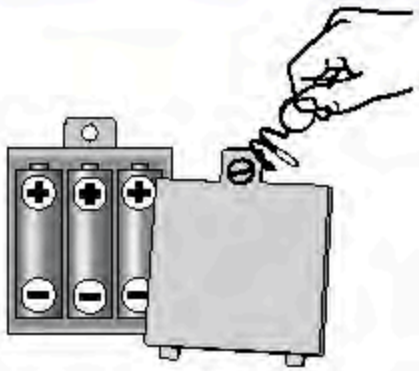
A Special Reminder About Lenses
The most important parts of your microscope are the lenses. Handle them with care. If the lenses are dirty or dusty, you can clean them with a soft cotton cloth or a special lens-cleaning tissue. Do not wipe them with a finger or a regular facial tissue. Avoid any direct contact between the viewing lenses and the stage. If you have something large on the stage (such as a rock or a petri dish), turn the focus knob to move the stage down before switching lenses. Always put the lens cap on the eyepiece when you finish using your microscope.

Battery Installation Instructions



1. Use a coin to loosen the screw in the bottom cover of the microscope and remove the cover.
2. Install three AAA batteries following the diagram inside the compartment.
   - Do not use rechargeable batteries.
   - Do not mix old and new batteries.
   - Do not mix different types of batteries: alkaline, standard (carbon zinc), or rechargeable (nickel-cadmium) batteries.
   - Do not recharge nonrechargeable batteries.
   - Remove rechargeable batteries from the microscope before recharging.
   - Only charge rechargeable batteries under adult supervision.
   - Only use batteries of the same or equivalent type as recommended.
   - Insert batteries with the correct polarity.
   - Remove exhausted batteries from the unit.
   - Do not short circuit the supply terminals.
   - To prevent corrosion and possible damage to the product, we recommend removing the batteries from the unit if it will not be used for more than two weeks.
   - For best results, always use fresh alkaline batteries. Other battery types will have a shorter life.
3. Replace the cover and tighten the screw. Do not over-tighten.

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MICROSCOPE
INSTRUCTION GUIDE

⚠ WARNING:
CHOKING HAZARD—Small parts. Not for children under three (3) years.

⚠ WARNING:
SHARP EDGE HAZARD—Cutting edges. Not for children under three (3) years. Use under the direct supervision of an adult.

