Welcome to the world of Micro-Science ®

We take great pleasure in introducing you to the world of Microscope. Microscope refers to an instrument with lenses for making very small near objects to appear larger. Because there are innumerable of living things that cannot be seen with our naked eyes, microscope enables these invisible living things to be seen effortlessly.

The discovery of microscope goes back many many years, and since the invention it has exposed to a new field of exploration and study as more attractive, and exquisite specimens as you ever imagined can be evidence.

In our new world of advanced technology, every science from the most fundamental study of biology to the highly skilled fields of astro-physiology will use some form of microscope. The mission of microscope allows anyone from all walks of life to better comprehend the complexity forms of living organisms or stagnant materials that construct this world in which we live in.

This microscope set will be the starting point to your many hours of fruition as a hobby or broader your opportunity to a wonderful world of science.

Happy Experimenting!!!
Attention

Attention

The following information should be read carefully in order to overcome confusions.

This microscope set is appropriate for children over 8 years old. If not applied, supervision of adult is required as this set comprises of sharp dissecting needle, practical sharp edge on scalpel, spatula, and pointer tweezers.

Before using the microscope, attentively and carefully read the instructions, follow the guide, and have them for direction in case you need further helpful hints.

In any situation, be extreme caution to not allow chemicals to come into contact with any part of the body, especially the eyes and mouth. Keep away young infants and animals from the experiment. Always, reserve the microscope set in a place where young infant is out of reach.

Remember, in case of accidents please seek medical advice.

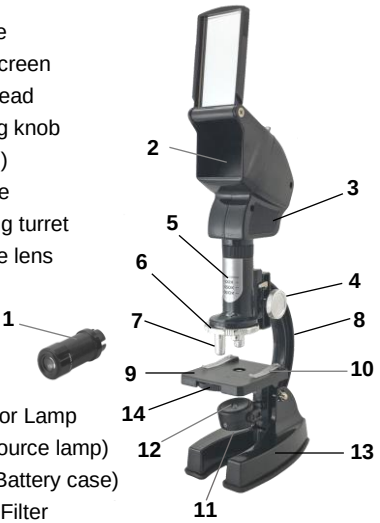
Safety Recommendations:

Always seek medical attention in case of any doubts.
In case of:

- Eye contact: Wash out eye with plenty of water, and if necessary holding eye open.
- Inhalation: Remove person to fresh air.
- Cut: Cut should be washed in antiseptic solution, or clean water. Next step is to put on a bandage.
- Swallowed: Do not encourage vomiting. Wash out mouth with water, and drink fresh water.

Components of a Microscope

1. Eyepiece
*2. Viewer screen
*3. Viewer head
4. Focusing knob (Handle)
5. Body tube
6. Revolving turret
7. Objective lens
8. Arm
9. Stage
10. Clip
11. Mirror
12. Illuminator Lamp (Light source lamp)
13. Base (Battery case)
14. Colour Filter



*2 & 3 (Only applicable to Item no. #2082, #9928, #9939, #9968, #9004, #9005 , #9006 & #9009)

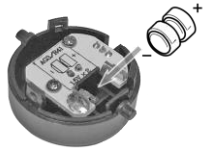
Helpful Hints

- The essential component of the microscope is the lens. Consequently, adequate care must be exercised when dealing with the lens.
- Microscope should be stored in a moisture free place. Because moisture build up on the light encourages a reduction in light concentration.
- After it is utilized, protect the microscope from dust by covering the microscope or placing it back into the box.
- If the lens gets dusty or dirty, it is suggested to clear off the lens surface with a soft cotton cloth or tissue. Do not rub the lens with a finger or unclean cloth.
- If a microscope is not put to use for a long period of time, discharge the light source batteries.

