

## WHAT'S IN MY KITCHEN CUPBOARD?

A range of mixtures found in the kitchen cupboard provide an interesting starting point for thinking about which products may be dangerous if care is not taken when using. Children are introduced to new vocabulary and definitions associated with hazards before designing their own warning labels to compare with those used conventionally. The activity concludes with children sorting and grouping common products before and after revealing internationally recognised warning symbols.

### TYPE OF ENQUIRY

Identifying, classifying and grouping.

### OBJECTIVES

- To show an understanding of new vocabulary by designing symbols to represent warnings
- To talk about criteria for grouping, sorting and classifying mixtures found in a kitchen cupboard

### To be able to:

- Recognise the symbols used on household products which alert the user to the potential hazards of misusing products

### SCIENCE VOCABULARY

Mixture	Product	Safety
Hazard	Warning	Toxic
Harmful	Corrosive	Irritant
Highly Flammable	Explosive	

### RESOURCES

Per class:

- Collection of empty, clean, sealed containers from household products – hide each container's hazard label by blu-tacking paper/card over them
- 2 PE hoops (for sorting/grouping)
- Hazard warning designs
- Hazard labels
- Safe clothes and signs
- Kitchen Chaos cartoon strip (optional)

**Note:** Containers could include:

Mr Muscle	oven cleaner	corrosive
Clean-off	oven cleaner	corrosive
Domestos	bleach	irritant
Stain-devil	stain-remover	irritant
Johnson's	wax polish for antiques	flammable
Jiff Mousse	surface cleaner	flammable
Halfords	screen wash	harmful

## PRIOR KNOWLEDGE/EXPERIENCE

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Children should have opportunities to compare and group materials together, looking closely at their similarities and difference

## ACTIVITY NOTES

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At any time during the nine activities in this resource, the Kitchen Chaos cartoon strip can be shared with the class on-screen.

Please refer to Safety guidance for this activity before providing an interactive display of empty, clean and sealed containers for the children to eventually use and explore. At this starting point in the activity, explain to children that many mixtures found in the kitchen cupboard at home should not be experimented with or handled and therefore, carry a warning symbol called a hazard warning to help keep us safe.

Some or most of these 'warning words' could be new vocabulary to children so it is important that the teacher spends some time introducing and discussing common hazard phrases, determining what the children understand by them and giving definitions and guidance where they are uncertain. Formal hazard warning definitions have been summarised in the table below:

Toxic	A substance that, if inhaled, swallowed or if it penetrates the skin, may involve a very serious health risk or even death
Harmful	A lower grade of toxicity
Corrosive	A substance which may destroy the skin, clothes or other surfaces when in contact with them
Irritant	Non-corrosive, but may cause inflammation when in contact with skin
Highly Flammable	Substances that will burn readily below average room temperature
Explosive	A substance which may explode if near a flame, or as a result of friction or vibrations

Children might discuss only the definitions with a partner and attempt to match these up with the warning word or phrase. More able children could write their own definitions to show their understanding of this potentially new vocabulary.

Explain to children that a simple black and white picture symbolises a warning on the label of any hazardous product. This is to ensure that the warning can be understood by people all over the world. Invite children to choose two of the hazards discussed and design a picture or symbol to represent that warning. Remind them that the picture must be simple, easy to interpret with no text, as it has to fit into a square on the label which is about 2cm x 2cm (see Hazard warning designs). Individuals should share their suggestions with each other before the 'big reveal' whereby the teacher shows examples of what the real hazard labels look like. Children can compare how similar or different their own suggestions were.

Throughout the week, each group of children should have the opportunity to work with the interactive display of sealed containers with their hazard labels hidden, discussing which products might pose which hazards and justifying reasoning based on the use of each product. The containers can be sorted into suggested hazard categories, using hoops and hazard labels if required. Photographs should be taken as evidence, before revealing the official warning symbols once all groups have had a turn. Children can then evaluate their decisions and discuss any incorrect classification. Please refer to Questions for Thinking to extend whole class discussion at this point in the activity.

## [ACTIVITY DETAIL] continued

### ACTIVITY NOTES...continued

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Children may be interested to learn that not all mixtures found in a kitchen cupboard carry hazard warning labels, as many do not contain ingredients that pose risks or dangers to us if handled incorrectly. These products might include washing-up liquid, hand soap, cleaning wipes and shoe polish. They may also notice that products carrying a warning label might also have written warnings and advice about treatment, as well as safety lids to prevent young children from opening them.

### EXTENSION OR HOME-BASED ACTIVITIES

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Children could extend their awareness of hazard warning symbols by keeping a journal of those found around school, at home, during car journeys, or researching warning signs and symbols using secondary sources such as the internet. They can be challenged to find unusual warnings and safety signs around the town, country or other parts of the world, as well as learn more about hazard warnings found in science labs or in industry. They should notice the universality of these signs.

### QUESTIONS FOR THINKING

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- Which products found in the kitchen cupboard have hazard warnings on them? Why?
- Which products found in the kitchen cupboard have you used in any of the other activities in this resource?
- Which products have no warnings on them at all? Why?
- What do you notice about the caps of the bottles which have a hazard warning? Why is this?
- Can you think of any other dangers that people need to be warned about? What kind of warning symbol should accompany this hazard?
- What warning symbols can you recognise in your school and at home? Where else can you find hazard warnings?

### SAFETY GUIDANCE

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Please use the following health and safety information to produce your own risk assessment for this activity:

- All containers must be thoroughly cleaned and sealed before being handled by the children. Children must be warned not to touch any of the household products at home.

## INDUSTRY LINKS AND AMBASSADORS

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Health and safety is of paramount importance in every kind of industry, with strict safety rules in place for all employees to follow. The job of the Health and Safety Manager is to plan, put in place, monitor and review safety practices, which includes making suggestions for how risks could be reduced and hazards can be managed. Teachers could link with a local company to arrange a visit to school from their Health and Safety Manager and children could plan a range of questions to help them find out more about the role. For help with finding and requesting a STEM Ambassador in your local area, please go to [www.stemnet.org.uk/ambassadors](http://www.stemnet.org.uk/ambassadors).

If a visit to a real manufacturing company can be arranged, children could focus their attention on the safety signs and safety clothes they see around site and record this on the safe clothes and signs activity sheet. Alternatively, they might look at some of the introductory challenges found at [www.risk-ed.org](http://www.risk-ed.org) (a resource for children aged 11+).

Children might like to research and examine a greater range of standardised warning signs created by the International Standards Organisation (ISO) and discuss how these might help us to understand potential dangers and use machines and equipment safely. They could create a safety sign quiz and have great fun trying to identify the hazards represented by different symbols.

## CROSS CURRICULAR LINKS

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**English:** opportunities to use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas. Also links to writing whereby pupils identify audience and purpose, as well as selecting the appropriate form.

**Mathematics:** links to sorting, classifying and grouping.

**Design and Technology:** pupils will develop design criteria to create their own hazard warning symbols that are fit for purpose. They will also have opportunities to work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].