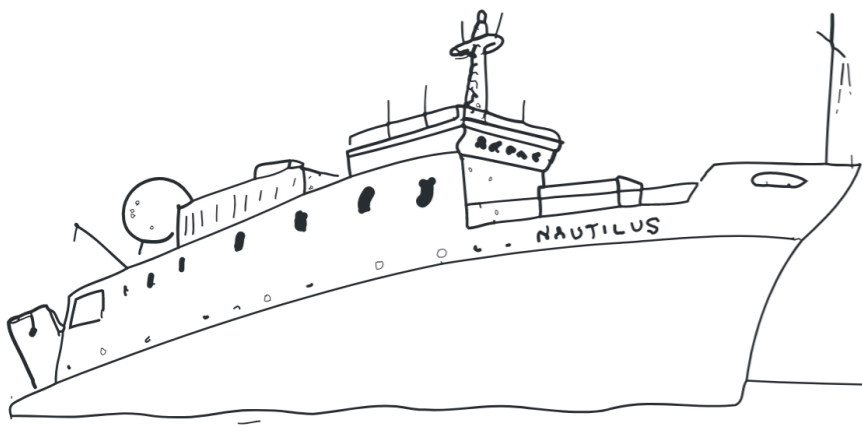


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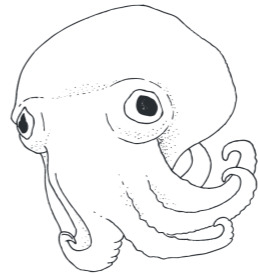
Fill the card with 24 terms from the phrase and sightings word bank below.

Listen closely to the team on www.NautilusLive.org as ROV *Hercules* and *Argus* ascend or descend to see how quickly you can complete your card!

- "What was that?"
- Ocean-themed pun
- Siphonophore
- Foraging tentacles
- Lantern fish
- Plankton
- Chaetognath
- Squid ink
- Medusa
- Whale
- Fish
- "Bioluminescence"
- "Cute"
- Shrimp
- Shark
- Larvacean snotthouse
- Ctenophore
- Marine snow
- Cephalopod
- Niskin bottle
- "How long until we reach the bottom?"
- "New sensor"
- Copepod
- LED light
- Zeus
- "Gorgeous"
- "Winch control"
- "Knots"
- "Photic Zone"
- CTD
- "Water masses"
- "Football fields"
- "Miles"
- "Seamount"
- "Trench"
- "Abyssal plain"
- "Role models"
- UBSL (ultra-short baseline) navigation
- Weather
- Oil-compensated
- Descent rate
- "Can you slow down/speed up a bit?"
- Bottom in site
- "Zero your wraps"
- "How long will this dive be?"
- 50 meters
- "What's the plan for this dive?"
- "OMZ / Oxygen minimum zone"
- SEIP / Science & Engineering Internship Program
- SCF / Science Communication Fellowship

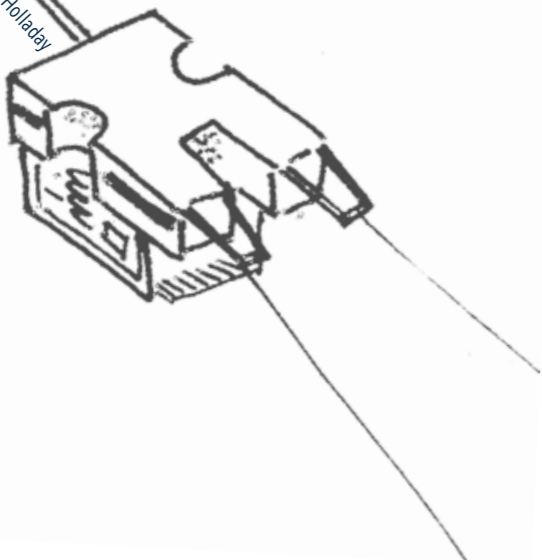


NAUTILUS LIVE BINGO!

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Corps of Exploration at
NautilusLive.org**

Artwork by L. Holladay



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Learn more about the vocabulary and phrases you hear on

www.NautilusLive.org during ascents and descents!

