

ISO Settings

In this lesson, we'll be taking a look at **ISO Settings**, and how these settings affects photos. You'll see examples of different settings, and learn how to use **ISO Settings** to your advantage.

Estimated Completion Time: 8 minutes.

ISO Settings

A few points before we start looking at *ISO*.

All cameras have an automatic mode. Some cameras only have automatic modes. In order to take *great* photos, you don't *need* to understand, much less adjust, *ISO*.

However, if you do get a basic understanding of ISO, you'll be able to take *even better* photos.



When you understand ISO, you'll be able to take photographs like this one.

ISO Settings

When you take a photo, the camera **shutter** opens to let in light, along with the image you are taking a photo of.

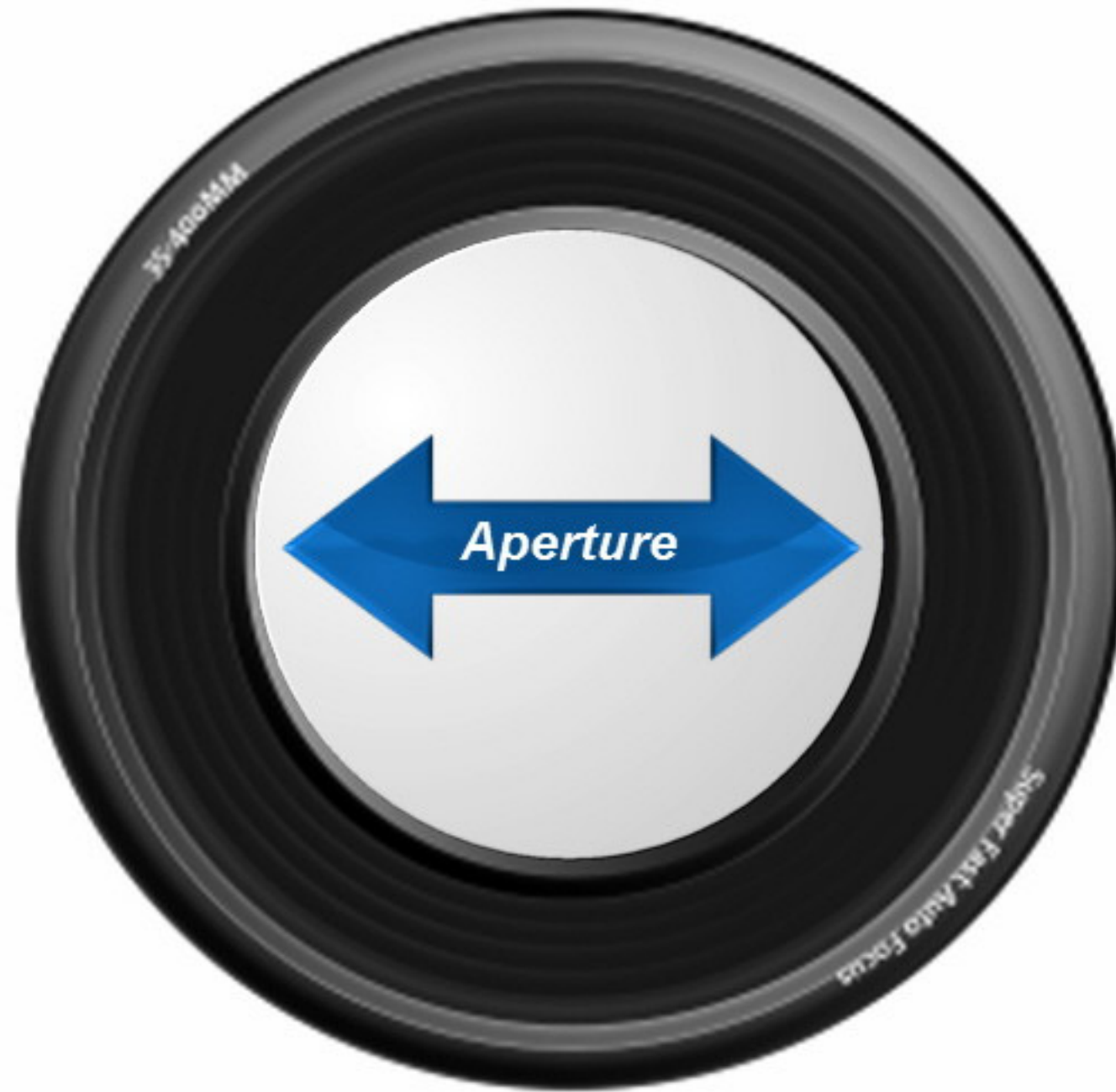
The shutter stays open for a certain period, then closes. The length of time it stays open is called the **shutter speed**.



