

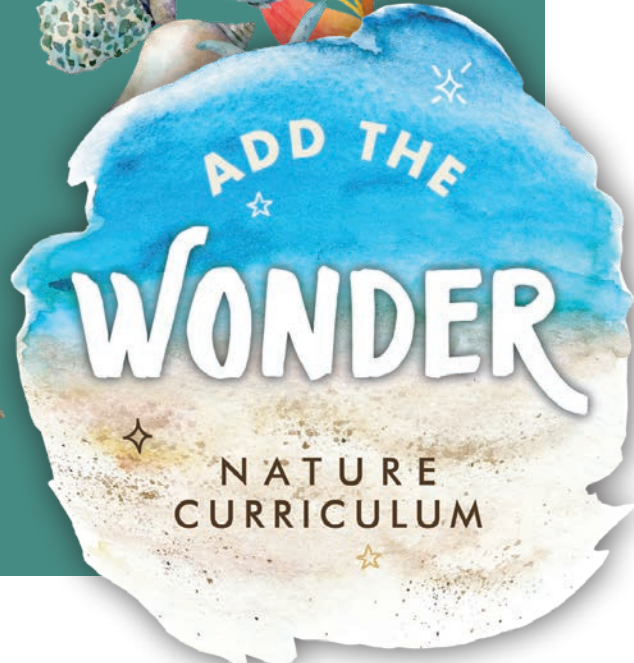


ODD COUPLES

1000 Hours Outside Official Curriculum for home educators, nature schools, and anyone who wants to learn fascinating things!



-Created by Ginny Yurich, M.Ed. and Julie Schultz, homeschool mom of eight



ADD THE
WONDER

NATURE
CURRICULUM

Welcome to Add the Wonder!

Home education is the best decision we've ever made for our personal families. According to the National Home Education Research Institute, homeschool kids typically score 15 to 30 percentile points higher than public-school kids on standardized academic achievement tests - and that is regardless of parent's education level, household income, and even homeschool methodology.

What may feel risky because it is somewhat out of the norm, or different from your own childhood, actually is not risky at all and in fact has the potential to give your child a bit of an edge when it comes to academics, social skills, and the list goes on.

Homeschooling lays out an entire childhood in front of you and leaves you with the exciting, but daunting task surrounding how you will structure your days, weeks, and years. What sort of a life will you craft?

Add the Wonder Nature Curriculum is designed to be cross-curricular, multi-age, and affordable but more than that it was written to capture attention through the fascinating things and interconnections that are already embedded in our world. For example, learn about the layers of our atmosphere through Ruppel's Griffon Vulture, the highest flying bird in the sky. Or learn geography and math as you map out where parrotfish poop out the sand that makes up 80% of the tropical sand in the South Pacific.

Add the Wonder was also created to be completed quickly. The world is out there, ready to explore and enjoy. Childhood was not meant to be spent at a desk. Free play in nature is a key to enhancing the development of children and we need to hand time back to them in order for them to thrive. In a family setting, you should be able to complete your daily work in around an hour or less. Add a few math pages and some writing and you'll leave the rest of your life open for additional natural learning opportunities.

Each Add the Wonder unit is eight days and will take your family through two weeks of your school year. You can currently purchase these units individually, which cover two weeks of curriculum or in packs of five, which cover ten weeks of curriculum. A traditional school year is around 40 weeks but many homeschool curriculums are 30 weeks. With Add the Wonder you can choose your length and since units can be purchased individually they can also be used to enhance a particular vacation, a nature school, or summer learning. For those looking to fill a 180-day school calendar, take a week after every two units to do a deeper dive into the topics you found most enthralling. Go on field trips. Watch documentaries. Create a presentation. Read absorbing books. Enjoy a slower pace.

Life does not come in neat and tidy subject-defined boxes. There are captivating connections that run through all of the subjects that we call school and it's these connections that help us become more curious, more knowledgeable, and ready to learn other things that pique our interest. Add the Wonder gives the gift of enjoying it all together as a family, capturing the multitude of benefits that come through multi-age learning environments.

