

Monday 4/6/20

Writing Prompt:

Life in the country can be very different from life in a city. Write a composition (1-2 paragraphs) that compares and contrasts an urban place and a rural place. Remember to think about ways these places are similar and different so that you can find a basis for comparison.

Tuesday 4/7/20

Newsela article & comprehension questions: Sharks' liver is prize when great whites and orcas go toe-to-toe

Write: Explain the central idea of the article. Use at least two details from the article to support your response.

Wednesday 4/8/20

Writing Prompt:

What day stands out as the best day in your life so far? Why? Write a personal narrative about that day (1-2 paragraphs). Tell what happened and what made it so great. Include sensory details (sights, sounds, etc.) and your thoughts about the day.

Thursday 4/9/20

Newsela article & comprehension questions: What are neutron stars?

Write: List 2 facts from the text about neutron stars. Make sure to use quotes if copying.

Friday 4/10/20

Writing Prompt:

Create a new ending to one of your favorite books, shows, or movies. Make it a twist ending, cliff-hanger, or switch from sad ending to a happy ending. The choice is yours. Be creative and have fun with it! (1-2 paragraphs)

Twist-ending- an unexpected change in events

Cliff-hanger- an ending that leaves the audience in suspense, a problem unresolved

Sharks' liver is prize when great whites and orcas go toe-to-toe

By Lauren Smith, The Guardian, adapted by Newsela staff on 11.29.17

Word Count **655**

Level **690L**



Great white sharks are fierce apex predators, but are they as tough as killer whales? Photo from: Wikimedia Commons.

The great white shark is the hungriest animal in the ocean. As an apex predator, it sits at the top of the food chain. It plays a key role in controlling ecosystems.

It is difficult to imagine the great white as prey. And yet, earlier this year the bodies of five great whites washed up along the coast of South Africa. The sharks ranged in size from 9 to 16 feet. They all had holes in the muscle between their fins. Strangest of all, their livers were missing.

The bite marks looked like those of orcas, or killer whales. These huge sea creatures had been sighted along the shore. They were probably responsible for the attacks.

Orcas Have Edge Over Sharks

Great white sharks and orcas are both apex predators. Both can swim about 28 miles an hour. Orcas are larger, though. They can grow up to 31 feet long and weigh up to 19,000 pounds. Great whites can grow up to 20 feet long and weigh up to 5,000 pounds. On paper, orcas seem to have a slight edge.

What orcas eat depends on where they live. Orcas in South African waters have a taste for shark. They have been targeting smaller sharks for their livers. These sharks include cow sharks, blues and makos. Examples of all three have been found without their livers. Again, this followed nearby orca sightings.

There is no doubt that orcas are using special hunting methods to target the liver. The real question is: Why?

Livers Like Deep-Fried Candy Bars!

Shark livers are large and rich in oil. They have a huge amount of fat. This fat has even more energy than whale blubber. For the sharks, this serves as an energy storage unit. It helps fuel migrations, growth and other shark activities. For the orcas, this is like eating a deep-fried candy bar. Shark liver is a tasty treat to orcas. Plus, it is packed with vitamins.

How does an orca remove a shark's liver? The evidence shows that orcas do not just rip the shark apart. They remove the liver very carefully.

In 1997, a group of whale watchers saw an orca off the coast of California. The orca slammed itself into the side of a great white shark. The hit left the shark stunned. The orca flipped the shark over. Then it held the shark in place for around 15 minutes. Finally, it began eating its prey. A similar event was captured on film off Costa Rica in 2014. This time the orca's prey was a tiger shark. Orcas have been seen doing the same thing to stingrays, too.



Unable To Move

What the orcas were using to their own advantage is something called "tonic immobility." It is called TI for short. TI is a natural state of paralysis. That means it leaves an animal unable to move. It happens when certain kinds of fish are turned upside down.

For some sharks, this can be dangerous. They are unable to breathe unless they keep swimming. If they stay in this "tonic" state for too long, they die. The orcas have learned to use this to their advantage. They have found a clever way to drown their prey. As a bonus, it requires very little effort.

