

Careful observation is a very important part of science. Ornithologists learn to identify birds from a quick glimpse as they fly through the trees. Meteorologists learn to read the clouds in much the same way that most people read books. Geologists learn to look at a hillside covered with gravel, and spot the one piece that happens to be a fragment of dinosaur bone. Part of this is learning what to look for, but part is also training your eyes to really see all the details that are there. To give this a try yourself, you will need:

- several chocolate chip, oatmeal raisin, or other cookies. Homemade are tastier, but you can use store bought cookies too.
- paper to draw on
- pen, pencil, crayons, or something else to draw with.
- a ruler

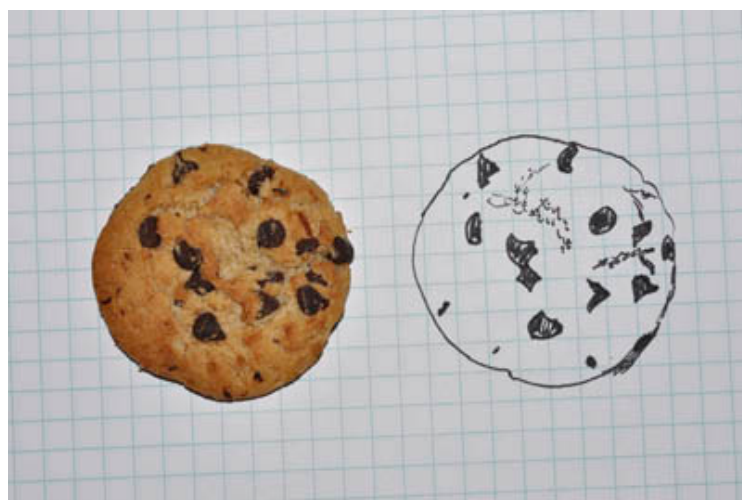


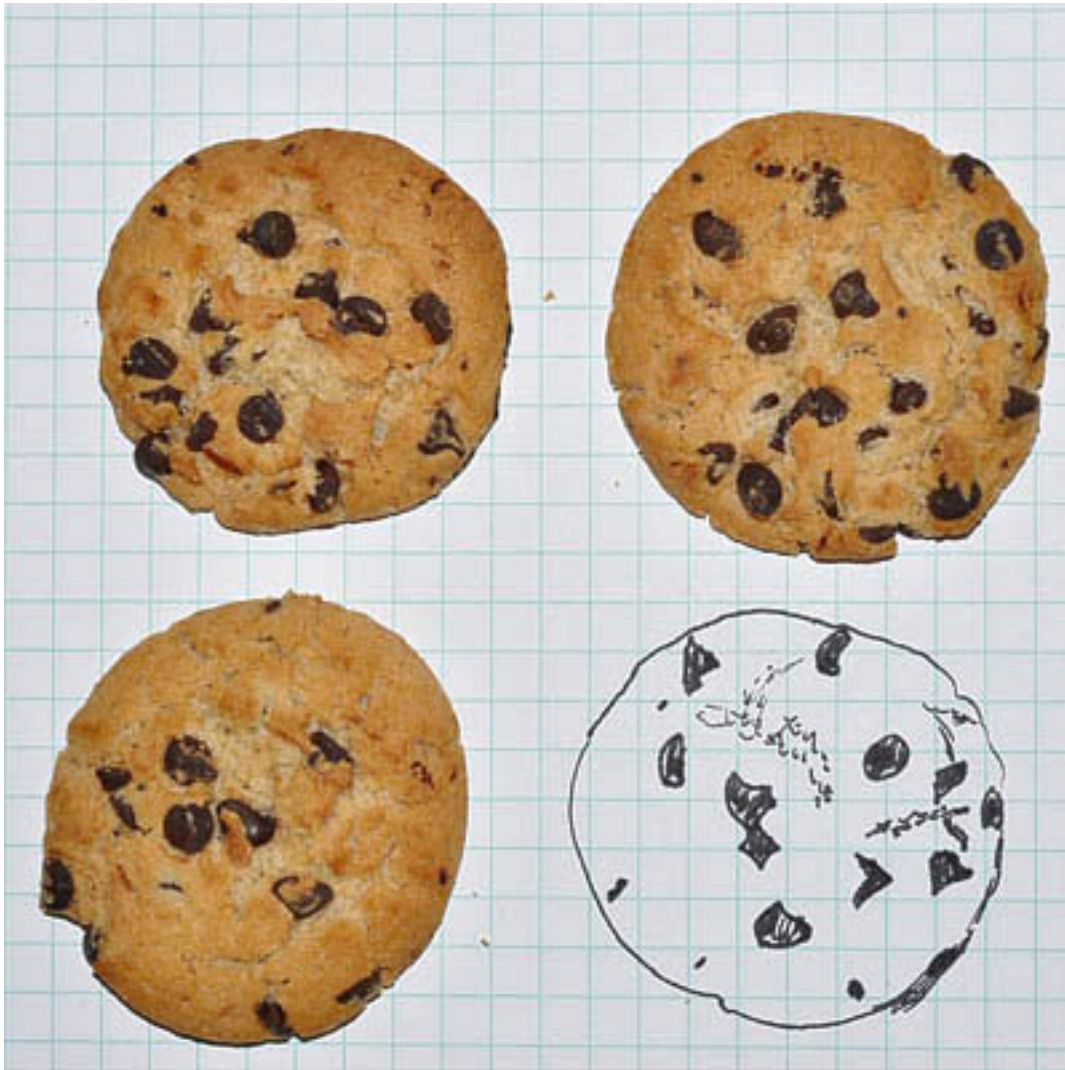
Pick two cookies at random. Eat one. Place the other on the table in front of you. Look at the cookie. I mean, REALLY look at it. Imagine that you are going to have to look at a pile of similar cookies, and know this one well enough to pick it out of the pile

Draw a picture of your cookie, being sure to note any identifying marks. Maybe one of the chocolate chips has a crack in it, or there may be two raisins at the edge that almost touch each other. Don't worry if your drawing is not perfect. You are recording your observations, so as long as it shows the things that make your cookie special, it is a wonderful drawing.

Measure your cookie, noting on your drawing any measurements that could help identify it. Maybe one side is thicker than the other, or it may be 1/4 inch wider at the point where the two raisins almost touch. Again, pretend that you need to record your cookie well enough to pick it out of a lineup of other cookies.

Once that is done, put your cookie in with all the others. Close your eyes and have someone mix them well. If you are doing this on your own, close your eyes and shuffle them well. Then open your eyes, and find your cookie. Check it against your drawing and measurements to be sure that it is your cookie.





Which is my cookie? It may be turned a different direction.

How well did you do? If you want to make it a bit more challenging, try using cookies that are manufactured to be very similar. Oreos work very well for this. They all seem to look alike, but if you look carefully, you can spot irregularities in the filling, top cookies that are not exactly aligned with the bottom, and other small differences.

Want to make it a bit more challenging? Ask someone else to look at your drawing and notes, to see if they can identify your cookie. This takes more practice and skill, but it is a skill well worth learning.

Once you are done, you will have a pile of cookies that have been handled. That means that you can't put them back in the package, so dispose of them properly. I like mine dipped in either milk or hot tea.

The more you practice observation, the more you will see in the world around you. You can do this activity with other objects, such as pennies, rocks, leaves, or sticks, but in that case, skip the step where you eat one.