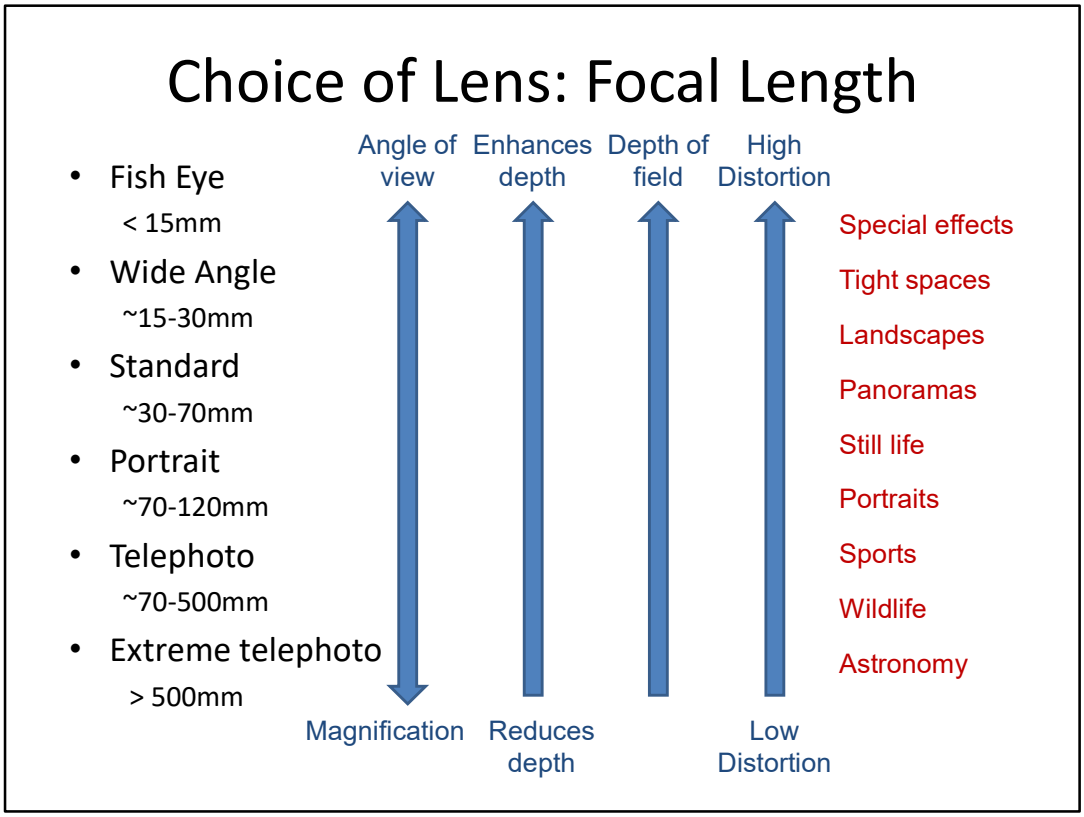
Part 2: Choice Of Lens And Gadgets

Steven Beard
Musselburgh Camera Club



The appearance of an image depends very much on the focal length of the lens you are using. A wide angle lens helps you fit in more of a scene, but it also creates distortion effects which can look great in a dramatic landscape but horrible in a portrait. A telephoto lens lets you zoom in to see the detail. It also shrinks the depth in an image, making objects at different distances look closer together. Note that the depth of field reduces when you use a larger focal length.

Choice of Lens: Focal Length

- Fish Eye
  < 15mm
- Wide Angle
  ~15-30mm
- Standard
  ~30-70mm
- Portrait
  ~70-120mm
- Telephoto
  ~70-500mm
- Extreme telepho
  > 500mm

Magnification Reduces depth Low Distortion

A fish-eye lens can be used for special effects (e.g. inside a tree) or to make a small room look much larger.

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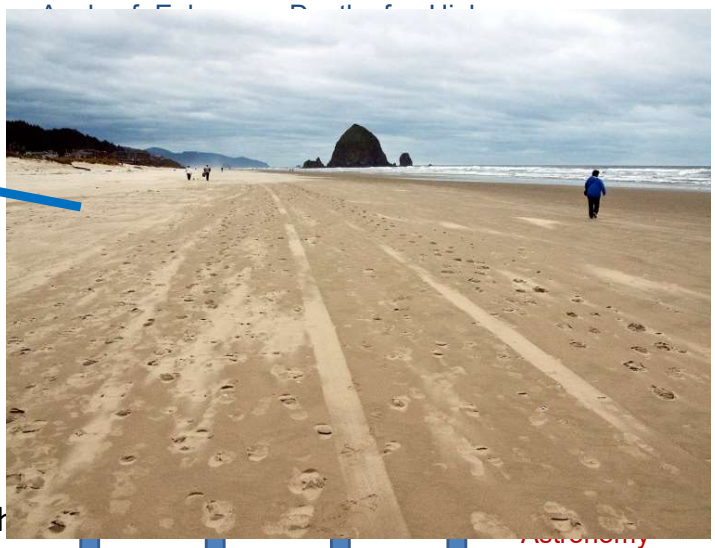

