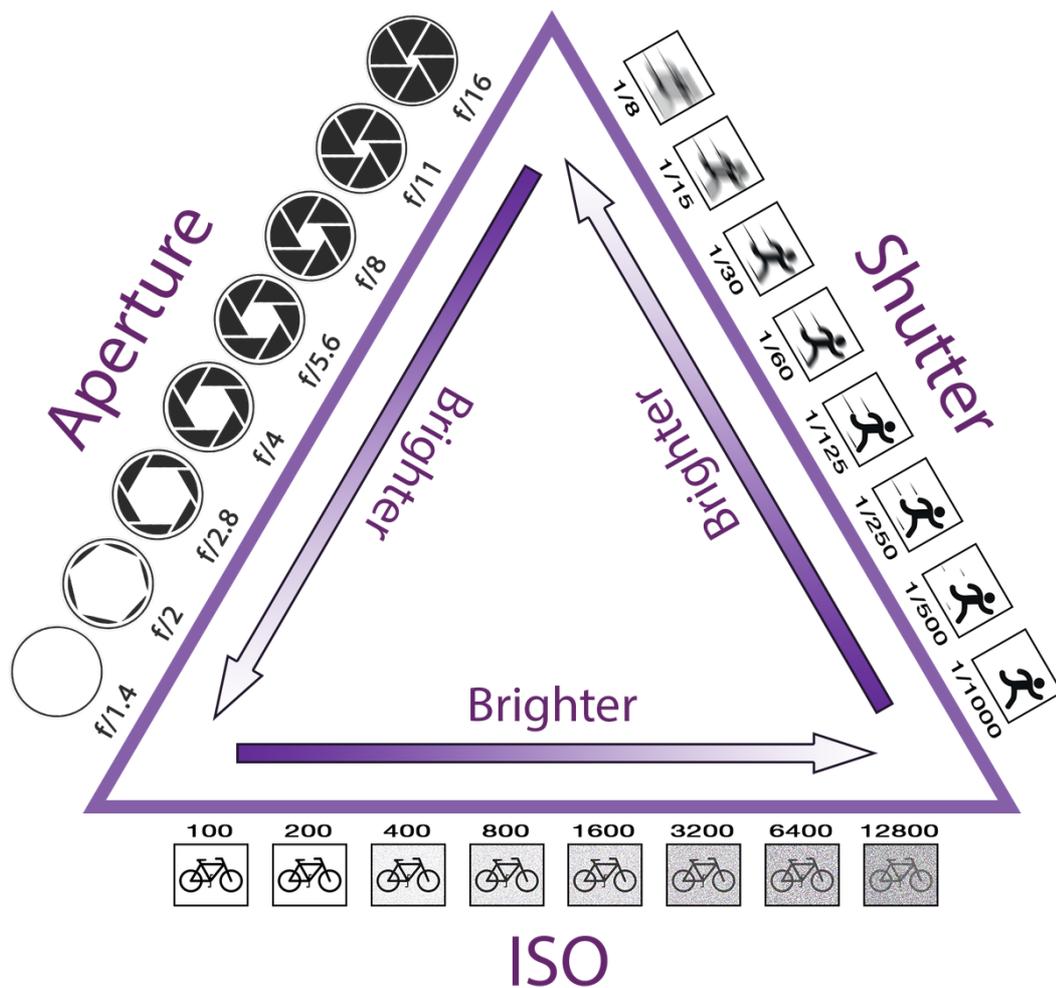


### Taking Control - Putting it all Together

In Hints 5 we mentioned that aperture, shutter speed and ISO are all things that control exposure but in addition each has an effect on other aspects of an image:

Aperture	the depth of field
Shutter speed	subject movement
ISO	image quality.

The trick is using the 3 in conjunction with one another to get the image you want - albeit that invariably we have to make compromises.



