



Do you ever wonder how a butterfly gets its colors? Or how turtles hibernate? For over 160 years, the Chicago Academy of Sciences / Peggy Notebaert Nature Museum has served a unique role in the city of Chicago connecting people of all ages to nature and science through immersive exhibits, fun family events, important conservation research and in-depth education programs, inspiring the wonder in all of us.

Every day, the Nature Museum supports parents and educators to build their comfort with and confidence in teaching science. We know that empowered and supported educators lead to more time spent on science and to higher quality learning for students. Here are a few top tips from the Nature Museum Education Department to use during this activity or anytime you are leading nature and science explorations:

- ❑ **You don't need to know all the content!** Science is a process of curiosity, wonder, and exploration.
- ❑ **Spark curiosity and foster wonder!** Add questions and observations to a wonder wall so you can come back and investigate them later!
- ❑ **Help your scientist make connections and drive their own learning!** Ask open-ended questions like: “What do you see that makes you say that?” and “What do you notice?”
- ❑ **Build routines for learning – and repeat them daily or weekly.** Things like nature journals, a wonder wall, and drawing for understanding are practices that you can come back to again and again.
- ❑ **Foster social-emotional learning through local nature!** Take some time outside each day—or bring nature indoors—to practice mindfulness and experience wonder, awe, creativity, connection, and feelings of joy and calm.

Visit the [Nature Museum blog](#) for more tips and how to's.

## Scientific Drawing

### Description:

Students make close observations to create a scientific drawing using found objects (seeds, sticks, leaves, rocks, critters, etc.)

### Materials:

- Nature Museum's Scientific Drawing video:  
<https://www.youtube.com/watch?v=ublfinvxqHo&feature=youtu.be>

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[www.naturemuseum.org/STEM](http://www.naturemuseum.org/STEM) - [bit.ly/SummerOfWonder](http://bit.ly/SummerOfWonder)



- Found objects (natural objects, household objects, anything!)
- Drawing tool (pencil, pen, marker, etc.)
- Paper

### **Advance Preparation:**

- Ask students, if they're able, to take a photo of something in nature or something inside that comes from nature. Have them think about or write why it was interesting to them. Ask them to bring the image to share with your group. Other options include collecting natural objects beforehand or looking out the window.

### **ENGAGE**

1. Ask students to share the interesting photo and/or tell the group about the object they captured. If they weren't able to take a photo or look for an object in nature (or made from something in nature), have them think of a time they saw something really interesting in nature.
2. Prompt all students to think about how they could share about their exciting discovery with others if they didn't have a photo to share. How could they help someone else see what it looks like? How could they remember later what it looked like to see if anything had changed?

### **PREPARE TO EXPLORE**

3. Introduce the idea of a scientific drawing, and discuss how a scientific drawing is based on careful observations. Mention that a good scientific drawing has words (labels) and pictures, and that it doesn't matter if someone is a good "artist" – just if the drawing reflects their real observations.

### **EXPLORE**

4. Share the [Nature Museum's Scientific Drawing video](#) with students (if accessible/applicable).
5. Ask students to select an object for their scientific drawing. Assure students that it can be a household object or an object from outside (if a grown up tells them that's okay).
6. Allow time for students to make close observations of their object. What colors, patterns, shapes, textures, etc. do they observe? What is unique or interesting about their object?
7. Then ask them to show those details by making a scientific drawing with pictures and words.
8. Remind students that scientific drawings communicate information to others, and to ourselves at a later time, so it's important to include lots of details.
9. Remind students that, as they draw, they should draw what they actually see rather than what they imagine. *It can be helpful to remind students that imaginative drawings are important and fun too, but when scientists do scientific drawings, they draw only what they observe.*
10. Remind students to add labels so that when others look at their scientific drawing, they are able to understand all the parts. A label can share extra information - a color you don't have in your box, or a texture that's hard to draw, for example.



11. If a student says they are done, challenge them to find another detail and add it to their drawing--they might need to look even more closely!
12. Have students move on to a second object to draw and repeat the process from steps 6-11 through a second scientific drawing.

