



Prize Winner

Crystal Investigation

Year 3-4

**Odin Swan
Louie Cook**

Grange Primary School



0218-050



Crystal Growing Competition
Watch your crystal grow

OLIPHANT SCIENCE AWARDS

CATEGORY: CRYSTAL GROWING

Supported by the SA Branch of the Royal Australian Chemical Institute
and
The RACI Chemical Education Group (S.A.)



raci

Royal Australian Chemical Institute

LOG BOOK

STUDENT NAME(S): Louie Cook

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YEAR LEVEL: 4

SCHOOL: Grange Primary School

Please note: the use of this version of a log book is not mandatory.
There will be no penalty for not using it.

However the student(s) who are preparing a crystal will need to provide evidence of their ongoing efforts by comments related to the criteria suggested in this log book model.

The competition instructions suggest that the crystal growers formulate an hypothesis that they can test while growing the crystal(s)

Examples of questions that could be expressed as a prediction or hypothesis are:

- Can my crystal grow to the required 9 mm in 3 weeks?
- Does leaving my crystal in a dark place help it to grow better?
- Does more or less attention help my crystal to be more clear and well-formed?
- Does an incubator help grow bigger crystals in a given time period?


MY HYPOTHESIS Does the crystal grow better in the light or dark?

The log book in this form is only advisory but students should try to document the following:

- Date and time for each handling of the crystal procedure
- Describe exactly what they did on each occasion (should include measurements of volume and temperature made at any time)
- What has happened to the selected crystal on each viewing (changes)
- Description of the crystal characteristics – clarity, regularity (smooth faces, sharp edges), and size (can be assisted by sketches or digital photos)
- What problems were encountered and how they were solved – may include summaries of discussions with teachers/mentors
- Acknowledgment of manual assistance by others e.g. for competitors from the R-2, 3-5 age groups, what teachers or parents did.
- Acknowledgement of any crystal growing advice from books or websites

Date/Time	Descriptions of what the student(s) did, problems encountered and solved	Crystal characteristics	signed
13-6-20 3:18 pm	<ul style="list-style-type: none"> • Added 10 grams Alum to jar • Heated 70mls demineralised water to 60°C • Added water to jar • Stirred till Alum dissolved 		KC
	<ul style="list-style-type: none"> • Tied string to stick and layed it across top of jar so string hung in solution • covered jar in gold wrap 		
	<ul style="list-style-type: none"> • placed jar in dark cupboard 		

Date/Time	Descriptions of what the student(s) did, problems encountered and solved	Crystal characteristics	signed
15-6-20 4:20	crystal seeds in middle and # sides	3mm straight sides	
	selected clear crystal with even sides tied to fishing	hexagon	
	line and dissolved left over alum and put away in cupboard		KC
16/6/20	The crystal has grown 5 times the size in every	diamond shape 10mm edges	KC
17-6-20	Our crystal I think is even more see through and	very clear and symmetrical smooth	
	not much bigger than yesterday - We have taken out of solution.	faces	KC

Date/Time	Descriptions of what the student(s) did, problems encountered and solved	Crystal characteristics	signed
21-6-20	repeated growing process to see if we could grow a		
	bigger crystal	the seed was 4mm smooth hexagonal	KC
22-6-20	most smooth faces but some irregularities	12mm low clarity	KC
27-6-20	kept crystals in solution.	irregular edges 20mm long side	
	Keep in solution for another week.	low clarity	
	Selected another seed and repeated growing process in fresh solution		KC
29-6-20 3:45pm	our big crystal is 3cm and our new one is 2cm long		KC

Date/Time	Descriptions of what the student(s) did, problems encountered and solved	Crystal characteristics	signed
4/7/20 11:00 ^{am}	repeat growing process Very hard to tie crystal to line	perfect hexagon shape Good clarity	KC
7/7/20 9:25 ^{am}	• Removed crystal from solution. • Measured growth	• Good clarity • 20mm • Some uneven edges	KC
	• Added thirty grams of Alum Sulphate to 200ml of warm water		
	• Hang crystal in solution		

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