

Gross Symbiosis

4th
Grade



Gross, gross, gross...
COOL, but GROSS!
I'm glad humans
have nothing to do
with symbiosis.

Don't you
know how
digestion
works?

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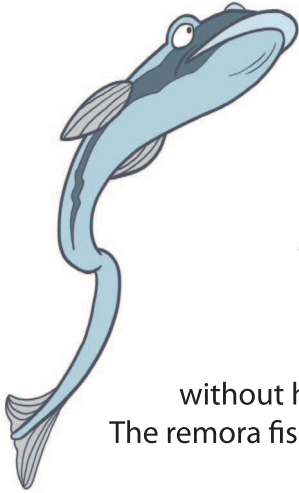
Gross Symbiosis

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Symbiosis Vocabulary



Symbiosis: A relationship between two unrelated organisms living closely together.

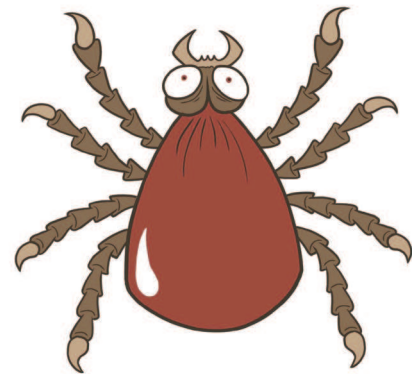
Mutualism: Both members of the symbiotic relationship benefit from each other.

Commensalism: A symbiotic relationship where one organism benefits without harming or benefiting the other. An example of commensalism is the remora fish. The remora fish follows larger fish and eats the scraps that remain from the larger fish's feeding.

The remora fish

Parasite: An organism that harms another organism in a parasitic relationship. An example of parasitism is the tick. The tick latches onto a host organism and drinks their blood and, in some cases, may pass on diseases to the host.

Host: The organism a parasite harms in parasitic symbiosis.



