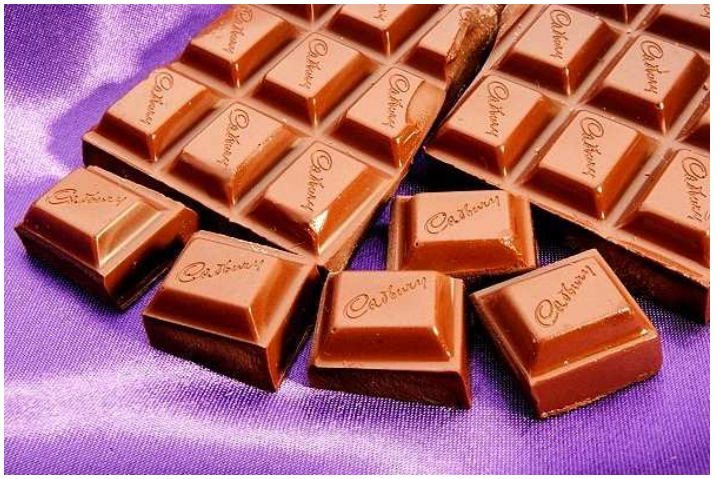

Lighting and Studio Photography

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LIGHTING BASICS

Small light sources produce hard shadows

Large light sources produce soft shadows

➜ N.B. Distance also affects effective size.

Types of lighting

Sunlight

- ➜ Direct sunlight is hard (point source)
- ➜ Sky light is soft

Tungsten/halogen lighting

- ➜ Electricity heats up filament which glows white hot
- ➜ Small hard source, but easy to add modifiers to direct light
- ➜ High power usage and heat output

Fluorescent lighting

- ➜ Around 5 times more efficient than tungsten
- ➜ Complex/unpredictable colour spectrum

Flash lighting

- ➜ Very short high-intensity flash of light — much brighter than practically achievable with continuous lighting
- ➜ Must be synchronised with camera shutter
  - ➜ hotshoe or X-sync connector
- ➜ Sometimes combined with a continuous modelling light to allow the photographer to visualise the lighting

Direction of light

From the front:

- ➜ no shadows, flat

From above:

- ➜ soft light can be useful for fill, like a cloudy sky
- ➜ hard light casts harsh shadows downwards

From the side:

- ➜ emphasises form and texture

From behind (rim lighting):

- ➜ emphasises the outline of the object
- ➜ typically use a grid to avoid light hitting the lens directly

SHADOW CONTRAST

A single light produces very deep shadows in areas where it does not reach.

Reducing shadow contrast:

- ➜ Add a reflector to bounce light into the shadows
- ➜ Move the light further away
- ➜ Add a less powerful light to fill in the shadows (fill light)

Light modifiers

We use light modifiers to:

- change the apparent size and shape of a light source
- change the colour of a light source
- control where light falls

Examples of light modifiers:

- umbrella (reflective or shoot-through)
- softbox
- diffusion screen
- snoot
- barndoors
- flag or gobo
- honeycomb grid
- colour gels

EXPOSING FOR FLASH

Maximum shutter speed is the X-sync speed

- ➜ Depends on camera, typically around 1/250s
- ➜ At faster speeds, the shutter is never fully open, so only part of the frame would be lit by the flash
- ➜ Some flash systems have a high-speed sync mode which pulses the flash

No minimum shutter speed

- ➜ First-curtain flash: flash fires after shutter opens
- ➜ Second-curtain flash: flash fires before shutter closes

Shutter speed has no effect on flash exposure

- ➜ Flash much shorter than exposure time
- ➜ Instead, aperture controls flash exposure

Flash quick start guide

- Set camera to manual
- Set aperture depending on desired depth of field
- For flash-only exposure:
  - Set shutter speed below X-sync speed (say 1/200s)
  - Set ISO speed as low as possible
- Alternatively, when combining flash with available light:
  - Set shutter speed and ISO speed for desired ambient exposure
- Set flash power to obtain correct exposure (your camera/flash system might do this automatically, but you may need to adjust Flash Exposure Compensation)

Colour temperature correction

Daylight colour temperature ≈5500K

- ➜ Somewhat lower (more orange) at sunrise and sunset
- ➜ Somewhat higher (more blue) in shade

Tungsten colour temperature ≈2700K

- ➜ Much lower (more orange) than daylight

If using one type of light, set white balance appropriately.

- ➜ If using film, either use correct film or use a filter.

If mixing different types of light, consider placing colour gel over one light.

- ➜ orange gel (CTO): converts from daylight to tungsten
- ➜ blue gel (CTB): converts from tungsten to daylight

Portrait lighting

Broad lighting

- ➜ Key light on camera-facing side of face
- ➜ Tends to widen appearance of face

Short lighting

- ➜ Key light on side of face turned away
- ➜ Tends to slenderise face

Butterfly/glamour lighting

- ➜ Key light on nose axis
- ➜ Flattest lighting, minimises nose