

NATURE DETECTIVES

Fall 2023



Please Pass the Peas!

What's a Pea?

Everyone knows that! It's a round green thing you stab with a fork or balance on a spoon and eat. But did you know that a pea is also a bean? What?

It's All in the Name

Peas and beans are actually like first cousins in the same family. Their family name is "Legumes." When we say "The Legume Family" we are talking about peas or beans or both.

Where Do Beans and Peas Grow?

Did you know that peas and beans grow naturally in the wild as well as in our farm fields? The Pea/Bean Family – The Legume Family – is one of the biggest plant families on earth! It's found on every continent except Antarctica. It includes tiny plants in alpine areas to gigantic trees in the tropics. We have plenty of wild ones in Boulder County, too.

How Can You Tell It's a Member of the Pea/Bean Family?

Whether you are on a farm or in the forest, you can tell a member of the Legume Family by its beautiful flower, which looks like butterfly wings.

And yes, peas are usually round and green and beans are usually oblong (but not always). Beans come in wider range of colors and patterns than peas. There are other differences, too, but here we will focus on their similarities as members of the same family.

The part we eat is the plant's fruit! The fruit we harvest—the bean or pea—is actually next year's seed! When we plant it, we call it the seed.



True Story



A shopper in a store selling bulk beans and peas once brought a pound of beans and a pound of peas to the checkout counter and asked the clerk, "Where do you have bean and pea seeds? I want to plant some." What do you think the clerk said? ("You just bought them!")

How do Beans, Peas, People, and Land work together?

People have been growing legumes for at least 8,000 years to eat and feed cows, pigs, and chickens. In our county farmers and gardeners

grow all kinds, including pinto beans, soybeans, alfalfa, clover, garden peas, field peas, green beans, runner beans, butter beans, and broad beans (favas).

Our many native wild peas/beans in Boulder County are members of wild habitats. You might know them as vetches, clovers, wild peas, lupines, locoweeds as well as honey locust, licorice, lead plant, golden banner, and more. One of our favorite pollinators – native bees – really likes legume flowers.

The Legume Family Does Something Very Special and Unique

It's something most other plants cannot do. Animals and people can't do it.

It all starts with a gas called nitrogen.

Humans, animals, and all other plants need this gas, nitrogen, to grow, live, and be healthy. We can't grow and live without it.

There's lots and lots of nitrogen in the air around us. But we humans, animals, and other plants can't just take it from the air and "eat" it. Just like we can't eat a raw pinto bean. Water has to boil and soften the bean so our bodies can digest it.

So how on earth do humans, animals, and other plants get to "eat" all that free nitrogen?



Bean and Pea Plants to the Rescue!

The roots of legume plants develop special bumps on them that are hollow inside. These bumps are home and workplace for a very special kind of bacteria. Bacteria are itsy bitsy organisms. These particular ones are our nitrogen heroes. They find air flowing through tiny passageways in the soil. In that air is nitrogen. The special bacteria pull the nitrogen into the bumps where they live and then . . .

special bacteria are at work inside these special bumps, called nodules, fixing up nitrogen gas for the plant – and the rest of the world – to use.



Then they fix up the “raw” nitrogen so the pea and bean plant whose roots they live on can “eat” it. That’s how nitrogen gets into the pea and bean plants! Then animals eat the bean and pea plants. People harvest, then boil and eat the beans and peas or we eat animals that ate the plants.

Other plants get their nitrogen when the bean and pea plants die back in the winter, decay, and the nitrogen (and other good stuff) in them goes back to the soil. The other plants can then slurp up the nitrogen from the soil.

This way, everyone can have nitrogen. This makes the legume family a very important family! We are very lucky the pea and bean family is everywhere on earth, including our home, Boulder County.



Activity: Be a Legume Family Gardener!

In the fall, ask a farmer or gardener (at school or in your community) if you can harvest a bean or pea from a legume plant. Or go to a farmers' market and buy a few beans or peas.

Ask the farmer, "what was it like growing peas and beans this year? What time of year do you plant these beans/peas? Do they need anything special to grow?"
Save one bean or pea (or one of each) all winter in a safe, dry place.

In late spring, plant your pea or bean in a plastic food-grade bottle with some good garden soil. Or plant one of each in separate bottles. Ask an older person to help saw the top off the bottle first so you have a little planter for each seed.



Transplant your new little plant into a big pot or directly into good soil outdoors. You could ask a gardener friend if they would let you transplant– or plant directly– one bean or one pea in a garden, then let you come back and tend your pea or bean plant for the season and watch it grow.

At harvest time next year, you get to pick lots of new beans or peas from your pea or bean vine or bush. What do you think of this: that one small pea or bean turned into many peas or beans! How many did you get? From one small pea or bean, with careful tending and watering, you can (with the help of an older person when cooking) feed your family a main dish!