

Nodule Hunt



Nodules full of Rhizobia on Partridge Pea roots

Some types of plants have special bacteria “friends” called **Rhizobia**. We learned about these last year when you **inoculated** your beds with Rhizobia using a big syringe! Rhizobia live in **nodules** on the roots of their plant **hosts**. Nodules (circled in the photo above) are little pink-ish microbe houses where millions of **Rhizobia** live and help their plant buddy grow! Check out the next page to learn how Rhizobia and plants work together.



We need you to help us find Rhizobia on the roots of your Partridge Pea, which are the plants that look like the one to the left.

If you have fewer than 10 Partridge Pea plants, you should do this activity with some **clover** from your yard instead!

Now find a Partridge Pea plant, grab the stem right where it comes out of the soil, and gently pull it out of the ground. Pull carefully so that you don't break the roots! Don't worry — by weeding out some of the plants, it will let the rest of the plants grow bigger!

How many Partridge Peas did you pull up? Be sure to leave at least 10 plants in your bed

How many of those plants had nodules?

Try looking at the nodules with your magnifying glass, and **draw them here** →

The Legume- Rhizobia Symbiosis Step by Step



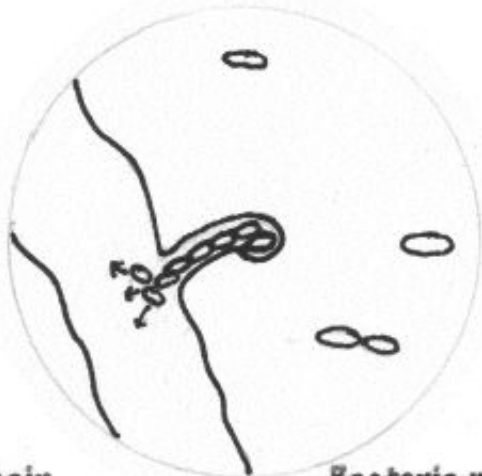
Rhizobial bacteria live in the soil.

Seeds germinate & roots grow



Plant signal to attract bacteria

Bacteria secrete sugars to signal identity



Root hair curls around rhizobia

Bacteria multiply & move towards root



Root nodules begin to form

Bacteria are engulfed by plant cells



Plants give bacteria Carbon (energy)

Bacteria provide Nitrogen to plants

Plants grow bigger due to N

When plants die, bacteria return to soil