## Examples

### 1. Wildlife photography:

- a. We're sitting in a hide in a forest on an overcast day with a red squirrel in front of us
- b. We have our camera set up with a big telephoto lens on the front (like the white ones you see around sports stadia)
- c. We have our sandwiches & flash of coffee to hand. (a pre-requisite for such occasions)

Things we want to achieve in order of preference:

- Blur the background to make the squirrel stand out against the messy forest background. Easy - we have a telephoto lens with a fast maximum aperture so setting F4 should help that one  
**Remember** - depth of field is most shallow with a telephoto lens set at its largest aperture eg f/4
- We want to "freeze" the movement of the fast moving little critter for which we need a shutter speed of around 1/1000<sup>th</sup> second.  
**Remember** - the faster the shutter speed the easier it is to "freeze" motion
- Have as high a quality image as possible notwithstanding the low light levels in the forest- as a starting point let's consider an ISO of 100  
**Remember** - image quality is highest at lower ("default" rather than "extended") ISO settings.
- Maximise opportunities with a fast moving subject so set;
  - a high frame rate and
  - predictive autofocus

So, camera set to aperture priority and an aperture of F4 set ISO to 100, exposure meter to evaluative (matrix) metering and what do we get?

Bugger - a suggested shutter speed of only 1/125<sup>th</sup> second

So what do we do, we need that fast shutter speed to freeze movement?

Simple we need the sensor to be more sensitive to light so set a higher ISO

The shutter speed is 3 stops slower than we need so we need to make the sensor 4 stops faster, ie set an ISO of 800 which for a modern sensor will still provide a very acceptable image quality.

Re-meter and "bingo" - a shutter speed of 1/1000<sup>th</sup> second, we're in business 😊

**Note:**

- All the foregoing readings align with the sunny f/16 rule so if you become familiar with that you'd know that an ISO of 100 was not going to be sufficient.
- Another way to proceed which is often used by wildlife photographers is to set auto ISO on your camera, with a default minimum shutter speed of 1/1000<sup>th</sup> second. The camera would then set the ISO to achieve this.

2. Landscape photography.

- a. We are standing in the Yorkshire Dales in the late afternoon on an autumnal day, with a beautiful scene stretching out in front of us.
- b. We have our camera set up with our wide angle lens in place to take in as much of the scene as possible.
- c. We have our sandwiches & flask of coffee to hand (again a prerequisite for such occasions)

Things we want to achieve in order of preference

- We want to capture as much detail as possible and all those delicate tones so a low ISO is a must.; let's say 50 ISO  
**Remember** - image quality is highest at lower ("default" rather than "extended") ISO settings
- To capture all that detail we also want as much of the image as possible in sharp focus, so a small aperture is required - let's say f16.  
**Remember** - depth of field is greatest with a wide angle lens set to a small aperture eg f/16

So, camera set to aperture priority (again) and an aperture of F16 and ISO to 50, exposure meter to evaluative (matrix) and see what we get.

A shutter speed of 1/15<sup>th</sup> second. The view in front of us isn't going to run away so not a problem

**EXCEPT** with that shutter speed we're in danger of getting camera shake if we hand hold.

But come on folks - we're a landscape photographer, we're used to using slow shutter speeds **so have our camera set up on a tripod, don't we...?**

Seriously now, a tripod can be a bit of an annoyance if we're out for a long walk and photography is incidental to that activity, so if no tripod either

- Take along a monopod (far easier to carry)
- Make sure vibration reduction/image stabilisation is engaged.
- And/or set a higher ISO to increase the shutter speed.

We're in business again.

Both examples are a bit simplistic as along the way we've had to make a few decisions and importantly take control away from the camera and as a consequence we're no longer in Programme Mode.

**Going Full Circle: Auto or Manual - or even sticking with Programme.**

One thing that's often debated is whether we should use auto or manual or a combination for things such as exposure metering, setting of aperture and/or shutter speed, ISO and autofocus.

- Some go for aperture priority or shutter priority metering and auto ISO/focus and then use things like exposure compensation and focus over-ride/lock whilst
- Others go fully manual,
- And yet more a different combination depending on what they are taking pictures of
- Each arguing that their own option provides better control and or speed of use.

At the end of the day it doesn't really matter - each has its pro's and con's and really it's down to personal preference so do what is right for you, but now you can hopefully make a more reasoned judgement on what that may be.