Here we are looking down a camera lens - and the shutter is opening and closing, taking photos.

ISO Settings

The *wider* the shutter opens, the larger the **aperture** is, and the more light is let into the camera.

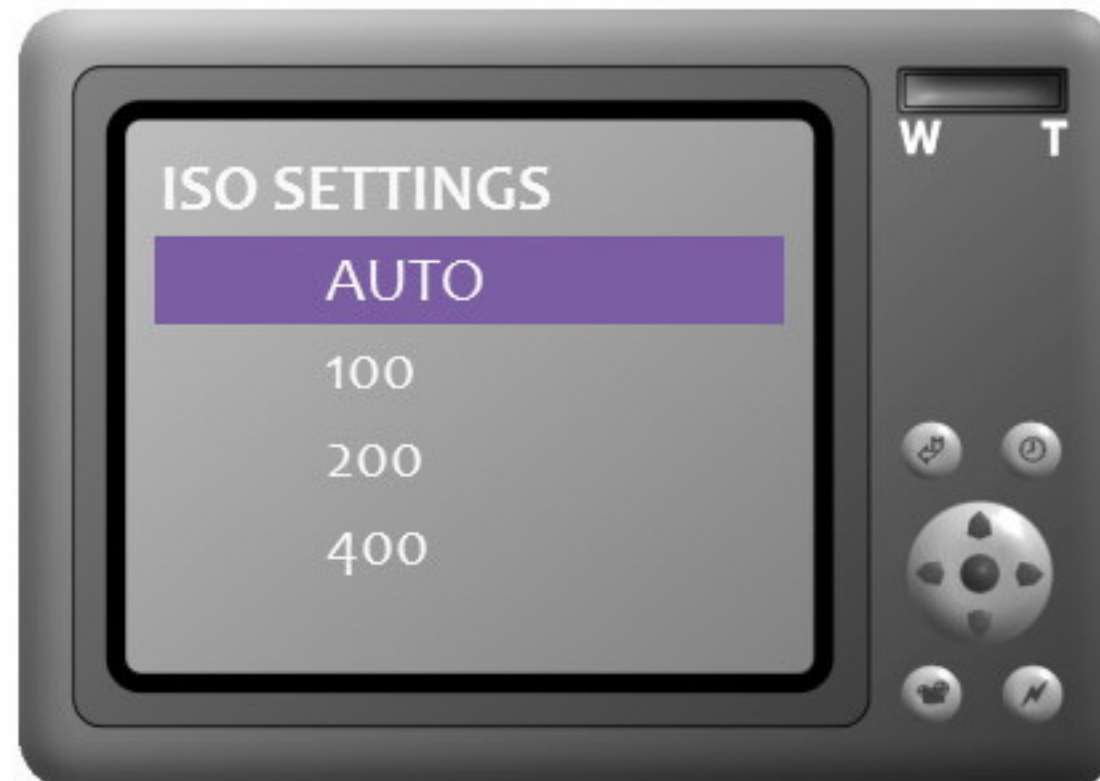


ISO Settings

The **ISO** rating on your camera determines how *sensitive* the camera is to light. The higher the ISO rating, the more sensitive to light the camera is.

All cameras have an automatic ISO settings, and many allow you to select custom ISO ratings.

ISO ratings on most cameras will range at the low end of 64, up to 1600, 3200, or even 6400. Believe it or not, some higher end DSLRs offer an ISO rating of over 100,000.



ISO Settings

Have a look at the examples below. Each was taken with an identical camera, with the same settings, except that the ISO setting was adjusted for each shot.

Note how as the ISO setting is set higher, the lighter the picture is.