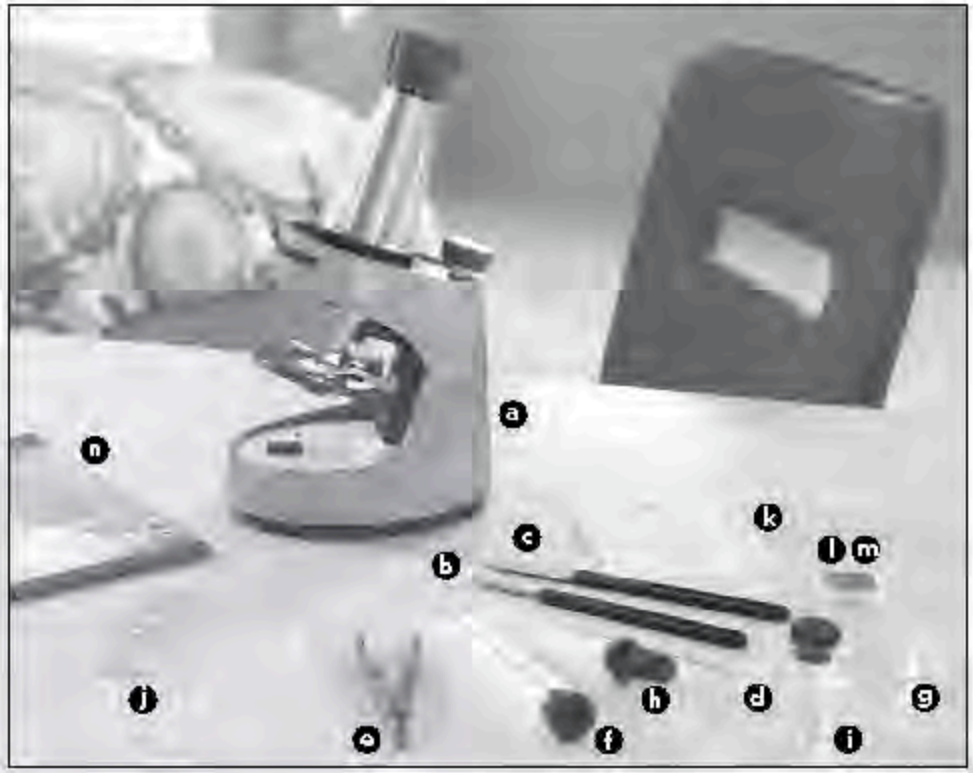
Welcome to the Microscopic World

Welcome to the hidden world of the microscope. Your new microscope is an instrument with lenses for making very small objects appear much larger so they can be studied. There are millions of things (including tiny plants and animals) that can be easily seen with your microscope.

Every field of science utilizes microscopes. Microscopes are used by biologists for studying microorganisms, by geologists for studying rocks and minerals, by archaeologists for studying ancient artifacts, and by astronomers for studying fallen meteorites.

Your microscope set contains the following parts:

1 – Microscope
1 – Scalpel
1 – Spatula
1 – Stirring Rod
1 – Pair of Tweezers
1 – Test Tube with Cap
1 – Petri Dish
1 – Pipette
1 – Specimen Vial
4 – Prepared Slides
7 – Blank Slides
7 – Slide Labels
7 – Cover Slips
1 – Journal with lots of fun activities inside



What are all of these things for?

a. **Microscope** – The microscope has lenses that magnify very small objects to allow the human eye to see them. When the light is shining from the bottom, it is called a *light microscope*. The light on the bottom shines a bright light through the small sample so you can see inside it. When the light is shining from the top, it is called a *dissecting microscope*. The light on top shines a light from above so you can see texture and tiny details on the surface of objects. In both cases, the lenses make the sample look very big. Your microscope can make things look 30 times, 100 times, or even 400 times larger than the way you see them with your own eyes.

b. **Scalpel** – A scalpel is a sharp blade used to cut very thin pieces of material so you can look at them with your microscope.

c. **Spatula** – The spatula has a large flat blade, but it is not as sharp as the scalpel. The spatula is used for scraping off bits of material for testing and to mash and flatten soft samples.

d. **Stirring Rod** – Use this rod to mix fluids until they are blended.

e. **Tweezers** – The tweezers are used to pick up small specimens and to handle samples that you don't want to touch with your hands. They are also helpful for dropping the cover slip onto the slide when making a wet *mount*.

f. **Test Tube with Cap** – This thin, clear tube, used to hold liquid samples, makes it easy to observe if anything is happening, such as when a sample changes color.

g. **Petri Dish** – This round, flat dish with a clear cover is used to grow and observe samples, such as molds. It's also useful for holding large samples, such as a dead bug or a stone.

h. **Pipette** – This is a device that you squeeze and then dip into a liquid to transfer drops to a slide for examination.

i. **Specimen Vial** – This is a little plastic bottle with a tight-fitting lid. Use it to carry your sample from the collection site to where you have your microscope set up.

j. **Prepared Slides** – These slides have samples on them that have been prepared by professionals for you to examine. Some abbreviations you might see on the labels: "w. m." stands for whole mount, "c. s." stands for cross section, and "l. s." stands for longitudinal section.

