

# The Capra Dragon Fruit Adventure

## By Crystal Schalmo



Meet Adam and Hannah, the masterminds behind the dragon fruit

On a typical CoVid-19 evening, as I finished doing the dishes from a fine homemade meal, I received a text from my neighbors, Hannah and Adam, announcing their dragon fruit was flowering! Our small community had been waiting for the arrival!

Honoring pandemic protocol while remaining sane and socially connected, I began to stretch my 'bubble of safety' to include the amazing people in my little community in South Park. Our 'cottage' complex provides a microcosm of caring I've not experienced since childhood. Easy daily exchanges have developed into distanced evening gatherings where we can check in with one another, vent if needed, and offer a safe set of listening ears as we all navigate the pandemic restrictions as a community. For those able to work from home during these challenging times, forming new relationships within a small bubble can provide an outlet from the often maddening existence of pandemic life.

A few weeks prior, during one of our gatherings, Adam and Hannah shared they were expecting their dragon fruit to flower soon and were going to propagate it. As a scientist, I was drawn to their enthusiasm and thought it would be awesome to observe. When the text came through I hurriedly threw on some shoes and headed out the door. To my surprise, almost all of our neighbors joined us, including 18 month old Tatum, intrigued by the process about to take place. The initial 'ooohs' and 'ahhhs' gave way to questions buzzing from within the group as Adam brought out the jar of pollen, collected earlier from the flower, and the paintbrush.

As I watched the neighbors interact, smiling and distracted from the weight of the pandemic and the civil unrest, I had a sudden urge to share this experience with other people. The wonder and curiosity being enthusiastically exchanged, reminded me of many field and citizen scientists I had worked with over the years. After some conversation, it occurred to me that they didn't see themselves as a community of scientists. The initiation of the dragon fruit had inspired a scientific inquiry.

One of our primary goals at Green Dragon Conservation Education is to inspire life-long global stewards. Our curriculum intentionally melds the practice of mindfulness with the scientific method. I began to formulate the potential of mindfully sharing stories such as these to strengthen a new conduit for sharing and learning within communities large and small. Through mindful observations of your environment the scientific method becomes more relevant. As I reflected during this time of 'waiting' for the arrival of the dragon fruit, *Community Stories* was born!

Scientific method? Doesn't that belong in a science class? Actually, the scientific method has applications for solving any problem. Let's take a quick peek at the steps.

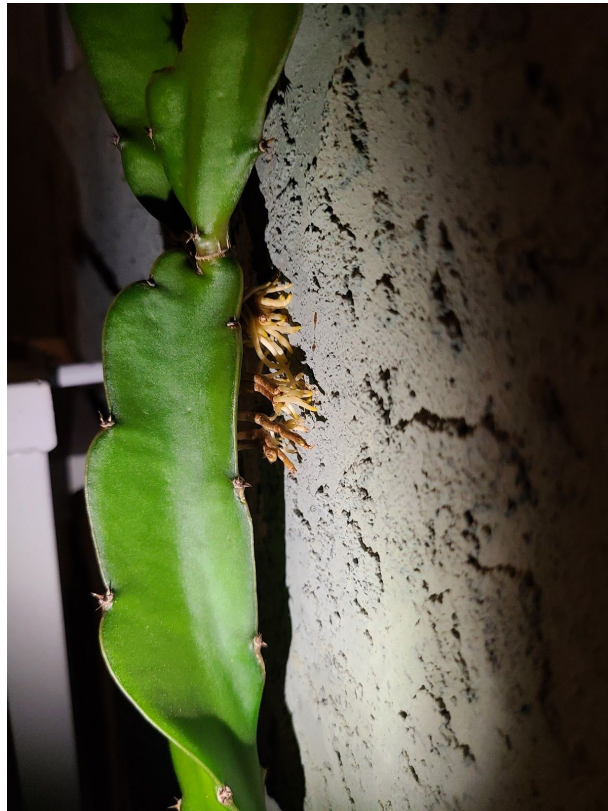
- Observe
- Develop a hypothesis (testable question)
- Experiment
- Data analysis
- Conclusion (s)
- Sharing conclusion (s)