100 ISO

200 ISO

400 ISO

800 ISO

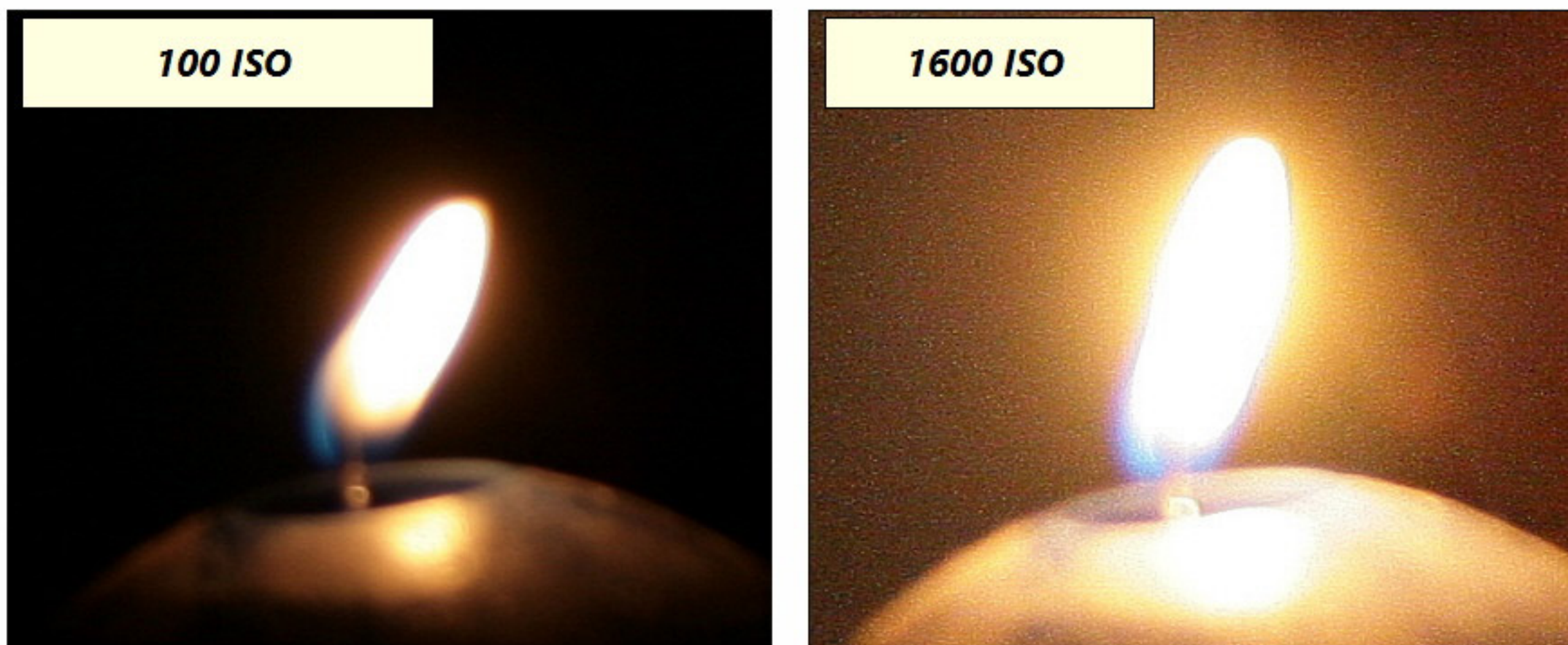
1600 ISO

Click on or move the mouse over any ISO setting to see the image taken at that setting.