The parasitic tick



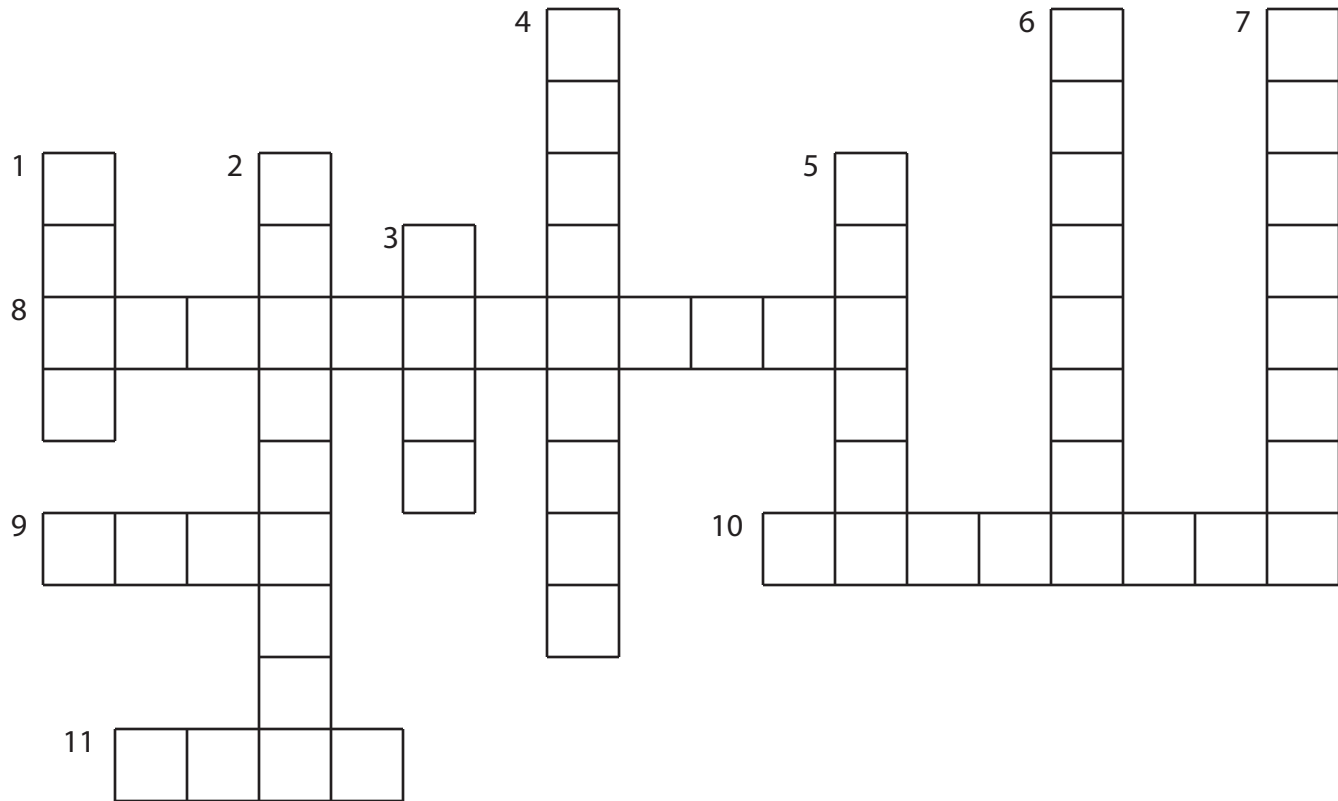
A barnacle

Ectosymbiosis: A symbiotic relationship where one organism lives on the surface of another. An example of ectosymbiosis is the barnacle. Barnacles are creatures that live on the surface of large sea creatures in order to feed on the remains of a larger animal's meals.

Endosymbiosis: A symbiotic relationship where one organism lives inside another organism. Bacteria live inside the bodies of organisms and aid in the digestive process.

Symbiosis Vocabulary Crossword Puzzle

Use the vocabulary words from the previous page to solve the crossword puzzle.



Down

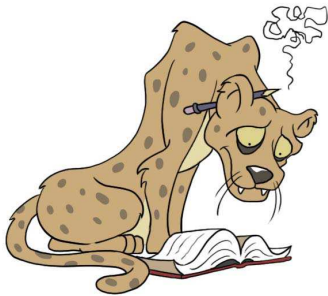
- 1: A parasitic organism
Hint: a clock goes "____ tock!"
- 2: A relationship between two organisms.
- 3: ____ symbiosis, when one organism lives inside another.
- 4: A symbiotic relationship where both members benefit.
- 5: A fish that practices commensalism.
- 6: Organisms that aid in the digestive process.
- 7: An organism that harms another in their relationship.

Across

- 8: A relationship where neither organism is harmed or benefits.
- 9: ____ symbiosis, when one organism lives on the surface of another.
- 10: A creature that lives on the surface of large sea creatures.
- 11: The organism that a parasite attaches itself to.

Howdy Partner

The animals on the left have problems they can't handle alone. Match them with the animal on the right that can help them.



I'm no cheetah, I need help with my homework!



My yard is a mess!



I'm not lion, I need a new hair-do.



These kids are driving me bananas!



Hairdresser



Babysitter



Gardener



Tutor

Symbiotic Partner Application

An elephant is looking for a symbiotic partner and has created a job application for all interested animals to fill out! Pretend you're applying for the job and fill out the questionnaire below.



NAME: _____

ADDRESS: _____

How did you hear about this job?

What days and times are you available to work?

How will you help me:

Clean myself?

Find me food?

Warn me when I'm in danger?

Do you have a reliable mode of transportation? _____

If yes, please specify your source: wings__ feet__ fins__ another animal __

Think back on your past jobs. Describe a time you saw an animal in need and what you did to help it.

What are your strengths as a symbiotic partner? What are your weaknesses?

Please list any special talents you have that no other animal has.





Lifestyles of the Wild and Woolly



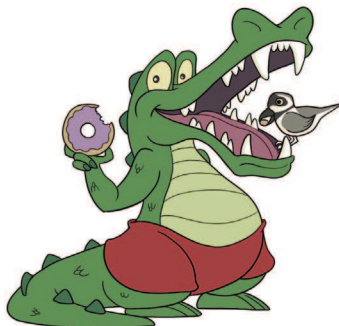
These animal pairs dish out the dirt on their symbiotic relationships. Match the statement to the wild couple.



