EXPERIMENT MANUAL

Ooze Labs

Colorful Crystal Lab

Grow magnificent crystals!

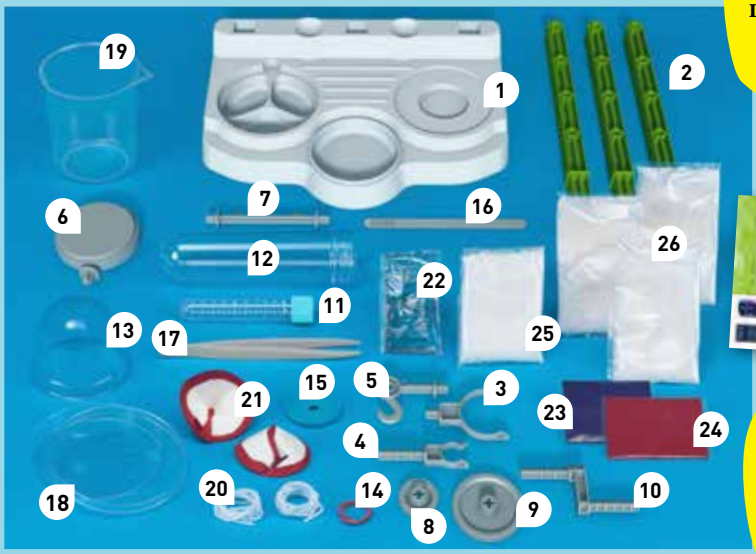
THAMES & KOSMOS

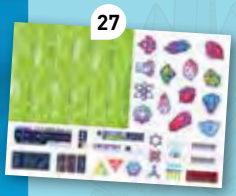
WARNING. Not suitable for children under 6 years. For use under adult supervision. Contains some chemicals which present a hazard to health. Read the instructions before use, follow them and keep them for reference. Do not allow chemicals to come into contact with any part of the body, particularly the mouth and eyes. Keep small children and animals away from experiments. Keep the experimental set out of reach of children under 6 years old.

WARNING – Chemistry Set. This set contains chemicals and parts that may be harmful if misused. Read cautions on individual containers and in manual carefully. Not to be used by children except under adult supervision.

Thames & Kosmos, 89 Ship St., Providence, RI, 02903, USA | 1-800-587-2872 | www.thamesandkosmos.com

What's in your experiment kit:





Good to know!

If you are missing any parts, please contact Thames & Kosmos customer service.

Before starting

Please check all of the parts in the kit to make sure that nothing is missing.

Checklist:

✓	No.	Description	Quantity	Part No.
○	1.	Station base	1	722952
○	2.	Vertical rod	3	722953
		Colorful Crystal Lab Accessories		722969
○	3.	Holder clip, 38 mm	1	
○	4.	Holder clip, 16 mm	1	
○	5.	Hook	1	
○	6.	Dome platform	1	
○	7.	Hanger rod	1	
○	8.	Small wheel	1	
○	9.	Large wheel	1	
○	10.	Crank handle	1	
○	11.	Small test tube with lid	1	722973
○	12.	Large test tube	1	717120
○	13.	Dome	1	722972
○	14.	Rubber band	1	722976
○	15.	Test tube lid with hole	1	722971
○	16.	Spatula	1	722970
○	17.	Tweezers	1	722974
○	18.	Petri dish	1	715232
○	19.	Measuring cup	1	722975
○	20.	Cotton string piece	2	722978

✓	No.	Description	Quantity	Part No.
○	21.	Filter paper (cone)	2	722980
○	22.	"Magic water" (aqueous potassium dihydrogen phosphate solution KH_2PO_4, EG-No. 231-913-4, 20 g)	1	706185
○	23.	Blue dye powder, 1 g	1	720170
○	24.	Red dye powder, 1 g	1	720171
○	25.	Ammonium dihydrogen orthophosphate (ammonium biphosphate, EG-No. 231-764-5, 30 g)	1	722984
○	26.	Alum (potassium aluminium sulfate, EG-No. 233-141-3, 20 g)	3	716294
○	27.	Sticker sheet	1	642108S

YOU WILL ALSO NEED:

Scissors, distilled water, water, table salt, paper towels, glass jars with lids, labels, pencil, cooking pot, potholder, trivet, small rock

The parts not included in the kit are marked in italics in the YOU WILL NEED lists.

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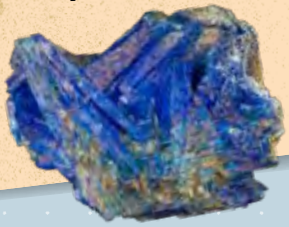
TIP

YOU CAN FIND ADDITIONAL INFORMATION IN THE "CHECK IT OUT" SECTIONS ON PAGES 10, 16, 21, AND 22

CRYSTAL OR *Mineral*?