ISO Settings

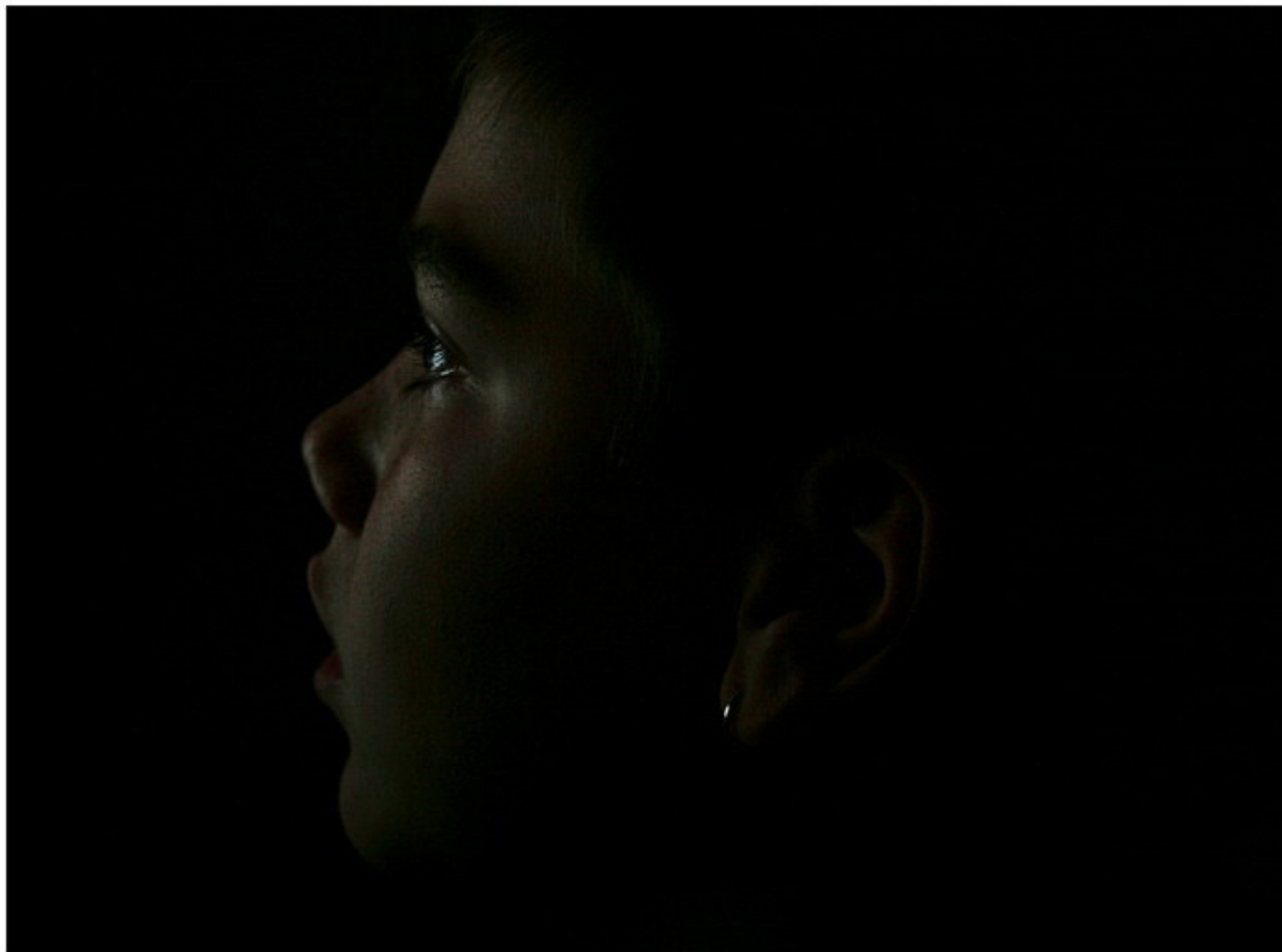
Sounds great doesn't it? Why not always use a higher ISO setting?

There is a tradeoff. The higher the ISO setting, the more **noise** appears in the image. **Noise** in an image translates to random colored dots appearing in the image.



Here, we've zoomed in on the images from the previous page - but the difference is quite obvious.

ISO Settings



ISO 800, 1/30 of a second. This subject is illuminated only by a computer monitor.

ISO Settings

Generally, the cheaper the camera, the more noise will appear when ISO settings creep higher. A high quality digital SLR camera at 400 ISO may produce very little noise - whereas on a cheaper camera, noise at the same setting can be prolific.

On many cameras, particularly the cheaper, more portable cameras, the difference in quality between ASA 100, and ASA 400 can be dramatic - so for better shots, keep that ISO setting as low as you can. This is not always possible of course - but just keep it in mind.



Both shots were taken at 400 ASA, and shown in close-up. On the left, is a cheaper digital camera. On the right, a digital SLR.

