

I. MAKING A CRYSTAL TERRARIUM



- 1
- Gently arrange your crystals on the tray.
- 2
- You can use provided unicorn figures or your own ornaments (e.g. figures, dried flowers, rocks, fresh flowers and gemstones) to decorate the crystal terrarium. Do not put any wet objects (such as wet soil) into the tray, as these will dissolve the crystals.
- 3
- Cover the tray with the transparent cover and decorate with transparent stickers as shown. Congratulations! Your sparkling crystal unicorn land is now complete. You can use it as part of your crystal collection.

J. HOW DOES IT WORK?

When you add the crystal compound to hot water, it breaks up into tiny particles in the water. These particles are far too small to see. The liquid is then called a solution of the powder. In fact, it's called a saturated solution, because if you stir in more powder, no more will dissolve. Slowly, the water cools, and some water evaporates. Now, the water can't keep all the particles dissolved, and some begin joining together again. More particles join them, and over time, groups of particles come together. The particles join up in an organised way, making the crystals that you see, with straight edges and flat faces.

K. WHAT IS CRYSTAL CLIMBING?

Crystal climbing refers to the phenomenon of small crystal flakes growing around the inner wall of the transparent cup during the crystal growing process. The crystal flakes are formed because liquid moves up through the tiny gaps between the crystals themselves and between the crystals and the transparent cup (this movement is called capillary action), and then as the water evaporates, it allows crystal flakes to grow. If this happens, refer to the resolving instructions in SECTION F – Step 5.

L. FUN FACTS

- A crystal is a solid object made up of particles (sometimes atoms, sometimes ions, and sometimes groups of atoms called molecules) that are arranged in a neat pattern. This pattern of particles is repeated again and again throughout the crystal.
- Crystals grow in seven basic shapes, called crystal systems. Each system has a different pattern of particles. The crystal systems are called cubic, tetragonal, hexagonal, monoclinic, triclinic, orthorhombic and rhombohedral.
- Many rocks are made up of crystals of different minerals. Common minerals include quartz, feldspar, hornblende and mica.
- The precious stones that sparkle in rings and necklaces, such as diamonds, emeralds and rubies, are crystals.
- The largest diamond ever found was the Cullinan Diamond, which was dug up in South Africa in 1905. It weighed 621g.
- Amazing and beautiful giant crystals grow in spaces inside rocks. Sometimes, they are discovered by people exploring caves.
- Monoammonium Phosphate (the powder used in this kit) is an ingredient in some fertilisers used on farms. It's also used in some fire extinguishers.
- The salt that you put on your food is made up of tiny crystals of a mineral called Sodium Chloride.

CRYSTAL GROWING
UNICORN LAND CRYSTAL TERRARIUM

US EU

PLEASE SCAN THE QR CODE FOR VIEWING MULTI-LANGUAGE INSTRUCTIONS.
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⚠ WARNING: CHOKING HAZARD-Small parts.
Not for children under 3 years. This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision.

⚠ WARNING : FOR AGES OVER 10. Not suitable for children under 10 years. For use under adult supervision. Contains some chemicals which present a hazard to health. Read the instructions before use, follow them and keep them for reference. Do not allow chemicals to come into contact with any part of the body, particularly the mouth and eyes. Keep small children and animals away from experiments. Keep the experimental set out of reach of children under 10 years old.

Please read the following instructions, safety messages, and first aid information provided in case of accidents. Keep them for reference. In case of accidental swallowing of dangerous substances, please call the local poison centre (central office for first aid information), or your local hospital. Please write your local emergency telephone number here for quick reference:

A. SAFETY ADVICE FOR SUPERVISING ADULTS

1. Read and follow these instructions, the safety rules and the first aid information, and keep them since it contains important information. 2. The incorrect use of chemicals can cause injury and damage to health. Only carry out those experiments which are listed in the instructions. 3. This experimental set is for use only by children over 10 years. 4. Because children's abilities vary so much, even within age groups, supervising adults should exercise discretion as to which experiments are suitable and safe for them. The instructions should enable supervisors to assess any experiment to establish its suitability for a particular child. 5. The supervising adult should discuss the warnings and safety information with the child or children before commencing the experiments. 6. The area surrounding the experiment should be kept clear of any obstructions and away from the storage of food. It should be well lit and ventilated and close to a water supply. A solid table with a heat resistant top should be provided. 7. Substances in non-reclosable packaging should be used up completely after opening the package.