How is this relevant to the real world? Imagine you pull a muscle. You observe you have pulled a muscle and are hurting. Next you could hypothesize what method would work best to treat the injury. Does heat or ice work? Are there exercises that would help stretch the muscle? Once you have decided on a few potential treatments, you would experiment with them and collect data on which method is working best. Your conclusion is an illustration of what works best for you and you might share your conclusions with others. You may need to present your findings to your doctor if necessary.

### **Your turn!**

See if you can identify the steps of the scientific method in the following interview with Adam and Hannah.

Adam and Hannah received the dragon fruit plant from Hannah's great aunt several years ago. Initially not knowing much about the plant, they experimented with placement and finding the right support to hold the cactus upright. Dragon fruit can grow very large and are often planted with substantial metal supports. Multiple branches can produce multiple blossoms which produce fruit once pollinated. There are multiple variations in the seeds, sweetness and color of the dragon fruit. Throughout the interview I discovered Hannah was hoping for a red one with pink flesh, as those are sweeter!



During the first year, the dragon fruit flowered for the first time, inspiring Adam and Hannah to research propagation techniques.

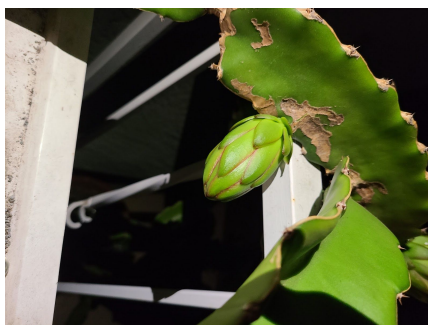
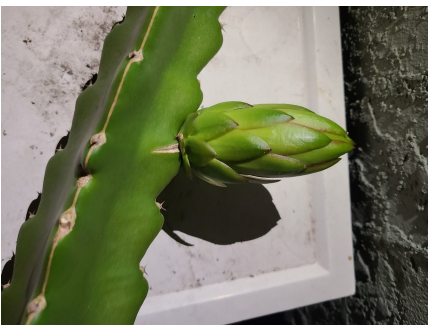
Armed with information from hours of YouTube footage and numerous articles, they set out to try the experiment for themselves.

Crystal: "How did the first year go for the two of you?"

Adam: "The first time we missed the propagation we were about one night too late."

Crystal: "I'm so glad you kept trying! Can you walk me through the steps of your experiment?"

Adam: " It starts from a little nug, grows until it's about the size of your fist then it elongates along the bottom and you can just start to see the little pebbles. Then it's like, yeah, it's business time. We need to be watching it every night or you can miss it."

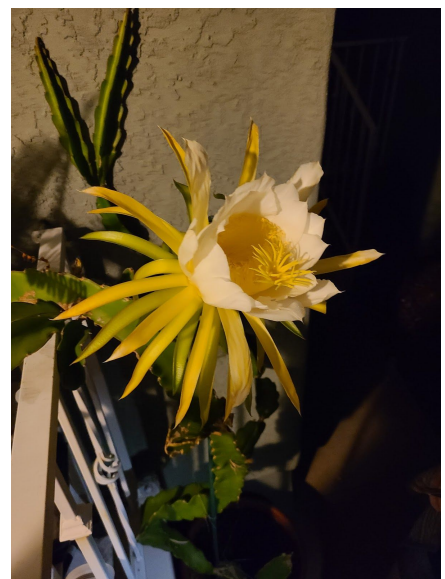


Hannah: "The night to propagate we called out all the neighbors because the flower was so huge, "Oh my gosh, come look it's flowering!"





Adam: "It was the size of Hannah's face."



Hannah: "It was beautiful with feather-like petals, with an alien-like pistil."

