

100X MICROSCOPE

INSTRUCTION MANUAL

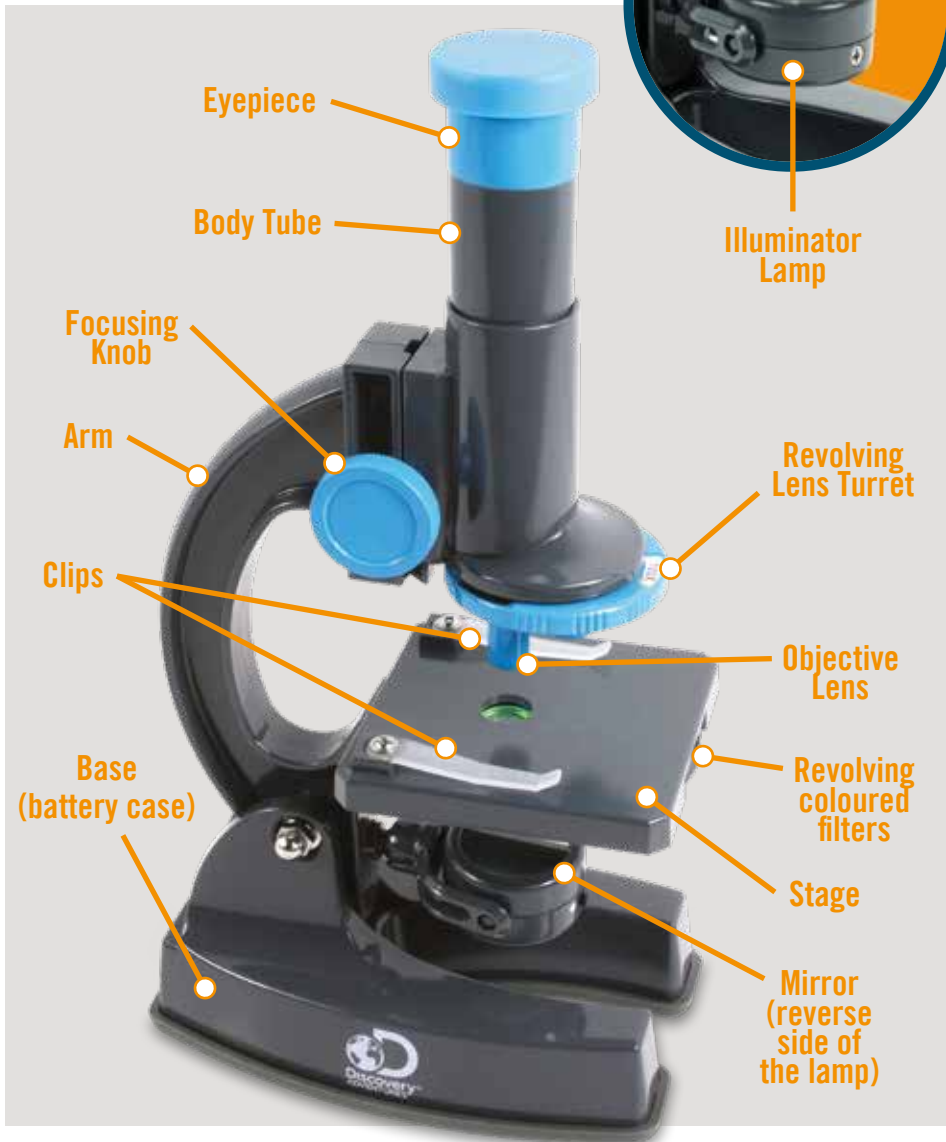
FEATURES
ELECTRIC
ILLUMINATION

25X / 50X / 100X
MAGNIFICATION



COMPONENTS

Get to know your Microscope and all the functions it has to offer.



CONTENTS

Features:

- 1 x microscope
- 1 x stirring rod
- 1 x tweezers
- 1 x spare bulb
- 3 x prepared slides (Fern root, wool and oleaster)
- 8 x blank slides
- 2 x vials
- 1 x magnifying glass
- 1 x pipette
- 1 x box containing: 8 x slide covers and labels
- 1 x manual

Things you may need for making slides that are not included with this set:

- Transparent glue
- Coloured dye (optional)

HOW TO USE YOUR MICROSCOPE

1. The most important parts of your microscope are the lenses. Handle them with care. If the lenses are dirty or dusty you can clean them with a soft cotton cloth or a special lens-cleaning tissue. Do not wipe them with a finger or a facial tissue.
2. If you are not going to use your microscope for a week or more, remove the two batteries that power the illuminator.
3. Protect your microscope from dust and moisture by always storing it in its box.

TAKE A
CLOSER
LOOK AT
THE WORLD



DID YOU KNOW?

This 36-piece set includes slides, tools and accessories for collecting and creating specimens

MAKE YOUR WORLD BIGGER

GETTING STARTED

1. First read all the important battery information on page 7 before you start. Then turn the microscope over. Insert two AA alkaline batteries in the base of the microscope. In order to remove the bottom cover of the microscope you will need a Philips head screwdriver. Insert the batteries as shown, making sure that the (+) and (-) terminals are properly identified. Replace the bottom cover and reinsert the screw. Do not over-tighten.
2. Place the microscope on a flat surface near a bright light, or in the daytime or a window. Locate the mirror and adjust the angle so that when you look into the eyepiece you see a bright circle of light. Do not point mirror towards the sun, as eye damage may result. If there is no bright light available or if the room lighting is poor, you can use the microscope's electric illuminator. To turn on the illuminator, flip the mirror over so that the light bulb is aimed upward. The light will come on by itself.