"Playing Dead" Is A Puzzle

TI is clearly helpful to orcas, but the benefit to sharks is less certain. It may be a way for sharks to defend themselves. However, the advantage of being able to "play dead" is not clear.

Whatever the use for sharks, orcas are known to use TI for their own ends. The sharks also learn, however. Sightings of great whites off the South African coast went down while orcas were in the area. Once the orcas left, the great whites began to return.

Quiz

- 1 Which detail MOST clearly shows how orcas use tonic immobility?
- (A) What orcas eat depends on where they live. Orcas in South African waters have a taste for shark. They have been targeting smaller sharks for their livers.
 - (B) The hit left the shark stunned. The orca flipped the shark over. Then it held the shark in place for around 15 minutes. Finally, it began eating its prey.
 - (C) For some sharks, this can be dangerous. They are unable to breathe unless they keep swimming. If they stay in this "tonic" state for too long, they die.
 - (D) TI is clearly helpful to orcas, but the benefit to sharks is less certain. It may be a way for sharks to defend themselves. However, the advantage of being able to "play dead" is not clear.

- 2 Read the paragraph from the introduction [paragraphs 1-3].

Whatever the use for sharks, orcas are known to use TI for their own ends. The sharks also learn, however. Sightings of great whites off the South African coast went down while orcas were in the area. Once the orcas left, the great whites began to return.

What conclusion can you make based on this paragraph?

- (A) Great white sharks are trying to fight back against the orcas but have been unsuccessful.
 - (B) Great white sharks have been known to use tonic immobility to attack orcas.
 - (C) Great white sharks are disappearing in South Africa because orcas are killing them.
 - (D) Great white sharks protect themselves from orcas by avoiding contact with them.
- 3 Select the sentence that BEST summarizes the article.
- (A) Orcas were attacked by great white sharks in South Africa recently.
 - (B) Orcas can grow to be 31 feet long and weigh 19,000 pounds.
 - (C) Orcas use special hunting methods to catch great white sharks.
 - (D) Orcas eat a variety of animals depending on where they live.

- 4 Read the list of sentences from the article.

1. *Shark livers are large and rich in oil.*
2. *For the orcas, this is like eating a deep-fried candy bar.*
3. *Plus, it is packed with vitamins.*

What MAIN idea do these details support?

