



[Painter Avenue](#) is a street in Whittier, California. This 1.8 mile long street passes by a lot of interesting places like the Quad, the courthouse, civic center, Whittier College, Lydia Jackson Elementary School, and Frontier High School.

The stretch of Painter Avenue that is by Uptown has lots of large ficus trees that line each side of the street. The trees provide a lot of shade; in fact it is hard to miss their large crowns (where the branches and leaves are located).

But have you ever looked down?

For this activity we are focusing on the tree roots. Roots serve important functions for the tree including stability (keeping the tree upright) as well as taking water and important nutrients from the soil. Learn more about roots [here](#).

ACTIVITY 1: THIGMATROPISM

Roots use a process called thigmotropism in order to navigate through the soil. What this means is that roots grow away from obstacles like rocks in the soil (for more on thigmotropism, check out this [link](#)).

Why might roots do this? How does this relate to the ficus trees on Painter Avenue? Look closely at how the roots interact with their surroundings. **What do you notice? What do you wonder?**



ACTIVITY 2: ROOT-SIDEWALK INTERACTIONS

You've probably noticed that some of the sidewalks along Painter are cracked. Ever wonder why this is? You'd be right if you suggested that the tree roots are somehow involved. **But how?**

As you ponder this, remember that as trees grow, both branches and roots increase in

size. Also, remember that roots take in water from the surrounding soil.

ACTIVITY 3: WHEN WE SEE ROOTS

We normally think about roots being below ground. Why might they normally be below ground? How does being below ground help roots complete their role?

However, sometimes we see tree roots that are visible, or exposed. There are some types of trees that are more likely to have exposed roots than others, though any large tree can develop them. Still, there are some conditions that increase the chances that a tree's roots become exposed. *What do you think those are? How could we find out?*



ACTIVITY 4: YOUR TURN!

What do you want to know about the Ficus Trees along Painter Avenue? Talk about what you'd like to know about these trees (and their roots!). What kinds of questions could you explore?

If you want to keep learning about roots, here is a fun activity from [PBSKids](https://www.pbskids.org) that you might try!