DID YOU KNOW?

Before lenses were invented, some early microscopes used tiny glass globes filled with water to magnify objects.

3. Once you can see a bright light circle in the eyepiece, your microscope is ready for use.
4. Choose one of the prepared sample slides from your set. Place it under the two spring clips on top of the stage.
5. Next, choose the magnifying power you want to use. Your microscope can provide magnifying powers of 25X, 50X and 100X
6. To change the magnifying strength, turn the revolving lens turret until you hear a click.
7. Turn the focusing knob until the objective lens is almost touching the slide. Don't let the lens touch the slide, as you may break the slide and damage the lens. Now look through the eyepiece and slowly turn the focusing knob back until you see the sample clearly.
8. Try using one of the coloured filters, as they can improve the image of particular specimens.

IMPORTANT: Wash your hands before and after every project using warm water and soap. Also wash any of the tools and accessories that have been used to prepare specimens. Be careful when handling the slides and slide covers. Make sure an adult knows what you are doing and is available to help you.

DID YOU KNOW?

Your microscope is lit with a small battery operated bulb. A synchrotron particle accelerator produces x-rays that are 100 million times brighter than the sun. A bit big to carry around though!



HOW TO PREPARE A SLIDE

Samples for examination should be very thin so that light can pass through them. If the sample is too thick it will appear dark in the microscope.

Cloth fibres, pollen, dust or salt crystals will be easy to see and make good samples for beginners to observe.

If the sample is very thin and clear a drop of dye may make details show more clearly. Methylene blue dye (not included) can be obtained from an aquarium supply store. You can transfer a drop of dye from the bottle to your slide with the pipette.

COLLECTING SPECIMENS

Use your tweezers and the vials to collect very small specimens from your garden or home. Items that are good to look at under a microscope are pieces of bath sponge, leaves, plant roots, flower stems, sand, dirt, fabric fibres, salt and seeds.

MAKING A TEMPORARY SLIDE

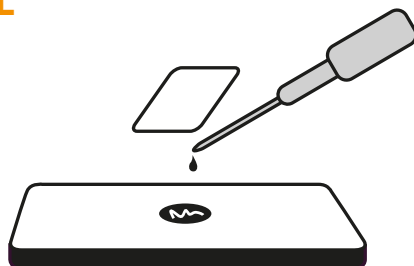
1. Wipe a blank slide clean, as dirt or grease may affect the viewing of your specimen.
2. Prepare a thin sample. You may have to ask an adult to slice something for you, as knives and scissors can be sharp.

CAUTION:

Dyes and food colouring can stain. Always follow the safety instructions on dye and food colouring bottles. We recommend that children wear overalls and/or old clothes and that you cover furnishings, carpets and work surfaces. Always follow the safety instructions on dye bottles. When using dyes, adult supervision is essential.

You can also try a little food colouring to see if that works on your specimen. Try mixing up our own colours using different food colours, an empty vial and the stirring rod included in the set.

Remember they must be thin enough and small enough so that the light can shine through and all around them up through the hole of the slide. Solid objects are not good for viewing with your microscope.



Cross-sections of stems, roots and pieces of leaves are really interesting under the microscope. When any kind of cutting is involved, adult supervision is essential.

3. Pick up your sample with the tweezers and put it on the centre section of the slide. Add one drop of water or, if needed, you can now add a drop of dye/food colouring using your pipette.

IMPORTANT INFORMATION

Safe Battery Usage

- Batteries must be inserted or removed by an adult.
- Do not mix battery types (for example, alkaline and zinc carbon), or old and new batteries.
- Do not attempt to recharge non-rechargeable batteries, as they may leak or explode.
- Batteries must be inserted with the correct polarity.
- Do not short circuit the supply terminals.
- Remove exhausted batteries from the toy.
- Remove rechargeable batteries from the toy before charging.
- Rechargeable batteries must be charged by an adult.
- Use only the recommended battery type or their equivalent.
- Do not dispose of batteries in fire, as they may leak or explode.
- Remove batteries from the toy if it is not being used for an extended period of time.

4. Gently place a slide cover (see-through plastic label) over the sample, being careful not to allow in any air bubbles.
5. Remove any excess water or dye/food colouring with a piece of paper towel (not included) by pressing it down gently over the slide cover.
6. Observe your slide.



MAKE YOUR WORLD BIGGER

36
PIECES!



Requires 2 x 1.5V AA batteries (not included).

WARNING!

To be used under
the direct supervision
of an adult.



The purpose of the crossed-out wheellie bin symbol is to remind us that most electrical product and batteries contain trace elements which could be harmful to our environment and therefore our health.

We must all be careful to dispose of them responsibly in a specifically designated way – either using a collection scheme or into the correctly labelled civic amenity (NOT into general waste) – this will help your local authority to arrange to recycle or dispose of them in the appropriate manner.



Please retain the information on this manual for future reference.
Colour, designs and decorations may vary from those shown in the photographs.

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