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4M KidzLabs Bubble Science Kit Instruction Manual

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1. INTRODUCTION

The 4M KidzLabs Bubble Science Kit provides an engaging way to explore the physics and art of bubble making. This kit includes various tools and instructions for performing exciting bubble experiments, such as creating unbreakable bubbles, giant bubbles, and bubble films. It is designed to encourage scientific curiosity and hands-on learning for users aged 5 years and up.



Figure 1.1: The 4M KidzLabs Bubble Science Kit packaging, illustrating the contents and potential experiments.

2. SAFETY INFORMATION

WARNING: CHOKING HAZARD - Small Parts.

This kit contains small parts which may pose a choking hazard. It is not suitable for children under 3 years of age. Adult supervision is recommended during assembly and use, especially for younger children, to ensure safe handling of all components and mixtures.

3. WHAT'S INCLUDED

The 4M KidzLabs Bubble Science Kit includes the following components:

- Bubble-making frames (various shapes, e.g., cube, pyramid)
- Bubble wands (star-shaped, round)
- Tray for bubble mixture
- Rope for giant bubbles
- Straws
- Connectors and other small parts for assembly
- Detailed instruction manual (this document)
- Recipes for high-quality bubble mixture

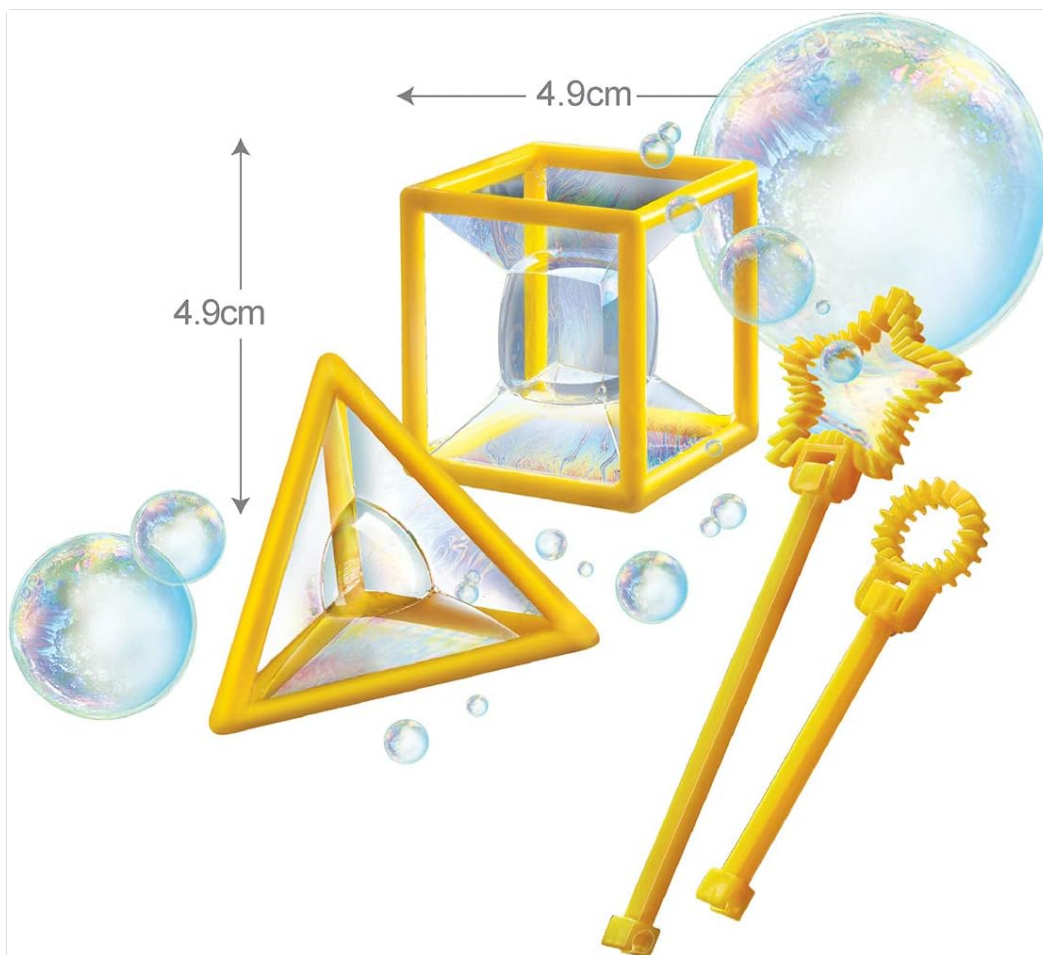


Figure 3.1: An overview of the main components included in the kit, such as wands, frames, and connectors.



