

NEW  
COMPETENCY  
PROGRAM !

# OSH-Coordinator Competency Program (Topik 9)



Department of Occupational  
Safety and Health



# OSH Coordinator

Competency Program

**TOPIC 9 REKABENTUK  
STESEN KERJA DAN  
PENCAHAYAAN  
(Workstation Design &  
Lighting)**

# **TOPIK 9**

## **TOPIC 9 REKABENTUK STESEN KERJA DAN PENCAHAYAAN**

**(Workstation Design & Lighting)**

# OBJEKTIF

- 1 Untuk mengenal pasti idea untuk reka bentuk stesen kerja yang lebih baik *(To identify idea for better workstation design)*
- 2 Untuk mengenal pasti 4 peraturan mengenai reka bentuk stesen kerja. *(To identify 4 rules on workstation design)*
- 3 Untuk mengenal pasti penambahbaikan mudah & kos rendah dalam reka bentuk stesen kerja *(To identify simple & low-cost improvement in workstation design)*

# What is meant by workstation?

## Apakah yang dimaksudkan dengan stesen kerja?

Merupakan tempat yang diduduki oleh pekerja semasa melakukan sesuatu pekerjaan. Ia boleh diduduki sepanjang masa atau ia boleh menjadi salah satu daripada banyak tempat di mana kerja dilakukan.

Contoh: Operasi alatan, Jadual Kerja untuk Meja kerja Pemeriksaan Pemasangan





# **CONTOH STESEN KERJA DI PEJABAT**

# Reka Bentuk Stesen Kerja

## 4 Peraturan dalam merekabentuk stesen kerja:

- 01** ➤ Pastikan bahan, alatan & kawalan mudah dicapai
- **02** Bekerja pada ketinggian siku & dengan ruang kaki yang mencukupi (postur kerja)
- 03** ➤ Gunakan pengapit, jig, peralatan & lekapan lain
- **04** Jadikan paparan dan kawalan mudah dilihat & difahami

# Peraturan 1: Mudah untuk Dicapai



Recommended Dimensions  
For Most Seated Tasks

Placement Of Tools  
On The Work-Table



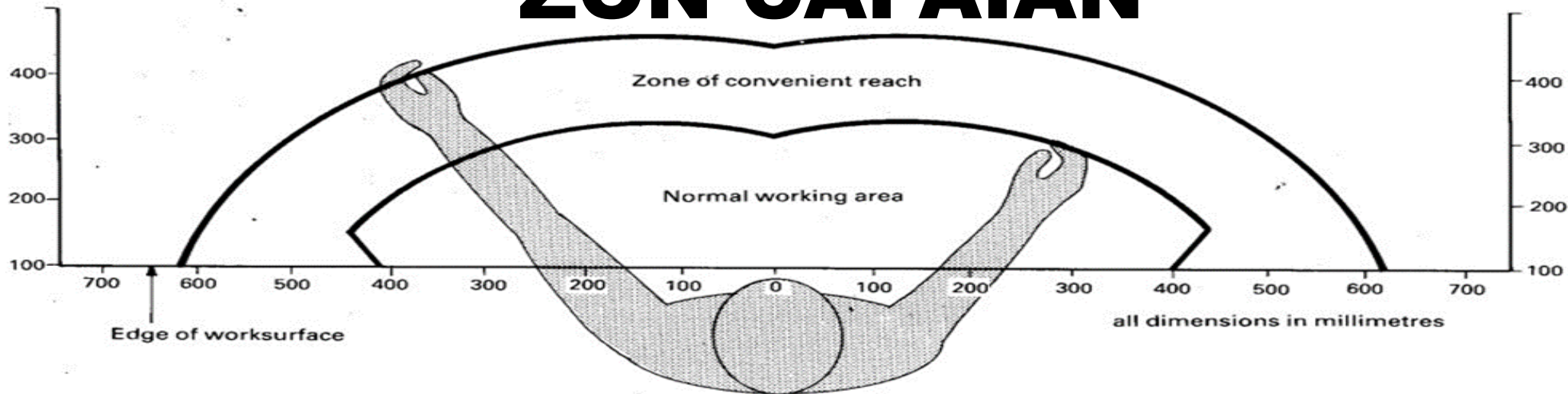
Letakkan Bahan/ Alat & Kawalan Yang Sering Digunakan Dalam Mudah Dicapai



