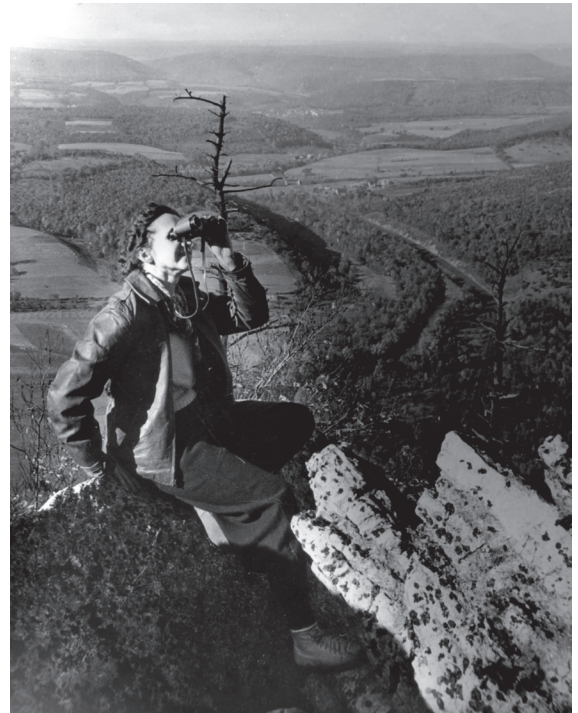




Binoculars Basics

Rachel Carson was an avid and accomplished birder. In this iconic photo of her taken by her close friend and colleague, Shirley Briggs (later head of the Rachel Carson Council), she is scanning the horizon with her binoculars looking for incoming hawks and other raptors at Hawk Mountain in Pennsylvania. Without a good pair of binoculars, and using only her own eyes, Rachel Carson would have seen only tiny specks in the sky instead of a clear sighting of the impressive Red-tailed Hawks pictured below magnified by two different binoculars.



To best see the marvels of nature, especially the wonderful world of birds, you will want to buy binoculars as good as Rachel Carson's! And you'll want an additional pair if you want to encourage and include children.

These "RCC Binocular Basics" are designed to help you understand just what you need to know before you buy. Now you're ready to follow in Rachel Carson's footsteps, whether up Hawk Mountain, along the C&O Canal, or anywhere where you want to discover and see nature up close and in focus! So, let's get started with the basics of binoculars.

Magnification



<https://procular.com.au/5-common-magnifications-binoculars/>

Most handheld binoculars' magnification ranges from 6x to 10x (power). Seven and eight power models are the most common and are considered to be the most versatile binoculars.

Higher magnification will allow you to see objects farther away but will narrow your field of view. So, you'll see farther, but for objects close to you, you'll be restricted to looking at a smaller area and refocusing if that object is moving. A lower magnification from about 7x to 10x is fine most

of the time. The biggest drawback of using higher power binoculars is while increasing the magnification of the subject, it also magnifies the movement of your hands and body making your image shake or appear jumpy. An additional drawback is that higher power models generally have a smaller field of view, so that it is more difficult to find or follow objects. (See *field of view* below).

Objective Lens

The second of the two numbers generally used to describe binoculars is the diameter of the objective lenses that are at the front. For example, "7x50" means that images are magnified 7x, and the objective lenses have a diameter of 50mm. These measurements are of greatest importance to image quality so need to be considered carefully. The larger the objective lenses the more light they can gather and deliver a sharper, brighter image. They are best for low light viewing such as at dusk or in heavily wooded forests. The downside of larger objective lenses is they add to the weight and size of the binoculars you have to carry.