Figure 3.2: The plastic tray for holding bubble solution and other small parts of the kit.

4. SETUP

Before beginning any experiments, ensure all components are present and accounted for. Follow the detailed assembly instructions provided in the physical manual included with your kit for specific steps on constructing the bubble frames and wands. Generally, assembly involves connecting plastic rods and connectors to form the desired shapes.

1. **Unpack Components:** Carefully remove all items from the packaging.
2. **Assemble Frames:** Connect the plastic rods and connectors to build the geometric bubble frames (e.g., cube, pyramid). Refer to the diagrams in the physical manual for correct assembly.
3. **Prepare Bubble Solution:** Use the provided recipes to create your high-quality bubble mixture. Pour the prepared solution into the plastic tray.

5. OPERATING INSTRUCTIONS AND EXPERIMENTS

This kit allows for a variety of bubble experiments. Always ensure you have a fresh batch of bubble solution for optimal results.

5.1. Creating a Bubble Film

To create a bubble film, dip one of the geometric frames (e.g., the square frame) into the bubble solution, ensuring it is fully submerged. Slowly lift the frame out of the solution. A thin, iridescent bubble film should form across the opening of the frame. Observe the colors and patterns on the film.



Figure 5.1: Demonstrating the creation of a bubble film using a rectangular frame.

5.2. Blowing Individual Bubbles

Use the star-shaped or round wands to blow individual bubbles. Dip the wand into the solution, ensuring the opening is coated. Gently blow through the wand to create bubbles. Experiment with different blowing speeds and techniques to produce various bubble sizes.

KidzLabs™

Bubble Science



CONTENTS: bubble tray, plastic ring, coloured yarn, pyramid framed wand, cube framed wand, bubble solution, 2 giant bubble wand stoppers, mouthpiece, star wand, round wand, 2 clip on wand handles, 2 giant bubble wand sticks, 2 long straws, detailed Instructions. Remarks: Also required for some activities, but not included in this kit: plain paper, sticky tape, scissors, poster paints, a jar or container, a container or measuring jug. A bottle of bubble solution is included in this kit. However, you will need to mix extra bubble solution to perform some of the tricks, such as making the mega bubble and bubble film. Detergent and a few other household items are required from home to make bubble solution (recipes are included in the instructions).

FRANCE: L'ATELIER À BULLES - CONTENU: PLATEAU À BULLES, ANNEAU EN PLASTIQUE, FIL COLORÉ, FORME PYRAMIDALE, FORME DE CUBE, LIQUIDE À BULLES, 2 BOUCHONS POUR LES BAGUETTES À BULLES GÉANTES, EMOUCHEURE, FORME DÉTOILE, FORME RONDE, 2 POIGNÉES DE BAGUETTE AVEC CLIPS, 2 BAGUETTES À BULLES GÉANTES, 2 PAILLES LONGUES, INSTRUCTIONS DÉTAILLÉES. REMARQUES: AUTRES ACCESSOIRES REQUIS POUR CERTAINES ACTIVITÉS (NON FOURNIS): PAPIER BLANC, SCOTCH, CISEAUX, GOUACHE, RÉCIPENT/POT, VERRE DOSEUR. UN POT DE LIQUIDE À BULLES EST FOURNI AVEC CE JEU. CEPENDANT, CERTAINS DES TOURS NÉCESSITENT DES QUANTITÉS SUPPLÉMENTAIRES DE LIQUIDE À BULLES (EX: LA BULLE GÉANTE, LE FIL À BULLES). LA PRÉPARATION DU LIQUIDE À BULLES NÉCESSITE DU DÉTÉRGENT ET CERTAINS USTENSILES MÉNAGERS (VOIR RECETTES DANS LE MODE D'EMPLOI).

