

## Close up Photography.

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Most lenses have a minimum distance between your camera and the subject to be in focus. The average is about 1 foot and a couple of inches.

Be aware that such distance is not from the edge of the lens.

The distance is from a very small circle with a line across located on top of the camera body. That is the location of the sensor.

There are lenses called 'Macro' lenses that will allow closer distances. They also have other good features. Also they are more expensive.

Smart phones get close to subject, but they also have limitations.

There are 3 ways to get closer

1 Using a microscope. Obviously that is not an easier or practical way.

2 Using enlarging lenses. They usually come in 1+ 2+ 3+ 4+ and 10+ magnification.

They have to be ordered to match the outer lens ring.

3 Tubes. These are devices placed between the camera and the lens.

They must be order specifically for the camera brand

There are 2 kinds:

A- 'Very inexpensive ones' with no electronic connections and they are about 17.00

B- 'advance type with electronic connection', so the camera can control the lens.

These adapters come in sets of 3. Each one keeping the lens further away from the sensor. Just like the close up lenses, they can be combined, even use all 3 together for the most magnification.

Advantages:

Close up lenses are easy to attach.

Tubes gives better quality as they do not add any between sensor and subject.

Disadvantages:

Close up lenses, require more care and cleaning and give a bit less quality.

If you have multiple lenses with different size rings, you may have to buy multiple sets or adapters

Tubes are more difficult to change.

Pricing:

Close up lenses can be from 10.00 and up

Tubes

Simple ones from 17.00

Advanced ones depending on the camera, can be from 60.00 and up.

Be aware that with magnification comes reduction of depth of field.

Tripod very highly recommended.

Lighting is trickier and becomes very challenging.

Taking many pictures is the best way to assure success.

Notes: