

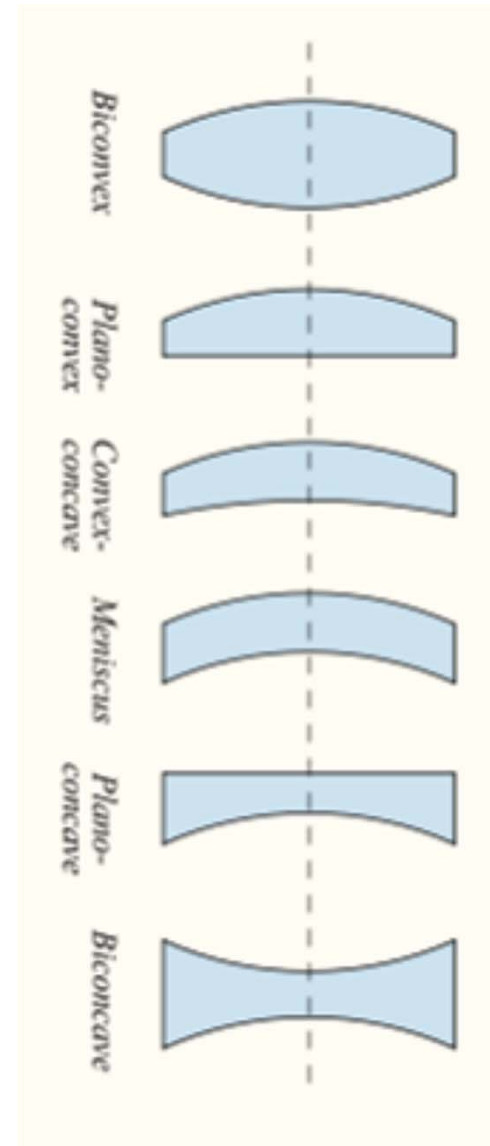
# Camera lens...

everything you wanted to know  
but where afraid to ask



Aristophanes circa 450(?)  
BC

By the end of today's lesson, you will be introduced to different camera lenses and understand the differences between them.



There are four basic types of lenses,  
they are:

- Normal
- Wide angle
- Telephoto
- Zoom

We will be discussing them in this order

# Normal lens

- This lens is called “normal” because it has little if any magnification compared to your eye
- This is the cheapest, and most often used lens
- It offers a very wide aperture (ie.- f1.8, f1.7, or even f1.4)
- This is the lens we have used up until this point on the cameras in this class
- Has a focal length of 50mm

This is what a normal lens looks like:



# The wide angle lens:

- Offers an increased angle of view
- Allows you to take photos in an area where space is limited
- Offer a very good depth of field
- Interesting effects; exaggerated sense of perspective
- Available in both rectilinear and fisheye
- Has a focal length of less than 50mm (usually less than 35mm)

This is a picture taken with a rectilinear lens from about 2 meters away:  
away:



And this is a photo taken with a fisheye lens from 5 cm's away...