GERMAN: SEIFENBLASEN-WISSENSCHAFT - INHALT: SEIFENBLASENSCHALE, PLASTIKRING, FARBIGES GARN, PYRAMIDENFÖRMIGER STAB, WÜRFELFÖRMIGER STAB, SEIFENBLASEN-LÖSUNG, 2 GROBE SEIFENBLASEN-STARVERSCHLÜSSE, MUNDSTÜCK, STERNFÖRMIGER STAB, RUNDER STAB, 2 KLEMBARE STABGRIFFE, 2 GROBE SEIFENBLASENSTÄBE, 2 LANGE STROHHALME, BASTELANLEITUNGEN. HINWEIS: FÜR ENIGE AKTIONEN EBENFALLS ERFORDERLICH, JEDOCH NICHT IN DIESEM SET ENTHALTEN: WEISSES PAPIER, REISTREIFEN, SCHREI, MALFAARBEN, EIN GLAS ODER EINE DOSE, EIN BEHÄLTER ODER EIN MESSBECHER. DIESES SET ENTHÄLT EINE FLASCHE SEIFENBLASEN-LÖSUNG. DU MUSST JEDOCH NOCH ZUSÄTZLICHE SEIFENBLASEN-LÖSUNG ANMISCHEN, UM EINIGE DER TRICKS DURCHFÜHREN ZU KÖNNEN (Z.B. FÜR DIE MEGA-SEIFENBLASE UND DEN SEIFENBLASENFILM). ZUM MISCHEN DER SEIFENBLASEN-LÖSUNG BENÖTIGST DU REINIGUNGSMITTEL UND EINIGE WEITERE HAUSHALTSARTIKEL VON ZUHAUSE (DIE REZEPTE SIND IN DIESER ANLEITUNG ENTHALTEN).

HUNGARIAN: A KUNST VÁN HET BELLENLAZÁS - INHOUD: BELLENLAZÁSBÁK, RING VÁN KUNSTSTOF, GELEIDRD GIAREN, PYRAMIDENFÖRMIG STAB, WÜRFELFÖRMIG STAB, BELLENLAZÁSMIDDEL, 2 GROTE STOPPERS VOOR EEN BELLENLAZÁSTOVESTAF, MUNDSTUK, TOVERSTAF, TOVERKORTEL, 2 OPRUKBARE TOVERSTAVEN, 2 GROTE BELLENLAZÁSTOVESTAVEN, 2 LANGE FREETES, GEDETAILEERDE HANDLEIDING. OPMERKINGEN: VOOR SOMMIGE ACTIVITEITEN HEBT U ENKELE ZAKEN NOODIG, DIE NIET ZIJN MEEVERPACT. GEWOON PAPIER, PLAKBAND, SCHAAR, GLUTON, EEN VAAS OF GLAS, EEN GEWONE BEKER OF EEN MAATBEKER, EEN RIES, GEVULD MET BELLENLAZÁSMIDDEL, E WEL MEEVERPACT. JE ZIJT ECHTER ZIEP EXTRA BELLENLAZÁSMIDDEL, MOETEN MENGEN OM SOMMIGE TRICKS UIT TE VOEREN, ZOALS HET MAKEN VAN EEN HEEL ERG GROTE BEL OF EEN BELLENFILM. VAN TRICKS HEBT U WAGSMODEL EN EEN PAKK ANDERE HUISHOUDELIJKE ARTIKELLEN NOODIG OM BELLENLAZÁSMIDDEL AANT TE MAKEN (HET RECEPT TREF U IN DE HANDLEIDING AAN).

