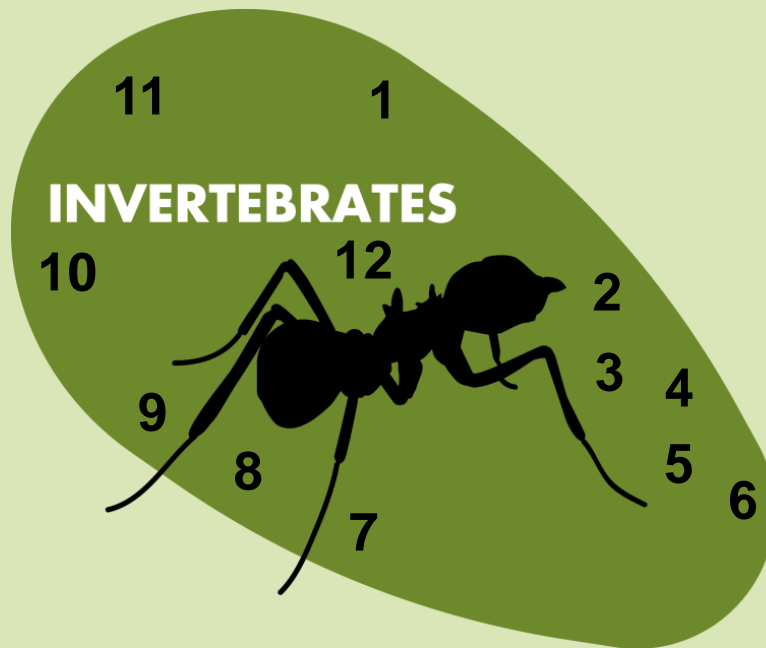




# SCULPTURE LEARNING PLAZA



- 1 Leafcutter ant (*Atta cephalotes*) 125x
- 2 Velella (*Velella velella*) 4x
- 3 Horseshoe crab (Family Limulidae)
- 4 Nautilus (Family Nautilidae)
- 5 Vampire squid (*Vampyroteuthis infernalis*)
- 6 Giant clam (*Tridacna gigas*)
- 7 Giraffe weevil (*Trachelophorus giraffa*) 18x
- 8 Scorpion (Order Scorpionus) 3.5x
- 9 Centipede (Class Chilopoda) 2.25x
- 10 Tardigrade (Phylum Tardigrada) 900x
- 11 Termite mound (*Macrotermes* sp.)
- 12 Coconut crab (*Birgus latro*)

Sculptures are **true to size** except where scale is noted in red text.



# Leafcutter ant

## *Atta cephalotes*

**Habitat/diet:** These ants live in huge underground nests connected by tunnels. These tunnels are where the ants grow their primary food source— fungus. The leaves that they cut are used like mulch to cultivate the fungus growth.

**Status:** Not yet assessed by IUCN

**Range:** Leafcutter ants are thought to be one of the most numerically dominant invertebrates in Central and South America with each colony housing millions of individuals.

### Fascinating facts:

- Like most ants, they have a complex social structure with many castes and subgroups. Each individual performs a specific function for the colony, from soldier to fungus watcher to leaf cutter.
- Leafcutter ants use their massive mandibles (jaw pieces) to cut big sections of leaves that they use when “farming” fungi in their underground chambers.
- The ants and their fungus are obligatory mutualists – neither can live without the other.

### Can you find?...

- Another animal with 6 or more legs?
- Another animal carrying food?
- Another animal with a segmented body?





# Velella

## *Velella velella*

**Habitat/diet:** Feeds on small prey (fish, shrimp, plankton) that can be found close to the surface. They spend all of their lives on water until they are blown ashore where they disintegrate.

**Status:** Not yet assessed by IUCN

**Range:** Found in temperate and tropical oceans worldwide.

### Fascinating facts:

- Despite physical similarities, these animals are hydrozoans and not technically jellyfish, though they are close relatives.
- They are also called “by-the-wind sailors”, due to their sail-like flap that helps carry them across the ocean’s surface.
- They have tentacles on their underside around their mouths to help them catch plankton.
- They have a series of sealed air/gas chambers to help them stay afloat.
- Warmer waters bring them close to shore, and strong winds sometimes blow them onto beaches by the thousands.

### Can you find?...

- Another animal with tentacles?





# Horseshoe crab

## Family Limulidae

**Habitat/diet:** Horseshoe crabs are found on warm coastlines and are nocturnal omnivorous scavengers, feeding upon small bivalves, mollusks, worms, dead fish and algae. Their legs are covered with thick bristles that point inward and grind food toward their mouth, located at the center of their legs, as they walk.