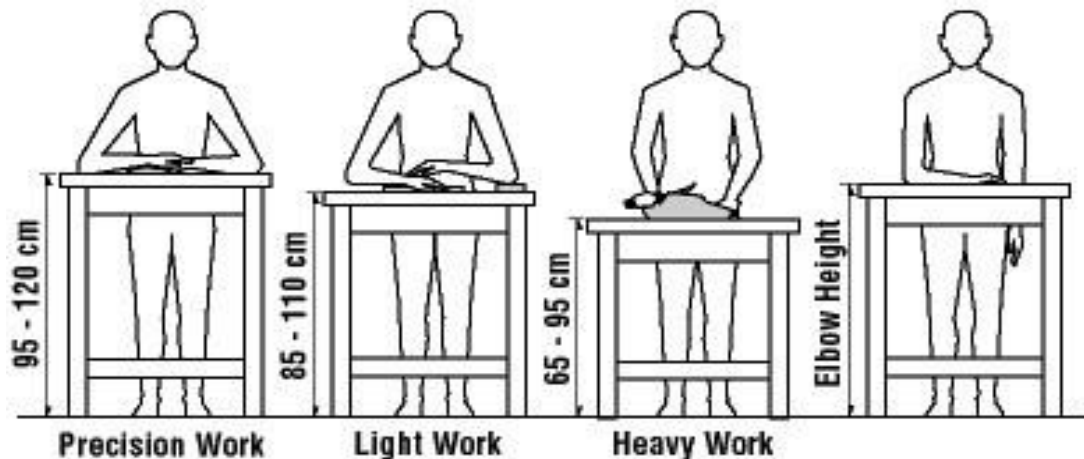
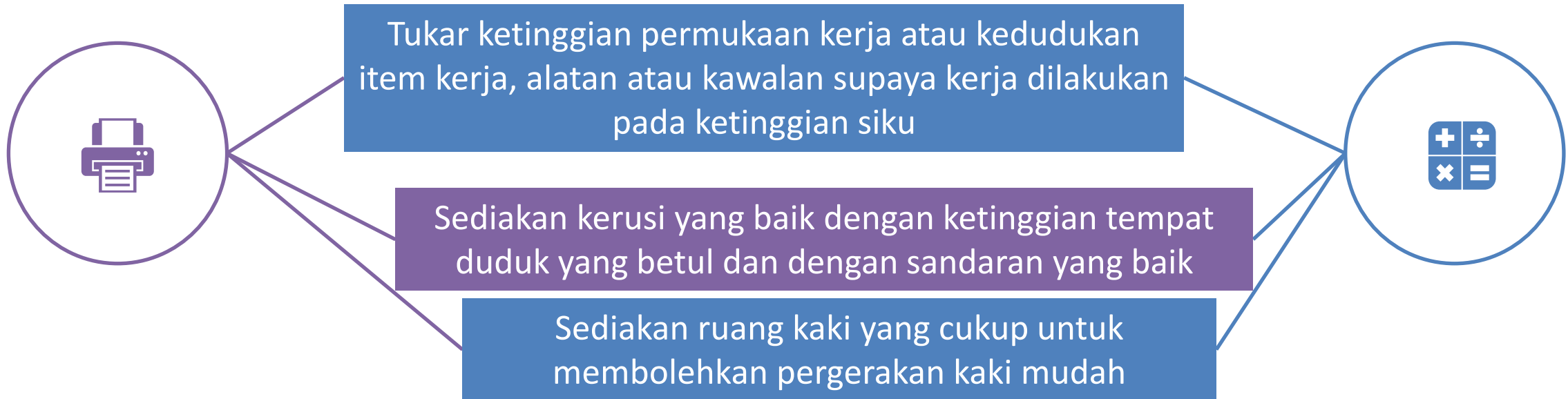




# ZON CAPAIAN



# Peraturan 2: Konsep Peraturan Siku Postur Kerja



***Peraturan mengenai postur kerja***

# Peraturan 2: Konsep Peraturan Siku Postur Kerja



Laraskan Ketinggian  
Bekerja Untuk Setiap  
Pekerja Pada Paras  
Siku Atau Di Bawah  
Sedikit

# Peraturan 2: Konsep Peraturan Siku Postur Kerja



↑  
Too Low

↑  
Too High

↑  
Correct

Contoh Tempat Duduk Dilaras Dengan Baik & Kurang dan kurang baik

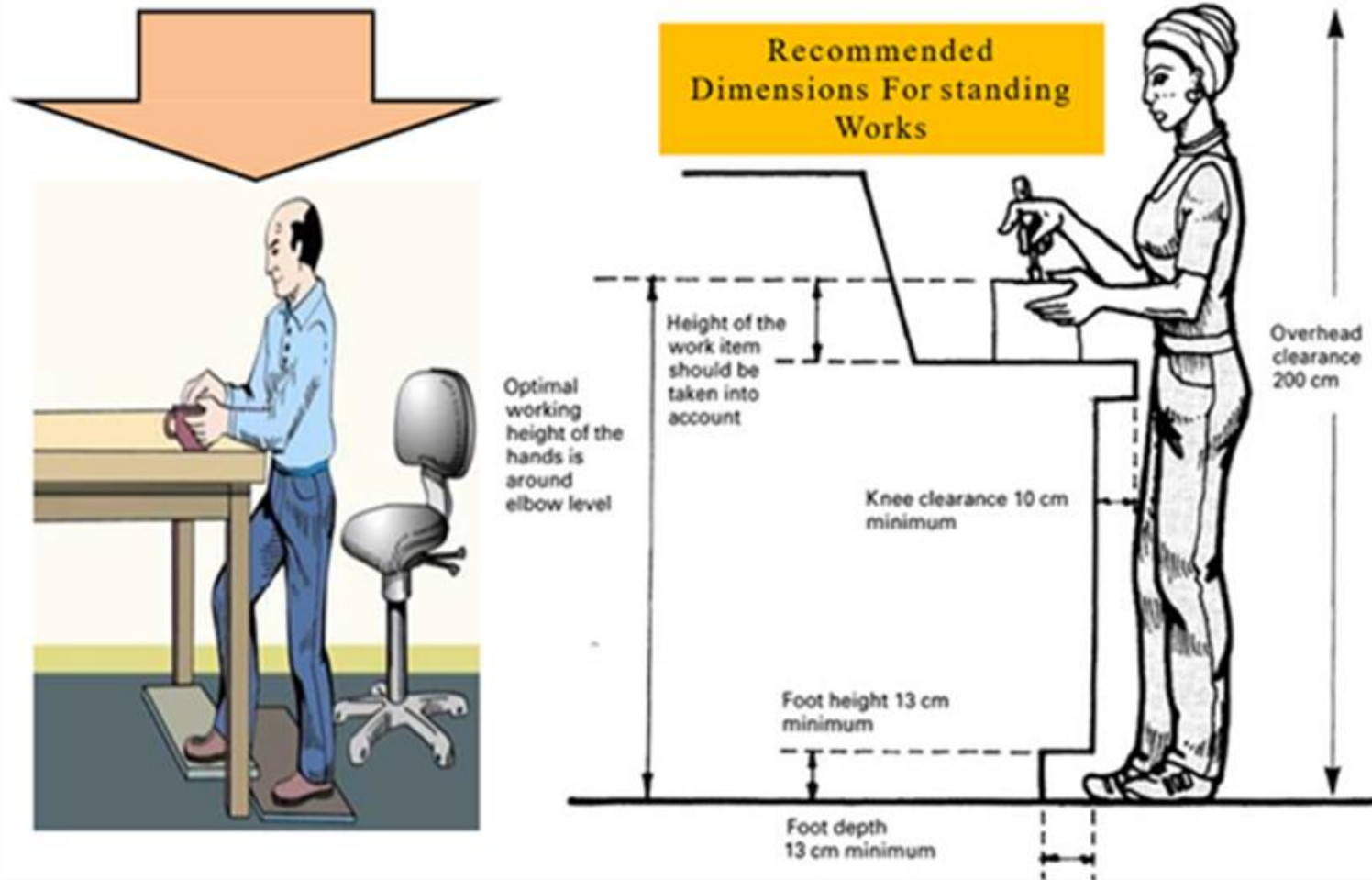
Sumber: Guidelines On Occupational Safety & Health For Seating At Work (JKKP)

# Peraturan 2: Konsep Peraturan Siku Postur Kerja



enyediakan Pekerja  
Duduk Dengan Kerusi  
Boleh Laras Yang Baik  
Dengan Rehat  
Belakang

# Peraturan 2: Konsep Peraturan Siku Postur Kerja



Seboleh-bolehnya,  
Benarkan Kerja  
Bergilir Berdiri &  
Duduk Di Tempat  
Kerja

# Peraturan 3: Gunakan Jig, Alatan membantu & dan Alatan Untuk Memegang Bahan

Pengapit, Jig,  
Tuas &  
Peranti Lain

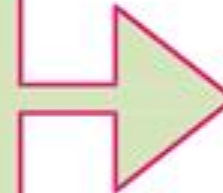




# Peraturan 3: Gunakan Jig, Alatan membantu & dan Alatan Untuk Memegang Bahan

Gunakan pengapit, jig, tuil dan peranti lain untuk menjimatkan masa dan usaha. Susunan tempat kerja yang mudah adalah penting untuk mengelakkan pembaziran masa dan meningkatkan sistem kerja dengan lebih baik

Minimise vertical movement or use chutes or other devices to save the worker's time and effort



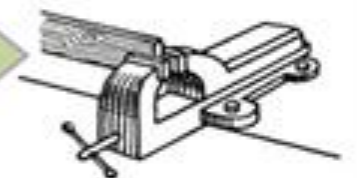
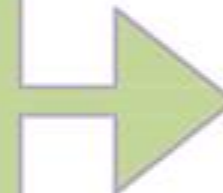
Use a specially designed or universal jig or fixture instead of holding an unstable work piece by hand



Suspended tools are less tiring to use. They also save the time lost in picking up and putting down the tool



Clamps and vices can hold different sizes and shapes of work pieces steady during work and can free hands as well



# Peraturan 3: Gunakan Jig, Alatan membantu & dan Alatan Untuk Memegang Bahan



Sokongan Tangan  
Disediakan Apabila  
Menggunakan Alat  
Ketepatan (Precision  
Tools)

# Peraturan 3: Gunakan Jig, Alatan membantu & dan Alatan Untuk Memegang Bahan

Sokongan Tangan Disediakan Apabila Menggunakan Alat Ketepatan (Precision Tools)



Mengurangkan pergerakan Ketika melakukan kerja-kerja penelitian

# Peraturan 4: Paparan dan Kawalan



Gunakan penandaan, warna atau lampirkan label perkataan mudah dalam bahasa tempatan pada paparan untuk membantu pekerja memahami perkara yang perlu dilakukan.

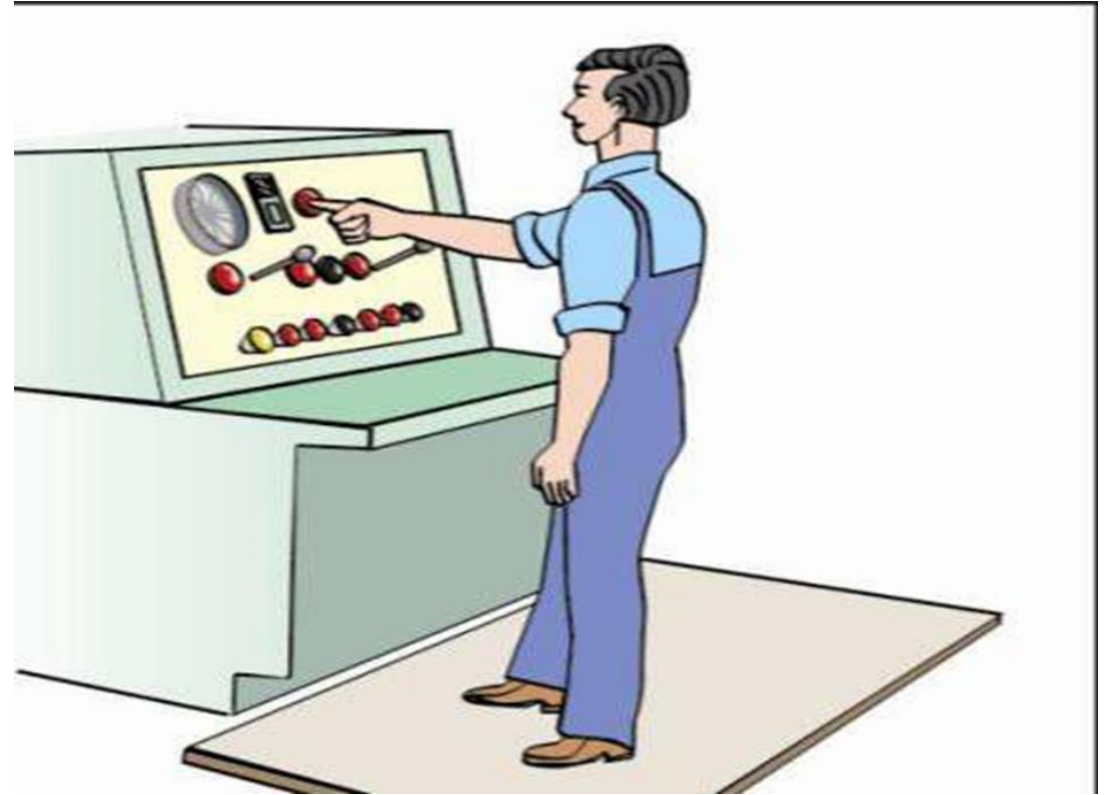
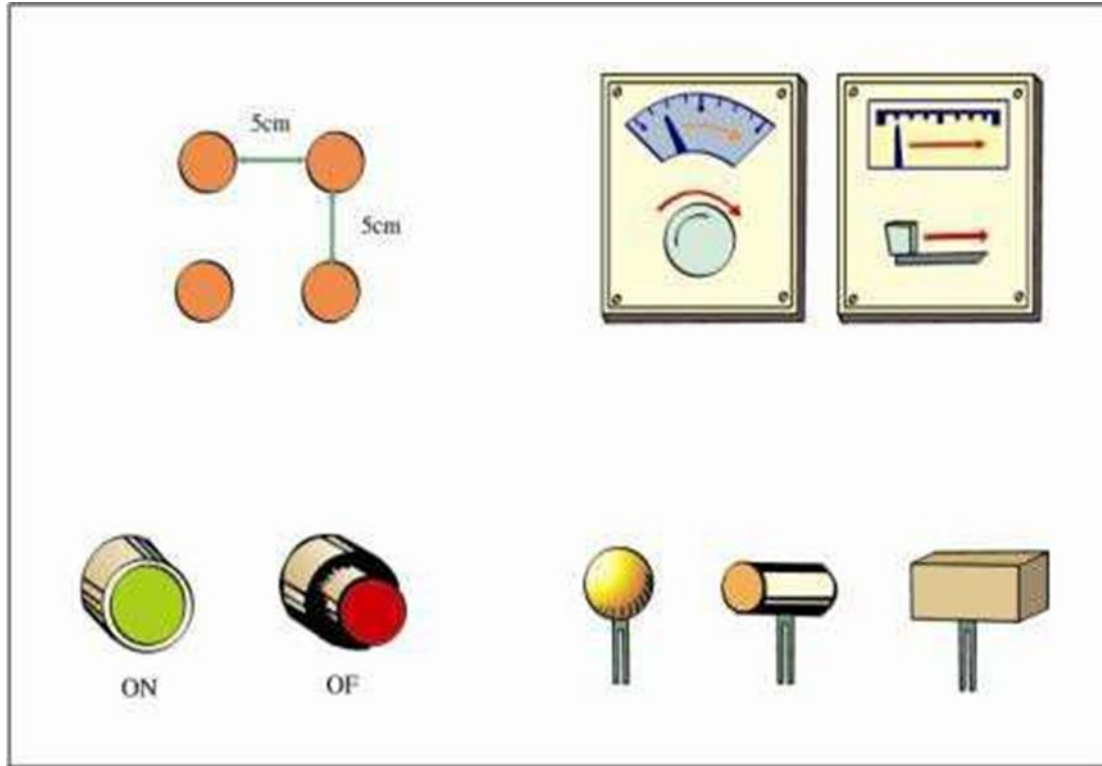
# Peraturan 4: Paparan dan Kawalan



Sertakan label bahasa tempatan yang mudah pada kawalan atau suis



# Peraturan 4: Paparan dan Kawalan



Setiap butang kawalan kecemasan dan suis kelihatan dengan jelas

# Peraturan 4: Paparan dan Kawalan



Paparan dan kawalan yang mudah dibezakan boleh meminimumkan kesilapan.

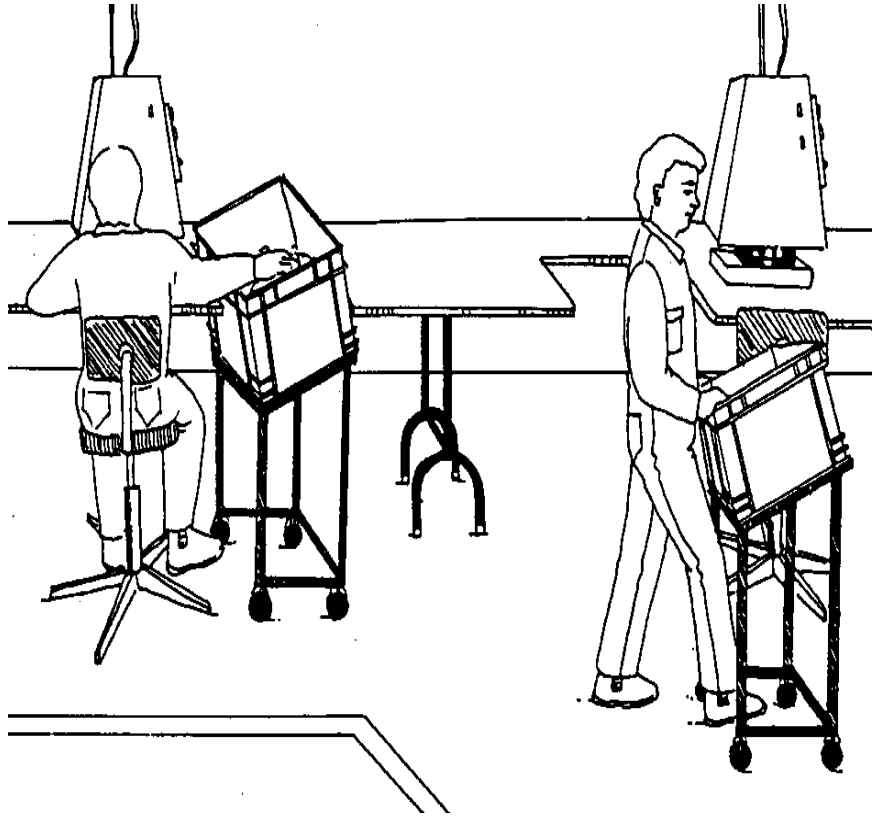
# Peraturan 4: Paparan dan Kawalan

Perbandingan di antara 2 stesen kerja: Mana Yang Lebih Baik?





# Seating Facilities and Work Station



## SHW Regulation 30 and 31.

- Seating facilities shall be provided
- Chair Design and dimension should be suitable to workers and their jobs as to avoid bodily injury.
- Workstation design must suit to the workers posture

# LIGHTING



## Objectives

1. To understand that productivity and work quality are raised if worker's eye strain reduced by good lighting.
2. To identify 3 rules on lighting

Good lighting is important.

Improvement can be made with low cost and even no cost at all.

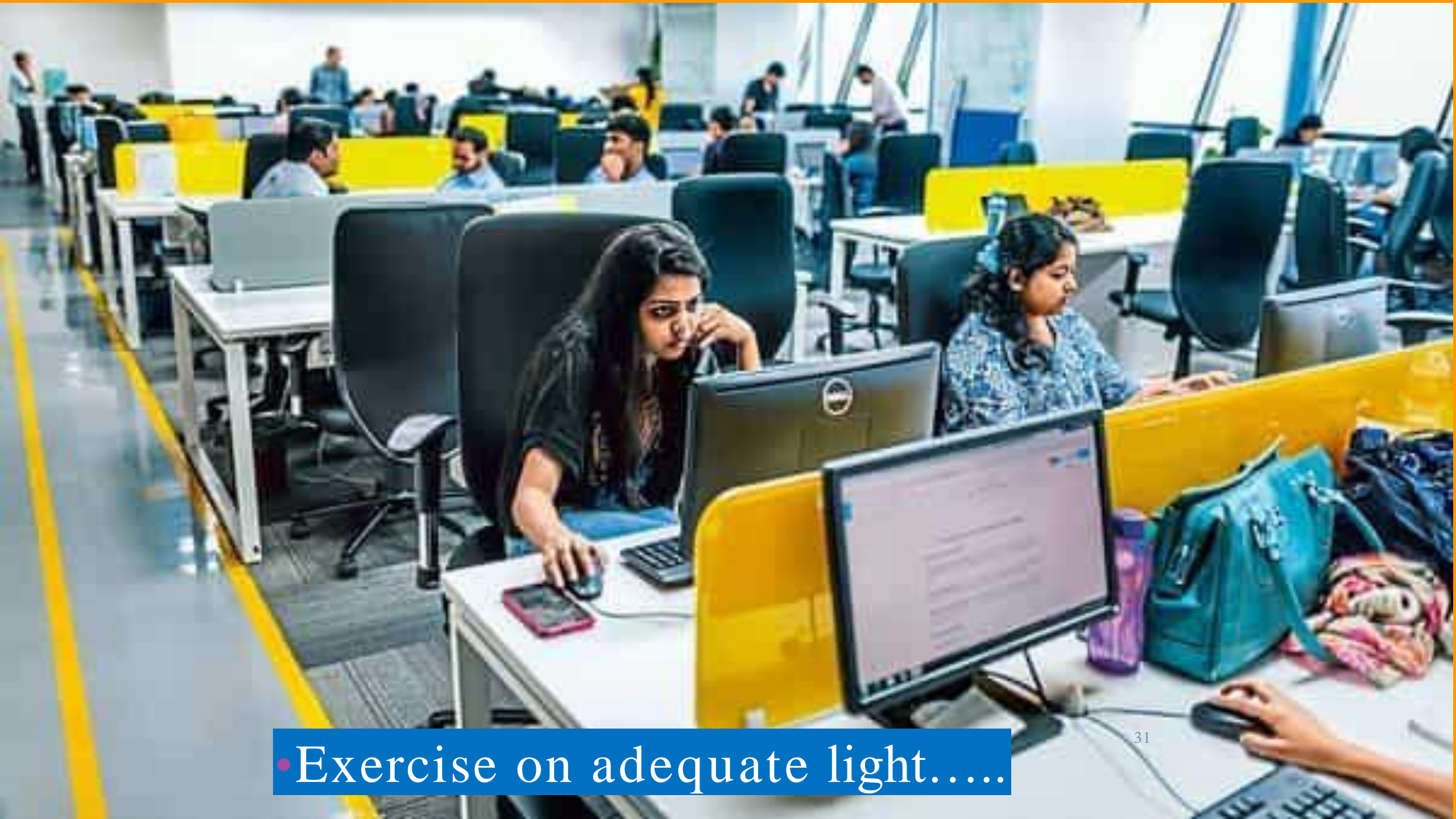


1 good example..

# List of ideas...



- How to reduce your electricity bill by using natural lighting.
- How to get better lighting out of existing measures.
- How to increase productivity and quality by using local lighting and avoid glare.
- How lighting maintenance can save your money.



• Exercise on adequate light....

# Rules on use of daylight

**What the ways to make use of daylight....**



# Rules on avoid glare..



Figure 86  
Reflected (indirect) glare.

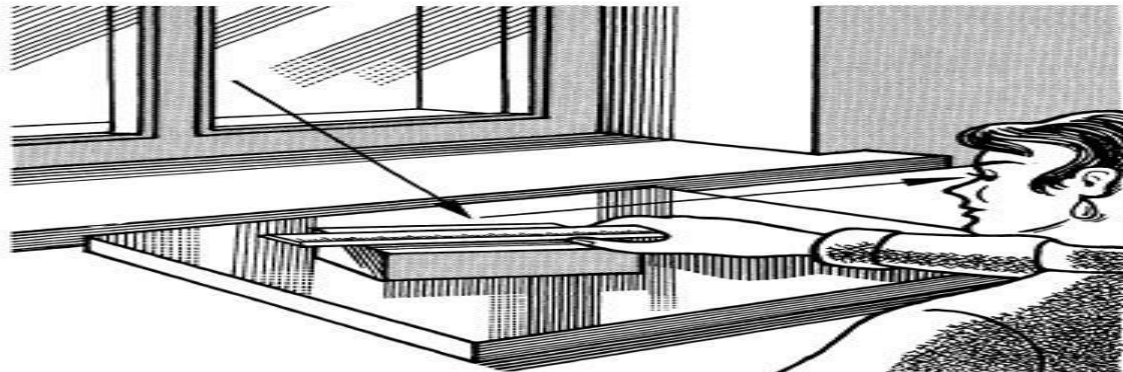
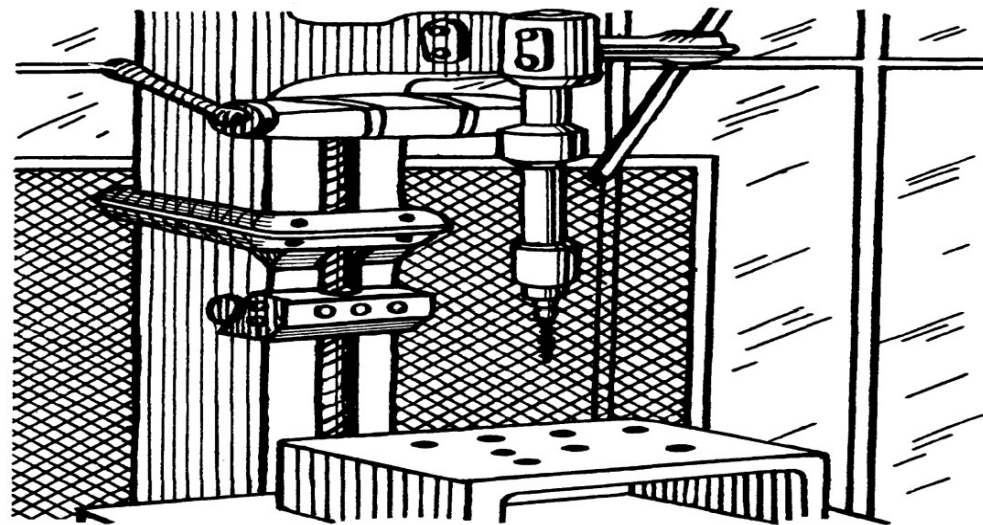
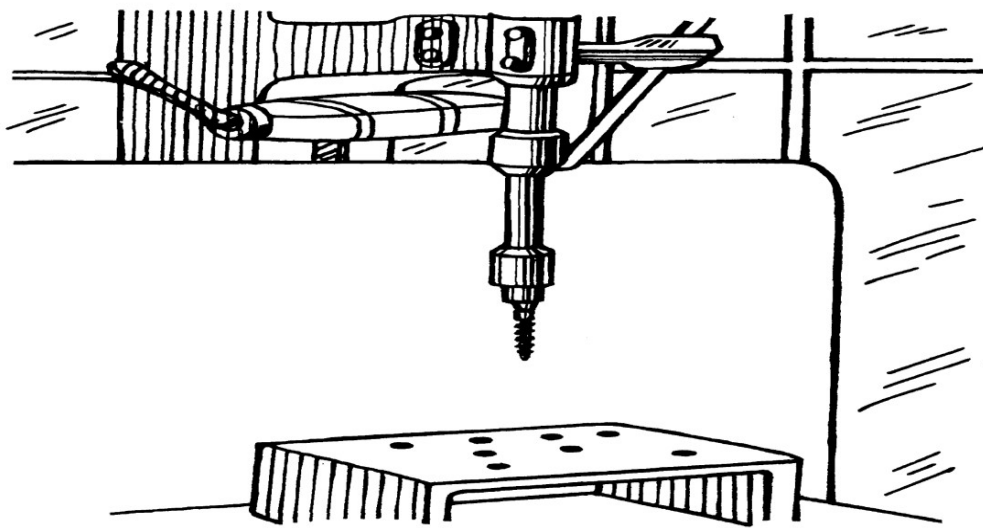


Figure 87  
Glare reflected from a polished surface reduces visibility.



(a) Before



(b) After

Figure 88

Elimination of distracting details with the help of a screen.

Choose an appropriate visual task background

For visual tasks that demand close attention, make sure that the background is free from **eye-catching** distractions.

Usage of the backlighting is useful when working with small work-piece.



# What other measures to avoid glare???

- Using blind, curtains, louvers, shades and trees..
- Changing windows to translucent ones,
- Changing the position of light source or workstation.
- Deep shades or shades low enough or high enough to ensure that light bulb or bright surface are outside the normal field view.
- Mat surfaces without reflected glare

# Avoid Glare

Glare means especially bright points or areas within the field of vision.

Causes a reduction in the ability to see, discomfort, annoyance and eye fatigue.

Two types of glare : direct glare and reflected (indirect glare)

Figure 84  
Direct glare.

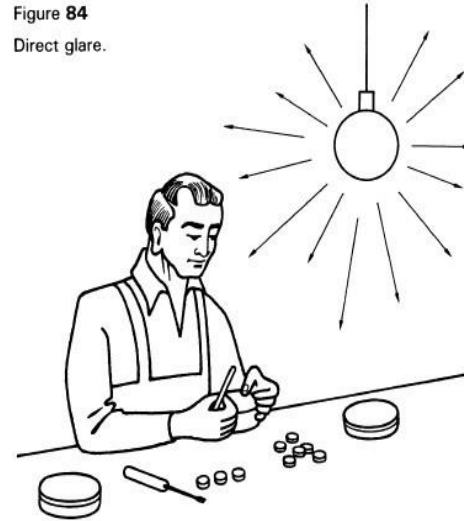
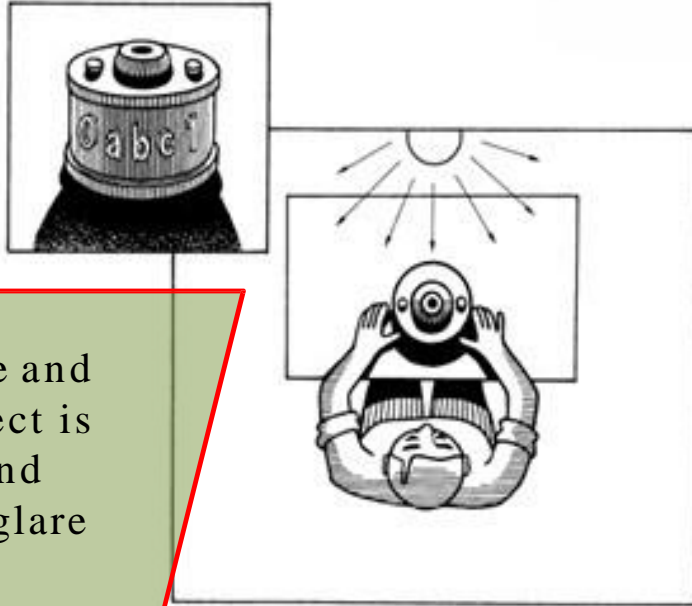


Figure 85  
A shaded lamp should be placed at the appropriate height.

