

### Observe, Investigate, Discover!

When you want to take your investigations to the cellular level, the 1200x Microscope is ready to reveal the hidden details of the world around you. Everyday things like sand, onion skin, hair and pollen will show their extraordinary sides when viewed at magnifications ranging from 300x to 1200x. To jump start your observations, the set comes with prepared specimens, collection tools and an experiment guide.

#### Microscope Parts:

- 01. Eyepiece
- 02. Focus Knob
- 03. Stage with Color Filters
- 04. Stage Clips
- 05. Objective Turret (5x, 20x, 45x)
- 06. Illumination On/Off Switch and Mirror
- 07. Rubber Base and Battery Case
- 08. Microscope Arm
- 09. (5) Prepared Slides and (20) Blank Slides with Slide Case
- 10. (20) Slide Covers
- 11. (5) Collection Vials
- 12. Yeast / Gum Media / Sea Salt / Brine Shrimp Eggs
- 13. Graduated Cylinders
- 14. Petri Dish
- 15. Slicer
- 16. Scalpel / Spatula / Needle\* / Tweezers
- 17. 3x Magnifying Glass / Scissors / Stirring Rod / Pipette
- 18. Shrimp Hatchery
- 19. Slide Projector and Screen



Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (ni-cad, ni-mh, etc.) batteries. Non-rechargeable batteries are not to be recharged. Please recycle batteries responsibly.

\*Not suitable for children under 8 years of age. Contains functional sharp points.

#### What's Included:



## 1200X MICROSCOPE SET INSTRUCTION MANUAL

**WARNING:**  
CHOKING HAZARD – Small parts.  
Not for children under 3 years.

**WARNING:**  
FUNCTIONAL SHARP POINT – Not for  
children under 3 years.

**WARNING:**  
The lens contains lead that may be harmful.  
Wash hands after touching.

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Customer Service: Call 1-866-252-3811

#### IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW THE INSTRUCTIONS BEFORE USE.  
KEEP THESE INSTRUCTIONS FOR LATER USE.

• **THIS MICROSCOPE SET IS INTENDED FOR CHILDREN OLDER THAN AGE 7.** CHILDREN SHOULD ONLY USE THIS DEVICE UNDER ADULT SUPERVISION. NEVER LEAVE A CHILD UNSUPERVISED WITH THIS DEVICE. ACCESSORIES IN THE EXPERIMENT KIT MAY HAVE SHARP EDGES AND TIPS. PLEASE STORE THE DEVICE AND ALL OF ITS ACCESSORIES AND AIDS OUT OF THE REACH OF YOUNG CHILDREN WHEN NOT BEING USED DUE TO A RISK OF INJURY.

• **CHEMICALS:** ANY CHEMICALS AND LIQUIDS USED IN CONJUNCTION WITH THE DEVICE SHOULD BE KEPT OUT OF REACH OF CHILDREN. DO NOT DRINK ANY OF THE CHEMICALS CONTAINED IN THIS SET. HANDS SHOULD BE WASHED THOROUGHLY UNDER RUNNING WATER AFTER WORKING WITH THESE CHEMICALS. IN CASE OF ACCIDENTAL CONTACT WITH EYES OR MOUTH, RINSE THE AFFECTED AREA WITH WATER. SEEK MEDICAL TREATMENT FOR ALLMENTS ARISING FROM CONTACT WITH THE CHEMICAL SUBSTANCE, AND TAKE THE CHEMICALS WITH YOU TO THE DOCTOR.



• **CHOKING HAZARD:** CHILDREN SHOULD ONLY USE DEVICE UNDER ADULT SUPERVISION. KEEP PACKAGING MATERIALS LIKE PLASTIC BAGS AND RUBBER BANDS OUT OF THE REACH OF CHILDREN AS THESE MATERIALS POSE A CHOKING HAZARD.