Magnification | Reduces depth | Low Distortion

A wide angle lens can be used to emphasise depth in a landscape image. Objects at different distances seem further apart. The enhanced perspective effect can help to lead the viewer into a scene. But a wide angle lens can also make it harder to emphasise a subject, since objects in the scene are shrunk. The image needs to work as a whole.

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A standard lens views the world in a similar way to the human eye. It makes a good general purpose lens.

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A portrait lens (or a telephoto lens at the low side of its range) is good for portraits. It minimises the distortion which a wider angle lens would produce and it narrows the depth of field, letting to blur the background to emphasise the subject. Portraits can be made with longer focal lengths, but the fact you have to stand so far away (and the reduction in depth) can be a problem.

As the focal length of a lens increases, the harder it becomes to eliminate camera shake. If you are hand-holding a shot a rule of thumb is to use a shutter speed faster than the focal length of the lens: at least 1/70th of a second for a 70mm lens or at least 1/200th of a second for a 200mm lens. You can overcome this limitation by using a tripod.

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Angle of Enhances Depth of High

Magnification Reduces depth Low Distortion

A telephoto lens is good for wildlife photography and sport photography, allowing you to keep a good distance from the subject or zoom in to the action. It is also good for special effects which require a very narrow depth of field (such as emphasising a single brick in a long wall).

Note that “fast” telephoto lenses, which allow aperture openings larger than f/4, can be very expensive because they need very large lenses.

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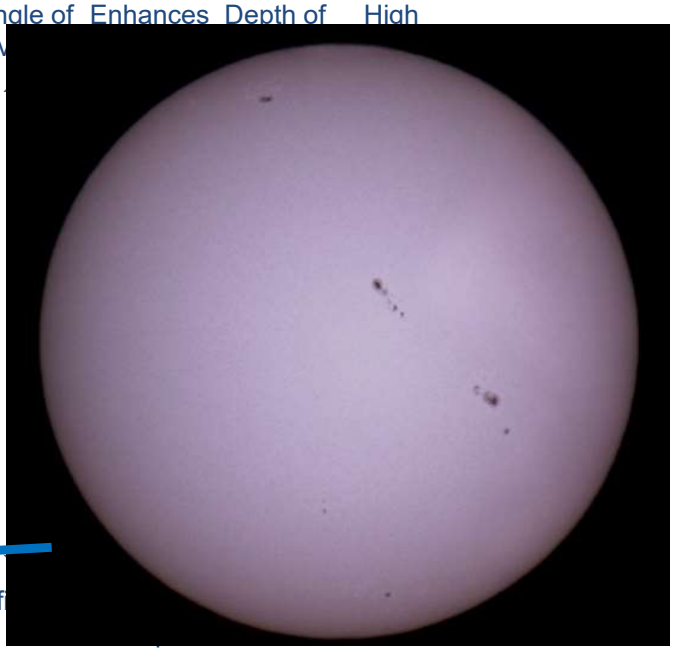
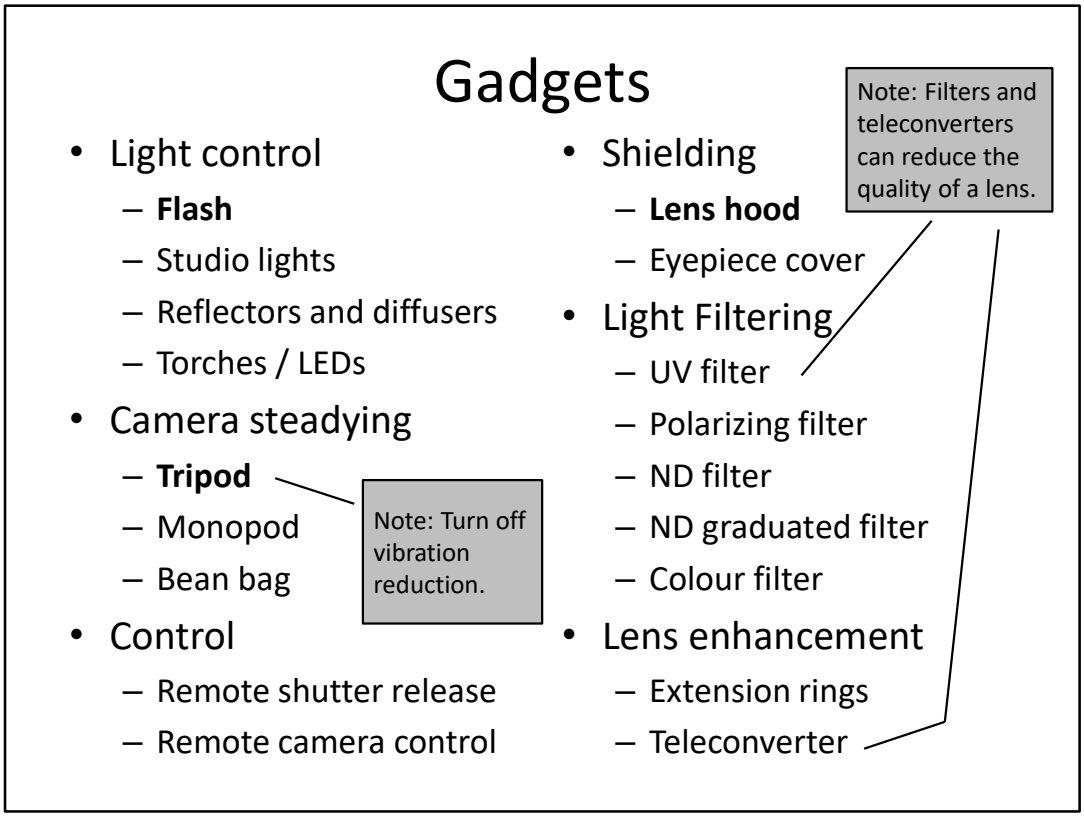
Angle of Enhances Depth of High