"My honey helps me find honey by flapping his wings and chirping when he spots a hive. In return, once I'm able to get some I share with him."



"My teeth are so big and I eat so fast that sometimes tiny bits of food get stuck in my teeth. My lady is able to use her tiny beak and pick the food scraps out of my mouth. She gets a meal, and I have excellent dental hygiene – brings new meaning to the term 'eats like a bird!'"



"I'm a big guy, so I can't fit underground very easily, where most of my food lives. She uses her small size to dig underground and find me food."



"I've never had a great sense of smell, but my guy is great at it. It's the opposite for eyesight – he can't see well, but with my long neck, I get a great view. Whenever he smells trouble or I see danger, we warn the other."

Critter Closet Caper

Think about how symbiotic partners work. Look at the pictures below and see if you can come up with a way for the animal to use the object!

Hint: If you can't think of a way for the animal to use it, that's okay! Instead, write why the object wouldn't help the animal.



How could a cheetah use a hat?

How could a hippo use a scuba suit?

How could a bird use a pair of glasses?

How could a bear use a beekeeper suit?

How could a penguin use a pair of shoes?

How could an elephant use a fork?

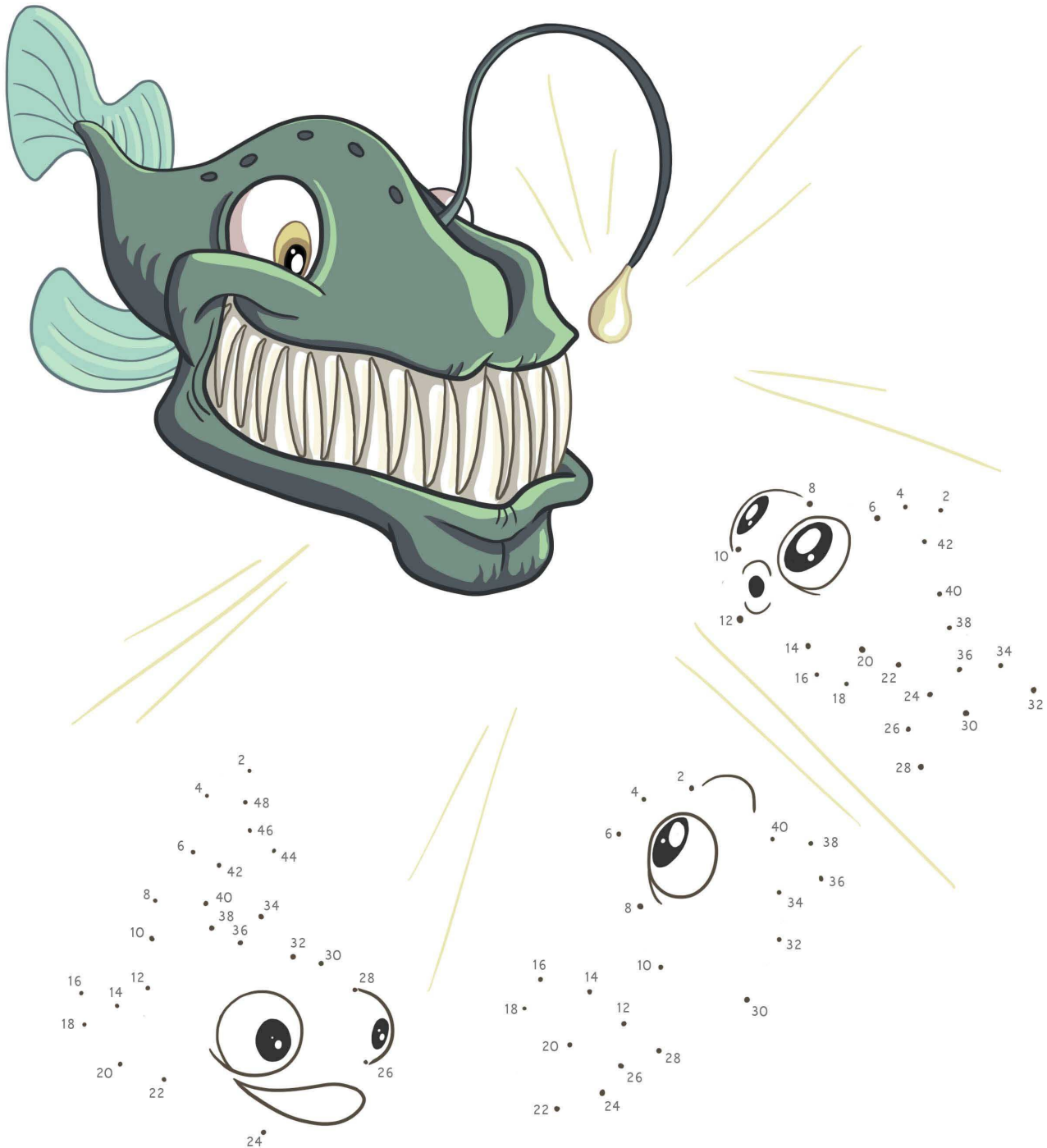
DENTAL DILEMMA

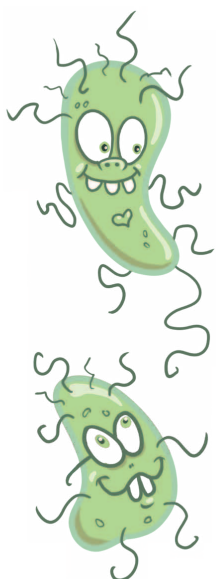
Birds and hippos have a symbiotic relationship. The bird helps the hippo keep his teeth clean by eating food stuck between the hippo's teeth. Draw what kind of gross things you think would be in a hippopotamus's mouth.



Dive and Seek

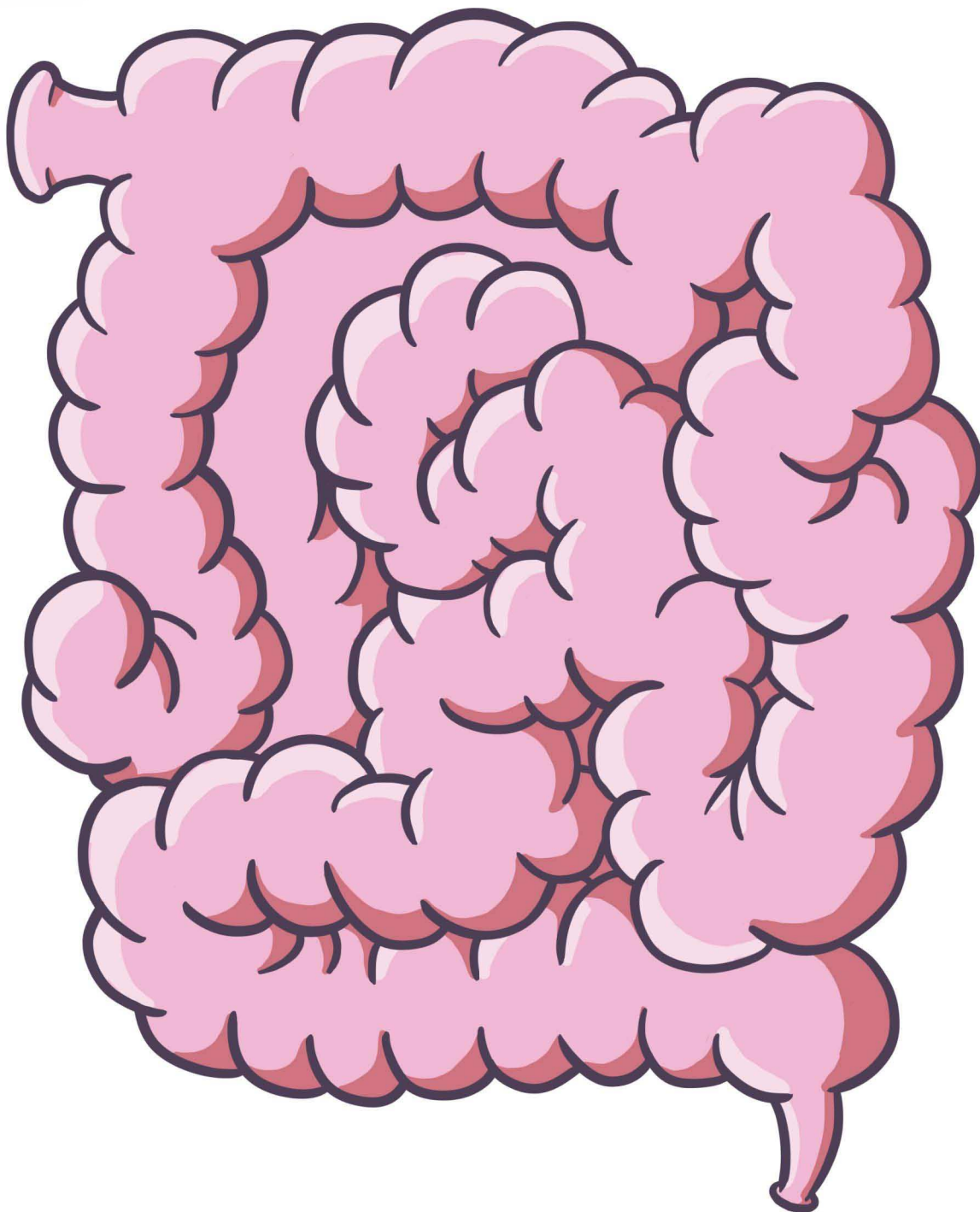
Angler fish live deep in the ocean, deeper than even sunlight can reach. It's so dark at the bottom of the ocean that the fish have to adapt to new ways of finding food. The angler fish has a symbiotic relationship with glowing bacteria. The bacteria live inside the angler fish's antenna and produce a light that helps the fish find food in exchange for leftovers. Connect the dots to help the angler fish find food.