If you've been looking for a curriculum that you can complete as a whole family, that naturally weaves subjects together, that protects those open spaces of time kids need to thrive, that is affordable, and that will leave you slack-jawed in wonder - you've come to the right place.

-Ginny Yurich, M.Ed. and founder of 1000 Hours Outside and Julie Schultz, homeschool mom of eight and unit study expert

YEAR ONE PRICING:
Individual Units - \$16/each



YEAR ONE PACKS

BUNDLE ONE	BUNDLE TWO <i>(available Monday, September 12)</i>	BUNDLE THREE <i>(available Monday, November 14)</i>
Clouds Sand and Soil Owls Mushrooms Odd Couples	Migratory Animals Trees Animal Poop Sunflowers River Animals	Caves Seeds Bears Animal Homes Natural Disasters

WEEK 1:

- Day 1: Symbiosis and Mutualism
- Day 2: Mutualism in the Tropical Rainforest
- Day 3: Mutualism in the Ocean and Sea
- Day 4: Mutualism in the Grasslands

Supplies Needed:

- Whatever materials you need to complete your research project

WEEK 2:

- Day 5: Mutualism in the Tundra
- Day 6: Mutualism in the Taiga
- Day 7: Mutualism in the Desert
- Day 8: Mutualism in the Garden

RECOMMENDED BOOK LIST:

- Good Friends: Animal Mutualism by In-Sook Kim
- Symbiosis: How Different Animals Relate by Bobbie Kalman
- Amazing Animal Friendships: Odd Couples in Nature by Pavla Hanackova
- Animal Partners by Scott Cohn
- Animal Sidekicks by Macken Murphy
- Over and Under the Rainforest by Kate Messner
- The Rainforest Book (DK) by Charlotte Milner
- A Walk in the Tundra by Rebecca L. Johnson
- A Walk in the Desert by Rebecca L. Johnson
- About Habitats: Grasslands by Cathryn Sill
- The Forested Taiga: A Web of Life by Philip Johansson
- Up in the Garden and Down in the Dirt by Kate Messner
- Ocean Anatomy: The Curious Parts and Pieces of the World Under the Sea by Julia Rothman
- The Boreal Forest: A Year in the World's Largest Land Biome by L.E. Carmichael

All of nature in the ecosystem is interconnected in some way. When we study one nature topic, it naturally leads into the study of other nature topics and that cycle of learning will continue for your whole life as long as you are willing to add the wonder of nature to your days!

Over the next few weeks, we will be learning about creatures, and even a few plants, that depend on each other to survive. This is different from animal babies needing their mom or dad to take care of them. The animals and plants we will be studying are completely different species! Sometimes both organisms benefit from each other and sometimes just one organism benefits from the other.

First let's start by defining the term symbiosis.



Symbiosis is a relationship between two different species

There are 3 general types of symbiosis:

- MUTUALISM
- COMMENSALISM
- PARASITISM

In this unit, we will be focusing on mutualism, but let's learn about all 3 types first.



MUTUALISM

Mutualism is a type of symbiosis where both organisms are benefited. In simple words—the relationship between the two organisms is good for both of them! This is the form of symbiosis we will be learning about in this unit study. It's a win-win for both species because they are helping each other to survive!

One example of mutualism in humans is the relationship that we have with a certain type of bacteria that lives in our digestive system. Millions of *Escherichia coli*, also known as *E. coli*, live in our intestines and benefit from the food that we eat and the cozy living environment. In turn, humans benefit from *E. coli* because they help make certain vitamins that are necessary for our health, such as Vitamin K. *E. coli* also helps to regulate our immune system and keep us healthy by killing off pathogens, or germs. Recently, scientists have found that *E. coli* also produces a compound that helps humans produce necessary iron for their bodies. Some forms of *E. coli* can make us sick, but most are beneficial to humans.