Adam: "I got a paint brush, rubbed it against the petals on the inside, they were just coated in pollen. I've still got some pollen in my freezer. Apparently it will keep for a few months."



Crystal: "Wow! That's amazing! After the petals are dusted, what happens next?"



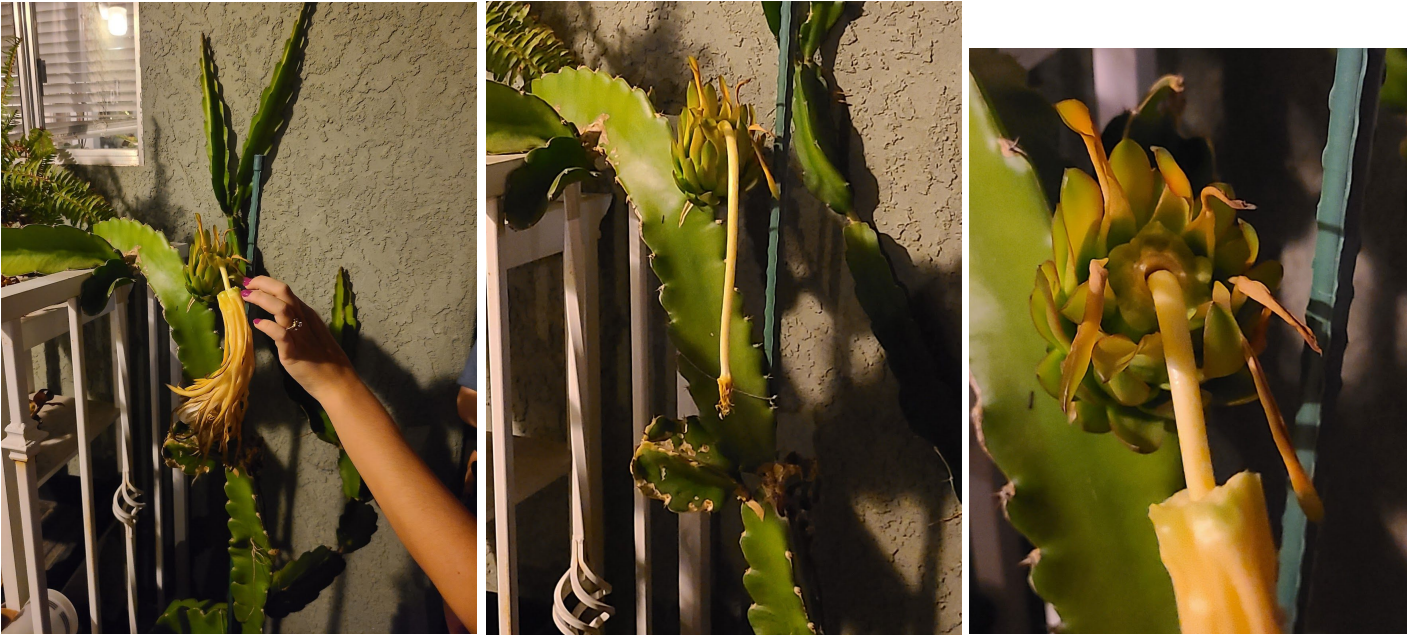
Adam: "It closes up and actually looks very sad the next day."

Hannah: "Yeah. I gave it a couple of days, and the videos instructed that we should take the flower off but leave the pistil so it doesn't get moldy or house insects."

Crystal: "So you leave just the pistil on then?"

Adam: "Yeah, it kind of looks like a string hanging out almost. Once it dries after a few days, you can crack off the pistil."





Crystal: "How strange!"



