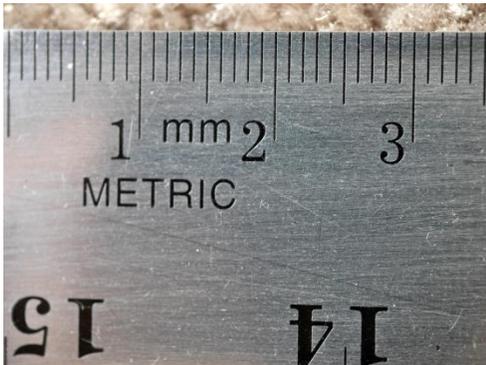


# Holy Macro

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## Macro defined

- Close-up photography
- The object photographed equal or smaller to captured image
- 1:1 ratio fills full frame camera sensor with 35mm wide object



## Macro anomaly

- Small sensor cameras can achieve higher magnification than FF DSLR
- Also their Depth of Field is much larger than FF DSLR
- Therefore small sensor bridge cameras with long telephoto lens and close-up filter are superior for extreme macro work



## Point and Shoot camera

- Tiny sensor, ability to focus close

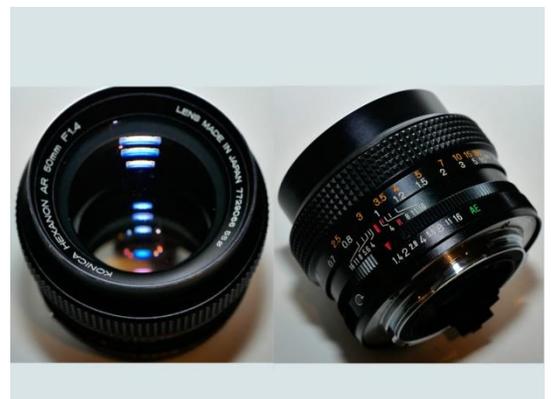


## Larger sensor camera

- M4/3, C or FF sensor, much shallower DOF (Depth of Field)

## Equipment needed

- Pseudo macro with telephoto lens
- Non macro lens + close-up filter(s)
- Non macro lens reversed (buy old film camera lens, 50 mm or wider)



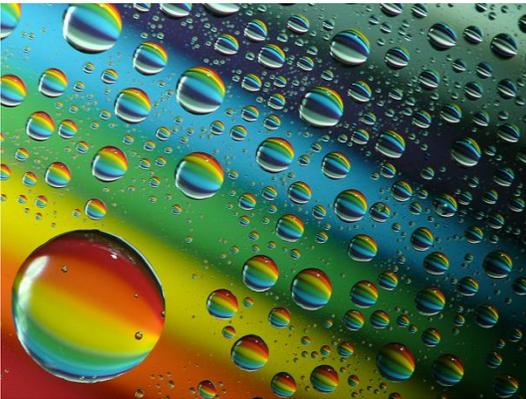


- Telephoto lens + reversed non macro lens
- Macro lens
- Lens + extension tube(s)
- Combination of all of the above



## Focusing

- Manual



- Manual, move camera in - out
- Automatic

## Lighting

- Available light is not enough with higher magnification
- Moving subject, small aperture, low ISO all dictate need for more light
- On-camera flash obstructed by the lens

- Diffuse the flash
- Ring flash

## Tripod

- Maybe a good choice to minimise movement
- Only useful with stationary subjects
- Too restrictive for effective macro photography



## Depth of Field

- Fully open lens can produce selective focusing and very creative images
  - Stopped down lens gives sharper overall image
  - Smaller sensor camera produces deeper DOF
  - Novel technique of focus stacking (shooting images at multiple focusing spots) is being used a lot



# Focus stacking

- To get deeper DOF
- To use lens at its best f-stop (2-3 stops above largest f-stop)
- Processing in camera
- Processing in Photoshop
- (Automate, Photomerge, do not Blend images together)
- Select all layers
- Edit, Autoblend, Stack



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