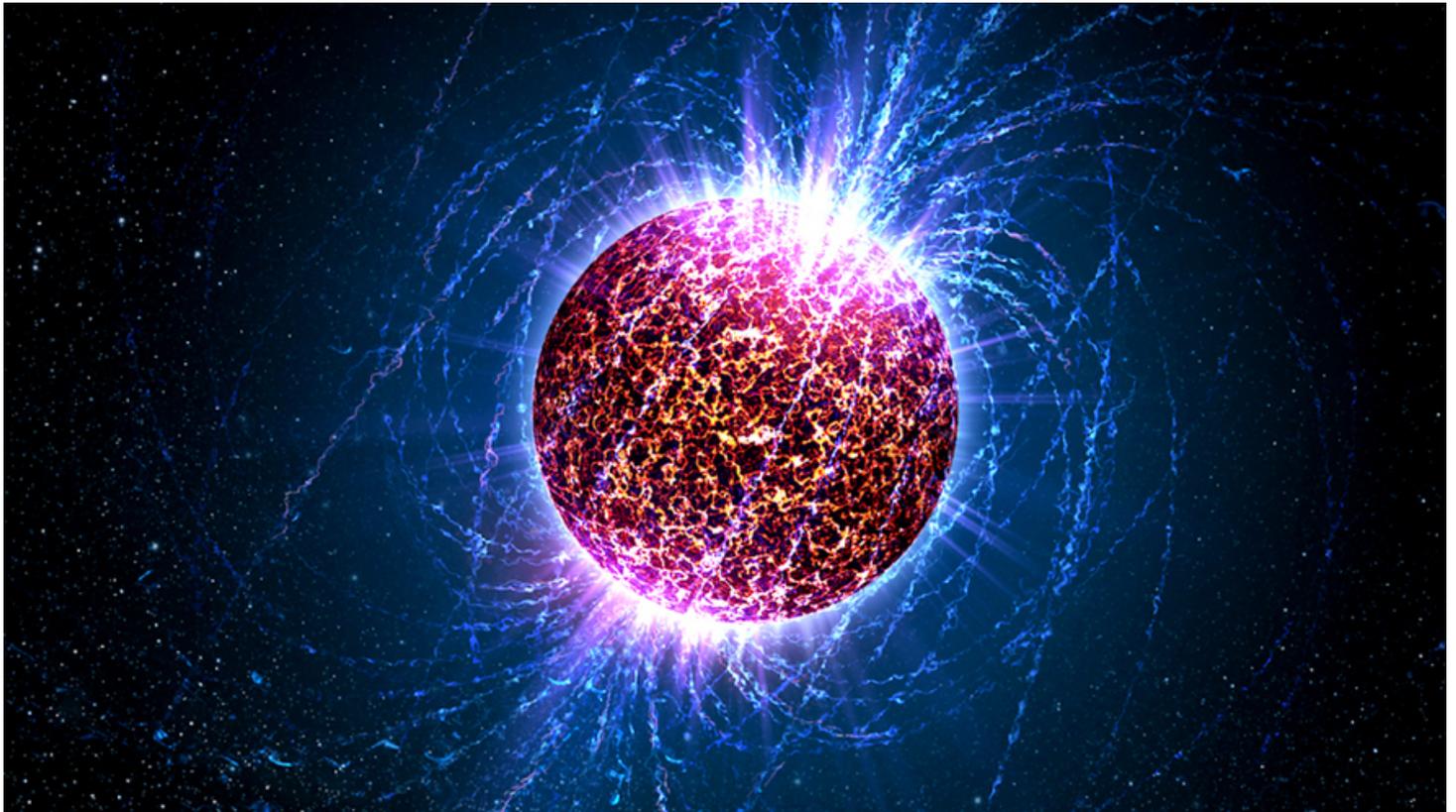
- (A) Great white sharks have livers that are a delicious treat for their many different predators.
- (B) Great white sharks were found on the coast of South Africa last year with missing livers.
- (C) Orcas have a way to carefully remove the livers from the great white sharks they catch.
- (D) Orcas enjoy eating the livers of great white sharks because they are nutritious and tasty.

What are neutron stars?

By Agence France-Presse, adapted by Newsela staff on 10.25.17

Word Count **669**

Level **670L**



An illustration of a neutron star. Illustration from: Wikimedia.

Last week, a group of scientists made an exciting announcement. For the first time ever, they had seen two neutron stars join together. This is one of the most amazing events in the Universe. It created a flash brighter than a billion suns.

But what are neutron stars?

Scientist Patrick Sutton helped make the discovery. He studies neutron stars at Cardiff University. Below, he explains what neutron stars are. He also explains why they sometimes merge, or join together.

Dead Stars That Have Burned Out

You can think of neutron stars as dead stars that have burned out. All that is left of them are their cores.

When a star reaches the end of its life, the core caves in. At this point, the outer layers of the star are blown off. What is left is a strange object called a neutron star.

A neutron star usually would have a much greater mass than Earth. Mass is how much matter is inside something. Yet these stars are only about 12 miles across. That's about the size of London, England.

In other words, neutron stars are very heavy. A handful of material from one would weigh as much as Mount Everest!

Neutron stars are also very hot, perhaps as hot as a million degrees. They are very radioactive, too. They give off many rays of energy. This energy shoots off into space. Neutron stars are some of the most hostile environments in the Universe today.

Why Do Neutron Stars Merge?

It's very common for stars to be formed in pairs.

At the end of their lives, the stars explode and leave behind neutron stars. These will sometimes continue to orbit, or circle around, each other.

As they orbit, the neutron stars give off gravitational waves. This is another name for "ripples" in space-time.