Magnif



It is also possible to find lenses at even larger focal lengths, effectively turning your camera into a telescope. These are useful for subjects, such as astronomy, that require a high magnification. In this example I have used an astronomical telescope as a 1400mm f/14 lens.



There are a number of gadgets out there which can help you with creative photography. Some are more expensive than others. Filters are much cheaper than lenses, and can be used to protect a lens or make creative effects (e.g. a polarizing filter can improve a blue sky, an ND graduated filter can improve a seascape and an ND filter lets you take long exposures in daylight). Be aware, however, that a filter can spoil the quality of a lens. Take all the filters off if you want the very best quality and don't need to protect the lens (e.g. for indoor macro shots).

The gadgets I think are most useful are shown here in bold. A flash is very useful for photography in the dark, or for filling in shadows. A tripod is essential for reducing camera shake with a long lens or with long exposures (turn off your lens's vibration reduction when using a tripod). A remote shutter release is a perfect companion when using a tripod. A lens hood is essential for reducing flare and unwanted stray light. If your lens has one, always use it unless it blocks the light from your flash.

Teleconverters are a cheap way of expanding your focal length range. A 200mm lens with a 2x teleconverter will behave like a 400mm lens. However, the image quality will not be as good as a 400mm lens and (because you are expanding the focal length without increasing the size of the lens) the maximum aperture will be reduced by 2 stops (e.g. from f/4 to f/8). If you are going to use a teleconverter, you need a good quality fast lens to fit it to.

Photography on a budget

Standard gadget	Budget alternative
• Flash or studio lighting. – Coloured gel filters.	• LED torches. – Coloured plastic film.
• Reflectors.	• White paper. Aluminium foil.
• Diffuser.	• Bubble wrap. Tracing paper.
• Photographic backdrops.	• Bed sheets, curtains, paper.
• Bean bag.	• Bag of rice.
• Macro lens.	• Close-up filter or extension rings.
• Soft focus filter.	• Glass smeared with Vaseline (or breathed on).
• Special effects filter.	• Decorated glass or bottle.

If you have a limited budget, it is better to use that budget to buy a good camera and save on the extras. Buying gadgets can be expensive, but you can often get a similar effect with cheaper alternatives, as shown here. What objects do you have in your household that could help improve your creativity? Why buy an expensive "soft box" if you can cobble something together yourself using a laundry drying rack draped in bubble wrap, for example?

Note that any filter will reduce the quality of a lens it is attached to. You will get better results for macro photography from extension rings than from a filter. But a close-up filter is a better option of you intend to take the filter on and off in a dirty environment (since you don't need to remove your lens to remove it).