**Status:** Near Threatened or Data Deficient – IUCN 1996

**Range:** East and Southeast Asia, American Atlantic coast, and the Gulf of Mexico.

### Fascinating facts:

- They are not crabs; their closest relatives are actually arachnids.
- Their blood is literally blue and it is harvested (without harming the crabs) to be used in blood testing, cancer research, and more.
- Their spike-shaped tail, or telson, functions as a tool for digging in sand and a lever if the animal finds itself upside down.
- Horseshoe crabs have 10 eyes located all over their bodies, with the largest rods and cones of any known animal. Even so, they can only sense light and locate mates with them.
- Many shorebirds and fish depend on horseshoe crab eggs for food.

### Can you find?...

- Another animal with a protective covering or a shell?
- Another arachnid?







# Nautilus

## Family Nautilidae

**Habitat/diet:** Nautiluses are nocturnal cephalopods that make vertical migrations from the benthic zone by day to the pelagic zone by night where they forage on crustaceans, carrion and small fishes. Food is captured by up to 100 retractable tentacles and passed to their mouth where a beak-like jaw tears it into pieces. Their radula, a file-like feeding structure, further shreds the food before it is swallowed.

**Status:** Not yet assessed by IUCN

**Range:** The nautilus lives on the bottom of the South Pacific and Indian oceans at depths of 200 to 2,000 feet (60 to 600 m).

### Fascinating facts:

- Nautiluses live in the newest, outermost chamber of their shell, secreting a larger chamber and sealing off the older one as it grows.
- They produce a siphuncle—a thin tube that goes back through each chamber and helps them control buoyancy and swim upright.
- Their muscular hood partly closes their shell opening when hiding.
- Octopuses are their only predator as they can crack their hard shell.
- Nautiluses have simple, pinhole eyes that lack lenses and most likely form blurry images.
- They are hunted for their shells, which are used in trinkets.

### Can you find?...

- Another animal with a shell?
- Another animal with tentacles?





# Vampire squid

## *Vampyroteuthis infernalis*

**Habitat/diet:** Usually found at depths between 4,500 to 7,500 feet– so deep, there is little to no light or oxygen and temperatures are between 35-42 degrees Fahrenheit. They are the only cephalopods known to not eat living matter – instead, they eat dead plankton and fecal pellets that drift through the water.

**Status:** Not yet assessed by IUCN

**Range:** Tropical and temperate oceans

### Fascinating facts:

- Vampire squids are about the color, shape, and size of a football.
- They don't ink! They emit a bioluminescent fluid that can glow for up to 10 minutes.
- They have the largest eyes – proportionate to body size – in the animal kingdom.
- Contrary to most squid and octopus behavior, vampire squids wait for their food to come to them.
- When threatened, they "pumpkin," with their caped arms over their body, presenting a large, fearsome, spiny mass.



Sculpture Photo by Blair Bazzarich

### Can you find?...

- Another cephalopod?
- Another animal with spines?





# Giant clam

## *Tridacna gigas*

**Habitat/diet:** The mantle (material between the shells) of Giant clams has two siphons – one ‘inhale’ and one ‘exhale’. They use their ‘inhale’ siphon to pull in seawater that is filtered for plankton. Most of the clam’s nutrients come from a mutually beneficial relationship with a unicellular algae called zooxanthellae. They live in coral reefs, stationed within 20 feet of the surface.

**Status:** Vulnerable – IUCN (1994)

**Range:** South Pacific and Indian Ocean waters



### Fascinating facts:

- As the world’s largest mollusk, they can be 4 ft long and can weigh over 500 lbs.
- Every individual has a different coloration– no two giant clams look the same!
- Once fastened to a spot on a reef or rock, the giant clam is there to stay.
- The adductor muscle of the giant clam is considered a delicacy, and overharvesting of the species for food, shells, and the aquarium trade are their greatest threats.

### Can you find?...

- 3-5 other animals that live in water?
- Another animal with bright coloring?





# Giraffe weevil

## *Trachelophorus giraffa*

**Habitat/diet:** Giraffe weevils live in forests, spending almost their entire lives on a tree known as the “giraffe beetle tree”. They are herbivorous, feeding on the leaves of that tree.

**Status:** Not yet assessed by IUCN

**Range:** Endemic to the forests of Madagascar.

### Fascinating facts:

- Male giraffe weevils’ necks are 2-3 times the size of females’, which most likely aid them in nest building and competition.
- Females will roll a leaf and lay a single egg inside the tube, snipping it off to fall onto the forest floor. The leaf then provides the larva with food in its first days of life.
- Giraffe weevils cannot bite or sting and, therefore, are not dangerous to humans.
- This species was only discovered in 2008, so not a lot is known about them yet!



### Can you find?...

- Another animal that is sexually dimorphic (difference in form between males and females)?
- Another herbivore (plant-eater)?







# Scorpion

## Order Scorpionus

**Habitat/diet:** Scorpions are found in a wide range of habitats, the only necessity being soil. They are most common in deserts but can also be found on plains and savannas, and in forests, rain forests and caves. They are nocturnal carnivores, eating primarily insects and occasionally small vertebrates. Each species' venom is tailored to their prey.

