

EXPERIMENT MANUAL

Genetics & DNA Lab



THAMES & KOSMOS



WARNING. Not suitable for children under 10 years. For use under adult supervision. 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.

WARNING — Science Education Set. This set contains chemicals and/or 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.

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Information about Hazardous Substances

Please note the following risk and safety information for the chemicals contained in this chemistry kit. The following overview also shows the hazard symbol for the chemicals you will be using and identifies the hazards associated with it.

Denatured alcohol (also known as methylated spirits; main ingredient ethanol, ethyl alcohol). Highly flammable liquid and vapors.

Keep away from heat/sparks/open flame/hot surfaces.

Request to parents: Keep denatured alcohol locked away. Fill the brown bottle yourself and decant only the amount that will be required for a few experiments.



DANGER

Keep all chemicals locked away. Do not allow any of them to get into the hands of children. This applies above all to young children, but also to older children who — unlike the ones performing the experiments — have not been appropriately instructed by adults about proper safety measures.

IN CASE OF SWALLOWING: Immediately seek medical advice or help and have the packaging or label of the swallowed chemical available for reference.

Keep packaging and instructions as they contain important information.

We reserve the right to make technical changes.

WARNING. This kit contains functional sharp edges or points. Do not injure yourself!

Please note: You should read the important information about first aid in case of accidents on the outer back cover, handling hazardous substances on this page, and further information on pages 1-4.

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

Local Hospital or Poison Centre (Europe)

Record the telephone number of your local hospital or poison centre here:

Write the number down now so you do not have to search for it in an emergency.

When in doubt, seek medical advice without delay. Bring the chemical and its container with you. In case of injury, always seek medical advice.

IMPORTANT INFORMATION

Dear Parents,

This experiment kit is for use only by children over 10 years who are interested in learning more about genetics in a fun way. Not only is this kit fun, it can also provide an introduction to the exciting world of the biological sciences.

It is normal to have questions about the safety of a kit that contains chemicals. The incorrect use of chemicals can cause injury and damage health.

The experimental equipment in this kit meets U.S. and European safety standards, which specify the safety requirements for chemistry experiment kits. These standards impose obligations on the manufacturer, such as forbidding the use of any particularly dangerous materials. The standards also stipulate that adults should assist their children with advice and assistance in their new hobby. We are addressing this information to you, so you can understand what this involves.

Take a look through this instruction manual and pay particular attention to the → Basic rules for safe experimentation, → Information about hazardous materials (inside front cover), as well as → First aid in case of accidents (outside back cover).

Many of the risks mentioned in these places cannot even occur with this experiment kit, but we have included all of the chemistry experiment kit safety guidelines for completeness.

Also take a look at the safety information accompanying the experiments. Carefully select the experiments that seem safe and appropriate for your child. Before starting the experiments, discuss the safety suggestions with your child.

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 acids, alkalies, and flammable liquids.

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

Only carry out those experiments which are listed in the instructions.

A special laboratory is not required for these simple experiments. 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.

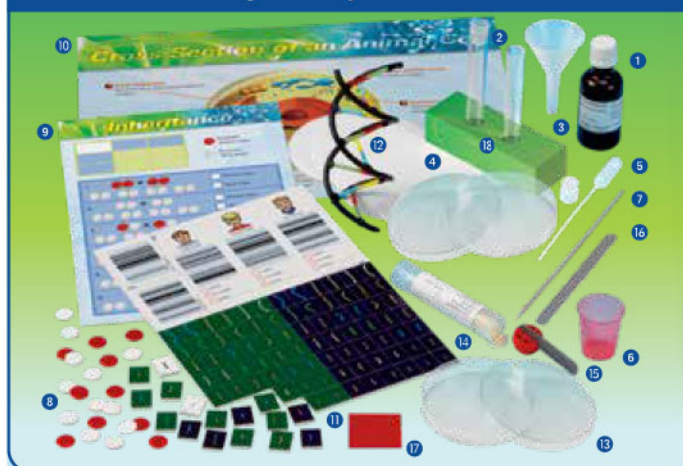
When performing the experiments, your child should wear clothes that can take a little abuse (or an old smock). After completing the experiments, he or she should clean up the work area and thoroughly wash his or her hands.

Please be careful not to let the chemicals get into the hands of young children.

We wish you and your child a fun and interesting time with these experiments!

EQUIPMENT

What's inside your experiment kit:



Additional things you will need:

Denatured alcohol (methylated spirits), table salt, dish washing liquid, teaspoon, 2 yogurt containers, ruler, felt-tip pens, knife, scissors, permanent marker, plastic wrap, hand blender, tomato, jelly jar, microwave

Checklist: Find – Inspect – Check off

✓	No.	Description	Qty.	Item No.
<input type="checkbox"/>	1	Empty brown plastic bottle with lid	1	775740
<input type="checkbox"/>	2	Test tube with stopper	2	772100
<input type="checkbox"/>	3	Funnel	1	086228
<input type="checkbox"/>	4	Filter paper sheet	10	772092
<input type="checkbox"/>	5	Pipette	1	232134
<input type="checkbox"/>	6	Measuring cup	1	065099
<input type="checkbox"/>	7	Wooden skewer	1	713654
<input type="checkbox"/>	8	White and red plastic chips	12	705818
<input type="checkbox"/>	9	Inheritance worksheet	1	706847
<input type="checkbox"/>	10	Cell poster	1	706848
<input type="checkbox"/>	11	Chromosome puzzle and genetic fingerprinting cards	1	706846
<input type="checkbox"/>	12	DNA model	1	705817
<input type="checkbox"/>	13	Petri dish	2	723751
<input type="checkbox"/>	14	LB agar	1	772529
<input type="checkbox"/>	15	Lid opener	1	070177
<input type="checkbox"/>	16	Plastic spatula	1	722970
<input type="checkbox"/>	17	Red decoder film	1	161415
<input type="checkbox"/>	18	Die-cut cardboard test tube stand	1	724180

Any materials not contained in the kit are marked in *italic script* in the "You will need" boxes.

→ Before doing anything else, please check all the parts against the list to make sure that nothing is missing.

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

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Crack the code of
the double helix



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Learn how forensic scientists
use DNA fingerprinting

Heredity: Investigating Traits Pages 12 to 18

Learn how traits
are passed from
parents to children



The Age of Genetic Engineering Pages 41 to 46

Grow a bacteria colony
to learn about genetic
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Cells and Chromosomes Pages 19 to 25

Find out
where the DNA
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CHECK IT OUT

You will find supplemental
information on pages 6, 11,
12, 19, 21, 22, 25, 30, 33, 37, 38,
40, 42, and 46.