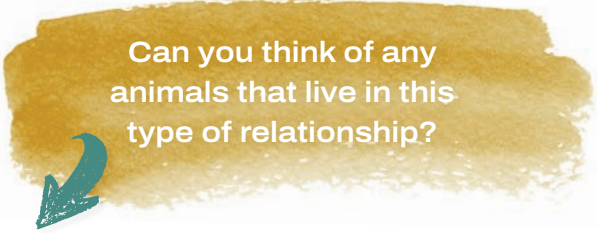
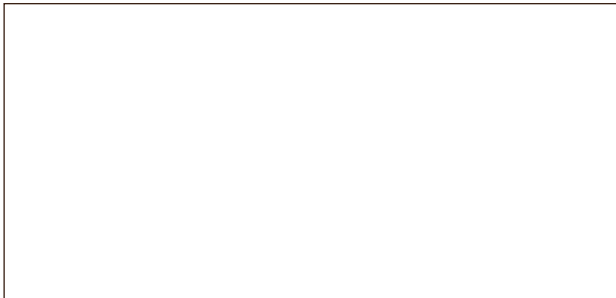
Have you ever heard of vitamin K? As we read above, *E. coli* helps humans produce and absorb this essential vitamin. Research this vitamin and tell about it here or in your notebook.



COMMENSALISM

Commensalism is a type of symbiosis between two living things where one organism benefits from the other, but it does not benefit or harm the other organism. This benefit can be food, shelter, a way to travel from place to place, or other support.

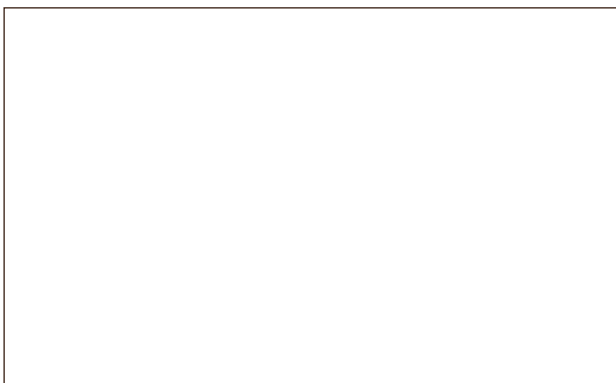
This type of symbiosis can be a short term interaction or a life long relationship. The organism that benefits from the relationship is called the commensal and the other organism is called the host.



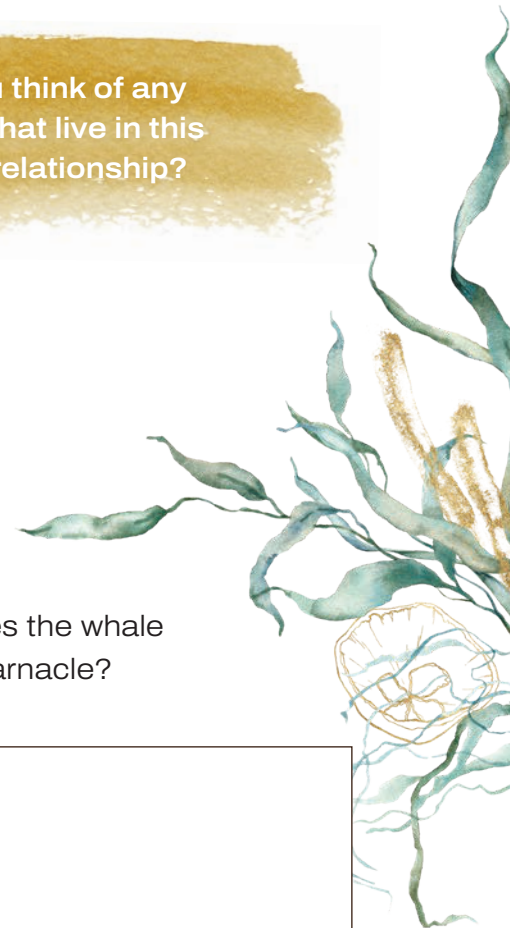
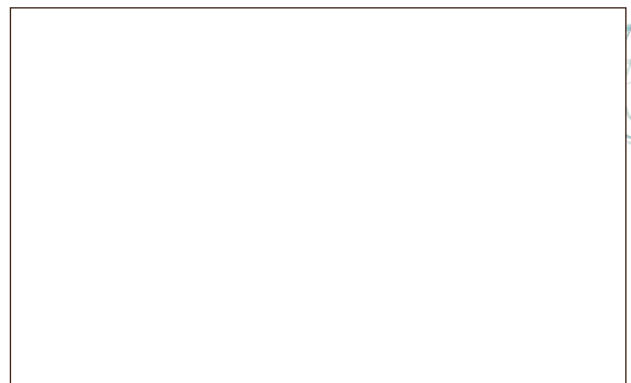
Can you think of any animals that live in this type of relationship?