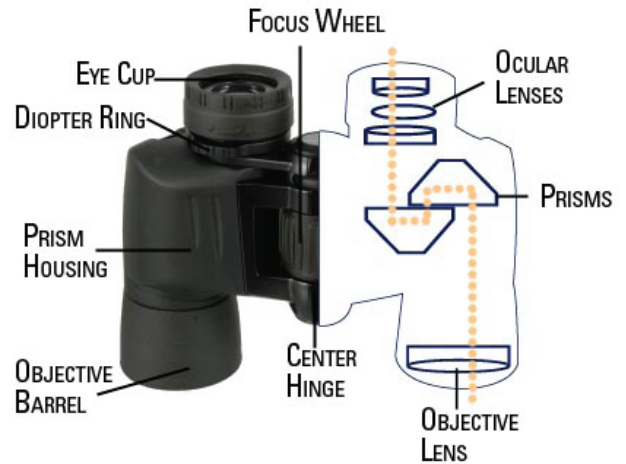
Field of View (FOV)

Refers to the area visible to you as you use your binoculars. The number given tells you how wide an area you can see when viewing objects 1000 yards away. For example, a FOV of 372 ft. means you will only see 372 ft. across when 1,000 yards away. As a general rule, the higher the magnification, the smaller the field of view. Therefore a 10x model will usually have a smaller field of view than a 7x model.

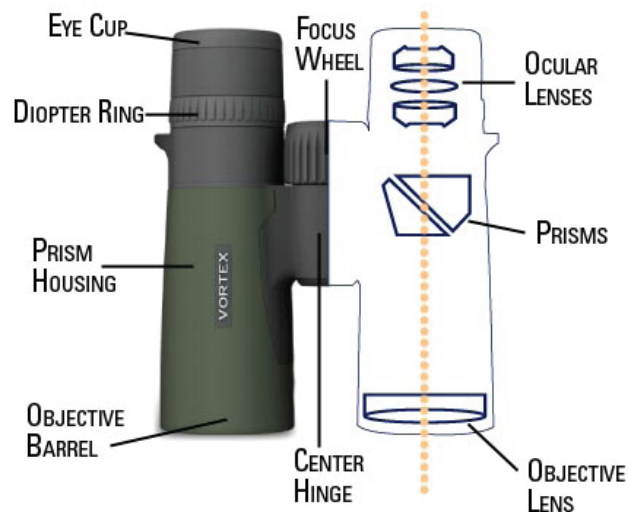
Eye Relief

This is the minimum distance at which you must hold the eyepieces away from you. This is important especially for those who wear eyeglasses, so make sure to test this in store to find a set of binoculars that are comfortable for you to hold to your eyes.

PORRO PRISM BINOCULARS



ROOF PRISM BINOCULARS



Two basic types of binoculars.

<https://www.opticsplanet.com/howto/how-to-choose-binoculars.html>

Teaching Children How to Use Binoculars

Make sure your child keeps the strap around their neck at all times! This rule has saved the life of many a pair of binoculars.

Binocular Use #1 – Fit the binoculars to their eyes. Start with the binoculars rolled out to a place you know is slightly too big for their eye width. Ask your child how many circles they see, if they're looking through the binoculars they should indicate that they see two circles. Slowly roll the binoculars smaller and smaller, ask your child to tell you as soon as those two circles turn into one.



Walton LaVonda, U.S. Fish and Wildlife Service

Binocular Use #2 – Zero in on a specific object: Have your child stare at a relatively close object (maybe 20 feet away) before putting the binoculars up to their eyes. Tell them to continue staring really hard at that object. They need to keep their eyes right on it! Have your child bring the binoculars up to their eyes without looking away from the object. Do they still see it? Yes!

Binocular Use #3 – Adjust the focus. While they are staring at the object, put their finger on the focus wheel (the rolling knob on the top). Explain that this is the wheel that focuses the picture. Ask them if the object they are looking at looks blurry, which likely it will (if not unfocus the binoculars so they can practice).

Have your child roll the wheel until the object they are looking at becomes clear.

Repeat Steps 1-3 until they have it down.

Don't walk with binoculars up to your eyes. This is very tempting for kids and can often be dangerous!

Don't just look, listen too. If your child is having a hard time finding anything tell them to sit still for a few minutes and listen. Wait until they hear something, then sneak up on the sound.



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