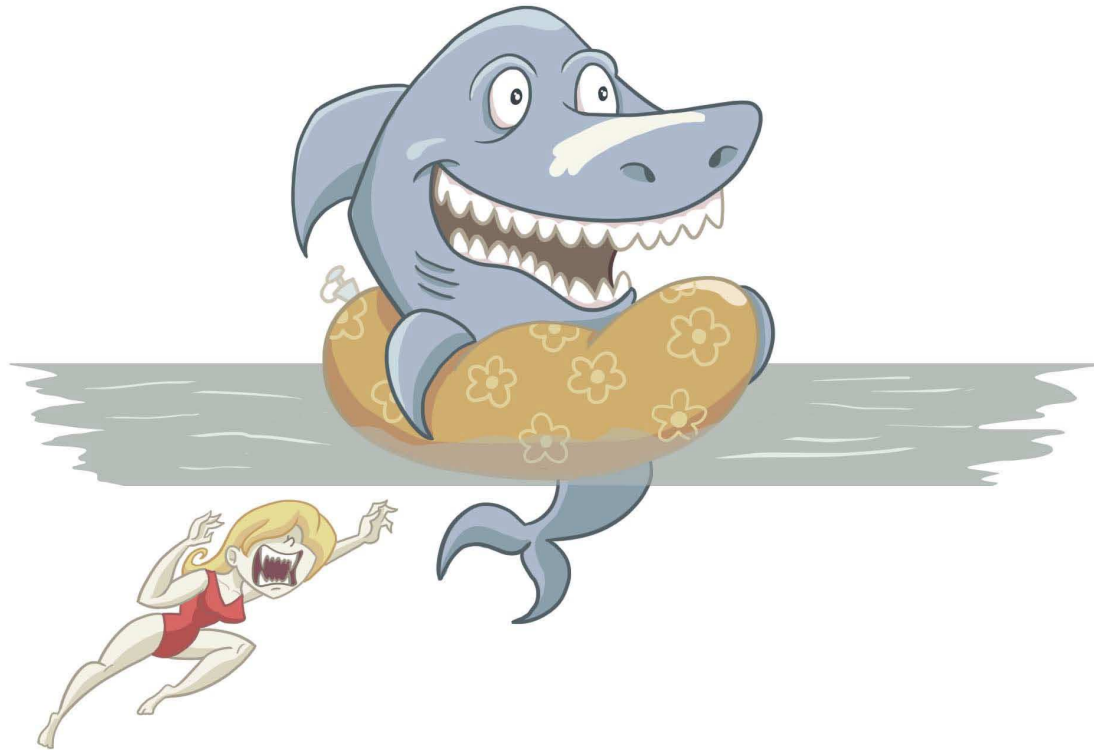
BACTERIA MAZE

Some symbiotic relationships happen inside of you!
Bacteria lives in the stomach and intestines of many living things to help them break down food.
Help the bacteria find their way out of the intestines!