One example of commensalism is barnacles attaching to a whale. Look up pictures of barnacles on whales.

What is a barnacle? Describe or draw one below or in your notebook.



What benefit does the whale provide for the barnacle?



PARASITISM

Parasitism is where one organism benefits and causes harm to the other organism. The term “parasite” comes from the Greek word parasitos which literally means “eat at the table of another.” There are two types of parasites—endoparasites and ectoparasites.

Let’s try to define those terms by defining their prefixes. A prefix is a word put at the beginning of another word to make a different meaning. Look up the prefixes endo and ecto and define them below or in your notebook.

ENDO DEFINITION

ECTO DEFINITION

Now that you know the definition, where do you think endoparasites live on the host? What about ectoparasites? If you said that ectoparasites live **ON** the animal, you are correct! Endoparasites live **IN** the animal. Can you think of examples of each and discuss with your family?

Believe it or not, almost half of all known species are parasites. While they sound bad, they are very important to our ecosystem because they help to control species overpopulation. The presence of parasites usually suggests a healthy ecosystem!

SYMBIOSIS INVESTIGATION

It's time for you to be scientists and decide what type of symbiosis is happening in each of these scenarios. Are both organisms being benefited? Is one organism benefited but the other not affected? Or is one organism being benefited and the other being harmed? You can find the answers in the answer key at the end of the unit.

Cattle or horses move through the pasture and stir up insects that were hiding in the grasses. Cattle egrets, which are birds, follow the cattle to catch the insects. When not eating the insects, they ride on the backs of the cattle or horses but they are light and do not cause pain to the cattle or horses.

WHICH ORGANISM IS BENEFITING?
IS EITHER ORGANISM BEING HARMED?
WHAT TYPE OF SYMBIOSIS IS THIS AN EXAMPLE OF?

Birds are nesting in the preexisting hollows of a tree.

WHICH ORGANISM IS BENEFITING?
IS EITHER ORGANISM BEING HARMED?
WHAT TYPE OF SYMBIOSIS IS THIS AN EXAMPLE OF?



Your head starts itching and you find tiny little lice on the hairs of your head. Lice feed on your human blood multiple times per day.

WHICH ORGANISM IS BENEFITING?
IS EITHER ORGANISM BEING HARMED?
WHAT TYPE OF SYMBIOSIS IS THIS AN EXAMPLE OF?

A cuckoo bird lays eggs in a nest of another bird hoping that other bird will raise her babies. So that the other bird doesn't notice, the cuckoo removed one or more of the birds eggs from the nest.

WHICH ORGANISM IS BENEFITING?
IS EITHER ORGANISM BEING HARMED?
WHAT TYPE OF SYMBIOSIS IS THIS AN EXAMPLE OF?



A spider crab lives in the shallow areas of the sea, which leaves them wide open to predators. Algae makes its home on the backs of the spider crab, camouflaging the spider crab.

WHICH ORGANISM IS BENEFITING?
IS EITHER ORGANISM BEING HARMED?
WHAT TYPE OF SYMBIOSIS IS THIS AN EXAMPLE OF?