• **BATTERY GUIDELINES:** THIS DEVICE CONTAINS ELECTRONIC COMPONENTS THAT ARE POWERED BY BATTERIES. BATTERIES SHOULD BE KEPT OUT OF CHILDREN'S REACH. WHEN INSERTING BATTERIES, PLEASE ENSURE THE POLARITY IS CORRECT. INSERT THE BATTERIES ACCORDING TO THE DISPLAYED +/- INFORMATION. NEVER MIX OLD AND NEW BATTERIES. REPLACE ALL BATTERIES AT THE SAME TIME. NEVER MIX ALKALINE, STANDARD CARBON-ZINC AND RECHARGEABLE NICKEL-CADMUM BATTERIES. NEVER SHORT CIRCUIT THE DEVICE OR BATTERIES OR THROW EITHER INTO A FIRE. LEAKING OR DAMAGED BATTERIES CAN CAUSE INJURY IF THEY COME INTO CONTACT WITH THE SKIN. IF YOU NEED TO HANDLE SUCH BATTERIES, PLEASE WEAR SUITABLE SAFETY GLOVES. REMOVE BATTERIES FROM THE PRODUCT BEFORE EXTENDED STORAGE TO PREVENT LEAKING. DO NOT IMMERSE THE BATTERY COMPARTMENT IN WATER. NON-RECHARGEABLE BATTERIES ARE NOT TO BE RECHARGED. RECHARGEABLE BATTERIES ARE TO BE REMOVED FROM THE TOY BEFORE BEING CHARGED. RECHARGEABLE BATTERIES ARE ONLY TO BE CHARGED UNDER ADULT SUPERVISION. EXHAUSTED BATTERIES ARE TO BE REMOVED FROM TOY. THE SUPPLY TERMINALS ARE NOT TO BE SHORT-CIRCUITED. PLEASE RECYCLE BATTERIES RESPONSIBLY.

• **RISK OF FIRE:** DO NOT PLACE DEVICE, PARTICULARLY THE LENSES, IN DIRECT SUNLIGHT. THE CONCENTRATION OF LIGHT RAYS COULD CAUSE A FIRE.

• **DO NOT DISASSEMBLE THIS DEVICE.** IN THE EVENT OF A DEFECT, PLEASE CONTACT YOUR DEALER. THE DEALER WILL CONTACT THE CUSTOMER SERVICE DEPARTMENT AND CAN SEND THE DEVICE IN TO BE REPAIRED IF NECESSARY.

• **DO NOT SUBJECT THE DEVICE TO TEMPERATURES EXCEEDING 60 °C (140 °F).**



• **DISPOSAL:** KEEP PACKAGING MATERIALS, LIKE PLASTIC BAGS AND RUBBER BANDS, AWAY FROM CHILDREN AS THEY POSE A RISK OF SUFFOCATION. DISPOSE OF PACKAGING MATERIALS AS LEGALLY REQUIRED. CONSULT THE LOCAL AUTHORITY ON THE MATTER IF NECESSARY AND RECYCLE MATERIALS WHEN POSSIBLE.



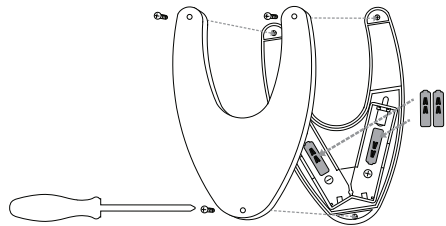
• THE WEEE SYMBOL IF PRESENT INDICATES THAT THIS ITEM CONTAINS ELECTRICAL OR ELECTRONIC COMPONENTS WHICH MUST BE COLLECTED AND DISPOSED OF SEPARATELY.  
• NEVER DISPOSE OF ELECTRICAL OR ELECTRONIC WASTE IN GENERAL MUNICIPAL WASTE. COLLECT AND DISPOSE OF SUCH WASTE SEPARATELY.  
• MAKE USE OF THE RETURN AND COLLECTION SYSTEMS AVAILABLE TO YOU, OR YOUR LOCAL RECYCLING PROGRAM. CONTACT YOUR LOCAL AUTHORITY OR PLACE OF PURCHASE TO FIND OUT WHAT SCHEMES ARE AVAILABLE.

• ELECTRICAL AND ELECTRONIC EQUIPMENT CONTAINS HAZARDOUS SUBSTANCE WHICH, WHEN DISPOSED OF INCORRECTLY, MAY LEAK INTO THE GROUND. THIS CAN CONTRIBUTE TO SOIL AND WATER POLLUTION WHICH IS HAZARDOUS TO HUMAN HEALTH, AND ENDANGER WILDLIFE.  
• IT IS ESSENTIAL THAT CONSUMERS LOOK TO RE-USE OR RECYCLE ELECTRICAL OR ELECTRONIC WASTE TO AVOID IT GOING TO LANDFILL SITES OR INCINERATION WITHOUT TREATMENT.