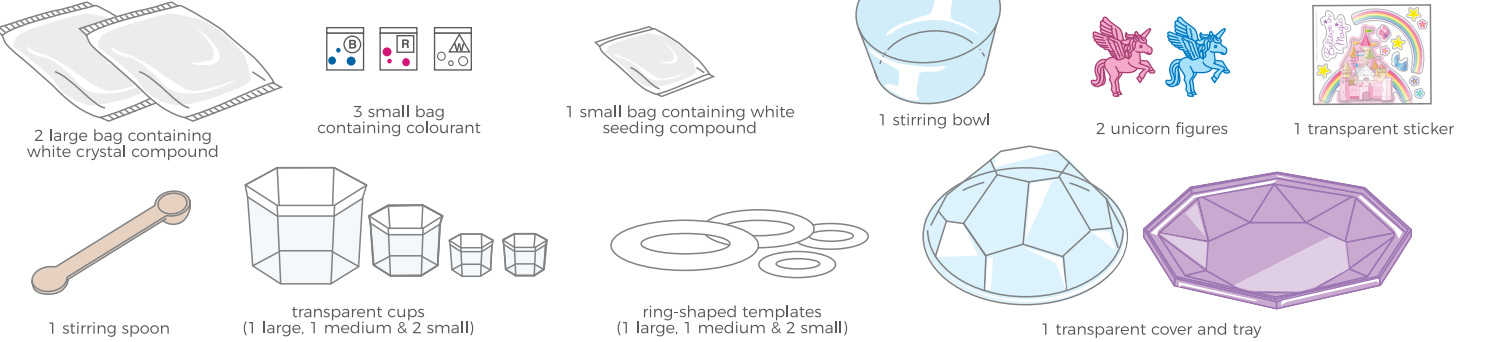
B. SAFETY MESSAGES

1. Read these instructions before use, follow them and keep them for reference. 2. Keep young children and animals away from the experimental area. 3. Store this experimental set and the final crystals out of reach of children under 10 years of age. 4. Clean all equipment after use. 5. Ensure that all empty containers and non-reclosable packaging are disposed of properly. 6. Wash hands after carrying out experiments. 7. Do not eat or drink in the experimental area. 8. Do not allow chemicals to come into contact with the eyes or mouth. 9. Do not apply any substances or solutions to the body. 10. Do not grow crystals where food or drink is handled or in bedrooms. 11. Do not use any equipment which has not been supplied with the set or recommended in the instructions for use. 12. Take care while handling with hot water and hot solutions. 13. Ensure that during growing of the crystal the container with the liquid is out of reach of children under 10 years of age. 14. Make sure that all containers are fully closed and properly stored after use. 15. Do not inhale the chemical dust. 16. Place completed crystals on a plate or non-porous materials, as the colour in crystal will remain soluble and may stain surface. 17. Dispose of materials according to your country's health and safety, and environmental regulations. 18. Wear protective clothing, gloves and eye/face protection when using the chemicals, and when removing the crystals from the container.

C. FIRST AID

In case of eye contact: Wash out eye with plenty of water, holding eye open if necessary. Seek immediate medical advice. If swallowed: Wash out mouth with water, drink some fresh water. Do not induce vomiting. Seek immediate medical advice. In case of inhalation: Remove person to fresh air. In case of skin contact and burns: Wash affected area with plenty of water for at least 15 minutes. In case of doubt, seek medical advice without delay. Take the chemical and its container with you. In case of injury always seek medical advice.

D. CONTENTS



Also needed, but not included in this kit: a jar of steaming hot water, a measuring jug, an apron, protective goggles, and rubber gloves.

E. IMPORTANT REMARKS

1. Different colourant mixtures contain the following chemicals: White Colourant: Monoammonium Phosphate. Blue Colourant: Monoammonium Phosphate & Brilliant Blue FCF. Red Colourant: Monoammonium Phosphate & Amaranth. Please be aware that the red and blue colourant mixtures are intensely coloured. While they help produce beautiful crystals, take care not to spill any coloured solution or colourant mixture! Though any stains on your skin would be temporary, they may leave permanent stains on some clothing or surfaces. Therefore, please wear an apron and rubber gloves when handling the colourant mixtures. Cover the work area with old newspaper and clean it after the experiment. Properly dispose of the coloured solution, to avoid staining the washing sink/drain. 2. The white seeding compound contains Aluminium Potassium Sulphate. 3. The white crystal compound (Monoammonium Phosphate) is hygroscopic: it tends to "capture" humidity contained in the air, and this phenomenon creates links between crystals. The material may become hard (caking), but can very easily be separated afterwards, rather like sugar.