ITALIAN: LA SCIENZA DELLE BOLLE DI SAPONE - CONTENUTO: VASSOIO PER LE BOLLE, ANELLO DI PLASTICA, FILO COLORATO, BACCHETTA MAGICA A STRUTTURA PYRAMIDALE, BACCHETTA MAGICA A STRUTTURA CUBICA, SOLUZIONE PER BOLLE, 2 FERMI PER BACCHETTA MAGICA PER BOLLE GIGANTI, BOCCHETTO, BACCHETTA MAGICA A STELLA, BACCHETTA MAGICA TONDA, 2 MANIGLIE A CLIP PER BACCHETTA MAGICA, 2 BASTONCINI PER BACCHETTE MAGICHE PER BOLLE GIGANTI, 2 CANNUCCE LUNGHE, ISTRUZIONI DETTAGLIATE. OSSERVAZIONI: PER REALIZZARE CERTE ATTIVITÀ SONO NECESSARI I SEGUENTI OGGETTI (NON SONO INCLUSI NEL KIT: CARTA COMUNE, NASTRO ADESSIVO, FORBICI, COLORI PER CARTA, UN BARATTOLO O CONTENITORE, UN CONTENITORE O UNA BROCCA GRADUATA, NEI KIT È INCLUSA UNA BOTTIGLIA DI SOLUZIONE PER BOLLE DI SAPONE. TUTTAVIA, AVRAI BISOGNO DI CREARE ULTERIORE SOLUZIONE PER BOLLE PER L'ESECUZIONE DI ALCUNI TRUCCHI, COME LA REALIZZAZIONE DELLA MEGA BOLLA O DELLA PELLICOLA DI BOLLE. PER PREPARARE TALE SOLUZIONE SARANNO NECESSARI UN DETERGENTE E POCHI ALTRI OGGETTI CHE TROVERAI IN CASA (LE RICETTE SONO INCLUSE NELLE ISTRUZIONI).

SPANISH: LA CIENCIA DE LA BURBUJAS - CONTENIDO: BANDEJA PARA BURBUJAS, ANILLO DE PLÁSTICO, CORDÓN DE COLOR, VARA CON MARCO PYRAMIDAL, VARA CON MARCO CÚBICO, SOLUCIÓN DE BURBUJAS, 2 TACOS DE VARA PARA BURBUJAS GIGANTES, PICO PARA LA BOCA, VARA CON FORMA DE ESTRELLA, VARA CON FORMA REDONDA, 2 MANOS QUE SE ENGANCHAN A LA VARA, 2 PALOS DE VARAS PARA BURBUJAS GIGANTES, 2 PAILLAS LARGAS, INSTRUCCIONES EN DETALLE. OBSERVACIONES: ELEMENTOS NECESARIOS PARA ALGUNAS ACTIVIDADES PERO NO INCLUIDOS EN ESTE EQUIPO: PAPEL BLANCO, CINTA ADHESIVA, TIJERAS, PINTURAS AL AGUA, UNA JARRA O CONTENEDOR, UN CONTENEDOR O VASO MEDIDOR. EN ESTE EQUIPO SE INCLUYE UNA BOTTLE DE SOLUCIÓN PARA BURBUJAS. SIN EMBARGO, NECESITARÁS UNA SOLUCIÓN MIXTA EXTRA PARA LOGRAR ALGUNOS DE LOS TRUCOS, COMO HACER UNA MEGA BURBUJA Y UNA PELÍCULA DE BURBUJAS. SE REQUIERE DETERGENTE Y OTROS ARTÍCULOS DEL HOGAR PARA PREPARAR LA SOLUCIÓN PARA BURBUJAS (LAS RECETAS SE INCLUYEN EN LAS INSTRUCCIONES).

CHINESE: 泡泡科学套装包含: 泡泡盘, 塑料环, 彩色线, 金字塔形泡泡棒, 立方体形泡泡棒, 泡泡液, 2个巨型泡泡棒握柄, 嘴, 星形泡泡棒, 圆形泡泡棒, 2个夹泡泡棒手柄, 2根巨型泡泡棒, 2根长吸管, 详细说明书。备注: 某些活动还需要一些额外的泡泡液来完成, 比如制作巨型泡泡和泡泡膜。制作泡泡液还需要一些家庭用品(配方在说明书中)。本套装不包含: 白纸, 胶带, 剪刀, 彩笔, 一个玻璃杯或量杯。本套装包含一瓶泡泡液。某些活动还需要一些额外的泡泡液来完成, 比如制作巨型泡泡和泡泡膜。制作泡泡液还需要一些家庭用品(配方在说明书中)。本套装不包含: 白纸, 胶带, 剪刀, 彩笔, 一个玻璃杯或量杯。本套装包含一瓶泡泡液。

CAUTIONS! FOR AGES OVER 5. NOT FOR CHILDREN UNDER 3 YEARS DUE TO SMALL PARTS. ADULT GUIDANCE RECOMMENDED. READ THE INSTRUCTIONS BEFORE USE. FOLLOW THEM AND KEEP THEM AS REFERENCE. COLOURS AND CONTENTS MAY VARY FROM THOSE ILLUSTRATED. MADE IN CHINA.

