



PETA KONSEP CONCEPT MAP

CAHAYA DAN OPTIK LIGHT AND OPTICS

Pembiasan Cahaya Refraction of light

Hukum Snell Snell's Law

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

Indeks Biasan, n Refractive Index, n

$$n = \frac{\text{laju cahaya dalam vakum, } c}{\text{laju cahaya dalam medium, } v}$$
$$n = \frac{\text{speed of light in vacuum, } c}{\text{speed of light in medium, } v}$$

$$n = \frac{\sin i}{\sin r}$$

Pantulan dalam Penuh Total Internal Reflection

Sudut Genting, C Critical Angle, C

$$n = \frac{1}{\sin C}$$

Fenomena semulajadi Natural phenomenon

1. Pelangi / Rainbow
2. Logamaya / Mirage

Aplikasi dalam kehidupan Application in life

1. Gentian optik
Fibre optics
2. Periskop berprisma
Prism periscope
3. Pemantul mata jalan
Road eye reflector

Kanta Lens

Kanta Cembung Convex Lens

Kanta Cekung Concave Lens

Formula Kanta Nipis / Thin lens Formula

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$$

Peralatan Optik Optical Instruments

1. Kanta Pembesar / Magnifying Glass
2. Mikroskop Majmuk
Compound Microscope
3. Teleskop / Telescope
4. Kanta kecil dalam kamera telefon pintar dan televisyen litar tertutup
Small lense in smart phone camera and CCTV

Pembentukan Imej Image Formation

Cermin Sfera Spherical Mirror

Cermin Cekung Concave Mirror

Cermin Cembung Convex Mirror

Aplikasi dalam Kehidupan Application in Daily life

Cermin Cekung / Concave Mirror

1. Pemantul lampu kenderaan
Reflector in car headlight
2. Cermin pergigian
Dental mirror
3. Cermin solek
Cosmetic mirror

Cermin Cembung / Convex Mirror

1. Cermin keselamatan jalanraya
Blind spot mirror
2. Cermin keselamatan dalam bangunan
Security mirror in buildings
3. Cermin pandang belakang kenderaan
Rear view mirror of vehicles