### Install Batteries

1. Remove button screws and cover.
  2. Install batteries with the positive (+) and negative (-) in the correct direction indicated by the battery compartment label.
  3. Replace the cover and screws.
- Please recycle batteries responsibly.



**WARNING:**  
 \* Examine devices and make sure the battery compartment is correctly secured, e.g. that the screw or other mechanical fastener is tightened. Do not use if compartment is not secure.  
 \* Dispose of used button batteries immediately and safely. Flat batteries can still be dangerous.  
 \* Tell others about the risk associated with button batteries and how to keep their children safe.

### How Do I Use My Microscope

Before you use your microscope, make sure that the table, desk or surface that you place it on is stable and is not subject to vibration. If the microscope needs to be moved, hold it by the arm and base while carefully transferring it. Once the microscope is in a suitable location and the batteries are installed, check the light source to make sure that it illuminates. Use a microfiber cleaning cloth to gently wipe the lenses off. If the stage is dirty with dust or oil, carefully clean it off. Make sure that you only raise and lower the stage using the focus adjustment knob.

### How Do I Operate The Illumination?

Locate the mirror/light on the base of the microscope. Flip the mirror/light to the “on” position (with the light facing up) and the light will illuminate. This microscope is equipped with an incandescent light that illuminates the specimen from below. The color filter wheel is located in the middle of the microscope stage. The filters help you when you observing very bright or clear specimens. Using these filters, you can choose various brightness levels and colors. This helps you better recognize the components of colorless or transparent objects (e.g. sea salt).

### How Do I Adjust My Microscope Correctly?

Place the microscope in a suitable location as described above, and sit in a comfortable viewing position. Always start each observation with the lowest magnification. Adjust the distance of the microscope stage so that the stage is in the lowest position – farthest away from the turret head. Turn the objective turret until it clicks into place at the lowest magnification (Objective: 7.5x/Magnification: 300x). Note: Before you change the objective setting, always make sure the microscope stage is farthest away from the turret by rotating the focus knob. Separating the stage and turret by rotating the focus knob will avoid causing damage to the specimen slide or microscope. When starting an observation, always start with the 5x objective in the rotating head.

### How Do I Observe The Specimen?

Sitting in your location with adequate illumination, the following basic rules should be observed. Start with a simple observation at the lowest magnification. Position the object or specimen in the middle of the stage under the stage clips, center over the lower light. Focus the image by rotating the focus knob until a clear image appears in the eyepiece.

Place the prepared slide directly under the objective on the microscope stage and secure it with the stage clips. The prepared slide should be located directly over the lower illumination. Look through the eyepiece and carefully turn the focus knob until the image appears clear and sharp. Now you can select a higher magnification by rotating to the objective turret. Higher levels of magnification can be achieved by turning the objective turret to a higher setting (600x or 1200x). Following this procedure creates a steady increase of magnification without overpowering the view of the object. The following magnification order should be used: 300x, 600x then 1200x. Each time the magnification changes (due to the objective change), the image sharpness must be readjusted with the focus knob. When doing this, be careful because if you move the microscope stage too quickly, the objective and the slide could come into contact and cause damage to the slide or microscope.

For transparent objects (e.g. sea salt), light is projected by the lower light traveling from below the stage, through the objective and eyepiece, and finally into your eye. This process of light transmission is known as microscopy. Many micro-organisms found in water, plant components and the smallest animal parts are transparent in nature. Opaque specimens, on the other hand, will need to be prepared for viewing. Opaque specimens can be made transparent by a process of treatment and penetration with the correct materials (media), or by slicing. You can read more about creating specimens in the enclosed microscope experiments booklet.

### Magnification Guide:

Eyepiece	Objective	Power
40x	7.5x	300x
40x	15x	600x
40x	30x	1200x

Note:  
 The highest magnification is not always the best for every specimen!

### Troubleshooting Guide:

Problem	Solution
No recognizable image	Turn on light, Readjust focus, Start with the lowest power objective
No image	Center object on slide under lowest power objective
No light	Replace batteries, Check on/off position



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