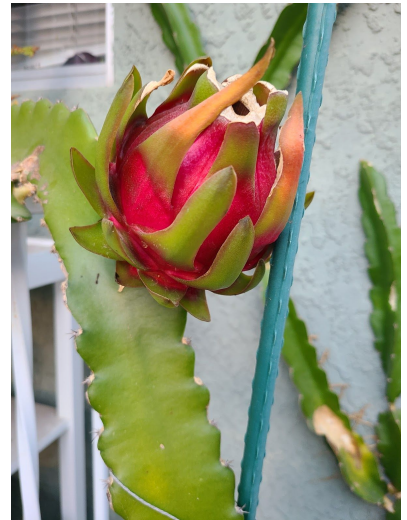
Adam: "Then after a few more days it gets hard and dried out. A hole then forms at the top. The flesh that was exposed dries up and gets a little 'bricky', almost like bone, very porous."

Hannah: "Yeah, exactly, kind of 'cementy'."



Adam: "The longer you go, the outside leaves kind of grow closer and almost fuse back into it. It's supposed to be about a month after the flower but ours took about two. One day you start to notice the change in color. The red starts to show at the bottom and then spreads further and further up the fruit until you start to wonder "Is it time to do it?" "I don't know, what do you think?" "Should we watch another video?"

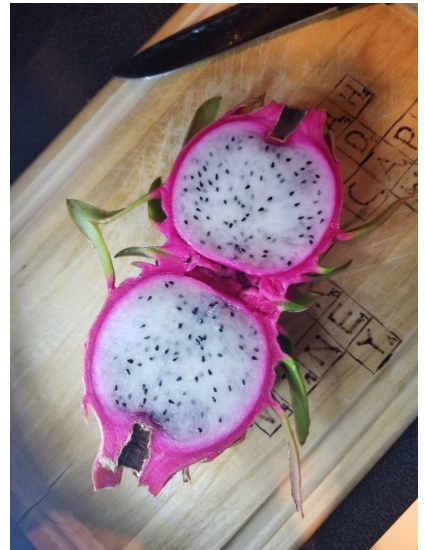
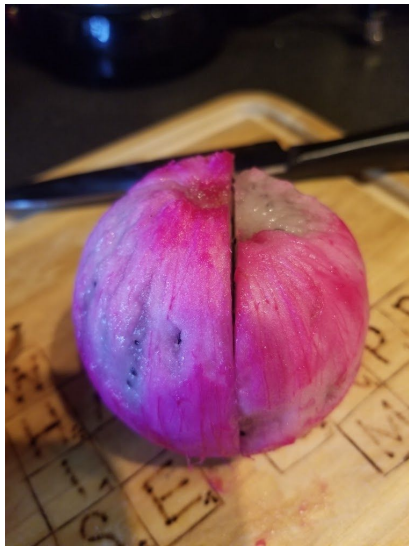
Hannah: "I noticed the leaves on the tips dry out, 'crispify'."



Adam: "Then you have to crack it off. But we were worried because it's supposed to be not super hard when it's ready. I guess naturally that makes sense because in the wild it would drop off on its own."

Hannah: "We then looked at the timeline and then decided to go for it. When I pulled it off the outer flesh was pink and cracked, so I thought it was red inside."





Adam: "Yeah, Hannah was a little disappointed when we got it open all the way to find white inside, which is more savory but it's still sweet. "

Hannah: "Yeah, we still enjoyed it though."

Crystal: "How did you prepare the fruit once you harvested it? "

Adam: "The fruit breaks away, and then you can slice up the fruit."



Crystal: "Do the different varieties look different on the outside?"

Adam: "Some, yes, the yellow one you can see for sure. Others have different shapes too. But we're amateurs so we don't know a whole lot."



Crystal: "Sounds to me like you do!"

Adam: "Well this was our first one to fruit, you know."

Hannah: "After we pollinated it, 8 more little babies showed up too."

Adam: "Yeah little nuggets!"



Another friend, Sandra, chimed in at this point in the interview. She has dragon fruit and started showing pictures of her variety.



Adam: "Oh yeah, I see some are spindly and the 'leaves' are more flat. Was it flowering around June because that's when they are supposed to flower?"

Sandra: "Yes, it was around then."

Hannah: " Well next time you'll know when to have a paintbrush ready!"

