SASTA OLIPHANT SCIENCE AWARDS

SOUTH AUSTRALIAN SCIENCE TEACHERS ASSOCIATION

Highly Commended

Crystal Investigation

Year R-2

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Beautiful Crystals

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Statement of authorship roles:

Naomi measured, poured and mixed the crystal solution, measured and 'fed' the crystals every week or so and recorded observations, contributed to data entry typing and final reporting.
Sophia measured, poured and mixed the crystal solution, measured and recorded observations some weeks and contributed to final reporting.
Naomi's mum facilitated the 'lab work', suggested report structure and helped substantially with typing and learning to use word processing software as writing is still a very new skill for the authors. Sophia's mum took photos.

Text written by Naomi's mum in black, in purple if dictated by Naomi, in blue if dictated by Sophia

Introduction:

How do crystals grow?
At first the water gets cold and it can't handle as many of the crystal powder. Then, when we leave the solution over time the water disappears and the crystal powder doesn't come with it so the crystals get bigger.

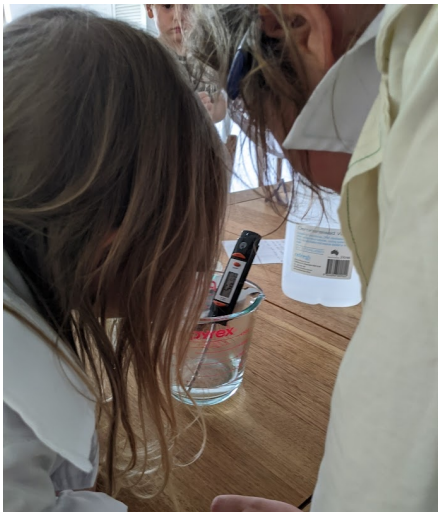
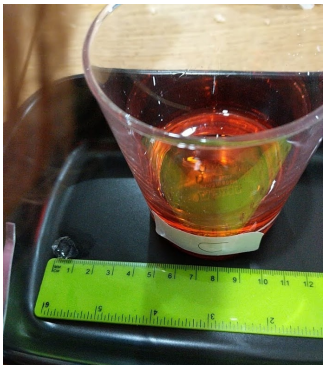
Aims:

The girls wanted to try adding food dye and rosewater to the solution to make pink and scented crystals
I want it to be beautiful like a diamond and really big.

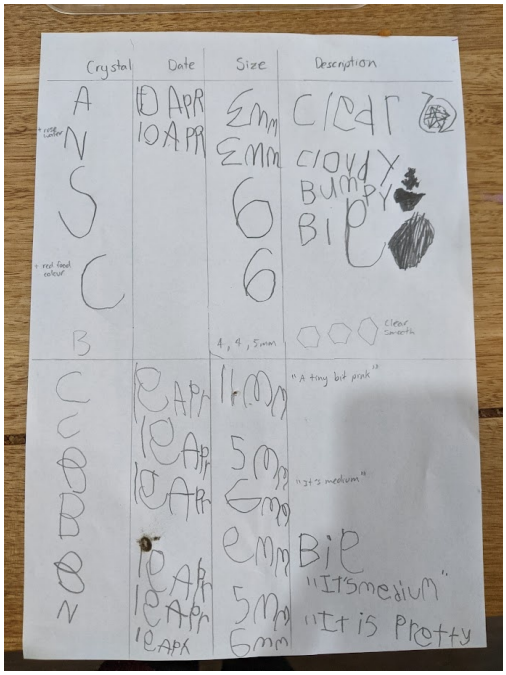
Hypotheses:

What do you think will happen to the crystal with rosewater compared to our control crystals?
I think the crystal with rose essence would have a tiny bit of smell.
What about the one with red food dye?
I think it will turn pink

Methods:

1) We were getting ready to make the crystals. 	2) We were measuring the crystal water. (100g) It was super pure water. 
3) Adding the crystal powder. (60g alum) 	4) We were taking the temperature of the crystals (after microwaving). The number we looked for was 60 We stirred a lot 
5) We were picking which crystals to grow and measure. We put them in pots with letters (labels) on them I added red to my crystal. I added rose essence to my crystal. The other crystals had none.	6) We measured the crystals. They were growing. We waited for MONTHS. 

7) We wrote down our observations.
We were writing down stuff about the crystals. In some containers the mini crystals made more crystals. We also removed the extra tiny crystals that had formed so they don't steal the food. We used tweezers to chop off the mini crystals on the big crystals.



