

Primary RiskAssess

www.riskassess.com.au

Risk Assessment Tool for Primary Science

- Make your STEM investigations safer
- Meet your legal obligations
- Feel more confident



Primary schools are legally required to conduct risk assessments prior to science investigations. The safety information in Primary RiskAssess allows teachers to design and carry out scientific investigations with greater confidence and lower risk. More than 160 Primary schools in Australia subscribe to Primary RiskAssess.

Primary RiskAssess is a web-based system that makes performing risk assessments quick and easy. Primary RiskAssess has been specifically designed for use by Primary teachers.



Risk Assessment and Practical Order

School:

Author:

Experiment name:

Text reference:
(or procedure)
Can include web links. Eg.

Classes for Which Experiment is Required

Teacher:

Year group:

Chemical training codes:

Scheduling:

Scheduling notes:

Equipment, Chemicals and Biologicals for Risk Assessment

For each section below, enter one or more words to search on and then click 'Search & Add'. If a match is found, it will be added to your risk assessment. For example, in the 'Chemicals Used' section, enter 'iron oxide', click the button, and it will be added to your risk assessment. You can also search by chemical formula (eg. CH₃COOH), and incomplete words (eg. 'ir' or 'will find iron oxide).

Equipment

cup, plastic	Remove
food colouring, red	Remove
aluminium tray	Remove
dishwashing detergent	Remove
sand	Remove
newspaper	Remove
water paint, children's	Remove
paint brush	Remove
flour	Remove

Multiple results found. Click one below, or search again.

- paper
- paper, brown
- paper, butcher's
- paper, carbon
- paper, colored
- paper, coloured
- paper, craft
- paper, glossy black
- paper, glossy white
- paper, graph
- paper, universal indicator
- paper, white

Chemicals Used

acetic acid, vinegar (~0.7-1.3 M; ~4-8% w/w)	Remove
sodium hydrogen carbonate, solid	Remove

Chemicals Produced

carbon dioxide, gas generated during experiment	Remove
-------------------------------------------------	--------

Biologicals and Food

Other Items:

Includes potential hazards & standard handling procedure

By running 'Update Risk Assessment' you accept the [Conditions of Use](#) for the RiskAssess website.

Teachers will find using Primary RiskAssess simple, as it includes:

- an electronic template for risk assessments, following the Australian ISO Standard on Risk Management
- safety information for chemicals, equipment and living organisms
- online help and learning resources
- hot-links to documents, diagrams, websites, Safety Data Sheets, etc
- recording of risk level and control measures
- easy sharing of experiments between school staff
- experiment scheduling system and chemical labelling
- access for unlimited numbers of simultaneous users
- use on computers, iPads, tablets and smart phones
- storage of risk assessments for legal purposes
- easy-to-read user manual.

The cost of a year's subscription to RiskAssess is \$250+GST per school campus. A subscription lasts 365 days from the date that payment is received and includes all upgrades during that period.

You can subscribe online at www.riskassess.com.au or email your school name to info@riskassess.com.au to arrange a free 2-week trial.

EcoSolve Australia Pty Ltd ABN 48 145 464 204
3 Valley View Close, Roseville NSW 2069
Ph: 02 9415 8677 Email: phillip@ecosolve.com.au

Website: www.riskassess.com.au

Requirements of the Australian Curriculum for Science

The Australian Curriculum for Science¹ for Years F to 6 requires students to learn a wide range of basic science. This provides knowledge and skills for use throughout life and supports STEM (Science, Technology, Engineering and Mathematics) studies in later years. STEM studies have been identified as a matter of national importance and require a solid foundation in Years F to 6.

Science inquiry skills include

- questioning and predicting
- planning and conducting scientific investigations
- processing and analysing data and information
- evaluating
- communicating

From Year 3, students

With guidance, plan and conduct scientific investigations to find answers to questions, **considering the safe use of appropriate materials and equipment** (AC SIS054)

In Years 5 and 6, students

Identify, plan and apply the elements of scientific investigations to answer questions and solve problems **using equipment and materials safely and identifying potential risks** (AC SIS103)

Primary teachers are required by the curriculum to carry out scientific investigations, including ones with materials, equipment and chemicals which might cause injury. In many cases, teachers have not been provided with specific training on how to carry out these investigations safely. Primary RiskAssess allows teachers to be aware of potential hazards and access a range of safety information. This lowers the risk of injury to students and teachers, and allows teachers to feel more confident in developing and carrying out interesting investigations and demonstrations to develop student understanding.