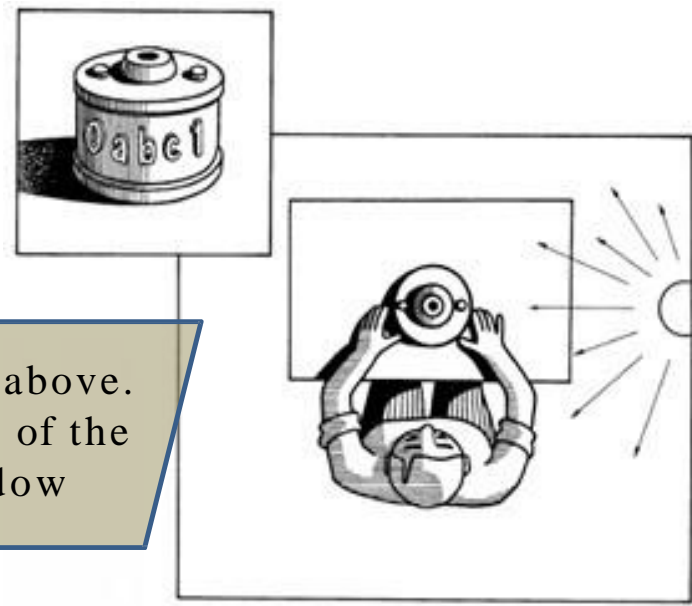
# **Rules on reposition of light and local lights**

# Find The Right Place For Light Sources

- ❖ Distinguish an object from its background
- ❖ Reveal its shape
- ❖ Reveal its surface texture
- ❖ Enable any marking on its surface to be seen easily

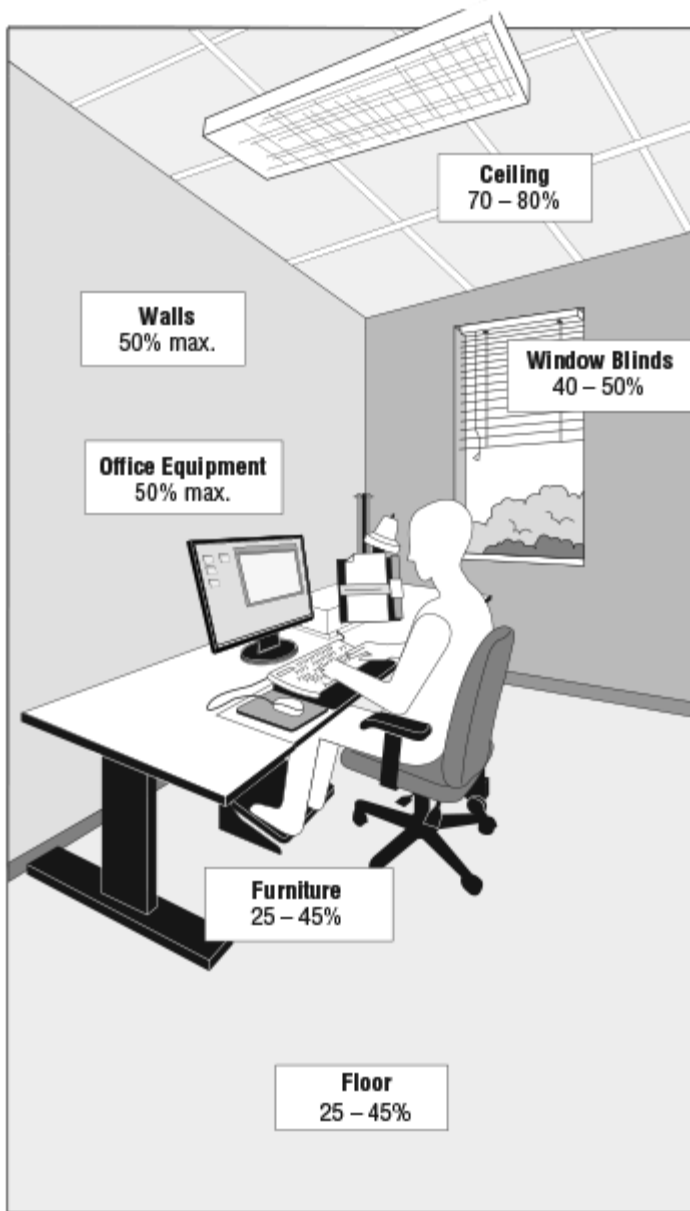


Light from above and behind. The object is difficult to see and there is often a glare problem



Light from the side and above. This is better but much of the work item is still in shadow

## Surface Reflectance of Objects



Summarize the rules.... invite question and comments..... how it is relevant to the productivity...



# LEGAL REQUIREMENT

- Lighting SHW Regulation 29
- Arrangement to make sure uniform distribution and maintenance of all windows
- In every part the intensity of illumination shall not be less than 20 lux and not less than 50 lux at any point where work is actually being done

Refer second schedule SHW Regulation

# **Terima Kasih**

## OSHISIS Solution