8) We were making more crystal food. The filter paper made sure there was no mini crystals in it.

Results:

The seed crystals look like tiny bits of glass!

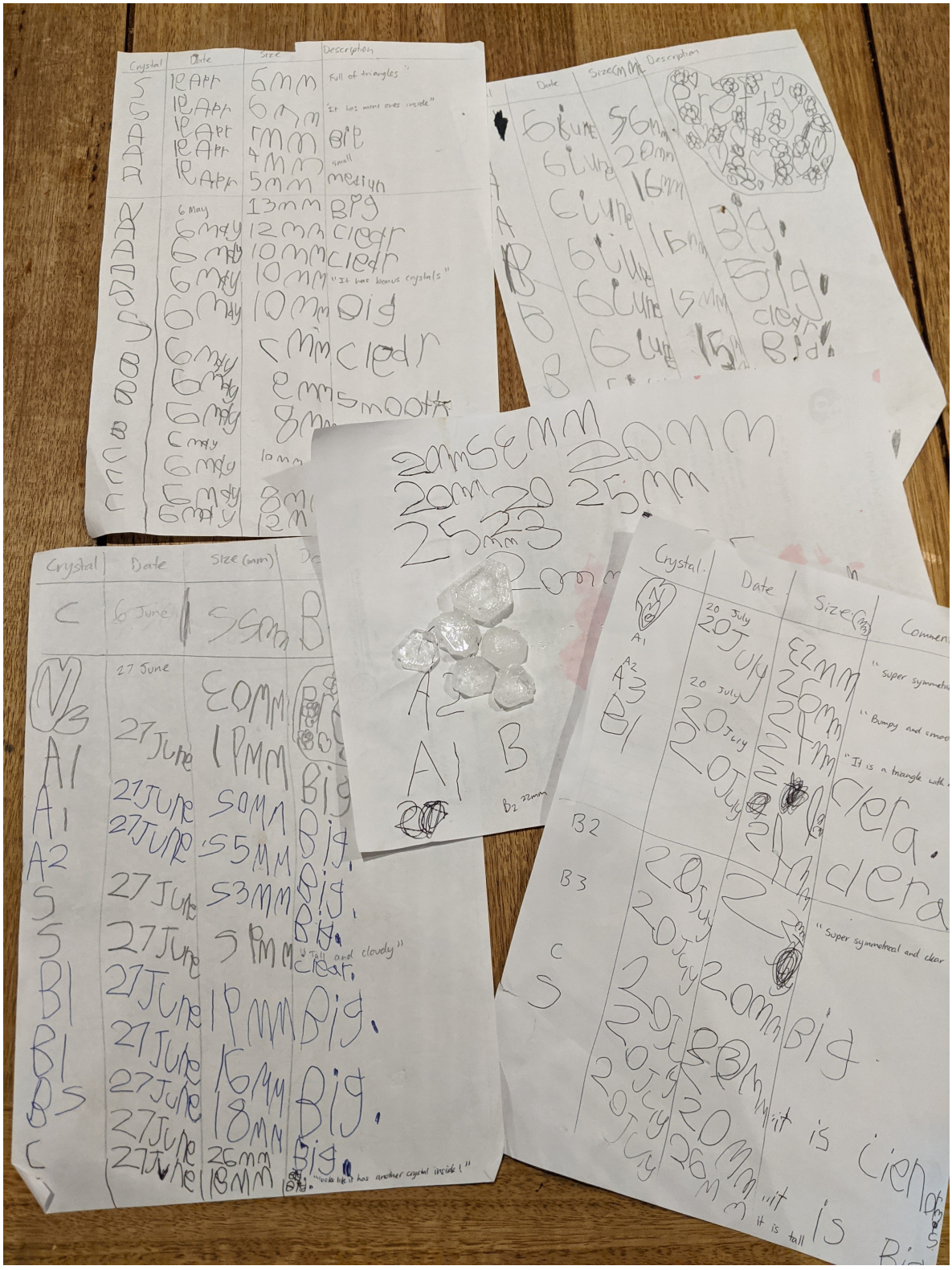
Comments after 1.5 weeks of growth:
There's tons of tiny crystals in N, it doesn't have much smell. In A there are a few crystals that are small but not too tiny, in A there's 5 crystals but 4 are mini ones and the one we put in earlier is bigger. In B the three crystals we put in are the same, with crystal C there's a few tiny weeny ones and one big one