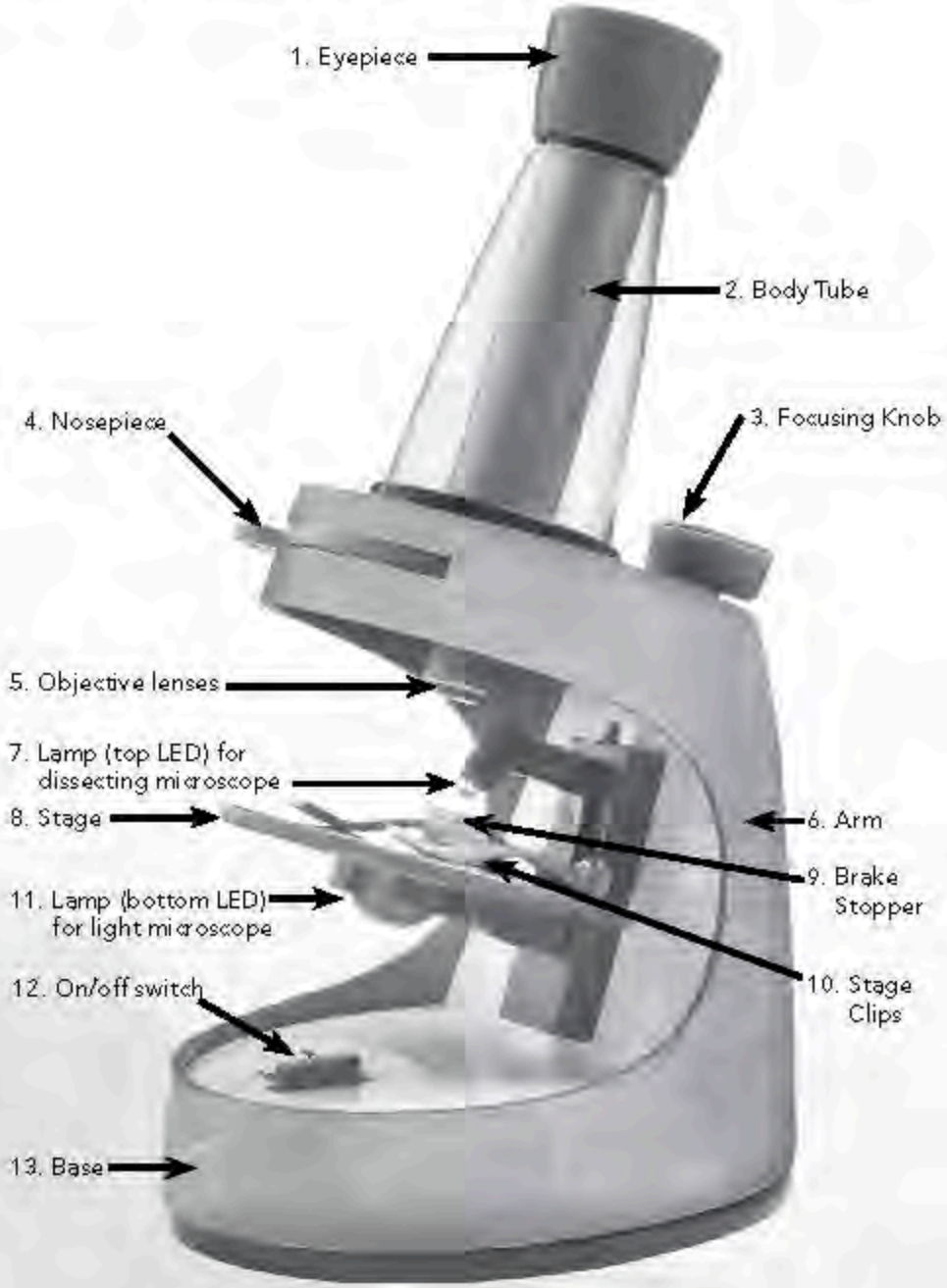
k. **Blank Slides** – These are the clear slides that you will place prepared samples on for examination under your microscope.

l. **Slide Labels** – These are little pieces of paper with sticky backs. You can write on them and stick them on your slides to record information such as when the sample was prepared.

m. **Cover Slips** – These are little squares made of thin, clear plastic. They are used to cover very small samples on a slide. See the instructions in your included journal for making slides.

n. **Activity Journal** – This book has tons of fun activities to do with your microscope. Use it as a journal and fill it with scientific notes and drawings.

Getting Acquainted with Your Microscope



Learning About Your Microscope

1. **Eyepiece** – The eyepiece is where you look into the microscope. It is a small magnifying lens that collects the image projected up by the three objective lenses. Your microscope has a 10x eyepiece, which makes an image look 10 times larger.

2. **Body Tube** – This is the main tube of the microscope. Light from the sample travels up this tube to the eyepiece.

3. **Focusing Knob** – Turn this knob very slowly to bring the image of your sample into focus so you can see it clearly.

4. **Nosepiece** – The nosepiece holds the three objective lenses. Slide the tab so that each lens clicks into position.

5. **Objective Lenses** – The objective lenses are the lenses closest to the objects you are examining. Your microscope has three objective lenses, each with a different magnifying power. The shortest lens has the lowest magnifying power (3x). The longest lens has the highest magnifying power (40x). The third lens has a magnifying power between the two (10x). The objective lenses work with the eyepiece to give your microscope a range of magnifications. With the 10x eyepiece, your microscope makes samples look 30 times (30x), 100 times (100x), and 400 times (400x) larger than they appear to the naked eye.