ISO Settings

By default, and in most modes, ISO settings will be automatically selected by the camera. This means your camera may select anything from 64 to 3200 or more, depending on what it can achieve.

Luckily, many cameras now have a mid way solution to this issue. You want to allow the camera to vary ISO if required, but you really don't want the ISO to go over a certain setting - say, ISO 400.

You will have to check your camera settings or manual to determine if this can be done. For compact cameras that have this setting, we select the option that allows the ISO to vary, but not go over 200 or 400.

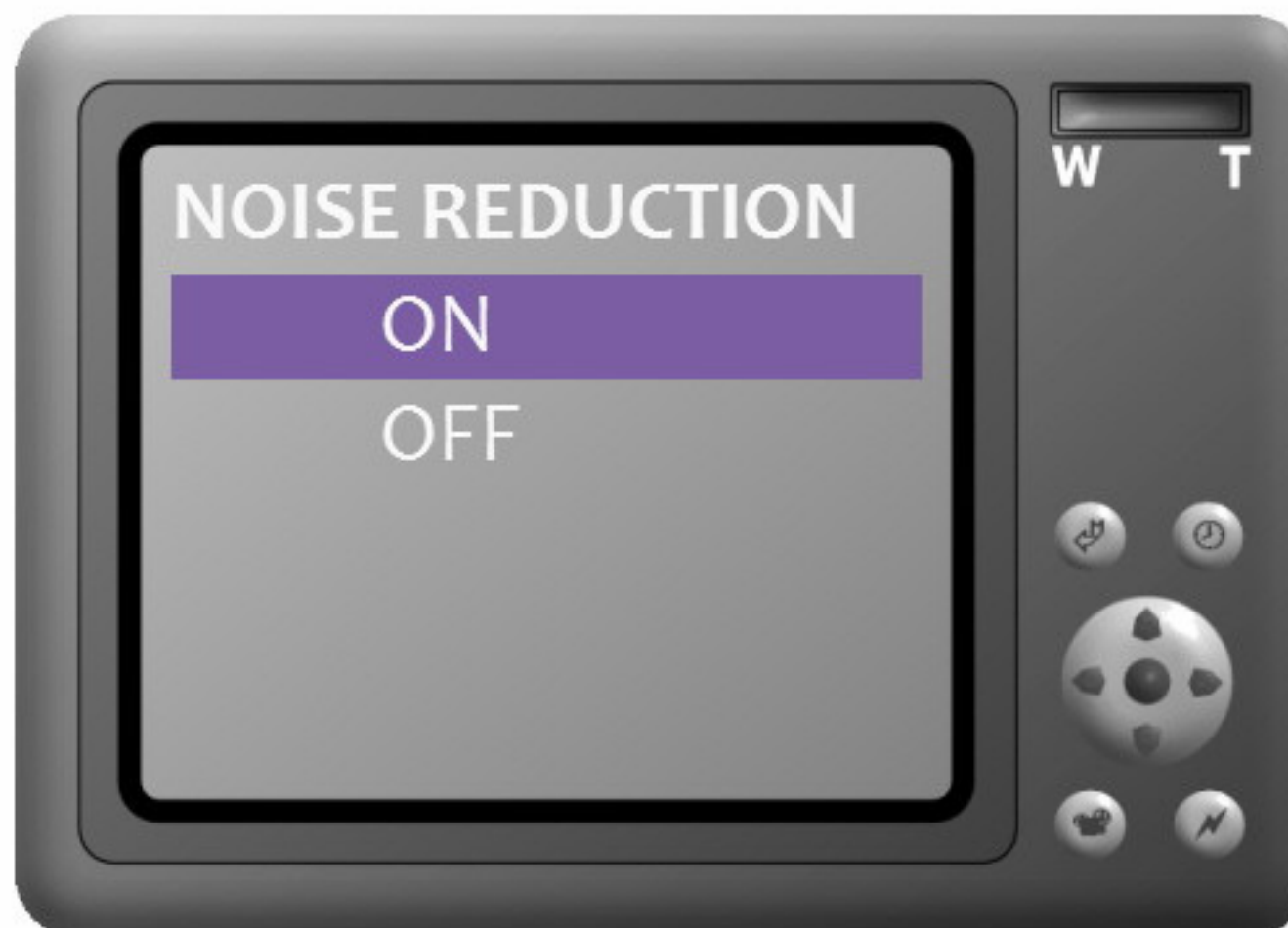


*At left - the original photo. At right, after we placed it through the **PhotoShop Express** noise reduction feature.*

ISO Settings

Your camera may have a feature called **noise reduction**. Certainly, this will reduce noise, but it will use digital techniques to actually alter the photograph to do so.

