**Difference Between Eye And Camera**

**Eye vs Camera**

Eye is an organ of sight while a camera is equipment that is used to record images.

The first and the foremost difference between an eye and a camera is that an eye cannot record an image. The eyes use living cells to detect and interpret the light and convert these into electrical signals that are relayed to the brain and processed into an image. The camera on the other hand uses a diaphragm from where the image is recorded on film or like in modern cameras on tape or digitally.

A camera sees in 2 dimensions while the eye sees in 3 dimensions. This means that when we see with our eyes we see height, width and depth. With a camera we only see height and width. There is no way to have the depth in the picture as a photograph in a flat medium. This is mainly achieved by the stereoscopic vision of the eye. A simple demonstration of this can be trying to bring the forefingers of both hands to meet from the sides. This is much simpler to do with both eyes open than with only one eye or almost impossible with a camera.

While changing the focus the retina and parts of the pupil adjust the size accordingly. However, in a camera the focus is changed by the movement of the lens. Eye has a blind spot which is also known as scotoma, whereas, the cameras do not have any such limitations. The eye can also adapt itself to the dark and within a few seconds one can get start seeing better in the dark. However, if a camera is not equipped to capture images in the dark it can never get accustomed.

The eye is highly sensitive to the dust and foreign particles settling on the outer film. In a camera there is no such problem as any dust can simply be wiped off the [lens](http://www.differencebetween.net/technology/difference-between-dx-and-fx-lens/).

Summary  
1. Eye is a live organ for sight whereas a camera is an equipment to capture images.  
2. Eye uses live cells to detect light while the camera uses a diaphragm to detect light and capture images.  
3. Stereoscopic vision of eyes allows 3 dimensional images while camera captures only 2 dimensional images.  
4. The pupil adjusts the size while focusing while in a camera lens moves to change focus.  
5. Eyes have blind spots while cameras do not.

Our eyes are able to look around and adjust dynamically depending on the environment. Hence, most of us would assume that there is little-t0-no difference between the human eye and camera. However, things are a lot more complicated than it seems. We need to understand that there are two primary differences in the way they work. We can summarize these differences as follows

* Difference in focusing on an image
* Difference in processing colour

## Human Eye vs Camera

Following are some of the major differences between a physical camera and the human eye.

|  |  |
| --- | --- |
| **Human Eyes** | **Camera** |
| **Focusing on an Image** | |
| The human eye contains small muscles that contract and relax – and this enables the eyes to change shape and stay focused on a moving object. These muscles also capable of changing the thickness of the lens to accommodate the image that is being viewed | A camera cannot do this, hence, it relies on a variety of lens. This is the reason why photographers often change the lens of their camera according to the distance from the object. Moreover, cameras use mechanical parts to stay focused on a moving object. |
| **Processing Colour** | |
| Human eyes contain special types of cells called photoreceptors. There are two types – rods and cones. Rods are primarily used for low-light vision while cones are used for colour vision. There are 3 types of cones that respond to 3 different wavelengths of light. For instance, blue cones respond to short wavelengths while red cones respond to long wavelengths and green cones respond to medium wavelengths. The colour we see is the result of the brain activating the cones in various combinations. | Cameras use something called photosites to collect light. A typical camera has millions of these light collectors that hold the light and then convert it into a signal that can be interpreted by electronic devices. Moreover, cameras use filters that break up light into its primary colours – red, blue and green. It reproduces the full spectrum image by combining these colours. |
| **Blind Spots** | |
| The human eye has a blind spot – this is located at the point where the optic nerve joins the retina. Under normal circumstances, we do not notice this blindspot as the brain uses information from the other eye to complete the missing portion of the image. | A camera does not have such a blind spot. |

## Similar Functions of the Eye Compared to a Camera

Those who are wondering just how similar a camera is to the human eye will be shocked to find out the functions of a camera that work just the same.

● The shutter in a camera can be compared to the iris in a human eye. It controls how much light is able to enter the lens.

● The lens in a camera is similar to the lens in the human eye, which are both used to focus light and create an image.

● With a camera, an image is recorded on a film. In the human [eye](https://en.wikipedia.org/wiki/Human_eye), the image is displayed on the retina. However, the camera stores the image one time and the retina is constantly passing information along.

● If the human eye were a camera, it would be 576 [megapixels](https://en.wikipedia.org/wiki/Pixel). As of yet, the highest megapixel camera ever produced is only 50.6 megapixels.