Battery Installation

1. Remove the LED lamp from the arc bracket.

2. With a small Phillips screwdriver, loosen the screw on the side.
3. Carefully remove the mirror cover, make sure the glass mirror does not detach from the plastic frame.
4. Discard the old batteries.
5. Install two 1.5 Volt LR41/AG3 batteries per the polarity markings in the battery compartment.



6. Replace the mirror cover and tighten the screw.
7. Install the LED lamp back to the bracket.

Procedures

1. Tilt the body and adjust the location of the reflector. Therefore, the light is fully caught by the mirror.

2. When the light is fully reflected by the mirror, which can be seen via the eyepiece, the microscope will be ready for inspection.
3. Now put the prepared slide on the stage, and fasten it in place with the clips.

4. Next, choose which magnification strength you desire. Remember, the greater the length of the objective lens, the bigger the magnification. In general, inspection is usually made at a low setting.
5. To change the magnification strength, turn the revolving turret until you hear a click.

6. Using the focusing knob, let down the lens as close as possible to the prepared slide sans making interactions. Next, looking through the eyepiece, turn the knob anti-clockwise until the reflection achieves clarity.
7. If the experimenting room is dim with low intensity of light, or if the focus is unclear at extreme magnification, it is recommended to switch on the illuminator lamp and rotate it towards the stage.

8. The rotating colour/light filter makes it easier to observe the slide preparation. Using a suitable coloured filter heightens the contrast of coloured preparation slides. Furthermore, the different apertures will focus the light. When the large aperture is used the slide appears very bright. The smallest aperture is helpful when examining a certain area in more detail.
(Not applicable to Item No. #1028, #2033, #2133, #2035, #2137, #9628, #9927, #9928)

How to Use the CCD Camera Holder

(Only applicable to Item No. #9004, #9005, #9006 & #9009)

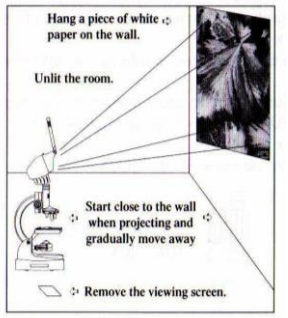
CCD camera holder has 2 functions:

1. It can be used to hold the camera when taking picture via the eyepiece.
2. It can be used to hold CCD camera for viewing when connecting to the T.V.

How To Make Use Of The Projection Device

(Only applicable to Item No. #2082, #9928, #9939, #9968, #9004, #9005, #9006 & #9009)

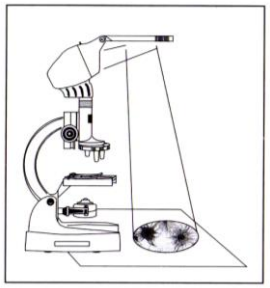
1. Turn the eyepiece by pulling straight out, then insert the viewer head into the microscope.
2. Face it toward white paper or a white wall that you are able to see projected image. Otherwise, attach a piece of white paper on the wall if the wall colour is dim.
3. Darken the room. Mount a prepared slide on the stage.
4. Then turn the light on.
5. Remove the viewing screen from the viewer head.
6. Revolve the viewing, projection and drawing head towards the wall at a distance of 1.5m from the wall.
7. Adjust the illumination lamp so that it is as bright as possible.
8. Focus the image by carefully erecting the objective.
9. Once in focused, adjust the illumination lamp one more time.
10. You can see a clear image projected. To increase the magnification, move the microscope away from the wall.



How To Make Use Of The Drawing Device

(Only applicable to Item No. #2082, #9928, #9939, #9968, #9004, #9005, #9006 & #9009)

1. Position and adjust the arm to a vertical position.
2. After the image has been projected on the viewing screen, darken the room by turning off the light.
3. Remove the viewing screen from the viewer head.
4. Place a piece of white paper horizontally in front of the foot of the microscope.
5. Station the reflecting mirror and rotate the focusing knob until a pleasing image is projected.
6. Once the image is in focus, adjust the illumination lamp one more time, thus it is as vivid as possible.