Try some shots with and without this feature enabled, and see what the difference is like.



ISO Settings

In an attempt to reduce noise at high ISO settings, some cameras will only allow a maximum resolution when using high ISO settings - say, 6 megapixels on a camera that will normally allow 10 or 12 megapixels.

Some cameras also get poor color saturation at higher ISO ratings - part of the way they attempt to squash noise.



1/74 of a second, 6400 ASA, f8. On this camera, photos at this ISO setting are reduced to 3 megapixels.

ISO Settings

We mentioned earlier that some new DSLR cameras allow ISO settings up to 25,600. As you can guess, the resulting images are noisy. But hey, it is ISO 25,600. And the results are much better than you would guess at that setting.

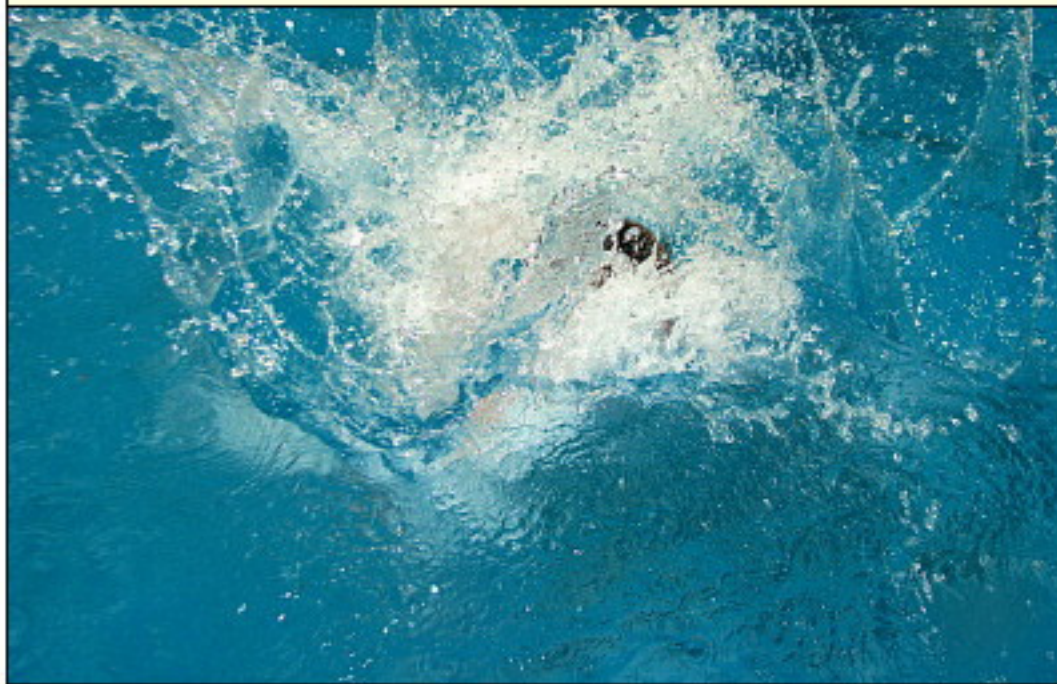
Combine quite reasonable results with the amazing flexibility of ISO 25,600, and it's a great feature. Don't expect 25,600 ISO capability on compact cameras anytime soon - this is definitely a high end DSLR feature for some time.

ISO Settings

Higher ISO settings can do more than just allow you to take photos in low light.

If you are taking action shots, you generally want a very fast shutter speed. This will help to 'freeze' the action. Problem is that fast shutter speeds mean not a lot of light is let into the camera. Using a higher ISO setting in this case will help compensate - so you can take better action shots.