You've probably heard these two words before. What's the difference? It's pretty simple: A crystal is a solid in which its smallest parts (called atoms) are arranged in an organized, repeating structure. When you grow the crystals in this kit, you'll see that they form quite regular, ordered structures. Minerals are naturally occurring crystals made of inorganic materials — meaning they have never been alive. A mineral has a definite chemical composition that is always the same for each specific mineral.



Please **observe this advice should any of the following situations occur.**

First Aid Information

1. In case of eye contact: Wash out eye with plenty of water, holding eye open if necessary. Seek immediate medical advice.

2. If swallowed: Wash out mouth with water, drink some fresh water. Do not induce vomiting. Seek immediate medical advice.

3. In case of inhalation: Remove person to fresh air. For example, move person into another room with open windows or outside.

4. In case of skin contact and burns: Wash affected area with plenty of water for at least 10 minutes. Cover burns with a bandage. Never apply oil, powder, or flour to the wound. Do not lance blisters. For larger burns, seek immediate medical help.

5. In case of doubt, seek medical advice without delay. Take the chemical and its container with you.

6. In case of injury always seek medical advice.

7. In case of cuts: Do not touch or rinse with water. Do not apply any ointments, powders, or the like. Dress the wound with a germ-free, dry first-aid bandage. Foreign objects such as glass splinters should only be removed from the wound by a doctor. Seek medical advice if you feel a sharp or throbbing pain.

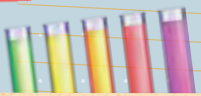
Poison Control Centers (United States) !!

In case of emergency, your nearest poison control center can be reached everywhere in the United States by dialing the number:

1-800-222-1222

KEEP THE PACKAGING AND INSTRUCTIONS AS THEY CONTAIN IMPORTANT INFORMATION.

SAFETY INFORMATION



This experimental kit is intended only for children *over 6 years* of age.

Dear Parents and Adults,

Children want to explore, understand, and create new things.
They want to try things and do it by themselves. They want to gain knowledge!
They can do all of this with Thames & Kosmos experiment kits.
With every single experiment, they grow smarter and more knowledgeable.

This set enables your child to learn the basic rules of scientific experimentation. Each experiment's steps are explained in detail. As in a real laboratory and in all chemical experiments, safety plays an important role here.

Please read through this manual and pay specific attention to the safety rules (page 4) and the first aid information (page 2).

As required by regulations for chemistry toys

Advice for Supervising Adults

→ Read and follow these instructions, the safety rules and the first aid information, and keep them for reference.

→ The incorrect use of chemicals can cause injury and damage to health. Only carry out those experiments which are listed in the instructions.

→ This experimental set is for use only by children over 6 years. For use under adult supervision.

→ 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.

→ The supervising adult should discuss the warnings and safety information with the child or children before commencing the experiments. Particular attention should be paid to the safe handling of hot solutions and chemicals.

→ 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.

→ Substances in non-reclosable packaging (magic water and crystal salt packets) should be used up (completely) during the course of one experiment, i.e. after opening the package.

Stop!
— Read this before you start!

Dear Crystal Researcher,

Read the following rules and instructions carefully.
This way, you can avoid potential risks.

General rules for safe experimenting (safety rules)

- → Read these instructions before use, follow them and keep them for reference.
- → Keep young children and animals away from the experimental area.
- → Store this experimental set and the final crystals out of reach of children under 6 years of age.
- → Clean all equipment after use.
- → Ensure that all empty containers and non-reclosable packaging are disposed of properly.
- → Wash hands after carrying out experiments.
- → Do not eat or drink in the experimental area.
- → Do not allow chemicals to come into contact with the eyes or mouth.
- → Do not apply any substances or solutions to the body.
- → Do not grow crystals where food or drink is handled or in bedrooms.
- → Do not use any equipment which has not been supplied with the set or recommended in the instructions for use.
- → Take care while handling with hot water and hot solutions.
- → Ensure that during growing of the crystal the container with the liquid is out of reach of children under 6 years of age.
- → Do not replace foodstuffs in original container. Dispose of immediately.

Chemicals, Waste Disposal, and Experiment Area

INSTRUCTIONS FOR HANDLING CHEMICALS

Please observe the following hazard and precautionary statements for the chemicals contained in this kit:

Potassium aluminium sulfate (alum):
Avoid breathing dust. Do not get in eyes or on skin.

