TOPIC: COMMUNITY INTERACTIONS: EXPLOITATION (+/–)

Community Interactions: Exploitation (+/–)

◆ **Exploitation**: one organism *benefits* (____) at the expense of the other organism being *harmed* (____).

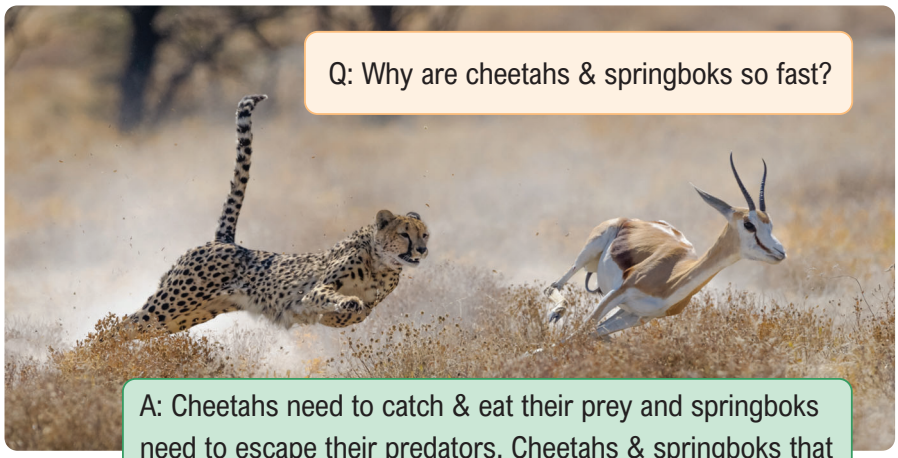
◆ There are _____ forms of exploitation:

1. _____	2. Herbivory	3. Parasitism
		

1) Exploitation (+/–): Predation

◆ **Predation:** when one organism (the _____) kills & eats another organism (the _____).

- Predators & prey in a community are constantly in a "coevolutionary arms race".
  - **Coevolution:** ≥2 interacting species constantly evolving in _____ to each other.



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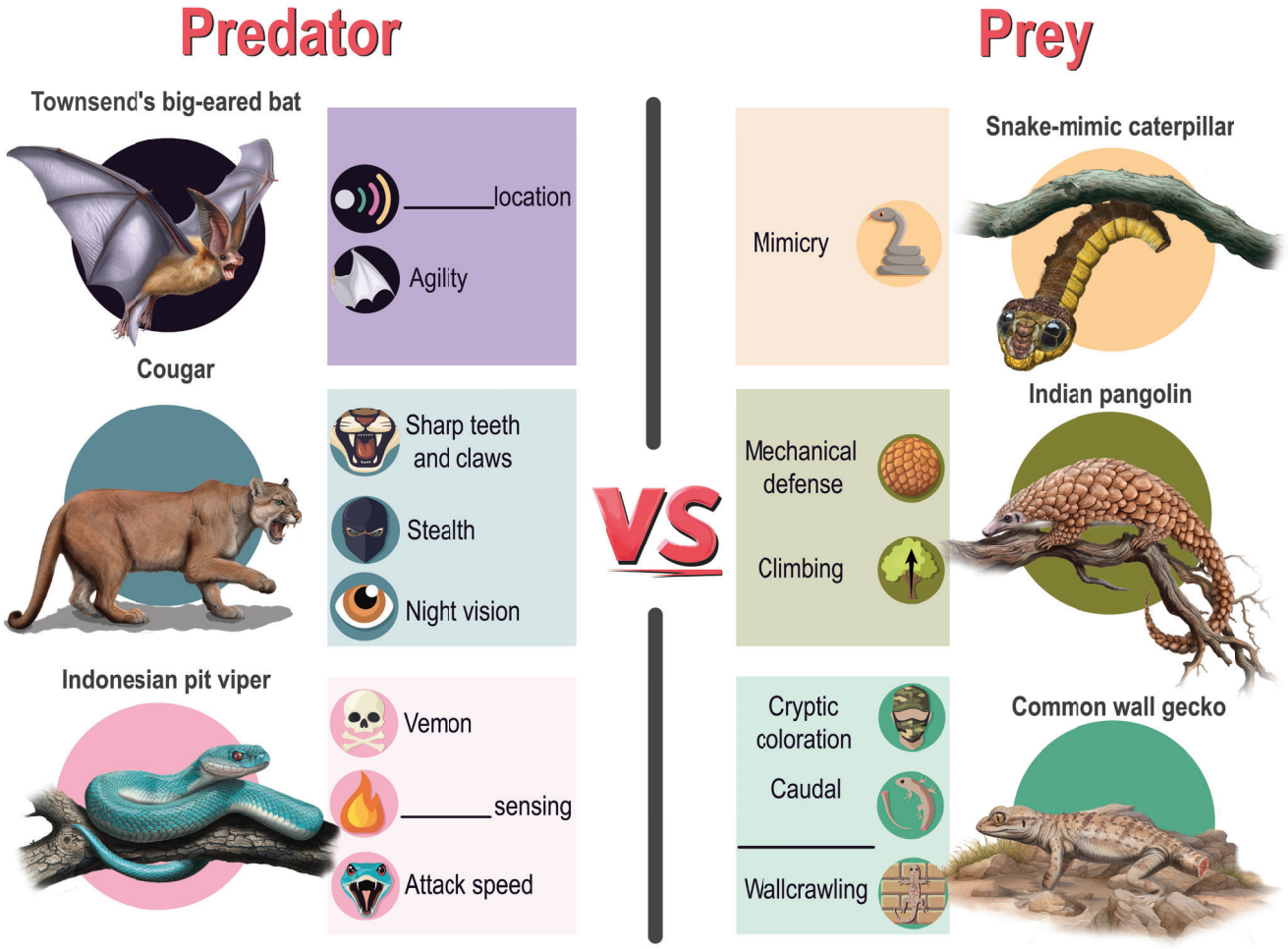
Predator & Prey Adaptations