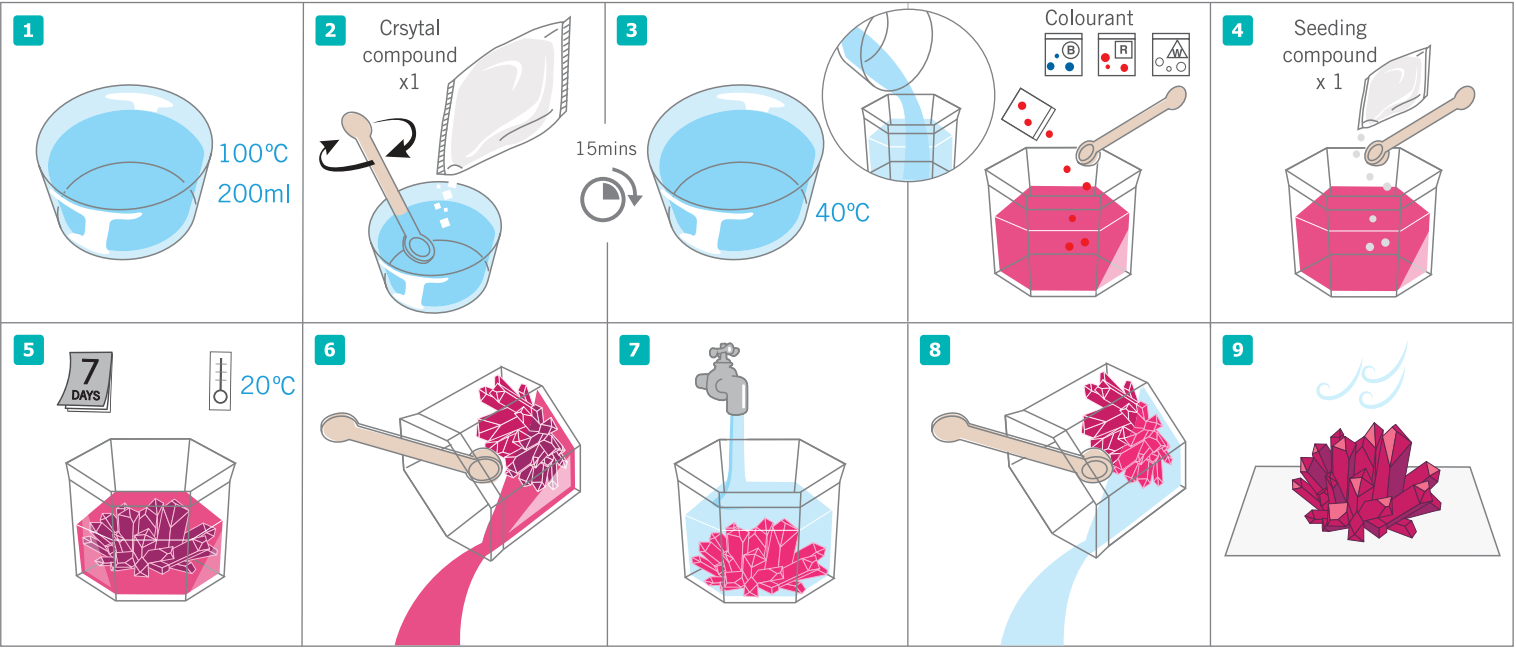
QUESTIONS & COMMENTS

We value you as a customer and your satisfaction with this product is important to us. If you have comments or questions, or you find any part of this kit missing or defective, please do not hesitate to contact our distributor in your country. You will find the address printed on the package. You are also welcome to contact our Marketing Support Team: Email: infodesk@4m-ind.com. Fax: (852) 25911566, Tel: (852) 28936241, Web site: WWW.4M-IND.COM

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F. MAKING THE LARGE-SIZED CRYSTALS



Adult supervision is required at all times. Take great care with hot water and solutions. Be careful when handling your crystals, as the spines are very sharp and are easily broken!

1 You need 200 ml (6.7 fl.oz.) of hot water to grow your crystals. Use boiling water (at 100°C (212°F)) if possible, as this makes the crystals grow best. Use a measuring jug to measure the 200 ml (6.7 fl.oz.) of hot or boiling water, and pour this into the stirring bowl. (Do not use the hexagonal transparent cup for this purpose, as the hot water will deform the thin plastic.)
*If there is a safety container provided, take out the crystal compound from the container before your start. You need press down the cap then twist it to open.

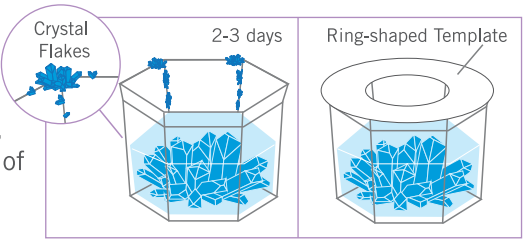
2 Now add the contents of ONE large bag (the white crystal compound) to the water. Stir until all the powder has dissolved to make a solution.