Ammonium dihydrogen orthophosphate (ammonium biphosphate): Avoid breathing dust. Do not get in eyes or on skin.

Dye powders, blue and red: Avoid breathing dust. Do not get in eyes or on skin.

"Magic water" (aqueous solution of potassium dihydrogen phosphate)

WARNING! The following applies to all chemicals: Store locked up. Keep out of reach of children. This primarily applies to young children, but also to older children who — unlike the experimenter — have not been appropriately instructed by adults.
Also follow this precautionary statement:
IF SWALLOWED: Get immediate medical advice/ attention and have product container or label (of chemical substance) at hand.

WASTE MANAGEMENT

If you don't want to save them for further use, you can rinse the remains of the chemicals used for crystal growing down the drain with plenty of water.

YOUR EXPERIMENT AREA ...

... should be set up in a quiet room. The kitchen is not suitable for the experiments, because the risk is too great that chemicals could get into food or be confused with food. A cool basement or garage is the best choice.

Please always pay close attention!

- → When experimenting, have paper towels ready in case of spills.
- → **Fire safety:** It is important that when you heat the water on the stove, you take the necessary measures to protect against fire and scalding!
- → **Accidental ingestion:** Please make sure that neither the starting chemicals nor the finished crystals get into the hands of young children: There is a risk that they will mistake the substances for candy and put them in their mouths.
- → Stains can occur on table surfaces, clothing, fabric, or carpets when handling the dye powders. Make sure that the experiment work surface is easy to wipe off and that your child wears clothing that can get stained.
- → If the crystal salt has become clumped together and hardened, it can still be used without any problems.

Assembling the crystal lab station

Before you start experimenting, set up your lab:

You will need

– All of the crystal lab station parts

Here's how

1. Connect the two vertical rods with the hanger rod.
2. Place the two vertical rods in the station base.
3. Now assemble the spinning dye mixer: Insert the small test tube holder and the small wheel into the top hole of the third rod. Insert the crank and big wheel into the second hole from the bottom. Once the four parts are inserted, place the rod in the station base.
4. Stretch the rubber band over the two wheels.
5. Put the crystal dome on the left rod, and the hook and large test tube holder on the middle rod. Put the test tubes in their holders.
6. Decorate your station with the stickers!

Crystals IN NATURE

Welcome to the world of geology. Rocks, minerals, and crystals are fascinating objects found in nature. Let's explore to understand them better.

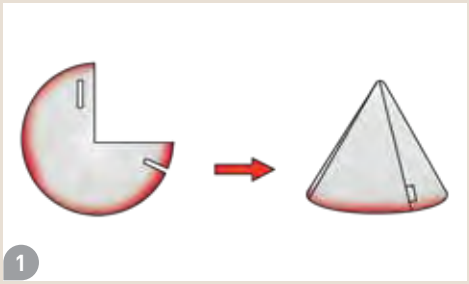
This chapter shows you where crystals grow. You will be amazed at the different crystals that occur in the natural world!

EXPERIMENT 1

Crystal volcano

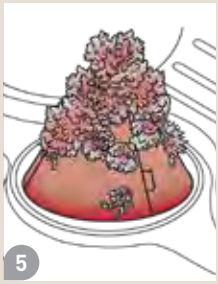
You will need

– Filter paper
– "Magic water"
– Scissors



Here's how

1. Build the volcano by carefully folding the filter paper to form a cone. Insert the tab into the slot to keep it together.
2. Place the volcano in the circular recess in the middle of your station.
3. Open the bag of magic water with scissors. Don't use your teeth! Pour the magic water completely into the recess in which the volcano is standing.
4. While the volcano is soaking up the magic water, you can make your first observations. It takes about 20 minutes for the first crystals to form.
5. Gradually, you can see the crystals as they get bigger. The crystals are very delicate, so make sure you don't bump them or shake the station.



Don't forget to clean the station after the experiment, so that the next experiments will also work well!

WHAT'S HAPPENING?

The volcano is made of thick filter paper. The magic water is sucked up into the paper through a phenomenon called capillary action. The magic water is actually a solution of a chemical called potassium dihydrogen phosphate in water. The water evaporates from the paper, and the crystal salt contained in the solution is left behind to form fine, cloud-like crystals.

