



## Foundational Services – Science:

### Mobile Phone Light Sensors

- Cell phones have many sensors built into the operating systems.
- A sensor is a device that converts one type of signal to another; for instance, the speedometer in a car collects physical data and calculates and displays the speed the car is moving. Therefore, a sensor is a converter that measures a physical quantity and converts it into a signal which can be read by an observer or by an instrument.
- One of the sensors found on your phone is a light sensor. Cell phones use the light sensor for many purposes including the operation of auto flash on the phone's camera, boosting brightness levels in dark environments, and identifying when your phone is your pocket.
- Light sensors are normally visible on the face of the device.
  - Put the phone close to the light source.
  - Make certain that the light sensor is facing the light source.
- The light sensors can report data if you download a light sensor app to your phone.
- Search for light sensor or light meter apps available for your device.
  - [Google Play](#): [Light Sensor](#) or [Lux Meter](#)
  - iTunes: [LightMeter by whitegoods](#)
  - [Windows](#): [Lux-o-Meter](#) or [Light Sensor](#)
- Most light meter apps report their values in lux value, and have a typical dynamic range between 1 and 30,000 lux level.
- Due to the nature of light and the design of light sources, a lux meter is not able to identify one lux value. Light sensors report the actual variations in light intensity; therefore, the lux value will vacillate on any device.
- Some devices stop reading after 5 secs and average the range of data collected.
- The exact value is not essential. Instead, the average of the range or an estimate of the range is useful.
  - If the lux value is high, this means high amounts of light.
  - If the lux value is low, this means low amounts of light.
- On some devices the light sensor may not be linear and not be so accurate. In addition, some earlier devices do not have a light sensor.