

SCIENTIFIC SKILLS



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SCIENCE YEAR 2

1. Ob serve	2. Cl assify	3. Me asure and use numbers	4. Com municate	5. Ma nipulative skills
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Observe
Memerhati

Classify
Mengelas

Measure and use numbers
Mengukur dan menggunakan nombor

Communicate
Komunikasi

Manipulative skills
Kemahiran manipulatif

1. Seeing
Melihat
2. Smelling
Bau
3. Touching
Menyentuh
4. Hearing/
Listening
Mendengar
5. Tasting
Merasa

1. Similarities
Persamaan
2. Difference
Perbezaan
3. Separating
Mengasingkan
4. Grouping
Mengumpul dalam kumpulan

1. Weight Jisim
Tool: Weighing scale
2. Length Panjang
Tool: Ruler, measuring tape
3. Volume of Liquid Isi padu cecair
Tool: Beaker, measuring cylinder

1. Writing
Penulisan
2. Reading
Bacaan
3. Pictures
Gambar
4. Charts
Carta
5. Graphs
Graf
6. Models
Model

1. **Use and handle** apparatus and substances
Mengguna dan mengendalikan radas dan bahan
2. **Handle** specimens
Mengendalikan spesimen
3. **Sketch** specimens, apparatus, and substances
Melakar spesimen, radas and bahan
4. **Clean** apparatus
Mencuci radas
5. **Store** apparatus and substances
Menyimpan radas dan bahan

HUMANS



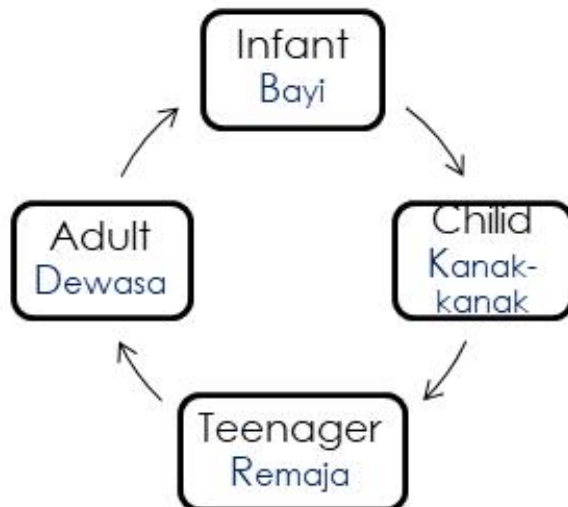
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A human **reproduces** by **giving birth**

Manusia membiak dengan melahirkan anak

Stages of Human Growth Peringkat Pertumbuhan Manusia



Changes of Human since Birth Perubahan pada Manusia sejak Lahir

1. **Increase** in **size** pertambahan saiz
2. **Increase** in **height** pertambahan ketinggian
3. **Increase** in **weight** pertambahan jisim

Increase in size

1. Shirt become **tight**
Baju menjadi ketat
2. Need **bigger** shoe
Perlukan kasut lebih besar
3. Palm become **bigger**
tapak tangan jadi lebih besar

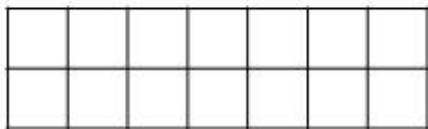
Increase in height

1. Become **taller**
Semakin tinggi
2. Need **longer** pants
Perlukan seluar lebih panjang

Inheritance Pewarisan

Features **inherited** from **parents** or **ancestors**
Ciri-ciri diwarisi daripada ibu bapa atau nenek moyang

1. **Skin** colour
Warna kulit
2. **Iris** colour
Warna iris
3. **Hair** colour
Warna rambut
4. **Hair** type
Jenis rambut



ANIMALS



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Animals Reproduction

Permbiakkan Haiwan

There are **2 ways** animals produces:

Terdapat 2 cara haiwan membiak

1. **Giving birth** Melahirkan anak
2. **Laying eggs** Bertelur

Giving birth

Melahirkan anak

1. There are animals that give birth to **a few** youngs. Ada haiwan melahirkan anak yang sedikit.
2. There are animals that give birth to **many** youngs. Ada haiwan melahirkan anak yang banyak.

Laying eggs

Bertelur

1. There are animals that lay **a few** eggs. Ada haiwan yang bertelur sedikit.
2. There are animals that lay **many** eggs. Ada haiwan yang bertelur banyak.

Animals Reproduction

Permbiakkan Haiwan

Giving birth

Melahirkan anak

A few youngs anak yang sedikit

- pangolin
- dolphin
- elephant
- panda
- cow

Many youngs anak yang banyak

- rabbit
- cat
- porcupine
- wolf
- hamster

Laying eggs

Bertelur

A few eggs telur yang sedikit

- birds
- swan
- penguin
- ostrich
- chicken

Many eggs telur yang banyak

- fish
- frog
- ant
- butterfly
- ladybird
- turtle
- tortoise
- crocodile

Animals that **lay eggs** look after their **eggs**:

Haiwan bertelur menjaga telurnya:

Birds: make **nest** on **tree branches**.

Burung: Membuat sarang di atas dahan pokok.

Turtles: **hide eggs** in the **sand**.
Penyu: Menyembunyikan telur dalam pasir.

Animals that **give birth** look after their **youngs**:

Haiwan melahirkan anak menjaga anaknya:

Feed their youngs with **milk**.
Menyusukan anaknya.

Cats: give birth in **well-hidden place**.

Kucing: Melahirkan anak di tempat yang tersorok.

ANIMALS



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Animals

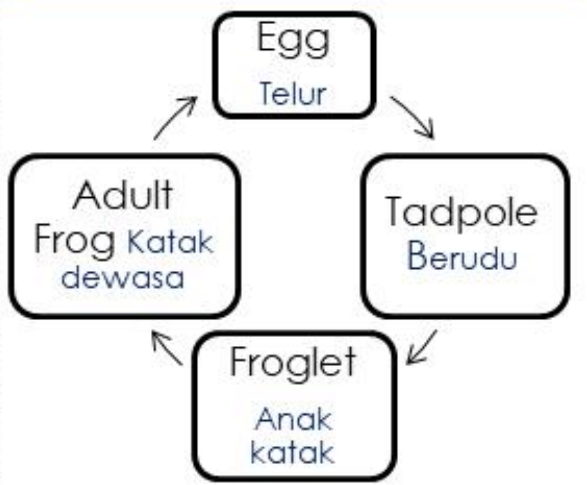
Similar Sama
Look like their parents
Kelihatan sama seperti ibu bapanya

Different Berbeza
Do not look like their parents
Tidak kelihatan sama seperti ibu bapanya

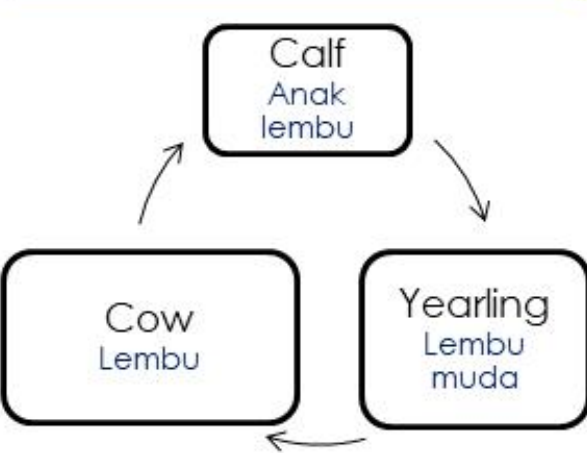
- Bear
- Hippopotamus
- Tiger
- Grasshopper
- Cat
- Elephant
- Panda
- cow

- Frog
- Ladybird
- Moth
- Butterfly
- Housefly
- Cockroach
- Bee
- Mosquito

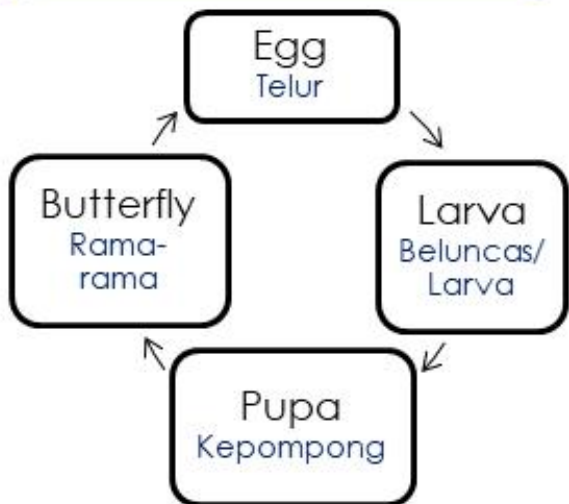
Life Cycle of a Frog Kitar Hidup Seekor Katak



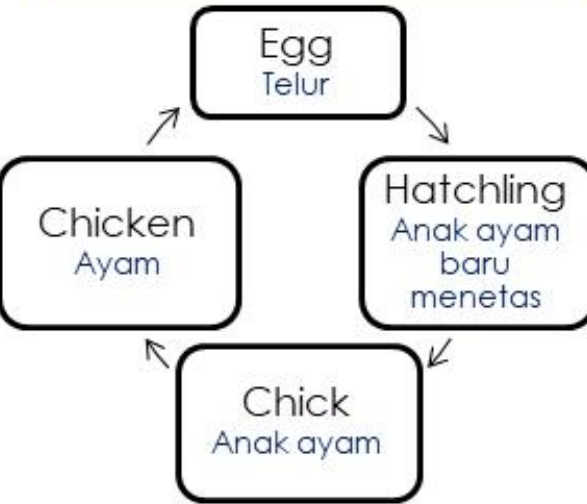
Life Cycle of a Cow Kitar Hidup Seekor Lembu



Life Cycle of a Butterfly Kitar Hidup Seekor Rama-rama



Life Cycle of a Chicken Kitar Hidup Seekor Ayam



PLANTS



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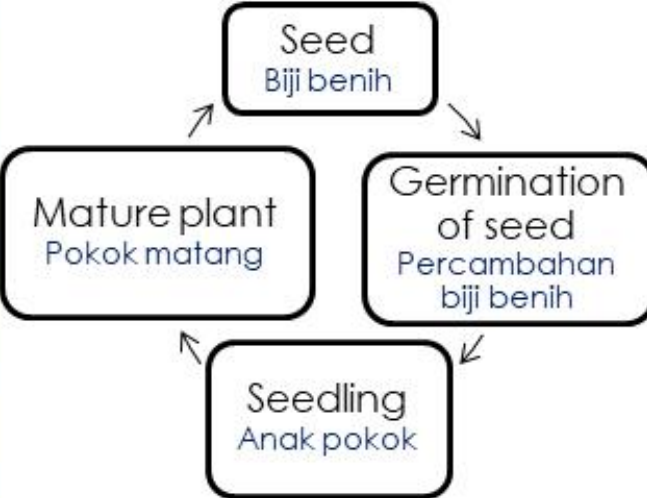
The **importance** of **plants** to human and animals
Kepentingan tumbuhan kepada haiwan dan manusia

1. Habitats Habitat
2. Air Udara
3. Medicine Ubat
4. Food Makanan

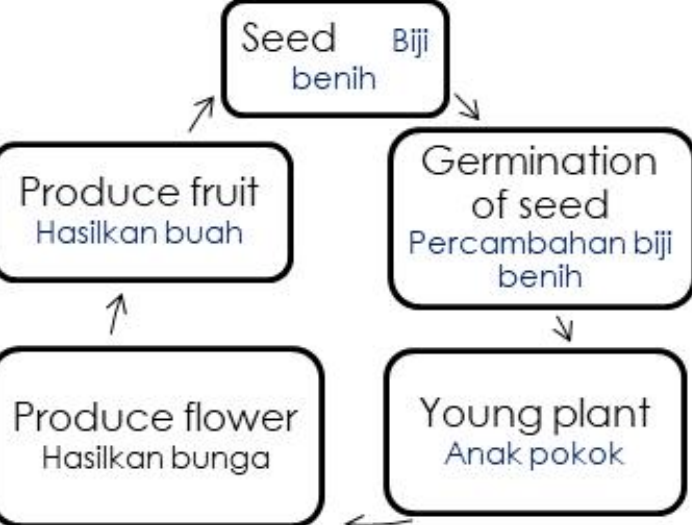
Basic needs for **Seeds** to **Germinate**
Keperluan asas untuk biji benih bercambah

1. Water Air
2. Air Udara
3. Suitable temperature Suhu yang sesuai

Growth Stages of a Maize Plant
Peringkat Pertumbuhan Pokok Jagung



Growth Stages of a Tomato Plant
Peringkat Pertumbuhan Pokok Tomato



When plants grow, they increase in
Semasa membesar, tumbuhan mengalami peningkatan

1. **Number** and **size** of **leaves**
Bilangan dan saiz daun
2. **Height** of the **plant** Ketinggian pokok
3. **Circumference** of the **stem**
Ukur lilit batang

Basic needs of a **plant's growth**
Keperluan asas untuk pertumbuhan pokok

1. Water Air
2. Air Udara
3. Sunlight Cahaya matahari

LIGHT & DARK



Source of Light Sumber cahaya

The sun
Matahari

(Natural source)
(Sumber semula jadi)

Lamps
Lampu

- Street lamp
Lampu jalan
- Car lamp
Lampu kereta
- Home lamp
Lampu rumah

Fire
Api

- Candle
Lilin
- Oil lamp
Pelita
- Torch
Obor

A shadow formed when **light is blocked** by an **object**.
Bayang-bayang terbentuk apabila cahaya terhalang oleh suatu objek

Moon and **fireflies** are **not** the sources of light.
Bulan dan kelip-kelip bukan sumber cahaya.

There is light → **Bright** → **Easy to carry out activity**
Ada cahaya → Cerah → Mudah untuk jalankan aktiviti

There is no light → **Dark** → **Difficult to carry out activity**
Tiada cahaya → Gelap → Sukar untuk jalankan aktiviti

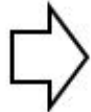
Produce a Shadow Menghasilkan bayang-bayang

Materials
Bahan-bahan

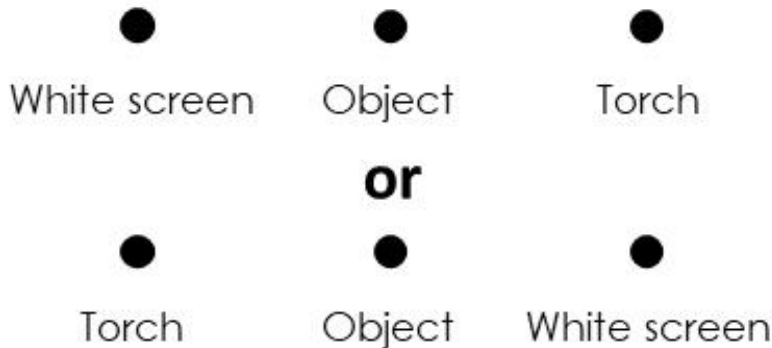
White screen/white card
Skrin putih/kad putih

Torch
Lampu suluh

Object
Objek



Arrangement and position Susunan dan kedudukan



The clarity of the shadows **depends** on the **objects** used.
Kejelasan bayang-bayang bergantung pada objek yang digunakan.

ELECTRICITY



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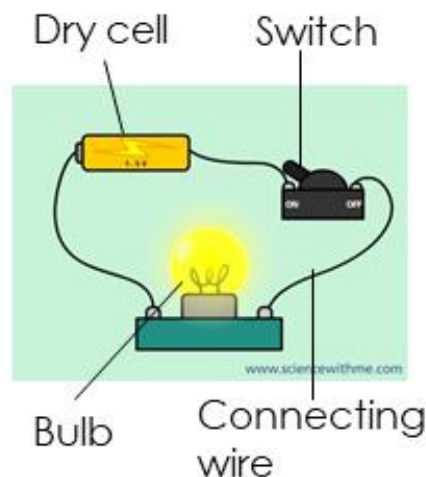
Electrical Components Komponen Elektrik

1. Dry cell Sel kering/bateri
2. Bulb Mentol
3. Switch Suis
4. Dry cell holder Bekas sel kering
5. Bulb holder Bekas mentol
6. Connecting wires Wayar penyambung

Functions of Electrical Components Fungsi Komponen-komponen Elektrik

Electrical Component	Function
Dry cell	Supply electrical energy Membekalkan tenaga elektrik
Bulb	Produce light Mengeluarkan cahaya
Switch	Complete and break an electric circuit Melengkapkan atau memutuskan litar elektrik

A Complete Electric Circuit Litar Elektrik yang Lengkap



Why Doesn't the Bulb Light Up? Mengapa Mentol Tidak Menyala

1. Opened switch Suis terbuka
2. Dry cell lack of energy Sel kering kekurangan tenaga
3. Damaged bulb Mentol rosak
4. Bulb is not properly fastened onto the holder Mentol tidak dipasang ketat pada bekasnya
5. Wire connections on the electrical components are not connected Wayar penyambung tidak tersambung pada komponen elektrik.

