

OCEAN BLUE CREW

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Newsletter



INTRODUCTION

Ahoy matey! The Ocean Blue Crew from the Clearwater Marine Aquarium is here to give you some nautical knowledge about our incredible ocean.

Here at CMA, it's no secret that we like our warm weather. The same is true for our animals! We are one big tropical family. Most years we can still enjoy summer-like temperatures in the winter months in Florida, while people that live in other parts of the world are shoveling snow! There are quite a few animals that do require cold weather in order to survive. Animals like narwhals, polar bears, walruses, and harp seals were all made for chilly temperatures, even living in places that have temperatures below freezing (32°F). Each of these animals has some very interesting adaptations that allow them to be successful in such temperatures. In contrast, the animals that call CMA home would not survive a day in these arctic temperatures! Which type of weather do you prefer?

In this issue, you will learn the difference between animals who were built for the cold weather and animals who simply need the warmth!



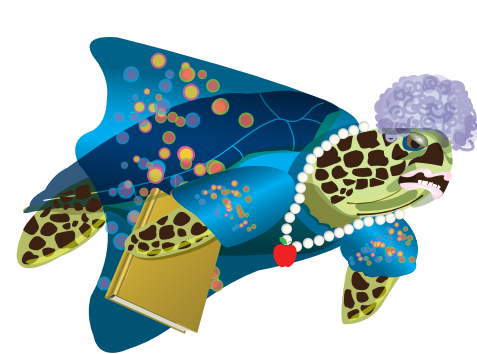
Captain
Squid Squidley

CAPTAIN'S LOG

Here at Clearwater Marine Aquarium, we do not have any animals that require cold weather or cold water. Florida has a very tropical climate (mostly) year-round! Some of our residents include bottlenose dolphins, rough-toothed dolphins, and sea turtles. Each of these animals prefers tropical and temperate waters. For sea turtles, their bodies will begin to shut down and enter a cold stun state if the water temperature drops below 54°F. Humans, dolphins, and all other mammals are warm-blooded, which means we can regulate our own body temperature without the help of the air and water around us. Cold-blooded animals, like one of our residents Harold "Mavis" the sea turtle, rely on the surrounding temperature to regulate body temperature. Because of this, these sea turtles have to move to warmer water if the water is too cold. We see this type of migratory behavior in many other marine animals as well, such as the manatee!

Back in 2018, Daphne (a juvenile green sea turtle) joined us after suffering from a cold stun event in Franklin County, Florida. "Cold stun events" refer to cold snaps that occur quickly, which shocks sea turtles and causes them to enter a very lethargic state. Unfortunately, many sea turtles are unable to survive these events without any help from humans. Luckily Daphne was rescued after stranding. While most cold stun turtles can be released after receiving veterinary care, Daphne is now a resident here at CMA due to a buoyancy issue. At this point, scientists are unsure as to why certain animals aren't able to migrate to warmer water fast enough. Some believe it has something to do with food availability, while others believe the temperature fluctuates too quickly for the animals to prepare.

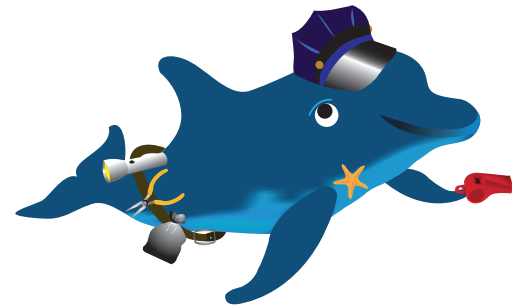
Teacher Turtle is going to teach you about why some animals are so successful, living in arctic temperatures!