After 2 months of growth:

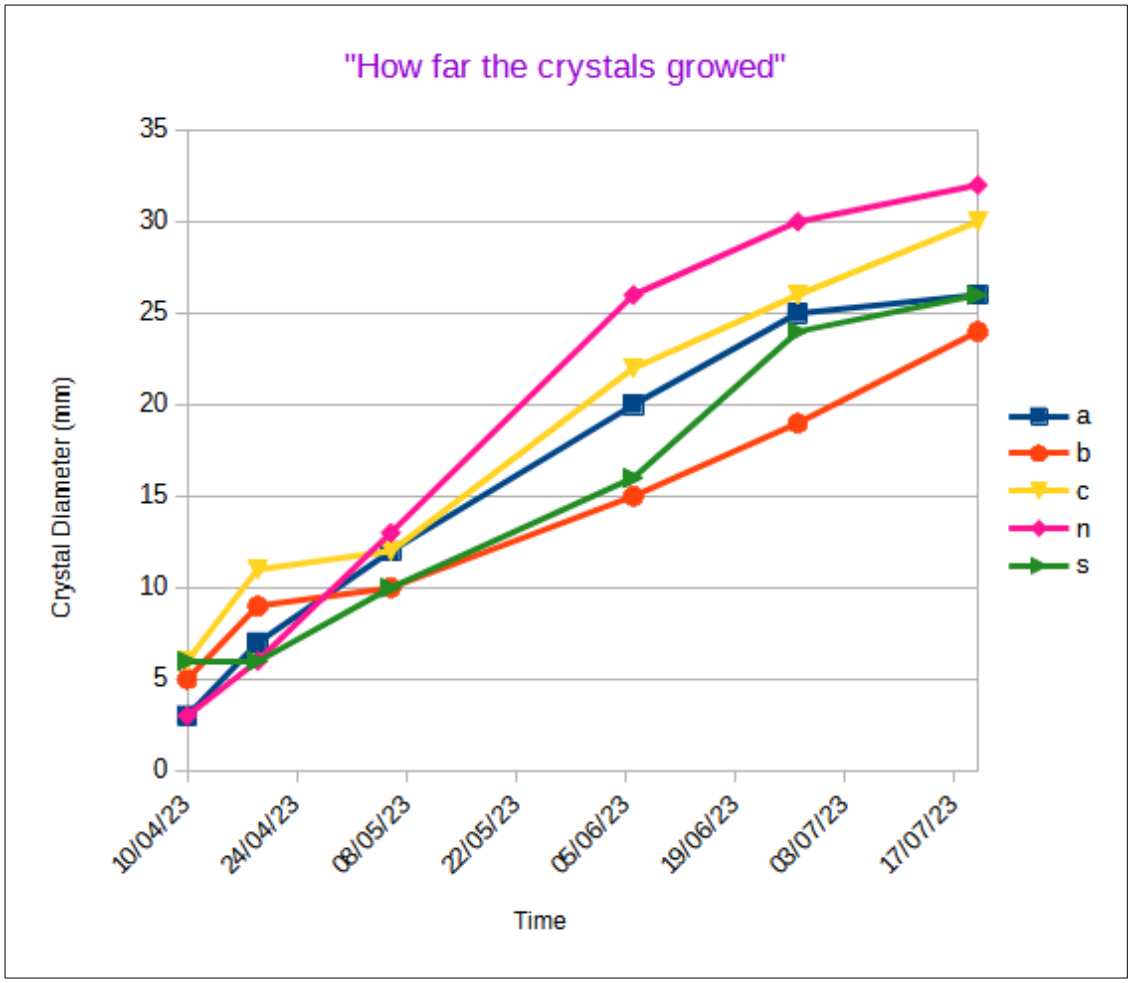
Crystals after 57 days

At the end of the experiment:
Crystal N (with rosewater essence added) did not stay smelly.
My crystal is pink! I see some red lines in it. It's clear and a bit bumpy.

Crystal C after 101 days with red dye



A compilation of the girls handwritten records



Crystal N growed the biggest over time.

Discussion and conclusions:

We made some good crystals. They were smooth and clear. I liked the big crystal B1 because it had another crystal inside of it. The small ones were the clear ones, the big ones were more cloudy.

My Crystal S grew so big! Maybe next time we can grow bigger crystals and try different things. The crystals we added stuff into did not have the smell and the colour that we wanted. Maybe because we didn't add enough. Maybe next time we can add enough.