dissolved in water as DO (dissolved oxygen). Most fish need 85-100% of DO.

1. What is the DO level in the Billabongs exhibit?
2. What happens if DO levels drop too low?
3. What could cause DO levels to drop too low?
4. How can DO levels be kept at an optimal level?
5. Describe how the exhibit is oxygenated, compared to a saltwater tank:

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SECTION 6

Shark Shipwreck - Keeping It Clean

Meet SEALIFE's clean up crew! The Cleaner Wrasse. They help to keep our animals clean and healthy.

How do the Cleaner wrasse benefit our animals in the Ocean Tunnel?

SECTION 7

Shark Shipwreck - Optical Illusions

A tank that is curved in shape will distort the size of the animals inside.

Circle the correct answer: Animals in the tunnel are 10% 30% 50% bigger than what they appear!

SECTION 8

Behind the scenes - Life Support System

LSS are imperative in an aquarium such as SEALIFE Sunshine Coast. Each component is responsible for keeping the water at optimum levels for our animals, and each stage is different.

On average _____ litres of seawater filters through the aquarium every day.

Explain what each component of the LSS does for the water:

Equipment	Quantity / Size	Responsibility
Sand trap filter		
Ozone generator		
Biological filter		
Protein skimmer		
UV filter		
Chiller / Heater		

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The images to the right show two different types of bio-media we use to maintain and grow healthy bacteria for our tanks. They are used in very different ways. Explain how each is used:

Flow-through media:

Tumble media:

How much surface area does the white tumble media get increased by?

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SECTION 9

Data Collections

As you explore the aquarium, you will be required to conduct various water quality tests. Fill in the following table with the data you collect. Please take great care not to hurt any animals in doing so.

Exhibit	pH	O_2 (DO)	Temperature (°C)	Salinity (PPT)	N (NO_2, NO_3)
Sea Dragons	**7.9 - 8.1**	**95-100%**	**14 - 16 °C**	**35**	**As close to 0 as possible**
Stingray pool					
Touch pool					
**** Ocean tunnel tank**					
Freshwater turtle pools					
***** Seal pool**			**22 - 24 °C**		

*The seal pool water has been provided for you in a sample container for safety reasons.

** Take care when taking samples from the Ocean Tunnel as animals can bite. Only do so when your Education Officer Instructs you.

Elaborate on obvious differences or trends in data you have collected:

pH:

O2:

Temperature:

Salinity:

N:

Why wouldn't turbidity be measured here at SEA LIFE?