

ENDANGERED RESCUE

Chambered Nautilus Trivia

Explore the hidden world of the chambered nautilus and its cephalopod cousins: deep-sea habitats, remarkable senses, survival challenges, and surprising memory skills.

A companion to Science Friday's [Endangered Rescue: Chambered Nautilus](#) game created in partnership with Grand Gamers Guild, a part of Cephalopod Week.



15 questions

Words to Know

Cephalopod

A type of ocean animal that has arms or tentacles around its mouth, such as an octopus, squid, cuttlefish, or nautilus.

Mature

To reach adulthood; here, to become able to reproduce.

Overfishing

Catching animals from the water faster than their populations can replace them.

Rhinophore

A body part that helps a nautilus sense chemicals in the water, much like smelling, so it can find food.

Lineage

A line of ancestors and their descendants stretching through time.

Molt

To shed an outer layer periodically, or the outer covering shed during molting.

Population

Members of the same species living in a particular area.

Spatial memory

Remembering where things are and how to move through a place.

The chambered nautilus is a type of cephalopod. Which animal below is NOT a cephalopod?

▲ **Cuttlefish**

◆ **Starfish**

● **Squid**

■ **Octopus**

The chambered nautilus is a type of cephalopod. Which animal below is NOT a cephalopod?

▲ Cuttlefish

◆ Starfish



● Squid

■ Octopus



Why? Cephalopods are ocean animals with arms or tentacles around their mouths, such as the octopus, squid, cuttlefish, and nautilus. Starfish are not part of this group.

Cephalopods usually have highly developed senses, a large brain, and...

▲ **A backbone**

◆ **Tentacles**

● **Scales**

■ **A prominent head**

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▲ A backbone

◆ Tentacles

● Scales

■ A prominent head



Why? Cephalopods are known for their prominent heads, highly developed senses, and large brains. They are curious creatures that are good at exploring and solving problems.

The nautilus lives 1,000 to 2,000 feet underwater. What is that environment like?

▲ **Extremely dark**

◆ **Many plants**

● **Warm water**

■ **Many predators**

The nautilus lives 1,000 to 2,000 feet underwater. What is that environment like?

▲ Extremely dark ✓

◆ Many plants

● Warm water

■ Many predators



Why? At these depths the ocean is extremely dark, which helps keep the nautilus safe because predators are less likely to spot it. Recreational divers only go about 100 feet down.

Nautiluses don't occupy the entirety of their shells.

◆ True

▲ False

Nautiluses don't occupy the entirety of their shells.

◆ True



▲ False



Why? The nautilus lives in only part of its spiral shell. When threatened, it can retract its full body into the shell.

About how big is the largest known chambered nautilus shell?

▲ About 1 inch

◆ About 12 inches

● About 3 feet

■ About 6 feet

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Why? The largest known nautilus shell specimen is about 12 inches in diameter.

How many tentacles can a chambered nautilus have?

▲ Fewer than 10

◆ Up to 30

● About 60

■ As many as 90

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Why? A chambered nautilus can have as many as 90 tentacles, which it uses to find food and to find a mate.

The spiral of a nautilus shell is a perfect example of the golden ratio.

◆ True

▲ False

The spiral of a nautilus shell is a perfect example of the golden ratio.

◆ True

▲ False



Why? Close, but not quite! The nautilus's distinctive spiral shell is almost, but not exactly, an example of the golden ratio.

Test it yourself: [Myth or math? Is the nautilus shell's golden ratio real?](#)

Nautiluses have a sensory structure called a rhinophore. What does it help them do?

▲ See

◆ Hear

● Smell

■ Touch

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What does it help them do?

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■ Touch



Why? The rhinophore is a body part that helps a nautilus sense chemicals in the water, much like smelling. Along with its tentacles, the nautilus uses it to search out food.

Which foods would a chambered nautilus use its tentacles and rhinophores to find?

▲ **Algae and seaweed**

◆ **Fresh fish and crabs**

● **Clams and oysters**

■ **Decaying animals**

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Why? Nautiluses search out decaying food items like fish and crabs. They also eat lobster molts.

**Some call the nautilus a “living fossil.”
How long has the nautilus lineage
existed?**

▲ 2,000 years

◆ 100,000 years

● 30 million years

■ 500 million years

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Why? The chambered nautilus lineage has existed with very little change to its anatomy for the last 500 million years.

How long can a nautilus hold information in its long-term memory?

▲ About 5 minutes

◆ Almost 1 hour

● Up to 24 hours

■ About 1 week

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Why? Drs. Jennifer Basil, Robyn Crook, and Gregory Barord found that nautilus have a biphasic memory curve: short-term memory for up to an hour and long-term memory for up to 24 hours.

Dig deeper: [Can a living fossil learn new tricks? Meet the nautilus!](#)

Experiments show nautiluses have spatial memory. What do they use it for?

▲ Recognizing faces

◆ Navigating familiar places

● Changing shell color

■ Remembering sounds

Experiments show nautiluses have spatial memory. What do they use it for?

▲ Recognizing faces

◆ Navigating familiar places ✓

● Changing shell color

■ Remembering sounds



Why? Spatial memory means remembering where things are and how to move through a place. Nautiluses use it to navigate familiar areas more efficiently, including mazes they have been through before.

Scientists can't tell a grown nautilus's exact age, but some believe nautiluses can live up to how long?

▲ **Less than 1 year**

◆ **Up to 5 years**

● **About 10 years**

■ **50 years or more**

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Why? A nautilus can generally live more than 20 years, and some scientists believe it may live up to and beyond 50 years. Its lifecycle is much longer and slower than other cephalopods'.

What is the main reason the chambered nautilus is threatened in many ocean regions?

▲ Warming waters

◆ Loud boat noise

● Too little food

■ Overfishing

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Why? Overfishing means catching animals faster than their populations can replace them. Nautilus shells are sold for décor and furniture inlays, and despite CITES protection since 2017, over 10,000 were openly used in traded goods in 2024.

Why is slow reproduction such a serious problem when nautilus populations are overfished?

▲ More predators

◆ Eggs are destroyed

● Only live a short time

■ Cannot replace losses

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Why? Nautiluses don't lay eggs until they mature at about age 10, and the eggs take at least a year to hatch. Populations are being depleted much faster than they can recover.

Help Save the Nautilus

Save the Nautilus is a nonprofit conservation organization dedicated to protecting chambered nautiluses. It was started by 11-year-old Josiah Utsch and his friend Ridgely Kelly to raise awareness and fund research on this 500-million-year-old creature.

Dr. Gregory Barord, the marine biologist who consulted on the game, is the Director of Science and Outreach for Save the Nautilus.



Write a letter

Ask retailers like eBay, Amazon, and Etsy to stop selling nautilus shells.

Find a sample letter at
savethenautilus.com



Thanks for helping rescue the nautilus!

Play the game: [Endangered Rescue: Chambered Nautilus](#)

30% of proceeds from every game support Science Friday's free, accessible science journalism, educational resources, and experiences.