200 ISO, 1/500 sec



1600 ISO, 1/1000 sec

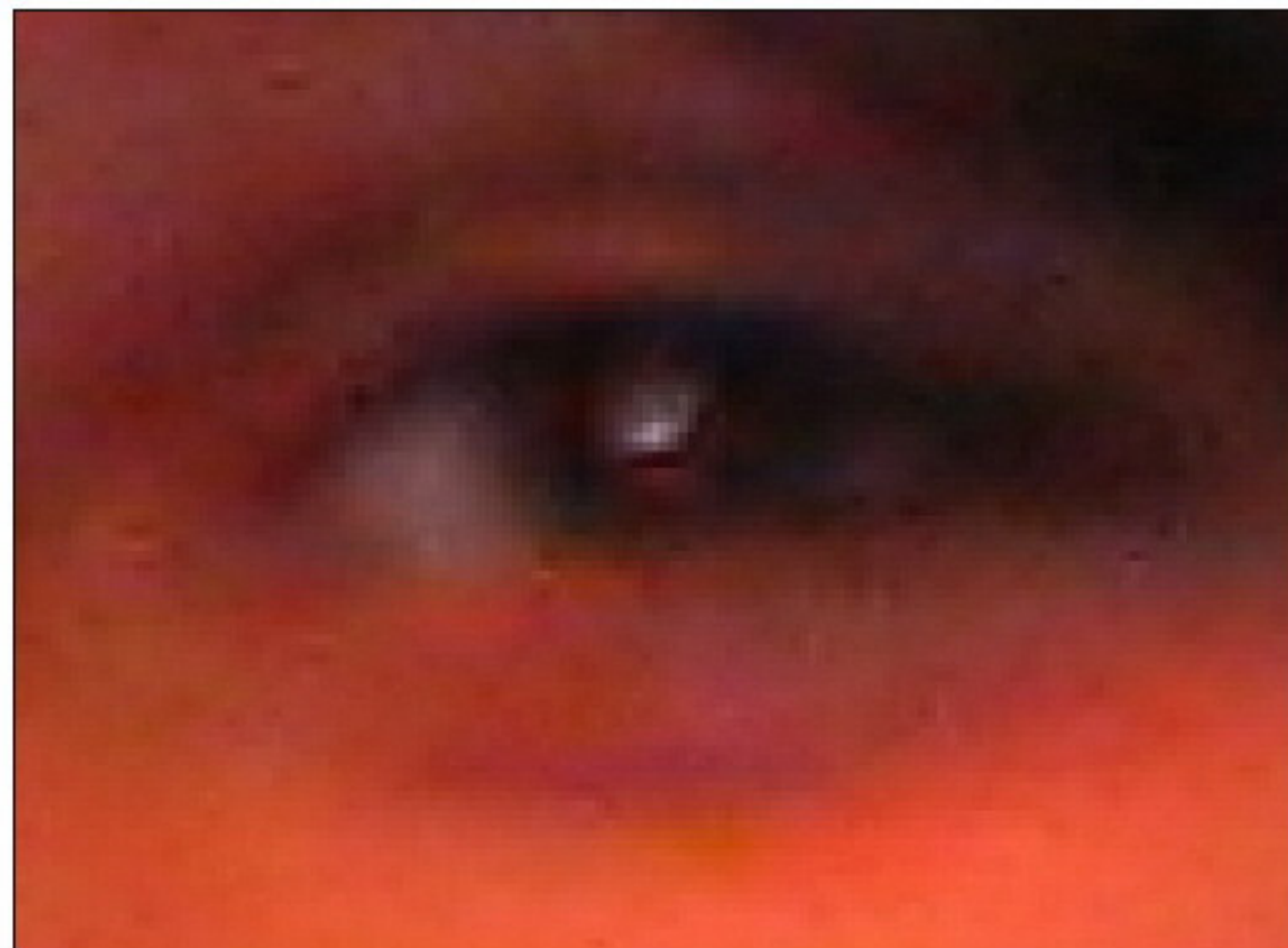
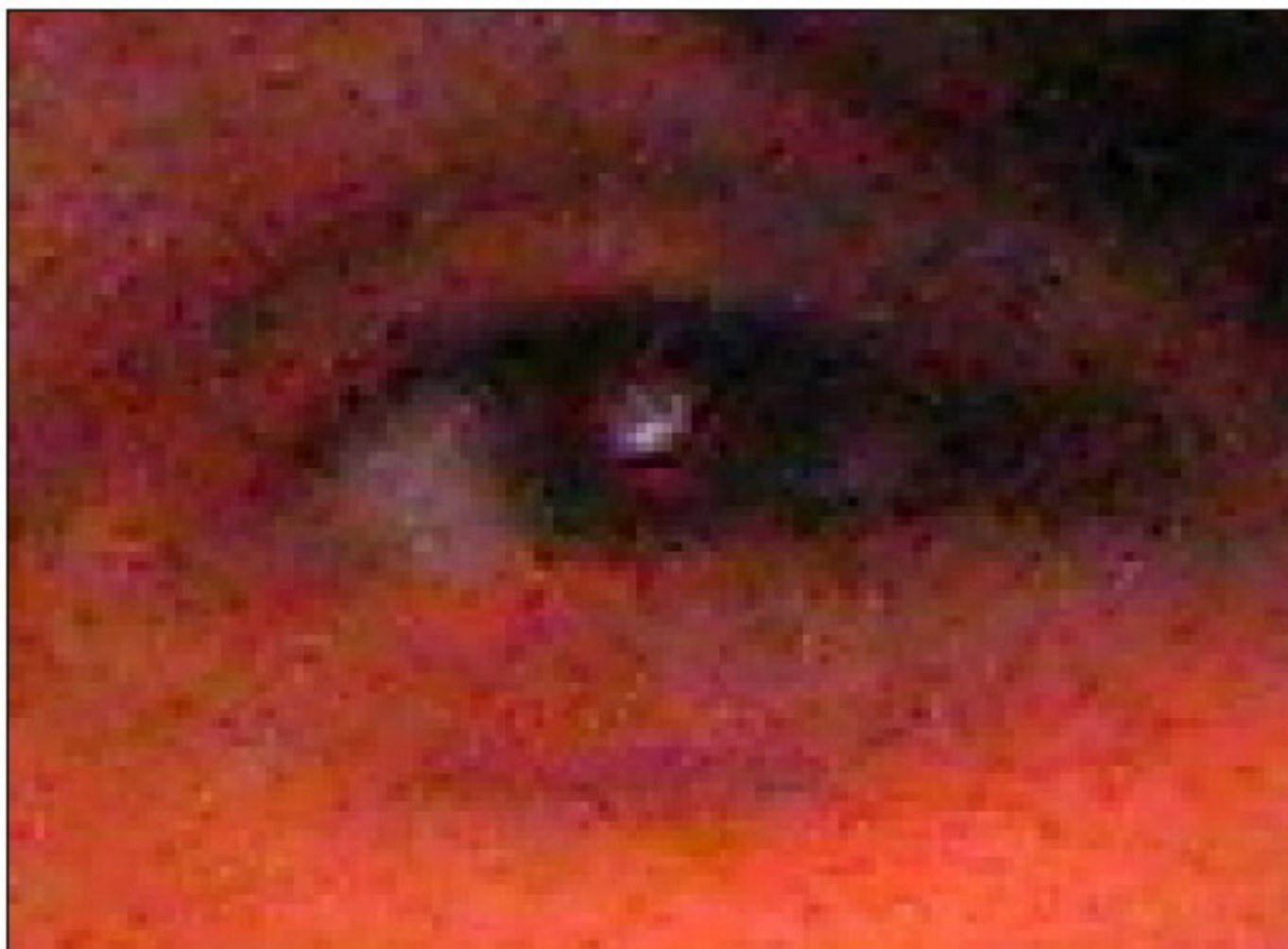


If you have a 'sports', or 'action' mode on your camera, there is a good chance it will up the ISO rating automatically to allow for faster action shots at higher shutter speeds.

ISO Settings

There is a lot of software now available that will help remove excess noise from a photograph.

Windows Live Photo Gallery is one of those that can reduce noise in photos you've taken.



Here - in extreme close-up - we've used Windows Live Photo Gallery to remove the excess noise from the image on the left. The result is the image on the right.

ISO Settings

Well done. You've now completed this lesson.

In this lesson, we took a look at **ISO Settings**.