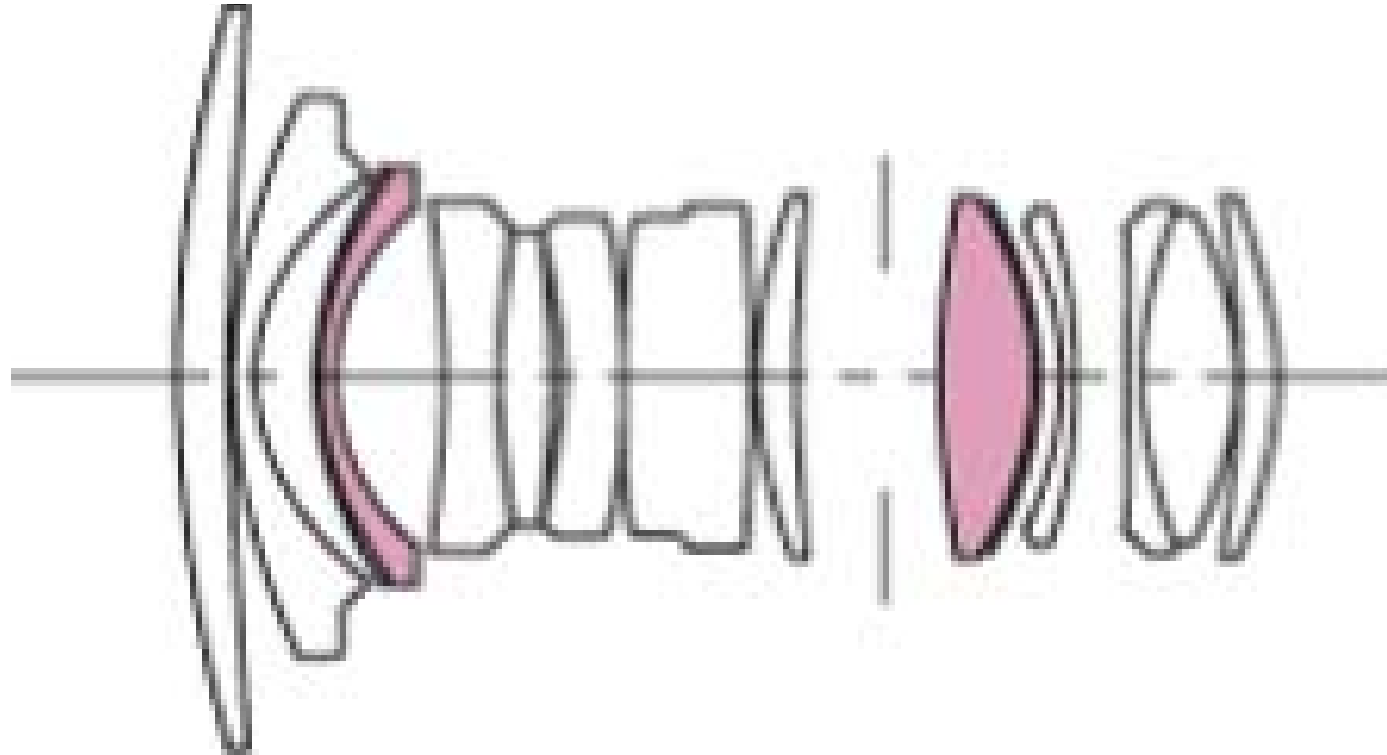




And another...



There are up to 13 separate lenses  
combined one lens!



■ Aspherical Lens

# Next we have the telephoto lens

- These lens range between 70 – 1000mm!
- They tend to give your photo a “flat” look
- You must use a very fast shutter speed with these lenses over 200mm
- These offer little depth of field
- Allow you to get a photo without getting too close to your subject
- Larger lenses need a stand for the lens, not the camera

They look something like this:



These are really pricey, as much as \$10,000, but yield amazing results

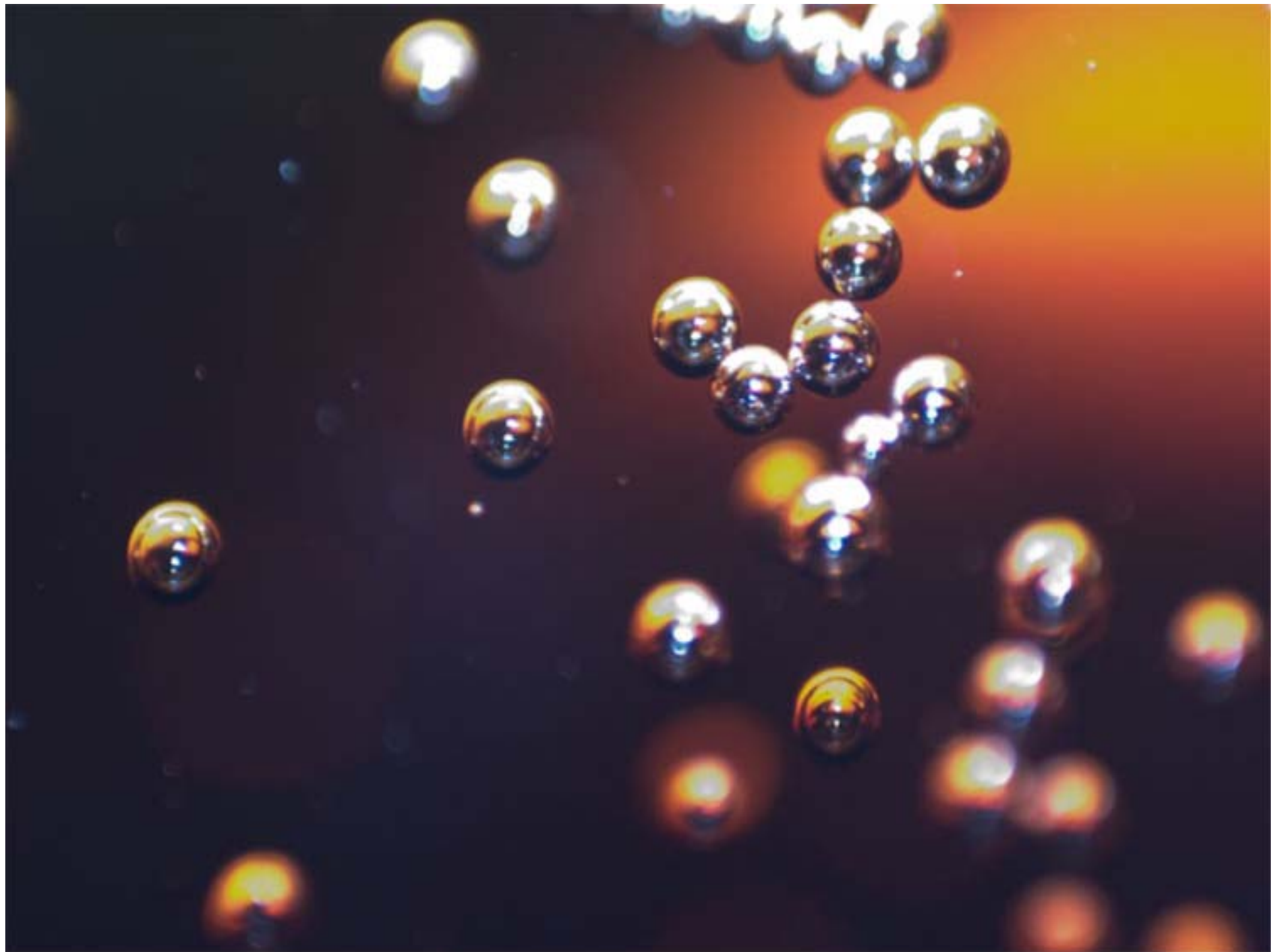


# Finally, there is the zoom lens.

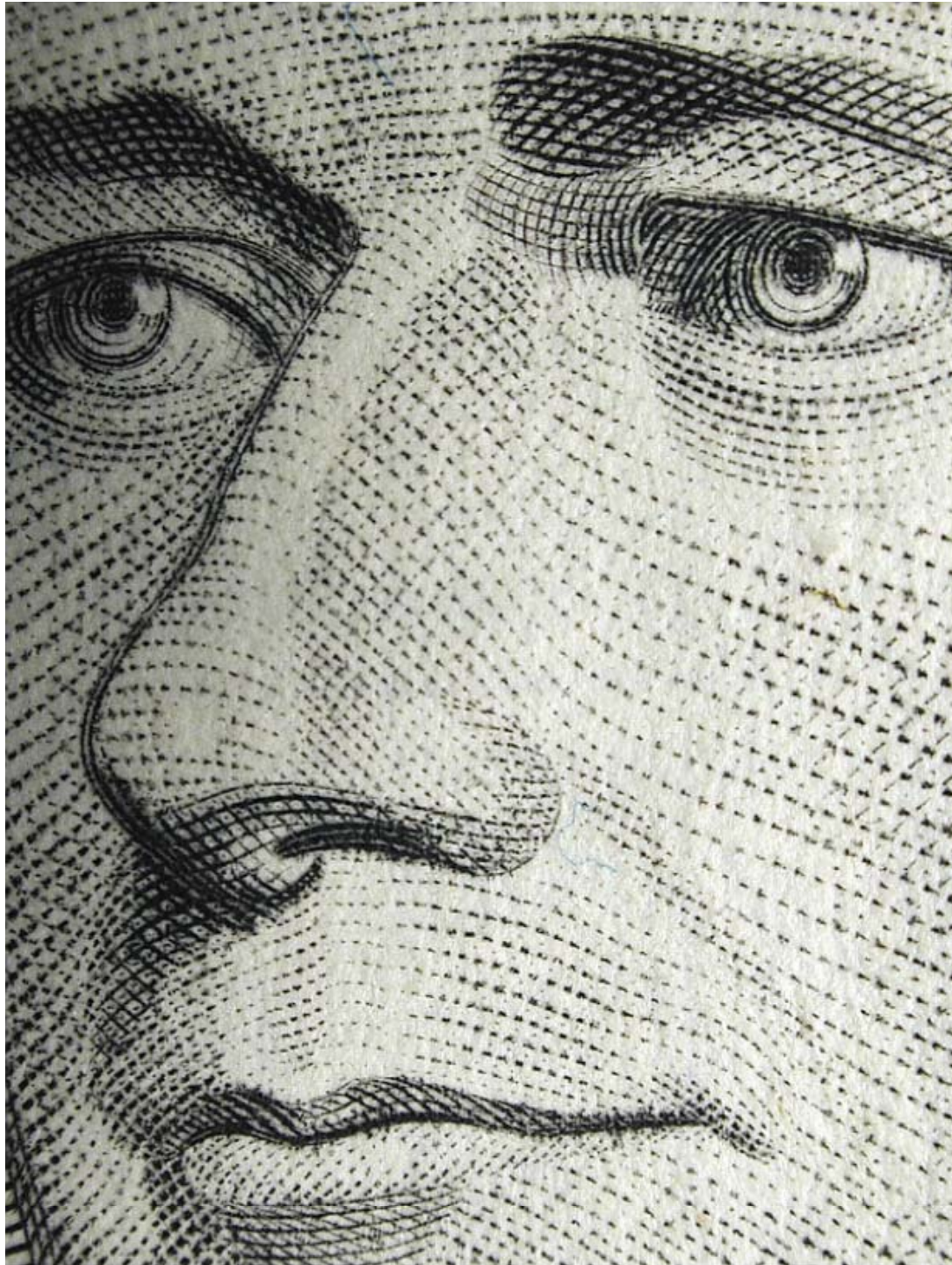
- This lens has variable focal lengths,
- Fewer lenses to carry
- You can do “cool” special effects with them
- They tend not to have very wide maximum apertures (ie f5.6)
- [http://en.wikipedia.org/wiki/Zoom\\_lens](http://en.wikipedia.org/wiki/Zoom_lens)