Teacher Turtle

Animals like the walrus can spend their entire lives in freezing water due to the presence of tusks and blubber. Blubber is essentially the world's best hoodie! While blubber is not fat, it is a very thick layer of tissue underneath skin that provides warmth and stores energy. While manatees are very large and look thick like an arctic animal, they actually don't have any blubber. Even though they are warm-blooded and can regulate their own body temperatures, manatees must still migrate to warmer waters during the cold winter months since they don't have blubber to keep them warm. On the contrary, there are several other marine animals that we describe as "cold-blooded," which means they regulate their body temperature using the temperature of their surroundings. Cold-blooded animals, such as sea turtles, are forced to migrate to warmer water as temperatures drop during the winter months. Here at CMA, we care for sea turtles that were not able to migrate to warmer water before becoming too cold. When the water temperature drops below approximately 54°F for sea turtles and below 68°F for manatees, these animals become very lethargic and are unable to swim, find food, or protect themselves from predators. Our team at CMA works with many rescue organizations to rescue, rehabilitate, and release sea turtles and manatees affected by the cold.

Check with Dolphin Deputy to find out how you can help!



Deputy DOLPHIN

What should you do if you see a sea turtle who has been cold-stunned?

CALL FOR HELP! The most important thing to remember when dealing with a sick or injured animal is: there are trained professionals who have devoted their life's work to rehabilitating marine animals. Picking up, touching, or even pushing a sea turtle or manatee back into the water could harm the animal more than it helps the animal. Fortunately, there are several organizations and agencies in place to handle this type of situation! While these professionals make their way to the injured animal, they may enlist your help. A seemingly simple phone call could make a world of difference! A quick search on the internet can help you find the closest rescue agency to contact in your area.

While cold-stunned sea turtles are frequent patients during the cold winter months, we also rescue many other marine animals throughout the year for a variety of other reasons, such as fishing line entanglements, fibropapilloma virus, red tide related sicknesses, hearing loss, buoyancy disorders, and more. You too can help us keep our planet clean and happy for the animals that inhabit it! By picking just one piece of trash out of the water, you may have saved the lives of many marine animals. To get in the habit of keeping our water clean, you can start by just keeping your room clean or cleaning up your local park while you are at the playground. Getting in the right mindset is the perfect first step; the little things really do count!



Creative Crab

Creative Crab is here to show you how you can re-purpose a toilet paper roll and make your very own polar bear!

You Will Need:

- A recycled toilet paper roll
- 2 googly eyes
- Black and pink markers
- 1 piece of white construction paper
- Glue
- Scissors

Directions:

1. Cut out four small ovals from white construction paper. On each oval, draw one large circle and five small black circles to resemble paws. Did you know all bears have 5 toes?
2. On the top portion of the toilet paper roll, glue two googly eyes.
3. Below the googly eyes, draw a nose and a mouth. You can also color in two rosy cheeks next to the nose if you want to.
4. Finally, cut out two additional circles from the white construction paper (smaller than the paws). Glue these two circles inside of the toilet paper roll, near the top. These should resemble ears popping out of the top!

*NOTE: Always ask a parent or guardian for assistance when using scissors.





ObSerVation otter

When we think of animals that handle the cold weather the best, usually the first animal that comes to mind is the polar bear. Observation Otter here to help you experiment with your very own blubber to help you stay warm in arctic temperatures!

You Will Need:

- A bowl filled with ice and water
- Vegetable shortening
- A spoon
- Paper towels
- A parent or guardian

Directions

1. With the help of a parent or guardian, fill a bowl with ice and water.
2. Place one finger in the ice water and time how long you can keep it submerged!
3. Dry off your finger.
4. Use a spoon to coat your finger with a thick layer of vegetable shortening.
5. Submerge your finger back into the bowl of ice water. Time yourself again and see how much longer you can keep it submerged!



You probably noticed that you were able to withstand the ice water for a longer period of time after covering your finger with shortening. Vegetable shortening is a great representation of the blubber seen in many arctic animals such as polar bears and walruses. Some animals have only an inch of blubber, while animals like the right whale have up to 12 inches of blubber! With this in mind, it's no surprise that these animals are comfortable in freezing temperatures.