- "What was that?"
- Ocean-themed pun
- Siphonophore - *a gelatinous creature that appears to be a single organism, but each specimen is in fact a colonial organism composed of small individual animals called zooids that have their own special function for survival. Most colonies are long, thin, transparent floaters living in the open ocean.*
- Foraging tentacles: *adapted tentacles on a squid used to capture food*
- Lantern fish: *Shiny fish with photophores that move up and down in the water column every day mixing nutrients from below into upper layers where they phytoplankton can use them; greatest animal migration on the planet!*
- Plankton: *organisms that float around in the water column, plant or animal, single or multicellular*
- Chaetognath - *marine worms that are a major predator group within plankton, these arrow worms' range from .5 to 5 inches and most have long torpedo shaped bodies*
- Squid ink
- Medusa: *the life stage of a jellyfish or anemone when the body is shaped like an umbrella. Seen in the midwater adrift with water currents. Not the mythical creature*
- Whale
- Fish
- "Bioluminescence": *animals that create their own light for communication, to attract food or to detract predators. It's not often possible to see bioluminescence when the bright broadcast lights are on, but some creatures like ctenophores will reflect the ROV lights back to the camera, appearing to glow.*
- "Cute"
- Shrimp
- Shark
- Larvacean snothouse - *Larvaceans are small solitary, free-swimming tunicates that are filter feeders. They have adapted a unique feeding strategy by producing a 'snothouse' made of protein and cellulose that surrounds the animal like a bubble, and contains a complicated arrangement of filters to bring in and concentrate food. Once filters get clogged, a larvacean abandons the snothouse and builds a new one.*
- Ctenophore
- Marine snow; *the biological material that falls from the surface waters above, living or dead, whole or in pieces. Marine snow is an important part of the food chain for organisms on the seafloor.*
- Cephalopod - *the name translates to "head-foot", includes squid, octopus or nautilus*

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- **Niskin bottle** - *common water sampling tool; a niskin bottle is an open tube with caps at both ends which can be triggered to close at depth containing a water sample.*
- **"How long until we reach the bottom?"**
- **"New sensor"**
- **Copepod**: *fish food - a small zooplankton animal with lots of swimming legs*
- **LED light**
- **Zeus**: *the brand name of the high definition broadcast cameras used on ROV Hercules and ROV Argus*
- **"Gorgeous"**
- **"Winch control"** - *the Argus pilot controls the speed the winch lowers the communication and fiber cable and ROV Argus into the ocean.*
- **"Knots"**
- **"Photic Zone"**; *part of the water column with enough light to support photosynthesis*
- **CTD**
- **"Water masses"**: *distinct parts of the ocean that share properties such as temperature, nutrient content, or flow rate*
- **"Football fields"** : *Common American reference measurement for ocean depth = 110 yards includes the end zones and = 100 meters*
- **"Miles"**
- **"Seamount"**: *undersea mountain*
- **"Trench"**
- **"Abyssal plain"**
- **"Role models"**
- **USBL (ultra-short baseline) navigation** - *The style of acoustic navigation the ship and ROVs use to reference their location to one another. Since GPS doesn't work underwater, the USBL signal is a series of call/response pings that allow the vehicles to be triangulated against each others relative position. Ultra-short baseline refers to the small distance between the two ROVs.*
- **Weather**
- **Oil-compensated** - *Oil-compensated spaces on the ROV have a reservoir of oil that feeds into a space like the electrical junction panel when under pressure. As the junction panel is compressed by during descent, oil-compensation feeds inert mineral oil into the housing rather than corrosive seawater.*
- **Descent rate**: *The speed measured in meters / minute that the ROVs are going down*
- **Bottom in site**

Nautilus Live Midwater BINGO

Learn more about the vocabulary and phrases you hear on www.NautilusLive.org during ascents and descents!

- *"Can you slow down/speed up a bit?" // You might hear this during an ROV descent or ascent between the two ROV pilots in the control room as they are trying to match the speeds of descent/ascent between the two vehicles. When they are exploring the seafloor, the ROVs operate in a configuration with Argus ~15-20 meters above Hercules. When they are in transit to the seafloor or back to the ship, the vehicles are strung out with Hercules and Argus at the same depth.*
- *"Zero your wraps" - A reference measurement taken during launch when the two ROVs are facing directly away from one another with no twists /wraps in the tether connecting them. ROV Argus pilots monitor the number of left and right turns throughout a dive to make sure the tether doesn't get kinks in it from spiraling only one way.*
- *"How long will this dive be?"*
- *50 meters*
- *"What's the plan for this dive?"*
- *"OMZ / Oxygen minimum zone"; a naturally forming layer of the water where oxygen concentration is low due to consumption by bacteria or larger organisms; the amount of oxygen present in the water will strongly influence what organisms that can live there.*
- **SEIP / Science & Engineering Internship Program**
- **SCF / Science Communication Fellowship**