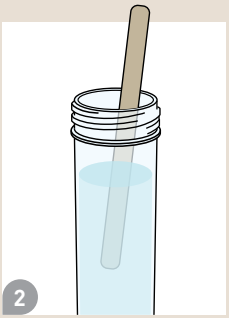
Sea crystals

You will need

– Petri dish
– Measuring cup
– Large test tube
– Spatula
– 50 ml water
– 2 teaspoons table salt

Here's how

1. Using the measuring cup, measure 50 ml of lukewarm tap water and pour it into the large test tube.
2. Add two teaspoons of salt and mix everything together with the spatula.
3. Once the salt is dissolved, carefully pour a few milliliters of the solution into the petri dish. There should be enough solution in the petri dish to completely cover the bottom.
4. You'll need the rest of the saltwater solution for experiment 3.
5. After one day, the water in the petri dish will have evaporated. This means that it turned from a liquid into a gas and moved from the dish into the air. What remains in the dish are small, glittering salt crystals.



WHAT'S HAPPENING?

Your solution of salt and water is like the water of the oceans. Salt is extracted from coastal waters in the same way as in this experiment. Seawater is trapped in large, shallow basins and becomes saltier and saltier through evaporation until only the salt remains.

EXPERIMENT 3

Stalactite

You will need

- **Large test tube with salt water solution from experiment 2**
- **Hook on the crystal station**
- **Test tube lid with hole**
- **Cotton string**
- *Paper towels*
- *Scissors*

Here's how

1. Place the test tube in the holder on the station. Place the lid with the hole in it on the test tube.
2. Take a piece of cotton string and tie one end to the hook.
3. Fill the test tube with the salt-water solution from experiment 2. Take the other end of the string, thread it through the hole in the lid of the test tube, and hang it into the solution. Wait two to three days.
4. Over the course of two to three days, crystals slowly form on the string. When the crystals are big enough, take the string off the hook. Hold it with one hand and lift the lid off of the test tube with the other hand. Pull the lid up over the string.
5. Lift the string of salt crystals up out of the solution and place it on a paper towel. Hang the string of crystals from the hanger rod on the station.
6. Once you have finished this experiment, remove the remaining solution from the test tube and rinse your equipment thoroughly.

If you add some dye to the solution, a colored stalactite will form. If you do this, seal the dye packet with tape after.

WHAT'S HAPPENING?

The salty water seeps up into the cotton cord. As the water evaporates over the course of two or three days, the salt crystals slowly form first on the thread, and then on the crystals already on the thread. Atom by atom, a stalactite structure builds up. Keep reading on the next page to learn more about this.

CRYSTALLIZATION

When crystals grow, it is called crystallization. Crystals can form when solutions cool and when a substance cools down and freezes, or solidifies. When you heat the solution of water and crystal salt in your experiments, the water can absorb more of the crystal salt. The result is called a saturated solution. When this cools down, a supersaturated solution is created. This means that there is more dissolved crystal salt in the solution than the water can actually hold. The crystal salt precipitates, and crystals are formed.

Stalactites

Stalactites form in nature a little differently than your stalactite formed in experiment 3. One way stalactites form in nature is when mineral-rich water drips from the ceiling of a cave. This causes tiny amounts of minerals to stick to the ceiling — a little with each drip. Thus, a stalactite grows slowly downward.

SOLUTIONS & Melting

Crystals are formed in solutions and also in a molten material. A solution is a mixture of different substances, such as a solid that is dissolved in a liquid. You will make such solutions for your crystal experiments. Melting occurs when solids are heated. Water, for example, is a liquid substance; the solid state of water is called ice. Metals can also be melted at extremely high temperatures, and they solidify when cooled. A molten material may consist of one or more different substances.

Crystal solution

Crystals and Chemistry

Crystals can form in many different shapes. In this chapter, you will learn about how different chemicals form different crystal structures, and also how the same chemical can be used to produce three completely different looking crystals.

Octahedral crystals

Be careful when handling the hot water!

You will need

- **Alum (20 g)**
- **Spatula**
- **Measuring cup**
- **Tweezers**
- *Distilled water*
- *Pot with hot tap water*
- *Potholder and trivet*
- *Label and pencil*
- *Paper towels*
- *Glass jar*
- *Scissors*

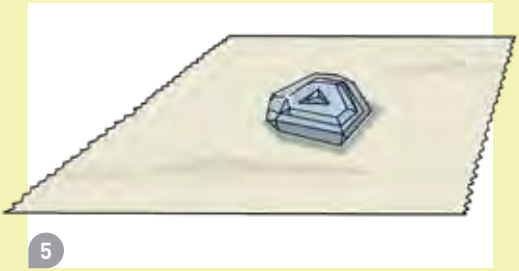
Here's how

1. Measure 90 ml of distilled water with the measuring cup and pour it into the glass jar. Add a packet of alum (20 g).
2. Fill a pot about 3 cm high with tap water and heat it on the stove. Carefully remove it from the stove and place it on a trivet. Wait until it is no longer boiling. Place the glass jar in the pot with hot water and stir it with the spatula until everything has dissolved.
3. Carefully remove the glass jar containing the clear solution. Caution, it is hot!
4. The next day, the first crystals will have formed on the bottom of the jar. If you want bigger crystals, wait another day.
5. Take the most beautiful crystals out of the glass jar with the tweezers and let them dry on a paper towel.
6. Label the glass jar containing the remaining solution and leave it for a few days. Watch as new crystals continuously form.