### The Superior Human Eye

Although modern technology is allowing cameras to improve rapidly, the human eye is still far better than any man made device out there. Technology is likely far from producing any type of imagery system that’s better than the human eye, and this is true. For a camera to be able to see more details than the human eye would be quite the development. However, the future may hold more impressive technology than we can fathom today…..

# The Difference between birds and planes

### The Structures

## Airplane's Wing:

The structure of the wing contains a wingtip, the wing flaps, a spar, the fuel tanks, the ribs, an aileron, the stringers, and the skin of the wing.

## Bird's Wing

The structure of the wing contains a terminal phalanx, basal phalanx, metacarpus, unare, radiale, ulna, radius, numerous, poracoid, blade of scapula, tertials, primaries, and secondaries.

### Airplanes

* Airplanes lift themselves up with a propeller that circulates in one motion.
* Airplanes are built with engines,electrical wires, and cables to operate.
* Airplanes use lights to reach to their designated destination.
* Airplanes require fuel to operate.
* Airplanes can twist and turn but can't change their wingspan shape.
* The airplane's wings only provide lift, while the engines or gravity would give thrust.

# 5 Similarities Between Birds And Aircraft

Birds and aircraft are amazing because of their common attribute, flight. Why is flight amazing? It might have been formidable to the humans at some point of time. But we humans did fly and today at this point, millions of people fly in the air daily.

5 similarities between birds and aircraft

Humans must have gained the inspiration of flight from birds, since birds were the only living creatures (putting aside the insects) gifted with the skill of flight. The early days aircraft prototypes contained movable wings as birds. We can be much inclined to this ‘bird inspired airplane’ hypothesis even more enlisting similarities between aircraft and birds. So here are 5 similarities between birds and aircraft.

#### ****1. The take off (lift)****

Birds take off in various ways. Some birds run just before flight to create an air lift (upward force), some flap their wings and some just jump off and glide. The flapping of their wings to swipe the air below as well as their speed during the run results the pressure below the birds to be higher and that of above to be lower. So, this creates an air lift which pushes the birds upward.

The similar kind of thing occur in an aircraft. In helicopter, the rotor pushes the air downwards as do wings in a bird. Also in airplane, the speed in the runway creates the pressure difference, which is responsible for creating the lift enough for flight. The structural design is actually more important for the lift.

**2. The shape and structure**

The structure of birds and aircraft is quite similar. Both have streamlined body structure which is necessary for flight. The body is made up of light materials in case of aircraft whereas birds have light bones and feathers in their body.

The wings make birds and aircraft even closer, as both of them use wings for flight as well as the shape of it. Also, the front part of aircraft is pointed as the front part of bird (beak). This is responsible for creating them more aerodynamic and helps in forward movement by sweeping the air.

**3. Flight techniques – Hovering and gliding**

There are various flight techniques that aircraft practice as the birds do. Both birds and winged aircraft can glide in the air for a longer distance. They can also use gliding as an energy efficient mode. During gliding [almost no energy is spent by birds](https://www.biology.lu.se/research/research-groups/animal-flight-lab/research/gliding-flight-in-birds) whereas the aircraft also use minimum of energy.

Also the helicopters hover as different birds do. The diving technique used by birds is also used in airshows. Most of the flight techniques are adopted from the observation of birds as human strive to outwit birds in flying.

**4. Movement in the air**

Aircraft use different movable parts in their wings and tails to change direction so as to direct the movement like rudder, elevator and ailerons. They control horizontal and vertical movement as well as tilting. Likewise the tail of birds are responsible for the maneuvers and the entire movement since both parts of birds are completely movable unlike aircraft.

**5. Landing**

Aircraft and birds both gain or lose elevation with the variation of the drag force that acts downward and the lift force that acts upwards. The parts that control the movement are the things that enable them to create such variation finally enabling them to land as well as take off.

Both of them take control during the landing process by the use of their motion controllers. Birds usually generate a resistance by flapping their wings while the aircraft move the ailerons, elevator and apply brakes.

Apart from these similarities, both are different in terms of many other things. Even we can sort many differences out in those above similarities when we scrutinize these two things more. Aircraft have evolved much from where they have started. So, the early bird inspired aircraft were more bird like than these modern evolved aircraft that we observe today.