# Finally, we have the macro lens

- the classical definition is that the image projected on the "film plane" (i.e. film or a digital sensor) is the same size as the subject.
- This means you could get a large postage stamp in focus and it would fill the viewfinder!!!



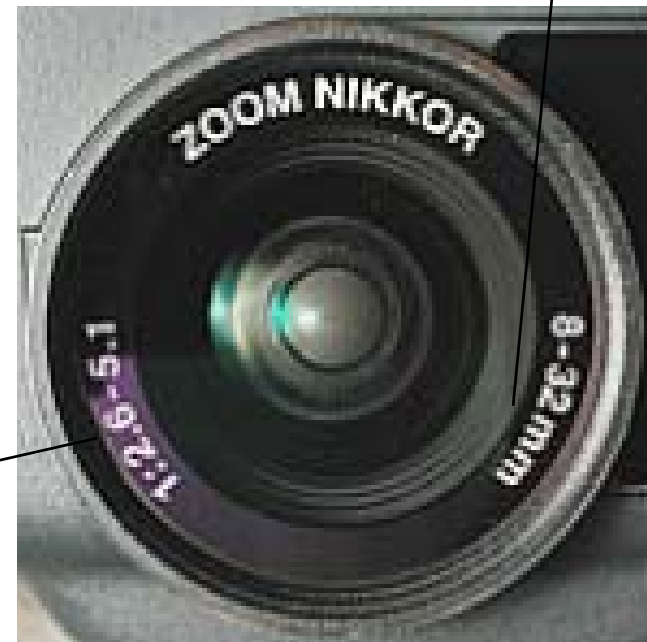




# Deciphering lenses

- Lens information is printed around the circumference of the lens body

This is the focal length of the lens, in this case 8-32mm because it is a zoom lens



This is the maximum Aperture of the lens (f2.6@8mm, f5.1 @32mm)