¹. <http://www.australiancurriculum.edu.au/Science/Curriculum/F-10>

Volcano (vinegar and baking soda)

Written by: Phillip Crisp

Commenced on: 12 Jun 2018

Expires: 12 Sep 2019

Classes for which experiment is required

Teacher: Eva Crisp (training code 6)

Year Group: 6

Room

Date

611

Thu 5/7/18

Procedure or reference, including variations

PC p26

http://www.riskassess.com.au/info/learning_resources**Equipment to be used****aluminium tray****dishwashing detergent***Potential hazards*

Do not drink.

flour*Potential hazards*

ALLERGY ALERT. Do not eat in Science laboratory, due to the possibility of chemical contamination. Also, some students may have a gluten allergy.

food colouring, red*Potential hazards*

ALLERGY ALERT. May cause an allergic reaction in some individuals. Do not drink.

newspaper*Potential hazards*

Easily flammable.

Standard handling procedures

Avoid use near naked flames.

paint brush*Potential hazards*

May splash paint into eyes.

plastic cup*Potential hazards*

Flammable. May release toxic fumes if burnt. Cup transmits heat of hot fluid, causing it to become uncomfortable to hold. Organic solvents may affect the plastic, causing leaks.

Standard handling procedures

Use insulating foam cups for hot liquids. Do not use plastic cups for organic solvents. Do not heat with bunsen burner.

sand*Potential hazards*

Sand may be thrown around and cause eye injury. May be source of toxoplasmosis, if sand is outside and not covered.

Standard handling procedures

Should be covered when not in use, due to the possibility of a cat infected with toxoplasmosis defaecating in the sand.

water paint, children's*Potential hazards*

Check label to ensure ingredients are not toxic. Do not ingest. May cause skin irritation.

Chemicals to be used**acetic acid, vinegar (~0.7-1.3 M; ~4-8% wt/wt)** (ethanoic acid)**CH₃COOH(aq)**

Class: nc

PG: none

Users: **K-12***

Training: 1-6*

CAS: 64-19-7

GHS data: Not classified as a hazardous chemical.

Potential hazards

Irritant vapour.

sodium hydrogen carbonate, solid (baking soda, bicarbonate of soda, sodium bicarbonate)

NaHCO₃

Class: nc PG: none Users: **K-12*** Training: 1-6*

CAS: 144-55-8

GHS data: Not classified as a hazardous chemical.

Potential hazards

Low toxicity.

Chemicals to be produced

carbon dioxide, gas generated during experiment

CO₂

Class: 2.2 PG: none Users: **K-12** Training: 1-6

CAS: 124-38-9

GHS data: Not classified as a hazardous chemical.

Potential hazards

Harmless, in quantities generated during experiments.

Toxic at high concentrations in air due to absorption through lungs into blood, lowering the pH.

Standard handling procedures

DO NOT GENERATE CARBON DIOXIDE IN A CLOSED CONTAINER SINCE THE CONTAINER MAY EXPLODE.

Magnesium burns in carbon dioxide to form magnesium oxide and carbon.

Knowledge

I have read and understood the potential hazards and standard handling procedures of all the equipment, chemicals and biological items, including living organisms.

I have read and understood the (Material) Safety Data Sheets for all chemicals used and produced.

I have copies of the (Material) Safety Data Sheets of all the chemicals available in or near the classroom.

Risk assessment

I have considered the risks of:

fire	breakage of equipment	electrical shock	radiation
explosion	cuts from equipment	escape of pathogens	waste disposal
chemicals in eyes	sharp objects	heavy lifting	inappropriate behaviour
inhalation of gas/dust	rotating equipment	slipping, tripping, falling	allergies
chemicals on skin	vibration and noise	falling objects	special needs
runaway reaction	pressure	heat and cold	other risks

Certification by Teacher

I have assessed the risks associated with:

preparing the equipment, chemicals and biological items, including living organisms, for this experiment, performing this experiment with students in the class room, and cleaning up after the experiment and disposing of wastes,

on the basis of likelihood and consequences using the School's risk matrix, according to International Organization for Standardization Standard ISO 31000:2009.

I consider the inherent level of risk (risk level without control measures) to be:

Low risk **Medium risk** High risk Extreme risk

Control measures:

Ensure that students do not inhale vinegar fumes or get vinegar in eyes or in cuts on skin.

Don't let students drink the red "lava" fizz.

With the specified control measures in place, I have found that all the risks are "low risk". Risks will therefore be managed by routine procedures in the classroom, in combination with the specified control measures.

Name: **Signature:** **Date:**

Monitoring and review

This risk assessment will be monitored using comments below and will be reviewed within 15 months from the date of certification.

Attach further pages as required