

Crystal Investigation

The beautiful symmetry of crystals has charmed and delighted people for centuries. Here is your chance to investigate how beautiful crystals are formed.

A successful SASTA Oliphant Science Awards Crystal Investigation entry:

- Will answer an investigation question or investigate a hypothesis (prediction).
- Will include at least one crystal that shows sharpness of edges, smoothness of faces and has good clarity (transparency).

Rules for Crystal Investigation:

- A group of up to 3 students can do a Crystal Investigation entry. The highest year level in the group will determine the year category of the entry.
- Growing the crystals must be the student's own work.
- The crystals must be made from potash alum (common alum, potassium aluminium sulphate).
- **You must keep a journal or log book of your investigation, which will include details of:**
 - The investigation question or hypothesis.
 - Details of equipment and method used, including the quantities of alum and water used.
 - Dates and times of carrying out procedures.
 - Observations each time the crystals are inspected. This should include a written description as well as drawings or photographs of the crystals.
 - A discussion of any problems encountered and how you overcame them. Evaluate your method and make suggestions for improvements that could be made to it.
 - A summary of your findings including an answer to your investigation question or a statement stating if the hypothesis was supported or not supported by the results.

In presenting your Crystal Investigation entry:

- You must package your best crystal in a labelled, separate, small press-seal bag. This bag should then be placed into a padded Post Pak envelope for protection and labelled with a copy of your Identification information. Be sure to also label the small press-seal bag with your ID Number (listed on your Identification Label).
- You must securely attach your Identification Label (your Coordinator will give you this label) to the front of your logbook.
- Place your packaged crystal and logbook together in a folder or plastic sleeve.

Important information:

- You need at least 10 weeks to grow a good crystal.
- Information and advice on growing crystals is available on the following website: https://www.raci.org.au/Web/Schools/Crystal_Growing.aspx#
- You can also download a log book checklist (pdf) and the Material Safety Data Sheet (MSDS) for alum (potassium aluminium sulfate).

A good source of alum is needed to grow a clear crystal. Ask your teacher or head to the RACI website (link above) to find out where to obtain alum.

Alum obtained from hardware stores or garden centres is likely to contain impurities and is not suitable without extensive extra preparation.