Sandra: "Yes, I'll be ready! So exciting! "

Adam: "Well they have a native plant in the Southwest called 'pitaya' that's related. My old manager, Manny, went back to his husband's ancestral home in Mexico to go to a pitaya festival. I didn't even know what it was at the time. But I remembered reading about dragon fruit and sure enough another name for dragon fruit is 'pitaya'. Manny had harvested a bunch of dragon fruit and I didn't even know it!"

Crystal: "Are they native there?"

Adam: "I think some varieties are, I would have to look."

Crystal: " They are very well known in Southeast Asia as well, perhaps a different variety. Was this the first time you have both tried something like this? An experiment of some kind? "

Hannah: "We tried growing veggies out in the back but they were eaten by bugs."

Adam: "We were somewhat successful, I wouldn't call it a rousing success but it was fairly successful. We tried cucumbers, peas, peppers, herbs, basil, thyme, and lavender. The herbs didn't do so well. The pepper grew alright but we really didn't know when to pick them which is why we struggled initially with when to pick the dragon fruit. "

Crystal: "How do you decide on those things?"

Adam: "Well with the dragon fruit we ended up doing more research and ultimately it ended up being soft to the touch but firm. It was more of a tactile thing. We didn't want it to be rotten or a waste."

Hannah: "It was super nerve wracking to cut into it."

Adam: "We will do it again for sure though."

Crystal: "What will you change the next time around?"

Hannah: "Better care of the plant, watching it closer. Maybe doing more than one."

Adam: "The thing is we have a lot to learn still. We are figuring out how much water and shade it needs, and the right physical support. Plus now we think it has a fungus we are fighting."

Crystal: "Did you guys keep records of the things you tried and when?"

Adam: "Nope. We pretty much are just flying by the seat of our pants. Maybe next year we would consider keeping better records. This time around we didn't note the time as much but we did take a lot of photos which helped us plot what we needed to do. "



Crystal: "That is still great documentation. Having photos to refer back to the next time around will be very helpful. Have you researched the fungus at all?"

Adam: "A little but we are still looking. Part of it is, it is kind of sad research. We're not sure if we are going to be able to save this particular plant, if it's fungus, it's very pervasive."



Crystal: "Could it be sun damage?"

Adam: "We're not sure. You can tell when it isn't happy, it gets a little yellow when it's not doing so great. It's doing better now we think as it's a bit darker green; it's hanging in there. We felt a 'little doom and gloom' about it a little while ago thinking 'of course we just got our first dragon fruit and now it's going to die!' It took a few years for us to get it to flower and we were so excited with its progress."

Hannah: "I think the most beautiful part about it was that we weren't expecting it. There was no planning it really. "

Adam: "Yeah the blossom is special too, you know. Kind of like "For one night only! Get your tickets to the show."

Hannah: "It was very exciting!"

Adam: "Yeah, a palpable excitement definitely!"

Hannah: "It was super cool to bring out all of the neighbors to participate as well. They thought it was cool too."

Crystal: "I know I enjoyed the experience! Did either of you garden with your families as you were growing up?"

Hannah: "My granddaddy was a big gardener, he had a huge green thumb. He mostly grew aesthetic things. My grandmammy grew tomatoes and cucumbers and stuff like that."

Crystal: "Did you hang out in the garden with them at all growing up?"

Hannah: "Not really with my grandmammy since it was on her deck, but with my granddaddy, yes. I spent a lot of time there. It was beautiful, massive landscaping, archways, stone work stairs and a gazebo. When I helped with his designs he would say "Well you're doing geometry now Hannah!". "

Crystal: "How about you Adam?"

Adam: "Nope, none at all. We never had a garden growing up. I mean there was a rosebush that my mom took care of. The closest thing I had to gardening was growing up in North Carolina with my best friend, Andrew, a very salt-of-the-Earth type of kid. We would go tromping out in the woods getting dirty and muddy, playing with everything, so I picked up a lot of local flora knowledge from him. He would say "Take a bite of this, it's sour" and we would explore together."