**Status:** Seychelles forest scorpion: Critically Endangered; Seychelles giant scorpion: Vulnerable; all other species not yet assessed by IUCN

**Range:** Found on all major landmasses except Antarctica.

### Fascinating facts:

- Some species can change their metabolic rate, allowing them to live on one meal per year or survive being stored in a freezer overnight.
- Scorpions are fluorescent under UV light – no one yet knows why!
- There are almost 2,000 scorpion species, but only 30 or 40 have strong enough poison to kill a person.
- Predators include centipedes, tarantulas, lizards, birds (especially owls), shrews, grasshopper mice, and bats.
- Scorpions give live birth to 24-35 young that climb onto their mother's back in pairs, where they stay until their first molt.

### Can you find?...

- Another venomous animal?
- Another animal who carries their young?





# Centipede

## Class Chilopoda

**Habitat/diet:** Centipedes are fast moving, agile, nocturnal animals that favor damp environments. They have small mouths and use their large claws with a venom gland to paralyze their prey, which include worms, insects, spiders, other centipedes, and small vertebrates.

**Status:** Most species Endangered or Critically Endangered – IUCN 2012

**Range:** Worldwide, except for the polar regions, with the highest abundance in the tropics.

### Fascinating facts:

- Centipedes may have anywhere from 15 to 177 pairs of legs, but always an odd number of pairs.
- Some centipedes have compound eyes, others have no eyes at all.
- They find food with their hair-covered antennae.
- The Amazonian giant centipede is the largest at 12 inches long.
- Some species can leave a twitching leg behind to distract a predator, replacing it during their next molt.
- The main threats to centipede populations are habitat loss and invasive species.

### Can you find?...

- Another animal with more than four limbs?
- Another nocturnal animal?





# Tardigrade

## Phylum Tardigrada

**Habitat/diet:** Tardigrades are water-dwellers that live in mosses and lichens and feed on plant cells, algae, and small invertebrates.

**Status:** Not yet assessed by IUCN

**Range:** Found throughout the world, from the Himalayas to the deep sea, and from the polar regions to the equator.



*Sculpture Photo by Marianne Hale*

### Fascinating facts:

- Tardigrades are also known as “water bears” or “moss piglets.”
- They have no respiratory organs, instead performing gas exchange across their entire body surface.
- They can withstand temperatures just above absolute zero to far over the boiling point of water.
- They can also survive the vacuum of space, pressures greater than deep sea trenches, and radiation 100x the lethal human dose.
- They can go without food or water for years, drying out to 3% water, only to rehydrate, forage, and reproduce later.

### Can you find?...

- Another organism you need a microscope to see?
- Another animal that lives in an extreme environment?





# Termite mound

## Genus *Macrotermes*

**Habitat/diet:** Termites obtain nutrients from wood and plant matter, but cannot digest it themselves. They have microbacteria in their gut that aid in digestion. *Macrotermes* lives in savannas and grasslands.

**Status:** Not yet assessed by IUCN

**Range:** *Macrotermes* contains about 350 species which are found throughout Africa, Southern Asia, and Australia. Termites can be found on every continent except for Antarctica.



Sculpture Photo by Blair Bazdarich

### Fascinating facts:

- Like ants, bees, and other social insects, the power of termite colonies is much larger than one individual.
- A colony starts with one pair ('king' and 'queen') from which all sterile offspring are hatched.
- The king and queen give rise to over 1,000,000 termites.
- Only a few of the 3,000+ species of termites are pests to people.
- Termite mounds create tiny holes that aid in rainwater runoff, increase soil nutrients, and resist erosion by mixing organic matter in with the sand and soil.



### Can you find?...

- Another animal that lives in a large group or colony?
- An animal with more appendages (arms/legs) than this one?







# Coconut crab

## *Birgus latro*

**Habitat/diet:** Coconut crabs live in rock crevices and burrow along the coast. They are nocturnal and feed on coconuts, fruit, and leaves. If coconuts aren't already available on the ground, the coconut crab can climb trees to cut them down.

**Status:** Rare - IUCN

**Range:** Found throughout tropical Indo-Pacific oceanic islands and offshore islets.

### Fascinating facts:

- Coconut crabs are a type of hermit crab and are the world's largest terrestrial arthropod (up to 3 feet across!).
- Unlike most other hermit crabs, only juveniles use shells to protect their abdomens; older coconut crabs develop a hard skin.
- They cannot swim, and will drown if immersed in water for long.
- They have large muscular claws to help open coconuts.
- Coconut crabs are hunted extensively for food, which can be problematic due to their long lifespan and slow growth rate.
- They can live to be over 60 years old!

### Can you find?...

- Another animal with eight legs?
- Another animal with claws?