Chef Shark is here to teach you a cool new recipe!
Our recipe today will transform an everyday snack into one of our favorite polar friends: the polar bear.

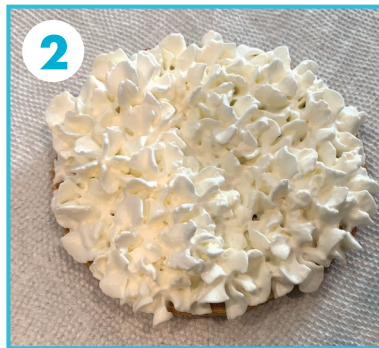
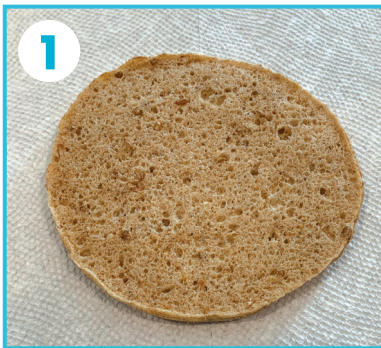
You Will Need:

- One rice cake (cinnamon & sugar or plain) or sandwich thin
- Cottage cheese, whipped cream, or marshmallow fluff
- Two sliced black olives or two raisins
- One chocolate cookie sandwich
- Banana
- Plastic knife
- A parent or guardian

Directions:

1. Place a rice cake down first on a plate or paper towel. Also, with the help of a parent or guardian, slice a banana into thin rounds.
2. Spread enough cottage cheese, whipped cream, or marshmallow fluff on the rice cake to resemble white fur.
3. Place the bananas just above the rice cake to resemble the polar bear's ears.
4. Take two sliced black olives or two raisins and place them on top of the cottage cheese, near the top of the rice cake to act as the polar bear's eyes.
5. Place the chocolate cookie sandwich near the bottom of the rice cake to create the polar bear's nose.
6. Serve and enjoy!

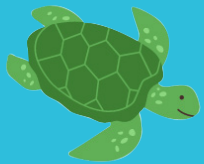
NOTE: Always ask a parent or guardian for assistance when using a knife.



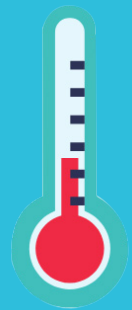


PlayTime Pelican

After learning about the difference between some of our local animals and those that require arctic temperatures, fill in the blanks below! Then, complete the word search with those words!



U	V	Z	S	C	W	A	D	O	T	H	U	D	W	W
T	W	K	W	O	O	C	J	L	U	T	N	O	A	N
J	R	H	Z	L	S	L	J	E	B	S	I	Y	R	V
Z	K	T	Z	D	V	U	D	E	P	Q	Q	Z	M	H
F	U	E	S	B	X	E	T	S	Q	H	S	L	T	F
A	N	M	O	L	U	A	R	C	T	I	C	A	H	D
D	A	P	L	O	P	D	I	V	Y	U	V	C	S	T
A	W	E	J	O	W	X	O	N	D	W	N	C	I	J
P	Q	R	N	D	H	C	N	M	I	G	M	W	G	N
T	N	A	S	E	T	E	D	H	L	S	T	E	S	G
W	U	T	E	D	R	J	T	R	O	P	I	C	A	L
F	C	U	L	R	Q	G	A	B	I	J	Q	J	Z	V
S	Z	R	F	A	O	G	Y	S	M	N	X	O	T	R
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I	I	P	A	B	L	U	B	B	E	R	F	S	W	M