Take a Walk on the Wild Side

Read the scenarios below and decide what would happen if a human tried to act like an animal!



Tree sloths let algae grow in their fur. The algae helps camouflage it when it's hanging in the tree, which is also covered in algae.

What would happen if a human lived in a tree and let algae grow on it?

Mosquitoes feed off of blood. They bite humans and other animals and suck their blood. This leaves an itchy bump in the area the mosquito bit.

What would happen if a human tried to bite another animal...or another human?

Some fish allow themselves to be cleaned by smaller fish. The large fish will go to a certain spot where smaller fish like wrasses and catfish will eat parasites, mucus and dead tissue off the large fish.

What would happen if a human tried to clean parasites and dead tissue off a fish?

In your opinion, what's the grossest scenario on this page? Why?

Manimal

Read the scenarios below and decide what would happen if a human tried to do what these animals can!



Sea anemones sometimes use hermit crabs as transportation. The anemone gets a ride and gets to eat the crumbs of whatever the crab eats. As a thank-you for its help, the anemone will fend off predators with its barbed tentacles, and the crab will defend the anemone from its predators as well. What would happen if a person tried to ride a hermit crab?

The plover picks leftover food from the teeth of the crocodile. The bird gets a meal, and the crocodile gets to stay clean.

What would happen if a human tried to pick food from the mouth of a crocodile?

The oxpecker picks parasitic bugs off of the skin of large animals. This helps the animal, but it can also harm it. The oxpecker picks at scabs and wounds left by the bugs, eating blood and skin.

What would happen if a human did the oxpecker's job?

In your opinion, what's the grossest scenario on this page? Why?