There are three dimensions of space. That is why sometimes you hear about three-dimensional objects or movies. Time is the fourth dimension. The scientist Albert Einstein explained the idea of gravitational waves in 1916. He also said that space and time were stuck together as one thing. He called it space-time.

Gravitational waves are caused by strong movements in the Universe. The waves create a kind of shaking movement in space. Scientists have tools that can detect these waves.

The neutron stars give off more and more gravitational waves. These waves carry away energy. This causes the stars to fall closer and closer together.

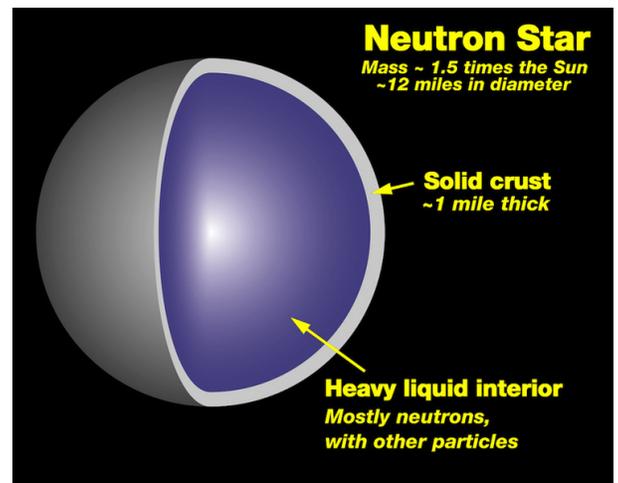
As the stars get closer, they orbit more and more quickly. This speeds up the release of gravitational waves.

Soon the stars are orbiting each other several hundred times a second. They begin to approach the speed of light. At a certain point, the stars are going so quickly that they join together.

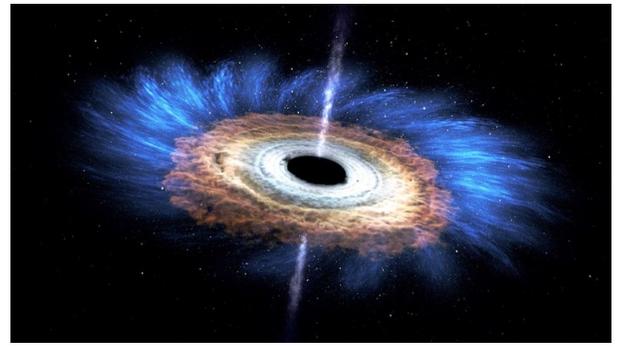
What Happens Then?

Scientists don't know everything about neutron stars just yet. Their inner workings are a mystery. Scientists aren't exactly sure what happens when two stars join together.

They know that if the stars are heavy enough, they will cave in. This forms a black hole, an area in outer space with very strong gravity. Gravity lets an object pull other things toward it. The gravity of black holes is so strong that even light cannot escape. This is why black holes are invisible.



But if the stars are light enough, they might not cave in. Instead, they might form a single, heavy neutron star. This might be stable enough to remain a neutron star forever. On the other hand, it might not be stable. In that case, it will probably cave in and form a black hole.



Quiz

- 1 Read the section "Why Do Neutron Stars Merge?"
Select the sentence that explains what creates gravitational waves.
- (A) The scientist Albert Einstein explained the idea of gravitational waves in 1916.
 - (B) Gravitational waves are caused by strong movements in the Universe.
 - (C) These waves carry away energy.
 - (D) This speeds up the release of gravitational waves.
- 2 Which paragraph from the section "What Happens Then?" helps the reader understand that some merged neutron stars do not turn into black holes?
- 3 Read the section "Dead Stars That Have Burned Out."
What does the image show?
- (A) a star core caving in
 - (B) a black hole created by neutron stars
 - (C) neutron stars merging
 - (D) two stars that have burned out
- 4 Based on the third image in the article and the information in the article, what do we know about neutron stars?
- (A) They are larger than any planet in our solar system.
 - (B) They are heavier than the Sun.
 - (C) They have a thick solid interior.
 - (D) They are the hottest objects in space.