Conductors and Insulators Konduktor dan Penebat

Electrical Conductors Konduktor Elektrik

Light up the bulb
Menyalakan mentol

Allow electric current to flow through it
Membenarkan arus elektrik mengalir melaluinya

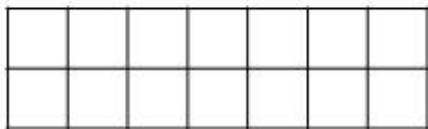
- Aluminium can
- Screw
- Nail
- Metal spoon
- Paperclip
- Key

Electrical Insulators Penebat Elektrik

Does not light up the bulb
Tidak menyalakan mentol

Does not allow electric current to flow through it
Tidak membenarkan arus elektrik mengalir melaluinya

- Rubberband
- Plastic toy
- Handkerchief
- Paper
- Glass rod
- Rubber



MIXTURE



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Methods to Separate Mixture Kaedah-kaedah mengasingkan campuran

Method Kaedah	Function Fungsi	Example Contoh
Hand-picking	To separate two big-sized materials Untuk mengasingkan dua bahan bersaiz besar	Paper clips and staples
Sieving	To separate fine-sized materials and large-sized materials Untuk mengasingkan bahan yang halus dan bahan yang besar	Green beans and flour
Magnetic attraction	To separate materials that can be attracted by magnet Untuk mengasingkan bahan yang boleh ditarik oleh magnet	Iron powder and sand
Floatation	To separate materials that can float from materials that sink Untuk mengasingkan bahan yang terapung daripada bahan yang tenggelam	Corks and sand
Filtration	To separate solid materials from liquid materials Untuk mengasingkan bahan pepejal daripada bahan cecair	Tea sediments and tea

Materials that **can dissolve** in Water

Bahan-bahan yang larut dalam air

1. Sugar Gula
2. Salt Garam

Materials can dissolve **more quickly** when

Bahan-bahan larut lebih cepat apabila

1. Using hot water
Menggunakan air panas
2. Being stirred Dikacau
3. It is small-sized Bersaiz kecil

EARTH



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Natural Sources of Water Sumber Air Semulajadi

1. Rain Hujan
2. Rivers Sungai
3. Lakes Tasik
4. Seas Laut
5. Springs Mata air

Rain	Lakes	Seas	Springs	Rivers
Water droplets that fall to the earth from clouds .	A large area of water that is surrounded by land .	A large part of the earth's surface that is covered with salt water .	A place where underground water flows out to the earth's surface.	Rains that fall to the earth form streams of water .

Liquid flows from a **high** place to a **low** place.
Cecair mengalir dari tempat tinggi ke tempat rendah.

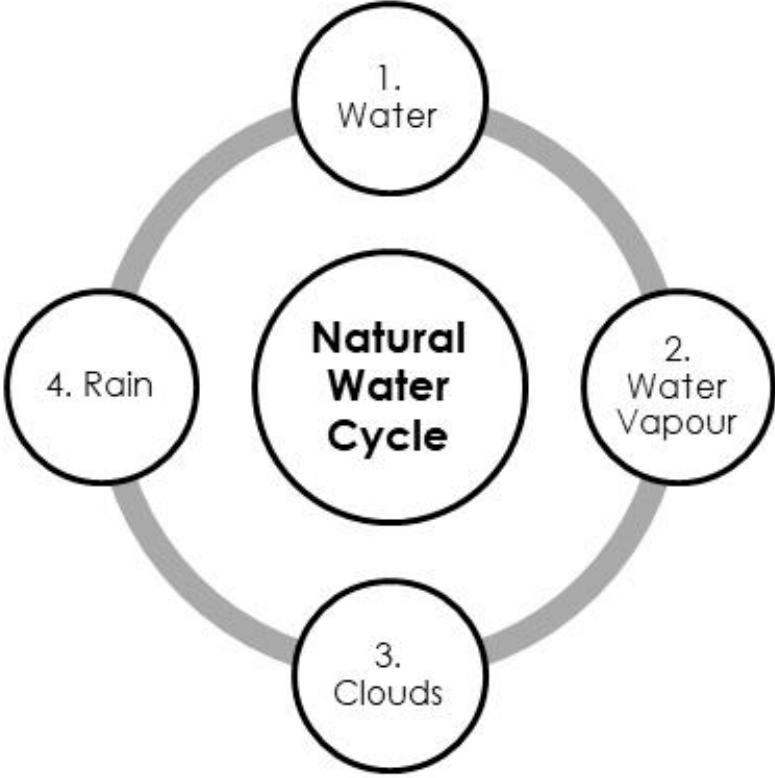
Water flows from **high** areas to **low** areas.
Air mengalir dari kawasan tinggi ke kawasan rendah.