1


2


4


5

EXPERIMENT 5

Tetragonal crystals

Be careful when handling the hot water!

You will need

- **Ammonium dihydrogen orthophosphate (30 g)**
- **Spatula**
- **Measuring cup**
- **Tweezers**
- **Petri dish**
- *Distilled water*
- *Pot with hot water*
- *Potholders and saucers*
- *Paper towels*
- *Glass jar*
- *Scissors*

1


2


4


5

Here's how

1. Measure 90 ml of distilled water with the measuring cup, pour it into the glass jar, and add a packet of ammonium biphosphate (30 g).
2. Fill a pot about 3 cm high with tap water and heat it on the stove. Remove it from the stove and place it on a trivet. Place the glass jar in the pot with hot water (no longer boiling) and stir it with the spatula until everything has dissolved.
3. Carefully remove the glass jar containing the clear solution. Caution, it is hot! Let the solution cool down enough to handle.
4. Pour part of the solution into the petri dish so that the bottom is well covered.
5. Wait a day. Crystals form at the bottom of the petri dish. Take them out with the tweezers, put them on a paper towel, and let them dry. Compare them with the crystals from experiment 4.
6. Save the remaining solution for experiment 6.

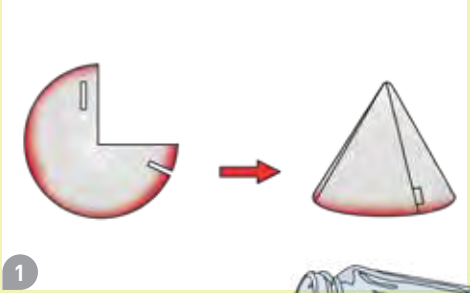
Fluffy crystals

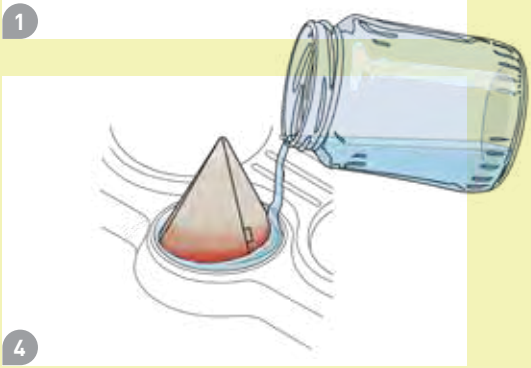
You will need

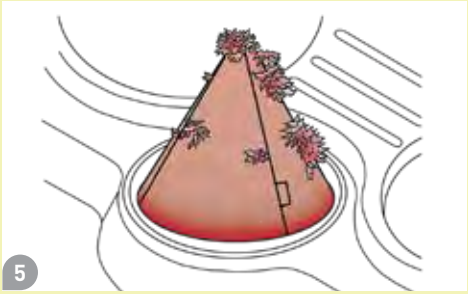
– Remaining solution from experiment 5
– Filter paper
– Spatula
– Measuring cup
– Pot with hot water
– Potholders and saucers

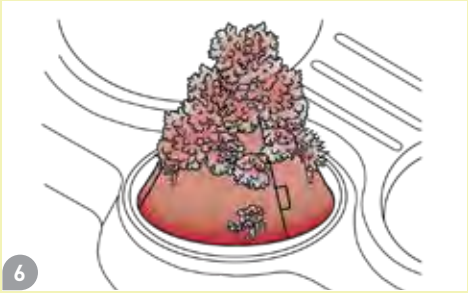
Here's how

1. Carefully fold the filter paper to form a cone. Insert the tab into the slot to keep it together.
2. Place the cone in the circular recess in the middle of your station.
3. Take the solution from experiment 5 and dissolve the remaining crystals in the glass jar (as described in experiment 5). Be careful when handling hot water!
4. When everything is dissolved, let the solution cool down enough so that it can be handled. Pour some of the solution into the recess in which the cone is standing until it reaches just under the rim.
5. Wait half an hour until the filter paper has soaked up the solution. Look to see if the first crystals have already formed.
6. After about a day, small fluffy cloud-like crystals will have formed. They look very different from the crystals in experiment 5.
7. Save the remaining solution for experiment 7.