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 WEBSITE: WWW.4M-IND.COM EMAIL: INFO@4M-IND.COM
 ADDRESS: 2104, SHUI ON CENTRE, HARBOUR RD, HONG KONG.



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Figure 5.2: A user blowing multiple small bubbles through a rectangular frame.



Figure 5.3: A boy demonstrating how to blow a chain of bubbles using a rectangular frame.

5.3. Creating Giant Bubbles

The kit includes components for making giant bubbles. Typically, this involves using a larger wand or a rope-based tool. Dip the giant bubble tool into the solution and slowly move it through the air to form large bubbles. This often requires a calm environment with minimal wind.



Figure 5.4: A boy successfully creating a large bubble with the kit's tools.



Figure 5.5: Another example of a large bubble created using the kit.

5.4. Experimenting with Geometric Frames

The kit provides various geometric frames (e.g., cube, pyramid). Dip these frames into the solution and observe how the bubble film forms across their surfaces. You can also try to blow bubbles through these frames to create unique shapes or multiple bubbles.



Figure 5.6: A boy demonstrating the use of a triangular bubble frame.

6. BUBBLE MIXTURE RECIPES

The kit includes detailed recipes for making your own high-quality bubble mixture. These recipes are crucial for achieving the best results with your bubble experiments. Always follow the instructions precisely for optimal bubble strength and longevity.

General Tips for Bubble Solution:

- Use distilled water if possible, as tap water minerals can affect bubble quality.
- Allow the mixture to sit for several hours or overnight before use; this can improve performance.
- Store unused solution in an airtight container to prevent evaporation and contamination.

7. MAINTENANCE AND CARE

Proper care of your 4M KidzLabs Bubble Science Kit will ensure its longevity and continued enjoyment.

- **Cleaning:** After each use, rinse all plastic components (wands, frames, tray) with clean water to remove any residue from the bubble solution.
- **Drying:** Allow all components to air dry completely before storing to prevent mold or mildew.
- **Storage:** Store the kit components in a clean, dry place, preferably in their original packaging or a designated container, away from direct sunlight and extreme temperatures.
- **Solution Disposal:** Dispose of used bubble solution responsibly.

8. TROUBLESHOOTING

If you encounter issues while using your bubble science kit, consider the following common solutions:

- **Bubbles Pop Too Quickly:**
 - Ensure your bubble solution is mixed correctly according to the provided recipes.
 - Check for dust or debris on the wands/frames, which can cause bubbles to pop.
 - Avoid windy conditions, as wind can easily pop bubbles.
 - High humidity can sometimes make bubbles more fragile.
- **Difficulty Forming Bubbles:**
 - Ensure the wand or frame is fully coated with solution.
 - Adjust your blowing technique; a slow, steady breath is often more effective than a quick, hard blow.
 - Verify the bubble solution is not too old or contaminated.
- **Components Not Fitting:**
 - Refer to the assembly diagrams in the physical instruction manual.
 - Ensure you are using the correct pieces for each connection.

9. PRODUCT SPECIFICATIONS

Feature	Detail
Product Dimensions	7.2 x 3.4 x 8.5 inches
Item Weight	8.8 ounces
Model Number	5591
ASIN	B007XWHN62
Manufacturer Recommended Age	5 years and up
Manufacturer	Toysmith
Release Date	June 1, 2018

10. WARRANTY AND SUPPORT

Specific warranty information for the 4M KidzLabs Bubble Science Kit is not provided within this manual. For details regarding product warranty, replacement parts, or further support, please contact the manufacturer, **4M**, directly or refer to their official website. You may also consult the retailer where the product was purchased.

For additional resources, you can visit the 4M Store on Amazon: [4M Store](#)