3 Allow 15 minutes for the solution to cool in the stirring bowl until it is warm (not too cool, not too hot, and ideally around 40°C (104°F)).Now take the small bags containing colourant. Choose your colour or refer to SECTION H to mix another crystal colour of your choice. First, ensure the stirring spoon is clean and dry prior to use, and then use it to add the colourant mixture to the solution. Stir the solution well. (Note: It is normal if some particles do not dissolve as they will serve as the base for the crystal to grow.)

4 Sprinkle 1 spoonful of the seeding compound in the centre area. DO NOT STIR THE SOLUTION. Also, try not to disturb any of the base compound that may have fallen to the bottom of the large transparent cover. Note: handle the colourant mixture with care, as the pigment may cause stains.

5 The crystals need a temperature above 20°C (68°F) to grow properly. Carefully put the large transparent cup in a warm room, or on top of your refrigerator, where it will be warm. Place a piece of kitchen paper under the transparent cup as a mat. Choose a place where the transparent cup will remain undisturbed for at least 15 hours, to allow the crystals to start growing. Observe the crystals every few hours. In normal conditions, your crystals will start to grow in the first day and reach a width of about 50mm (about 2 ins) and a height of about 40mm (about 1.5 ins) in 4 to 7 days. The size will vary depending on the environment in which the crystals are growing. If the environment is cold or humid, it will take longer for them to grow. In some cases it could take weeks. SO PLEASE BE PATIENT. It will be worth the wait!

Note: On days 2-3 of the growing process, some small crystal flakes may start to grow around the inner wall of the transparent cup. This effect is called “crystal climbing”. To avoid these small crystal flakes eventually growing out of the transparent cup and staining the table top, gently remove the small crystals without disturbing the solution, and place the ring-shaped template provided on top. This will stop the further growth of crystal flakes. Please refer to SECTION K for more details on crystal climbing.



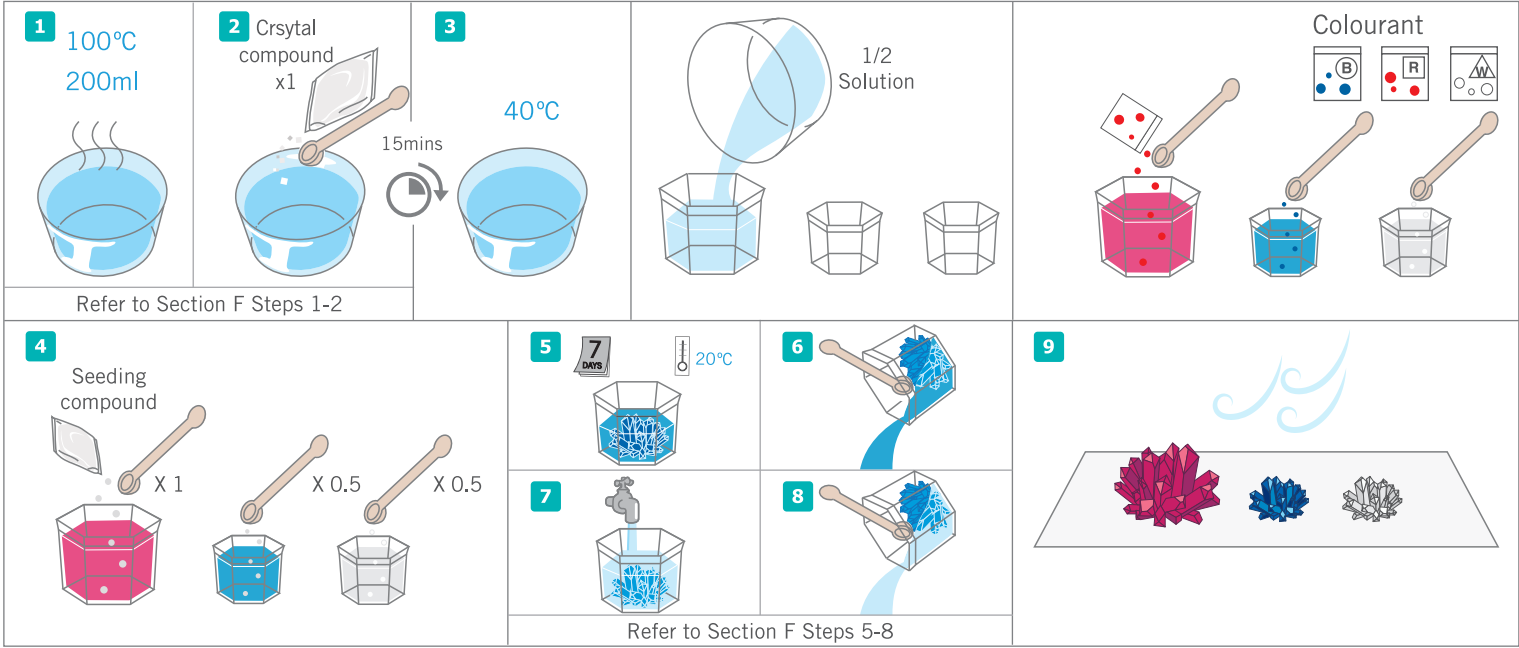
6 When the crystals have reached the size described above, drain away the remaining solution. Use the stirring spoon to hold the crystals in the large transparent cup as you tip it up. Once the solution is poured away, you cannot use it again, so DO MAKE SURE THAT YOUR CRYSTALS HAVE GROWN BEFORE YOU POUR AWAY THE SOLUTION. For coloured solutions, you could shine a torch into the solution to see if crystals have grown.