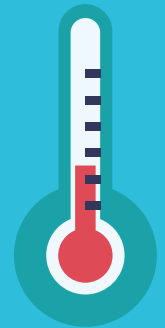
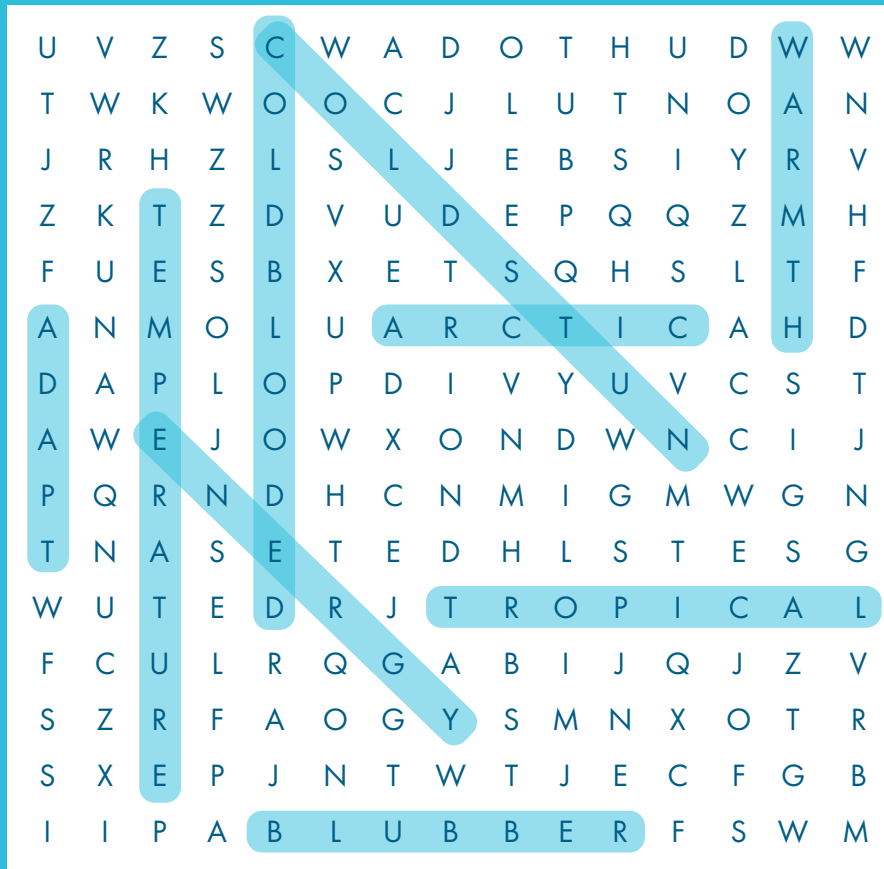
- 1 The changes that occur in sea turtles when they are exposed to cold water for too long is known as _____.
- 2 A very thick layer of tissue underneath skin that provides warmth and stores energy is called _____.
- 3 The northern most part of the earth is called the _____.
- 4 When temperatures drop, _____ must be used in order to stay warm.
- 5 _____ animals rely on the temperature of their surroundings to regulate their own body temperature.
- 6 _____ climates are warm year-round.
- 7 Animals built for tropical climates would not be able to successfully _____.
- 8 During the cold winter months, many marine animals will migrate to find _____.
- 9 Body _____ is not dependent on the surrounding environmental conditions for warm-blooded animals.

Answers on next page



Playtime Pelican

Answer Keys:



- 1 The changes that occur in sea turtles when they are exposed to cold water for too long is known as **cold stun**.
- 2 A very thick layer of tissue underneath skin that provides warmth and stores energy is called **blubber**.
- 3 The northern most part of the earth is called the **Arctic**.
- 4 When temperatures drop, **energy** must be used in order to stay warm.
- 5 **Cold-blooded** animals rely on the temperature of their surroundings to regulate their own body temperature.
- 6 **Tropical** climates are warm year-round.
- 7 Animals built for tropical climates would not be able to successfully **adapt**.
- 8 During the cold winter months, many marine animals will migrate to find **warmth**.
- 9 Body **temperature** is not dependent on the surrounding environmental conditions for warm-blooded animals.

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Sources:

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