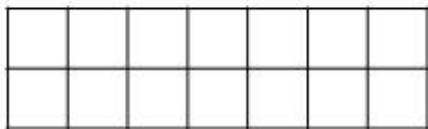
Natural Water Cycle Kitar Air Semulajadi

A **continuous** cycle.
Satu kitar yang berterusan.

Supplies water to **living things**
Membekalkan air kepada benda hidup

Cool down the **earth**.
Menyejukkan bumi.



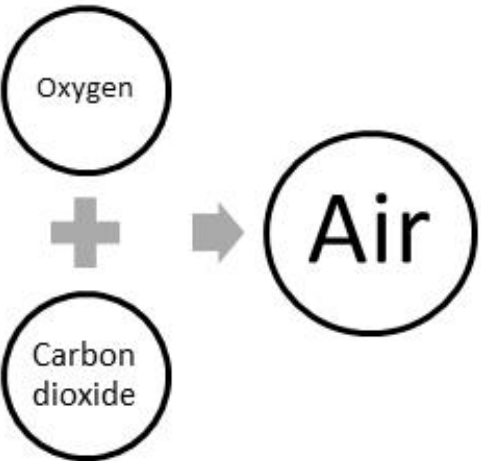


EARTH



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Natural Water Cycle Kitar Air Semulajadi



Air Udara

Air present **around us**, in **water** and **soil.**
Udara ada disekelling kita, dalam air and tanah.

Oxygen is needed for living thing **to breathe.**
Oksigen diperlukan oleh benda hidup ketika bernafas.

Living things **breathe out carbon dioxide.**
Benda hidup menghembus keluar karbon dioksida.

Wind Angin

Moving air is known as **wind.**
Udara yang bergerak dikenali sebagai angin.

The wind **helps** to:
Angin membantu:

1. **Move** a **sailing boat** Menggerakkan kapal layar
2. **Rotate** the **windmill** Memutarkan kincir angin.
3. **Fly** a **kite** Menerbangkan layang-layang
4. **Dry clothes** on the clothes line Meringkakan kain pada ampai

Strong wind can cause:
Angin kencang boleh menyebabkan:

1. **Big waves** Ombak besar.
2. **Threaten lives** Mengancam hidupan.
3. **Destroy properties** Memusnahkan harta benda.

TECHNOLOGY



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A Building Set Set Binaan

Contain A set of **components**.
Mengandungi satu set komponen.

Used to build several types of **models**.
Digunakan untuk membina beberapa jenis model.

It includes an **illustrated manual**.
Ia mengandungi manual bergambar.

An Illustrated Manual Manual Bergambar

A **guide** to assemble a model correctly.
Satu panduan memasang model dengan betul.

Components Komponen

1. Various **shapes** Pelbagai bentuk.
2. Various **colours** Pelbagai warna.
3. **Assembled** based on illustrated manual Dipasang berdasarkan manual bergambar.
4. Should be **disassembled** and **stored** neatly. Perlu dibuka dan disimpan dengan kemas.
5. Make sure all components **are counted** and **in good condition** before storing inside the building set box. Pastikan kesemua komponen dibilang dan dalam keadaan baik sebelum disimpan di dalam kotak set binaan.

Various shapes of components.
Pelbagai bentuk komponen.

1. **Cube**-shaped Berbentuk kubus.
2. **Prism**-shape Berbentuk prisma.
3. **Cylinder**-shaped Berbentuk silinder.

Disassemble the model.
Membuka model..

1. In **sequence** Mengikut turutan.
2. **Start** from the **final step** of installation Mulakan dari langkah terakhir pemasangan.
3. **Arrange** components according to the **shapes** and **colours**. Susun komponen mengikut bentuk dan warna.