7 Gently rinse the crystals with fresh water for a few seconds. Do not wash the crystals for too long, or they will be dissolved by the water.

8 Pour away the water. Now carefully take the crystals out and place them on kitchen paper for drying. Rinse the large transparent cup with fresh water as well.

9 Congratulation, you have made a large size crystal! Keep the crystal in a dry place to prevent them from dissolving.

G. MAKING THE MEDIUM-SIZED AND SMALL-SIZED CRYSTALS



1-2 Refer to Steps 1-2 in SECTION F.

3 Allow 15 minutes for the solution to cool in the stirring bowl until it is warm (not too cool, not too hot, and ideally around 40°C (104°F)).Now take the small bags containing colourant. Pour half the solution into the medium hexagonal transparent cup, and pour the remaining evenly into 2 small hexagonal transparent cups. Then take the small bags containing colourant, choose your colour or refer to Section H to mix another crystal colour of your choice. First, ensure the stirring spoon is clean and dry prior to use, and then use it to add the colourant mixture to the solution. Stir the solution well. (Note: It is normal if some particles do not dissolve as they will serve as the base for the crystal to grow.)

4 Now take the one small bag (containing the white seeding compound). For the medium-sized cup, using the stirring spoon (make sure it's clean and dry before use), gently sprinkle 1 spoon of the seeding mixture (about half of all the seeding mixtures) over the surface. For the small-sized cups, gently sprinkle 0.5 spoon of the seeding mixture over the surface. The particles should sink and spread evenly over the bases of the transparent cup. DO NOT STIR THE SOLUTION. Also try not to disturb any of the base compound that may have fallen to the bottom of the transparent cups. Note: handle the seeding mixture with care, as the pigment may cause stains.

5-8 Refer to the Steps 5-8 in SECTION F.

Note: In normal conditions, your medium-sized crystals will reach a width of about 30mm (about 1.2 ins) and a height of about 25mm (about 1 in) in 4 to 7 days. While small-sized crystals will reach a width of about 25 mm (about 1 in) and a height of about 20mm (about 0.8 in). The size will vary depending on the environment in which the crystals are growing.

9 Congratulations! You have made a medium-sized crystal and two small-sized crystals! Keep the crystals in a dry place to prevent them from dissolving.

H. HOW TO MIX COLOURS

With the three colourant provided, you can mix them up to make different colours. The following tables list the numbers of spoon(s) of different colourant needed for each result.

For large-sized crystals	Red	Blue	White	Purple	Pink	Light blue
R Red colourant	8 spoons	--	--	4 spoons	4 spoons	--
B Blue colourant	--	8 spoons	--	4 spoons	--	4 spoons
W White colourant	--	--	8 spoons	--	4 spoons	4 spoons

For medium-sized crystals	Red	Blue	White	Purple	Pink	Light blue
R Red colourant	4 spoons	--	--	2 spoons	2 spoons	--
B Blue colourant	--	4 spoons	--	2 spoons	--	2 spoons
W White colourant	--	--	4 spoons	--	2 spoons	2 spoons

For small-sized crystals	Red	Blue	White	Purple	Pink	Light blue
R Red colourant	2 spoons	--	--	1 spoon	1 spoon	--
B Blue colourant	--	2 spoons	--	1 spoon	--	1 spoon
W White colourant	--	--	2 spoons	--	1 spoon	1 spoon