EXPERIMENT 7

Needle crystals

You will need

- **Remaining solution from experiment 6**
- **Spatula**
- *Pot with hot tap water*
- *Potholder and trivet*
- *Small, rough stone that fits in the jar and the clear dome (e.g., sandstone)*
- *Glass jar*

Here's how

1. Dissolve the crystals as described in experiment 5.
2. Take the glass jar out of the pot. Caution, it is hot! Let it cool down for ten minutes. Place the stone in the glass jar.
3. Wait overnight. Observe the small crystals that form on the stone.
4. Place the stone in the clear dome on the station to display it.

Be careful when handling the hot water!

1

2

3

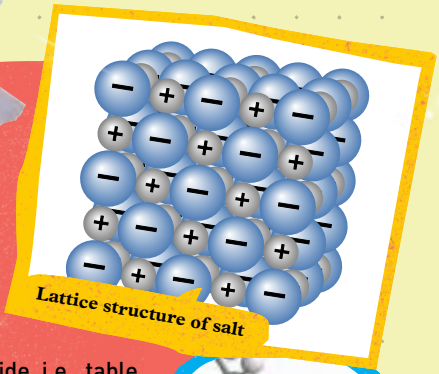
WHAT'S HAPPENING?

Needle-shaped crystals grew on the stone. This is because the rough stone has a good growing surface with many small nooks and crannies that the crystals can get lodged into. The crystals grow up from there.

You have now created three different crystal shapes with the same chemical. The form in which the crystals grow depends on the surface on which they grow.

Sometimes it takes a little longer until the crystals start to grow on the stone. Be patient!

KEYWORD
Salt


Lattice structure of salt

What is salt anyway?

In everyday conversation, we usually mean sodium chloride, i.e., table salt, when we talk about salt. But there are many more salts than sodium chloride. A salt is a chemical compound that forms uniform crystals made of positively and negatively charged particles. This means that the atoms (the smallest components of a chemical substance) form a regular, stable lattice (a repeating, 3D grid).


Sugar molecule

Not every substance that forms crystals is a salt. Sugar, for example, also forms crystals, but its atoms are not arranged in lattice form and therefore it does not belong to the group of salts.

Mega-Crystals!

CRYSTAL SALTS

By now, you have already seen many different crystal salts and the different shapes they form. Scientists have categorized all of the different crystals according to their crystal systems in order to be able to distinguish them better. Crystals of the same crystal system share similar lattice structures and thus similar shapes and other characteristics.

Crystalline JEWELS

Some types of crystals — such as diamonds, rubies, and emeralds — are processed into jewelry or treasured as precious stones in gem collections. In this chapter, you will create some beautiful crystal jewels for your collection.

Rotating color

You will need

– Small test tube with lid
– Red dye powder
– Spatula
– Distilled water

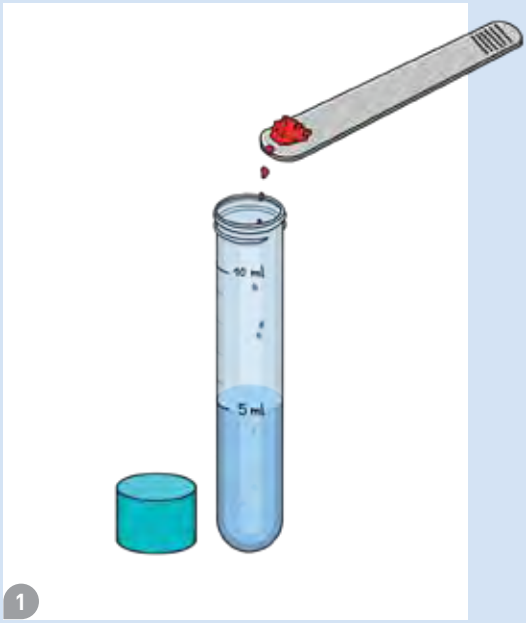
CAUTION!
The powdered dyes are highly concentrated. Be careful with them and make sure that no powder gets on your clothes or any other sensitive surfaces.

Here's how

1. Add 5 ml of distilled water and a spatula tip of red dye powder to the small test tube. Seal it with the lid.

2. Place the test tube in the holder clip of the spinning dye mixer. Mix the solution by turning the crank. Keep spinning the test tube until the water and the dye are completely mixed.

After using the dye powder, reseal the dye packet with tape.



