

EXPERIMENT MANUAL

Science Advent Calendar

New educational activities
for your holiday countdown

24 new
EXPERIMENTS

THAMES & KOSMOS



WARNING.

Not suitable for children under 8 years.
For use under adult supervision.
Read the instructions before use,
follow them, and keep them for reference..

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Dear Parents and Supervising 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.

Here's how your **Science Advent Calendar** works:

In each of the colorful boxes, you will find the materials needed to conduct an experiment. The instructions for the experiments are printed inside of the boxes, and each box covers a different topic.

Some additional household materials are required (e.g. vegetable oil, flour, etc.). They are listed in the **You will need** section in *italics*. Provide your child with the additional materials before they begin the experiment.

In the package underneath the boxes, there is a hidden cardboard sheet, which will be used for an experiment at the end of the calendar. If you would like to place your advent calendar boxes as decoration on a shelf or windowsill, please hold onto this cardboard sheet and give it to your child on December 23 (Day 23).

Certain experiments have QR codes that lead to additional content. They can be scanned with a smartphone or tablet with Internet access.

While experimenting with this advent calendar, children will learn basic scientific techniques. In the process, common household products such as shower gel, (powdered) sugar, vegetable oil, flour, salt, and cornstarch will be used. Do not return food items used in experiments to their original packaging. Dispose of them in the household trash

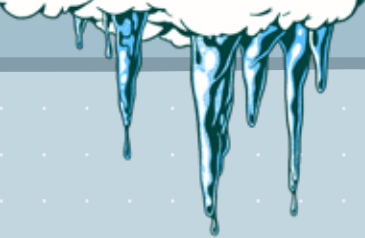
or down the drain, as appropriate. They are no longer safe for consumption.

As the supervising adult, you should discuss the warnings, safety information, and the possible hazards with the child or children before starting the experiments.

Particular attention should be paid to the safe handling of chemicals and chemical solutions. Please keep this safety information handy at all times. Emphasize to your child the importance of following all instructions and warnings, and the importance of carrying out only those experiments that are described in this manual.

All steps must be followed in the correct order for the experiments to work. Instruct your child to work slowly and carefully. Some experiments require household items like bowls or cups. It is safest for children to experiment with plastic. If you entrust your child with fragile materials, please make them aware of the danger of breakage, and ensure that they handle them carefully. Paper towels should be on hand in case of spills.

This advent calendar is only suitable for children over 8 years of age. Because children's abilities vary so much, even within age groups, as the supervising adult, you should review the



experiments and carefully select those experiments that are appropriate and safe for your child. Supervise your child especially during the experiment with cooling salt (Day 5) and the experiment with alginate and calcium lactate powder (Day 14). Keep the calendar, accompanying materials, and household materials out of reach of children under 8 years of age. Do not eat or drink in the experiment area.

Choose a spot with your child where they can experiment undisturbed. Ensure the floor and surface of the table are not easily damaged, or that they are covered. Your child should wear old clothing that can be stained, as strong dyes are used in some experiments (Day 14, Day 20). If the experimental setup is to remain in place for a longer period of time, choose a location that is inaccessible to small children and animals. During the experiments, instructions are given on how to dispose of the materials used and how to clean up after the experiment.

On some days, a flying or fluttering surprise awaits your researcher. Find a good place together where your child can let their surprises fly without other people, animals or fragile objects being nearby.

Help your child to gather, or provide them with, the additional materials required. Provide your child with only the amount of household materials required for each experiment. Most of these will be available in your household, but some items may first have to be obtained from the supermarket or other store. We recommend that you have all the materials ready before you start the experiment so that you don't have to interrupt the experiment later to gather something. After experimenting, always wash hands and clean and dry equipment used in the experiment. We suggest keeping the equipment in the boxes it came from, as it may be needed for other days or may only be functional in combination with its specific box. Information on whether a material will be needed again can be found in the respective instructions.

There are steps in individual experiments that should only be carried out by an adult. Explain to your child that they must always ask for your support in these steps.

We hope you and your child have a lot of fun experimenting with your Science Advent Calendar!



WARNING!

WARNING! Not suitable for children under 3 years. Choking hazard — small parts and small balls may be swallowed or inhaled. .

WARNING! Never look directly into the sun either with naked eyes or through the materials of the optical experiments (e.g. foils). You could blind yourself!

Keep packaging, instructions, and boxes as they contain important information.





Additional safety information for materials requiring special care and adult supervision:

Cooling salt, Part No. 776603, 5 g (Day 5):

Ingredients: Potassium chloride [CAS 7447-40-7],
POTASSIUM CHLORIDE (INCI), E 508.

Alginate Powder, Part No. 776613, 1 g (Day 14):

Ingredients: Sodium alginate.

Calcium Lactate Powder, Part No. 776612, 8 g (Day 14):

Ingredients: Calcium lactate pentahydrate [CAS 5743-47-5],
CALCIUM LACTATE (INCI), E327.

Do not ingest material. Do not put material in mouth or eyes. Do not inhale powder.

→ **In case of eye contact:** Wash out eye with plenty of water, holding eye open.
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 doubt, seek medical advice without delay: Take the chemical and/or product together with the container with you.

→ In case of injury, always seek medical advice.

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