Zoom Models:
(Only applicable to Item No. #2059, #2082, #2083, #2068, #2073, #2088, #2132, #9002, #9003, #9004, #9005, #9006, #9007, #9009 & #9077)

The eyepiece 10x or 20X is indicated on the opposite side of the eyepiece tube. Objective lens is 10x, 25x and 50x or 10x, 30x and 60x.

By rotating the silver knurled ring in clockwise direction, the eyepiece will zoom to 20X.

Assuming that you are using an objective turret of 60X, and with the eyepiece at 10X, then the magnification power of the combination is
60 x 10 = 600
The object you see is enlarged to 600 times.

By just using the zoom eyepiece, and rotating it to 20X, you now have combination of
20 x 60 = 1200.
Zoom power = 600X-1200X

ZOOM EYEPIECE
10X – 20X

How To Make a Prepared Slide

Please note that if the given specimen is not thin and crystalline, it cannot be inspected by the microscope. This is due to the fact that light from the reflector or light source does not advance through.

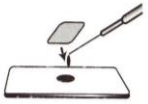
- Fiber of wool, pollen, or salt will be simple to see, and will not need a cover glass.
- Crystal-clear specimen are stain first with a drop or two drops of methylene blue. Eosin or other dyeing solutions are available on the market.

Also note these are dyeing solutions, and thus could induce staining of clothing, fabrics, and carpets. Extreme care should be handled when dealing with these solutions.

1. Temporary Mount

- Wipe the slide and cover glass clean
- Thin the sample with a razor blade. (Be extremely careful)
- Then pick it up with tweezers, and put it on the centre part of the glass slide.
- Next, add one drop of water on the sample with a dissecting needle. If the sample is clear, add one drop of methylene blue or eosin solutions. (Be extremely careful)
- Gently put the cover glass on it, take care not to let any air bubbles in it.
- Remove any excess water or dyeing solutions with blotting paper.
- Now, it is ready for observation.

Remember to wash your hands immediately after doing the preparations and dispose the dyeing solutions down the drain not into a sink.



2. Permanent Mount

- Wipe the slide and cover glass clean.
- Continue as above but before covering the slide with the cover glass, add few drops of gum media (or Canada balsam) solution or transparent adhesive glue with a dissecting needle to the slide.
- Put down on the cover glass with tweezers or fix it in place, and leave it to dry for about a day.

How To Use The Mini-Slicer

- Put the specimen that you would like to cut for study into the holes of the mini-slicer . (Be extremely careful.
- Revolve the blade.
- Finally, get thin slice of the specimen.

MICROSCOPE SET
INSTRUCTIONS

WARNING! Not Suitable For Children Under 36 Months Due to Small Parts. Choking hazard. To be used under the direct supervision of an adult. This toy contains functional sharp needle, also functional sharp edge on scalpel and slicer.

CAUTION! Read the instructions before use, follow them and keep them for reference. Keep small children and animals away from experiments. Store the microscope set out of reach of small children.

If any time in the future you should need to dispose of this product please note that Waste Electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

1. Warning: Dispose of used batteries immediately. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
2. Only adults should install and replace batteries.
3. Alkaline batteries are recommended.
4. If the toy has not been used for a long time, remove the batteries.
5. Do not mix old and new batteries.
6. Do not mix alkaline, standard (carbon zinc) or rechargeable (nickel cadmium) batteries.
7. Exhausted batteries are to be removed from the toy.
8. The supply terminals are not to be short-circuited.
9. Non-rechargeable batteries are not to be recharged.
10. Rechargeable batteries are to be removed from the toy before being charged.
11. Rechargeable batteries are only to be charged under adult supervision.
12. Only batteries of the same or equivalent type as recommended are to be used.
13. Batteries are to be inserted with the correct polarity.
14. Do not dispose of batteries in fire, batteries may explode or leak.
15. Batteries may explode or leak if misused.