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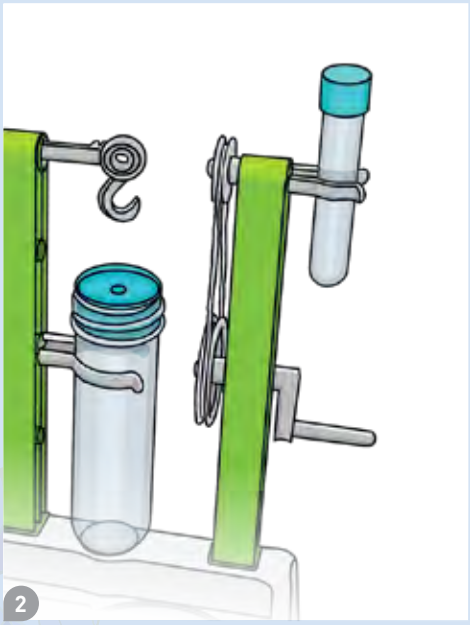

2

EXPERIMENT 9

Red crystals

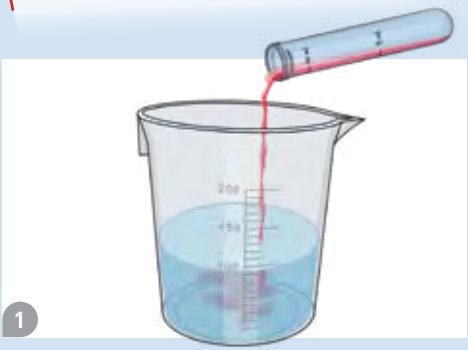
You will need

- **Red solution from experiment 8**
- **Alum (20 g)**
- **Measuring cup**
- **Spatula**
- **Tweezers**
- *Distilled water*
- *Pot with hot water (no longer boiling)*
- *Potholder and trivet*
- *Paper towels*
- *Empty glass jar*
- *Scissors*

Here's how

1. Using the measuring cup, measure 85 ml of distilled water. Add the red solution from experiment 8.
2. Mix everything with the spatula and pour the colored water into the glass jar. Then add a packet of alum (20 g).
3. Place the glass jar in the pot with hot water (like in previous experiments) and stir with the spatula until everything has dissolved.
4. Carefully take the glass jar containing the solution out of the pot. Caution, it is hot! Place it in a protected spot and cover it with a paper towel.
5. The next day, the first crystals will have formed on the bottom. If you want bigger crystals, wait another day.
6. Take the most beautiful crystals out of the glass jar with the tweezers and let them dry on a paper towel.

Be careful when handling the hot water!



7. Keep the remaining crystals and the rest of the solution. You need them for experiment 11.

Blue crystals

You will need

- **Alum (20 g)**
- **Blue dye powder**
- **Measuring cup**
- **Spatula**
- **Tweezers**
- **Small test tube**
- *Distilled water*
- *Pot with hot water (no longer boiling)*
- *Potholder and trivet*
- *Paper towels*
- *Empty glass jar*
- *Scissors*

CAUTION!
The powdered dyes are highly concentrated. Be careful with them and make sure that no powder gets on your clothes or any other sensitive surfaces.

Here's how

1. Color 5 ml of distilled water with blue dye powder as described in experiment 8. Add 85 ml of distilled water to the measuring cup and add the blue dye solution.
2. Pour the blue water into a jam jar. Mix everything with the spatula. Then add a packet of alum (20 g). Prepare a crystal salt solution as described in experiment 9. Be careful when handling hot water!
3. Leave the solution again overnight. The next day, the first crystals will have formed on the bottom. If you want bigger crystals, wait another day.
4. Take the most beautiful crystals out of the glass jar with the tweezers and let them dry on a paper towel.

Be careful when handling the hot water!

5. Keep the remaining crystals and the remaining solution. You need them for experiment 11.

Place the large crystals from experiments 9 and 10 in the crystal dome.

CHECK IT OUT

WHO researches CRYSTALS?

Crystals are used by many scientists. They are studied and used in physics, mineralogy, materials science, biology, and chemistry. The science that deals exclusively with crystals and their structures is called crystallography. Crystals have been researched since ancient times by crystallographers like Theophrastus of Eresos, an Ancient Greek scientist and intellectual who systematically recorded crystals and their structures around 300 BC.

Theophrastus of Eresos
371 – 287 B.C.

CRYSTAL COLOR

Naturally occurring crystals are found in many different colors. The different crystal colors are caused by the presence of various substances in the crystals, and also by the refraction of light through the crystal. When crystals of the same type occur in different colors, they are called varieties. In the last experiments, you created a blue and a red variety of alum.