NEED a HOME

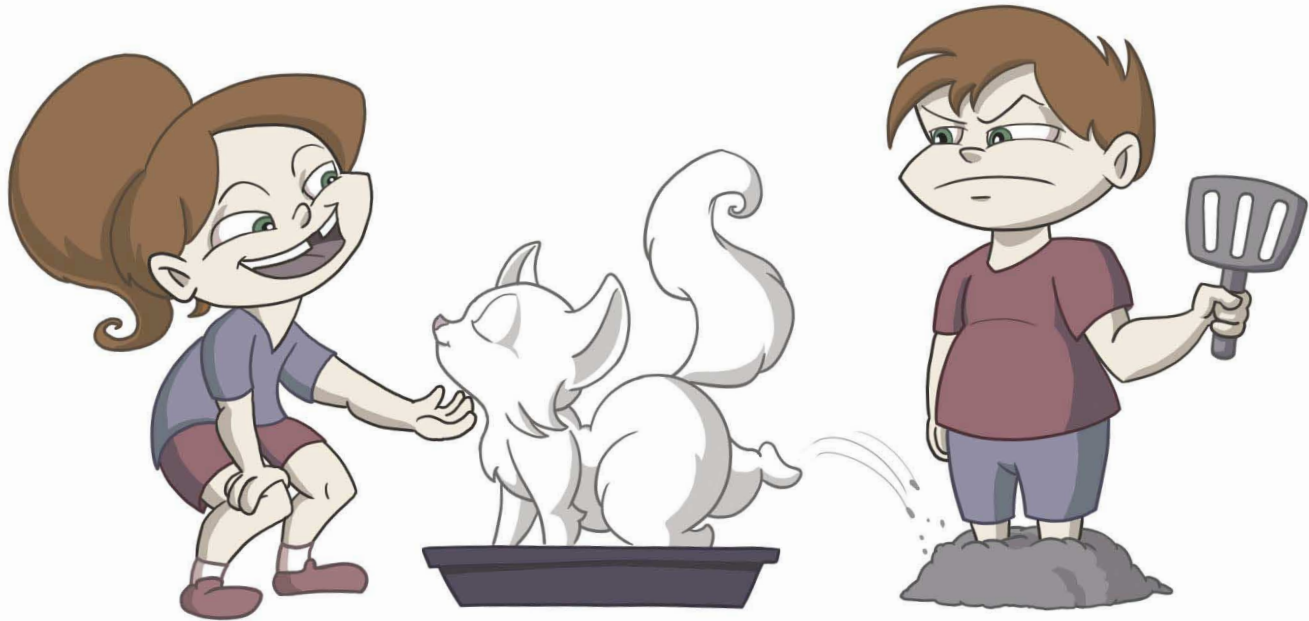


This leech needs a new symbiotic partner to live on. Leeches are parasites and give nothing back to their symbiotic partner. Help the leech write an ad that puts a positive spin on his parasitic nature.

A large, rectangular area with a torn, aged paper border, containing five horizontal lines for writing.

Symbiosis at Home

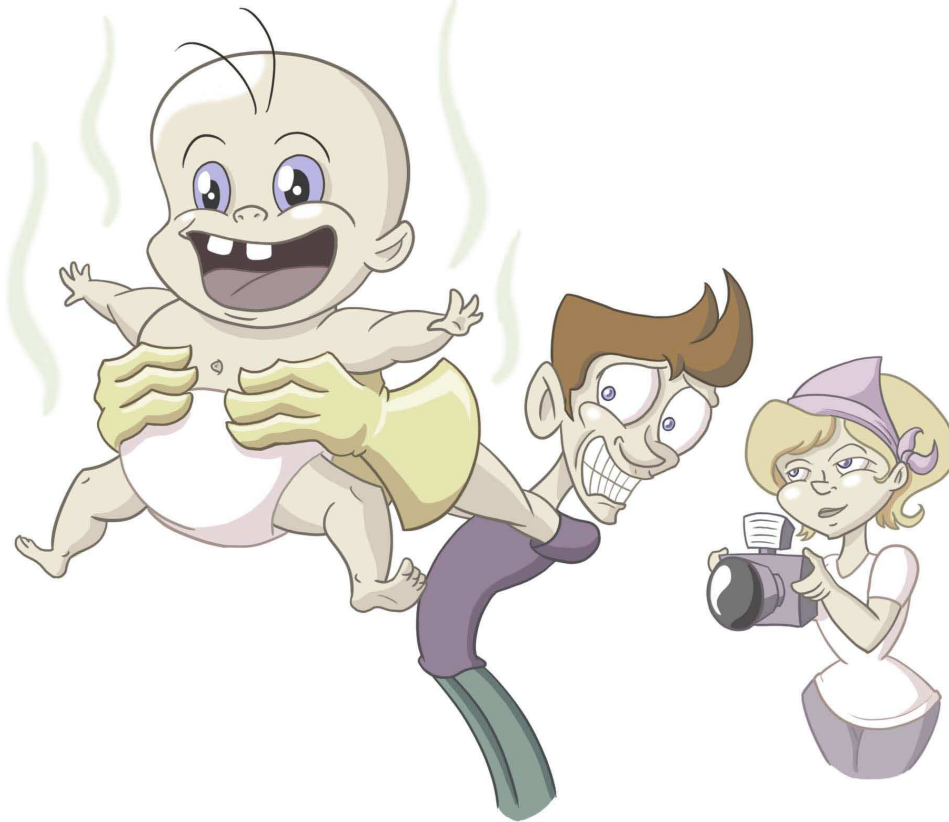
People and Pets



Do you have a pet or know someone with a pet? Pets and their owners have a symbiotic relationship. Write about the symbiotic relationship between pets and their owners. What kind of things do you do for your pets? Do you feed them or clean up after them? What does your pet do for you? Do they protect you or comfort you?