Hannah: "You also do really well with succulents."

Adam: "Well... I guess. I did have an aloe vera that just wouldn't die."

Crystal: "Hey, don't discount it. They take care too, just less of it. Thank goodness for the aloe veras of the plant world! "

Adam: "My experience was a lot more, hey let's just go get dirty and explore. I did take a botany class in high school. That teacher, Mr. Campbell, really shaped me. He was smart but inquisitive and talked to students in a way that others didn't. A lot of the teachers in the south were just tough task masters really that babysat mostly. They often really didn't take an interest in our learning, just more interest in managing us. But he really took an interest and wanted to push the curriculum and started the botany class. That really sparked something. I still have a love of nature and biology thanks to him."

Crystal: "What do you do now for a living?"

Adam: (laughing) "I'm an accountant. With a love of nature though."

Crystal: "Now you can garden on the side."

Adam: "Exactly."

Crystal: "Gardening is a learning curve for me too. I experiment with different things and see how it goes. I've never grown tomatoes but am trying now."

We then regressed into a brief conversation about the love of fresh produce and some of Adam and Hannah's love of fresh tomato recipes.

Crystal: "Do you think you would branch out and try experimenting with other things?"

Hannah: "We are pretty happy with this right now."



Adam: "Herbs and food plants are much harder. They just need more attention. We like to set it and forget it for a month."

Crystal: "I think that is the beautiful thing about food plants though. Working in the garden is meditative for me. Also it gives me a greater appreciation for the food on my plate. "

Adam: "Yes, definitely. Recognizing all of the hard work."

Crystal: "How do you feel about community gardens?"

Adam and Hannah: "We absolutely love them!!"

Crystal: "If there was a space for you to get a plot in a local garden would you be interested?"

Adam and Hannah: "I don't think we would do it justice. I would be happy to contribute or donate to an effort like that but I don't think we have the wherewithal or attention. We would be happy to go in once a month to volunteer I think but keeping up a plot of our own wouldn't work as well. "

Adam: "I see the one in North Park and it makes my heart happy!"

Crystal: "Yes, that one is run by and for refugees by the International Rescue Committee. They have an incredible program there called MAKE (Merging Agriculture, Kitchens and Employment). This program gives jobs to refugees and allows restaurants to use the garden as not only a source for produce but as a space for outdoor dining as well. Local people can volunteer and students can work in the garden for a stipend as well." <https://www.ircmake.org/about>

Sandra: "My experience with my local community garden has been rewarding. I volunteer three hours a day two times a week. I have access to wonderful organic produce and a wealth of knowledge."

Adam: "Yes! I think that is something we would be interested in."

Sandra: "We have a master gardener that facilitates instruction too so I learn a lot."

Adam: "Yes, that makes more sense. Someone to learn from, I would like a little instruction, it's so hard to drop out there and feel like you're in the middle of the ocean not sure where to go."

Crystal: "Also it cuts down on the number of YouTube videos you have to watch if you have access to a live master gardener."

Hannah: "Yes because you can have an actual conversation and ask questions."

Adam: "Yeah we are open to new things. An engineer at work got a mini hydroponic as a promotional item and handed it off to me so I guess we've got our next little experiment. Life has a good way of providing those."

Crystal: "Sounds like a great new thing to learn! Is there anything else you'd like to share?"

Hannah: "Not necessarily. We will say that we have really appreciated the support and excitement from you."

Crystal: "Happy to give it! I have to tell you as a person in a community, seeing anyone who is this excited, doing the research and following the steps has inspired all of us to be more curious as we mindfully explore and observe our environment. You are definitely citizen scientists! Thank you for taking the time to speak with me. "

As we continue to navigate challenging times, it is important to be mindfully grounded in our communities as we discover creative ways to express our unique contributions to a global citizenry.

Have a story you'd like to share about science in your community? Feel free to email the story or the contact information for an interview to: [crystal@greendragoned.org](mailto:crystal@greendragoned.org) .