QUARTZ

A Mineral with many Varieties

Clear quartz crystal

Quartz is a mineral that forms crystals of many different colors. Quartz crystals that are completely colorless and transparent are called clear quartz or rock quartz. If the crystal is not transparent but white and cloudy, it is called milky crystal. Amethyst is purple quartz, which gets its color partly from traces of iron in it. If the quartz is pink, it is called rose quartz. Also, the amber striped tiger's eye is a variety of quartz. Again, its appearance is caused by the presence of small amounts of other minerals in the quartz.

Amethyst

Tiger's eye

Rose quartz

Milky quartz

Yoo-hoo!

EXPERIMENT 11

Purple crystals

You will need

- **Red solution from experiment 9**
- **Blue solution from experiment 10**
- **Spatula**
- **Measuring cup**
- **Tweezers**
- *Pot with hot water (no longer boiling)*
- *Potholder and trivet*
- *Paper towels*
- *Empty glass jar*

Here's how

1. Use the tweezers to remove one of the larger crystals from one of the solutions from experiment 9 or 10. Set it aside.
2. Then pour both solutions and the remaining crystals into the empty glass jar.
3. Place the glass jar in the pot with hot water and stir with the spatula until everything has dissolved. Be careful when handling hot water!
4. Allow the solution to cool to room temperature. Then put the crystal in the solution.

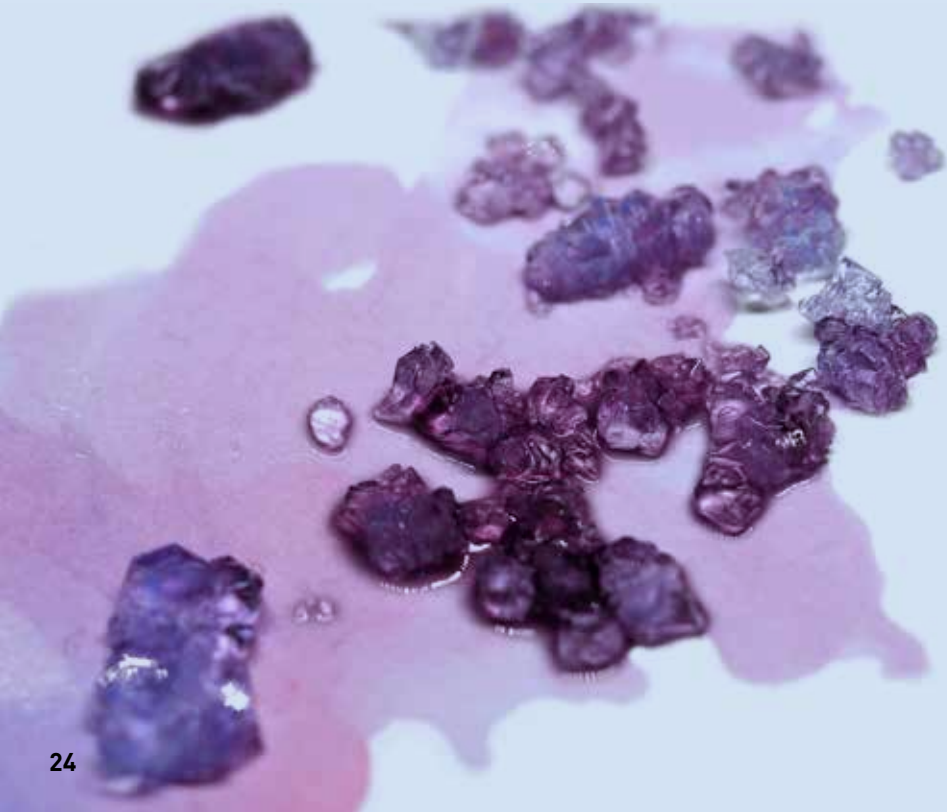
Continued on the next page.

5. Wait two days and check what is happening in the jar from time to time.
6. Take the most beautiful crystals out of the jar with the tweezers and let them dry on a paper towel.

6

WHAT'S HAPPENING?

When you combine the red and blue solutions together, you get a purple solution. The two solutions mixed together to create a new color. This color also incorporates well into alum crystals. You created a new color variety of alum!



Concept, text, and project management: Linnéa Bergstrasser
Technical product development: Bjoern Stolpmann
Product design: Manuel Aydt, cross creative designstudios, Pforzheim, Germany
Design style guide: Atelier Bea Klenk, Berlin
Manual layout: Matthias Horn, sloe-design.de, Stuttgart

Manual illustrations: Tanja Donner, Riedlingen
Background elements: Matthias Horn, sloe-design.de, Stuttgart;
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