Symbiosis at Home

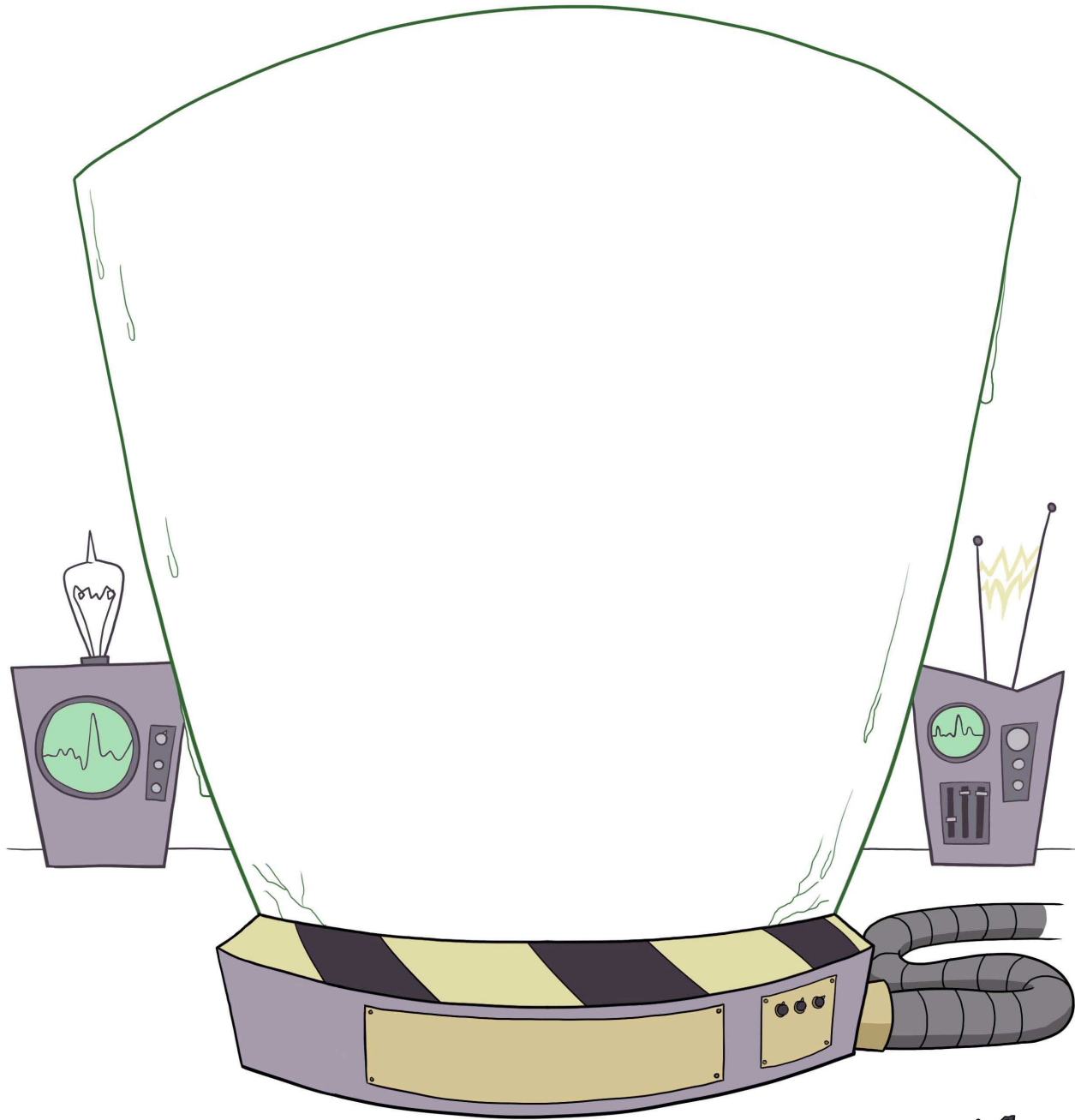
Parents and Children




Did you know that you have a symbiotic relationship with your parents? Your parents help you every day in ways you may not have thought of. Write about the relationship you have with your parents. Are there things your parents do for you that you couldn't do alone? Do you do things to help your parents?

Create a Creature!

Imagine an animal that can do everything on his own! What would he need in order to take care of himself with no help from a symbiotic partner? Would it have wings, legs or fins? Would it have fur, scales or skin? Draw a picture of it below, then write about four of its unique features on the lines at the bottom.







Great job!

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