6. **Arm** – This curved piece is the "backbone" of the microscope and connects the tube to the base.

7. **Lamp (top LED)** – The top LED shines onto the surface of your sample. Turn on the top lamp when you wish to use the dissecting microscope.

8. **Stage** – The stage is the flat platform where your slide or specimen is held for studying.

9. **Brake Stopper** – Use this to position and hold a specimen directly under the lens. You can slide the brake stopper forward or back, as needed. The brake stopper is specially designed for any specimen that might roll off the stage, such as a rock.

10. **Stage Clips** – The two clips on the stage hold your slide in position so that it doesn't
move around while you're looking at it.

11. **Lamp (bottom LED)** – The bottom LED shines through your sample. Turn on the bottom lamp when you wish to use the light microscope. Note: You need a very thin, translucent sample so that light can shine *through* it.

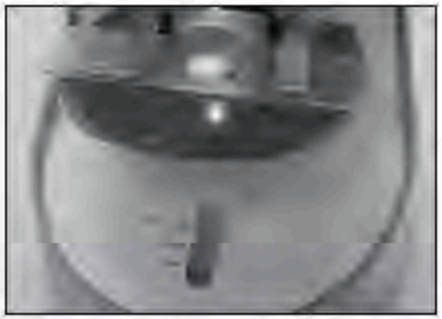
12. **On/off switch** – This is a three-way switch. Slide it up to switch on the top light. Slide it all the way down to turn on the bottom light. When centered, both lights are off.

13. **Base** – The bottom of the base has a rubber cover to help prevent your microscope from slipping on a smooth tabletop.

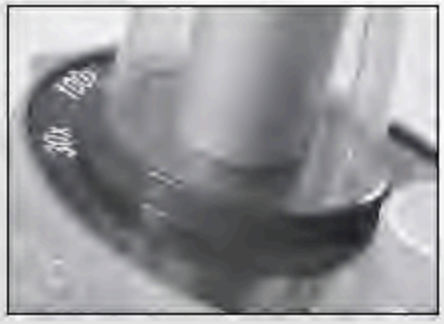
Getting Started

1. Insert three AAA batteries into the base of the microscope, following the instructions on page 8.
2. If your microscope arrived without the eyepiece installed, insert it into the body tube.
3. Place the microscope on a flat surface.
4. Switch on the bottom lamp.

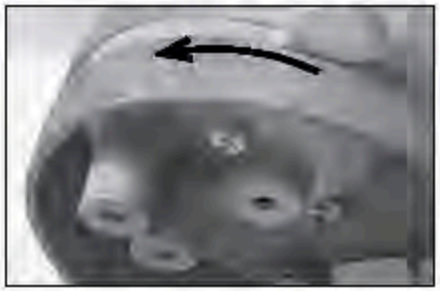
5. Choose one of the prepared sample slides from your set. Place it under the two clips on top of the stage.



6. Next, choose the magnifying power you want to use. Your microscope can provide magnifying powers of 30x, 100x, and 400x. For optimal viewing, start at the lowest power and work your way upward. Most observing is done at low power.



7. To change the magnifying strength, slide the tab on the nosepiece until you hear a click.



8. 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.
9. You can also switch to the top lamp to see how the view changes. However, the top lamp (dissecting microscope) is even better for viewing textured items. Check out the included journal for lots of fun activities using both the top lamp (dissecting microscope) and the bottom lamp (light microscope).

Microscope Safety Tips

Keep these safety tips in mind as you enjoy hours of fun projects and experiments with your microscope.

- Read all instructions before use. Follow them and keep them for future reference.
- Keep small children and animals away from experiments or projects.
- When working with samples, keep your hands away from your mouth and eyes. Eye protection is not included.
- Always wash your hands carefully after handling samples and always dispose of samples in a safe manner.
- Do not eat anything that has touched your microscope or microscope accessories.
- Store your microscope set and accessories out of the reach of small children.

Taking Care of Your Microscope

- Always handle the microscope with two hands—one hand around the arm and the other around the base.
- Remove and clean the slides from the microscope stage after each use.
- Place the microscope back in its box or cover it with a plastic bag after each use.
- Clean your microscope with a damp or dry cloth—do not immerse or spray liquid or water onto the microscope.