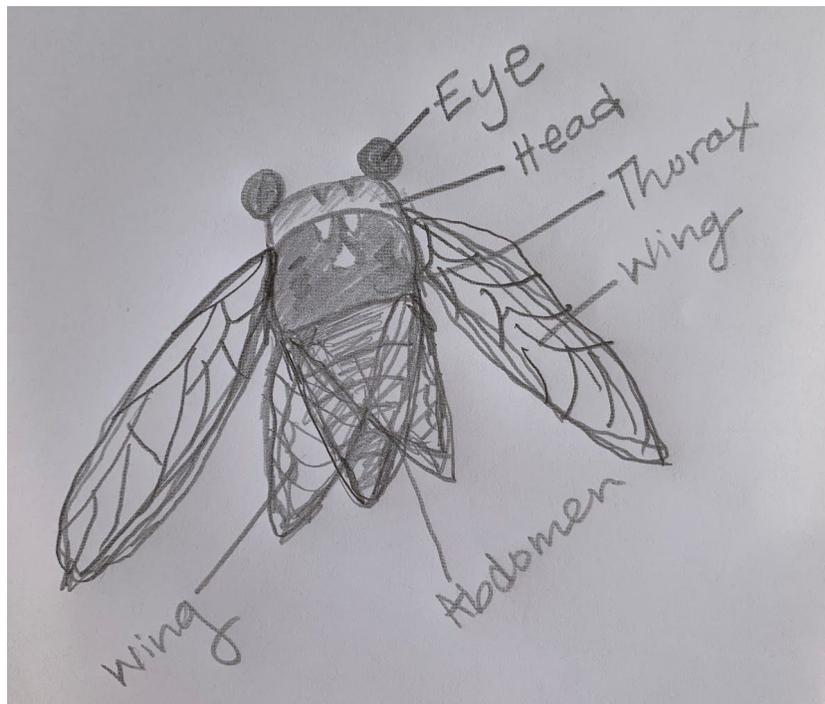
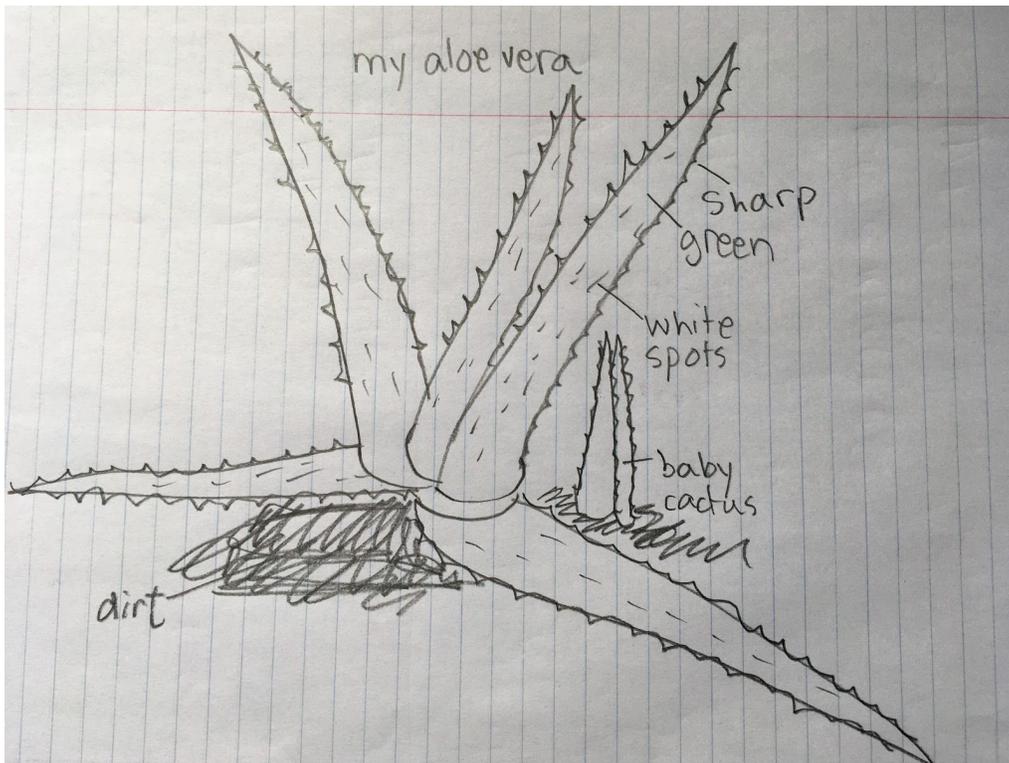
### **REFLECT and SHARE**

13. Ask students how they felt while they were creating their scientific drawings. Was it relaxing? Were there parts that were more difficult than others? Did they feel focused?
14. If they were able to complete more than one drawing, ask them to compare and contrast the objects. What was similar? What was different?
15. Allow time for students to share their scientific drawings with one another and observe each others' drawings.
16. Challenge students to create a journal or a place to continue to make and keep scientific drawings when they are excited to look closely and communicate what they're seeing in natural objects. Suggest that they include different objects or the same objects in nature at different times in the year.
17. Remind students that their drawings can be for their own reflections and enjoyment or to share with and communicate with others about the exciting objects they're seeing in nature.



**EXAMPLES:**

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## Scientific Drawing

Add details and labels to your scientific drawing! Draw what you actually see.



## La Ilustración Científica

¡Incluye detalles y etiquetas en tu ilustración científica! Dibuja lo que realmente puedes ver.

A large, empty rectangular box with a thin black border, intended for a student to draw a scientific illustration. The box is currently blank.

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