◆ Predators & prey have evolved adaptations to help them survive:



PRACTICE

Bats have evolved to use echolocation (emitting high-frequency sounds & listening to the returning echoes) to catch their prey. Some species of moth can perceive the high-pitched echolocation noise emitted by bats, helping them avoid becoming easy prey. This case is an example of _____.

a) Competitive exclusion.
b) Camouflage.
c) Mimicry.
d) Coevolution.

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Prey Defense Mechanisms

- Here are some other defense mechanisms used by potential prey that you should know about:
- **Behavioral Adaptations:** e.g. running/hiding from predators, living as part of a group/_____, active self-defense.
- **Aposematic Coloration:** "_____" coloration – bright colors signal that the animal is unpalatable.
- **Mimicry:** _____ another animal, plant or inanimate object. There are 2 major forms of mimicry:

- **Batesian Mimicry:** harmless species mimics a _____ one

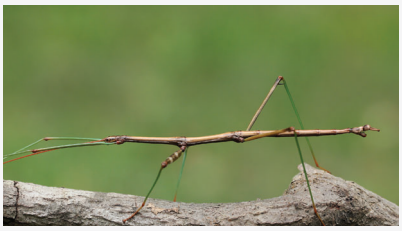
- **Müllerian Mimicry:** ≥2 harmful/unpalatable species share a _____ coloration

Batesian is a **B**luff, **M**üllerian has **M**utual benefits.

PRACTICE

Some stick insects can change color to blend in with their surroundings. This is an example of:

a) Cryptic coloration.
b) Batesian mimicry.
c) Müllerian mimicry.
d) Aposematic coloration.



PRACTICE

There are over 175 species of poison dart frogs, all with bright coloration that warns potential predators to stay away. It's not just an act, though; poison dart frogs are extremely toxic and most animals that attempt to eat one will end up paralyzed or dead. Which 2 defense mechanisms do poison dart frogs exhibit from the options below?

a) Aposematic coloration & Batesian mimicry.
b) Aposematic coloration & Müllerian mimicry.
c) Aposematic coloration & mechanical defense.
d) Cryptic coloration & Müllerian mimicry.

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2) Exploitation (+/–): Herbivory

◆ **Herbivory:** when an organism (herbivore) consumes _____, algae, or photosynthetic bacteria.

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- Some plants have _____ defenses (thorns, spikes); others have chemical defenses (e.g. toxins).

_____ mouth/teeth

_____

3) Exploitation (+/–): Parasitism

◆ **Parasite:** an organism that lives in or on another organism (the host), _____ resources from it.

- **Ectoparasite:** lives _____ the host.
- **Endoparasite:** lives _____ the host.

} Often not fatal to host

- **Parasitoid:** lays _____ on/in host; larvae feed on host when they hatch & is usually _____ to host.

_____parasite

_____parasite

Parasitoid

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EXAMPLE

Which of the following is an example of a parasitoid?

a) A tapeworm living inside a human's intestine, feeding on the food ingested by the human.

b) A nematode inside an ant causing the ant to display its reddened posterior area, in the hope a bird eats it.

c) A tick that bites a dog and extracts its blood.

d) A wasp that lays its eggs in a caterpillar; the larvae then eat the caterpillar when they hatch.

PRACTICE

Which of the following is not an example of exploitation?

a) A roundworm living inside a dog's intestine, taking nutrients from the dog while harming it in the process.

b) A giraffe eating leaves off a tree.

c) A robin swooping down to eat an earthworm.

d) These are all examples of exploitation.