

# Scientific Report

## Plants grow better in the dark?

**Aim:** To test whether a bean will grow better in the dark rather than in the sunlight.

**Hypothesis:** The plant should grow better in the sunlight than darkness because the plant needs the sunlight to grow.

In an investigation such as this it is better to formulate a clear statement describing the purpose addressed by the investigation, rather than an aim.

**Apparatus:**

- 375ml Water
- 600g Seed raising mix
- 30 Snow Bean seeds
- 10, 177ml foam cups
- Gloves
- Goggles
- Pipette (1ml)



Pipette



Water



Snow bean seeds



Foam Cups



Seed raising mix



Gloves



Safety goggles

**Risk****Assessment:**

<b><u>Risk</u></b>	<b><u>Prevention</u></b>
<ul style="list-style-type: none"><li>• Soil flicked on to the naked eye</li><li>• Using hands for the soil</li><li>• Pots shattering and someone gets hurt or injured</li></ul>	<ul style="list-style-type: none"><li>• Wear Safety goggles</li><li>• Wear gloves then dispose in the bin after use</li><li>• If there is a spill mop up the spill</li><li>• All ways keep the pot in the middle of the bench and any broken pots remove cautiously</li></ul>

**Method:**

1. Place 60g of seed raising mix in 10 foam cups, which are 177ml.
2. Place 5 snow bean seeds in each pot 2cm deep.
3. Drop 10 drops on each seed every day using a pipette.
4. Place 5 cups in a dark room.
5. Place 5 cups where there is sunlight.
6. Measure and record all pots every day with a camera, ruler, pencil and paper.

<u>Independent</u>	<u>Dependent</u>	<u>Control</u>
Sunlight	Growth of plant	Bean
Darkness		Soil Water

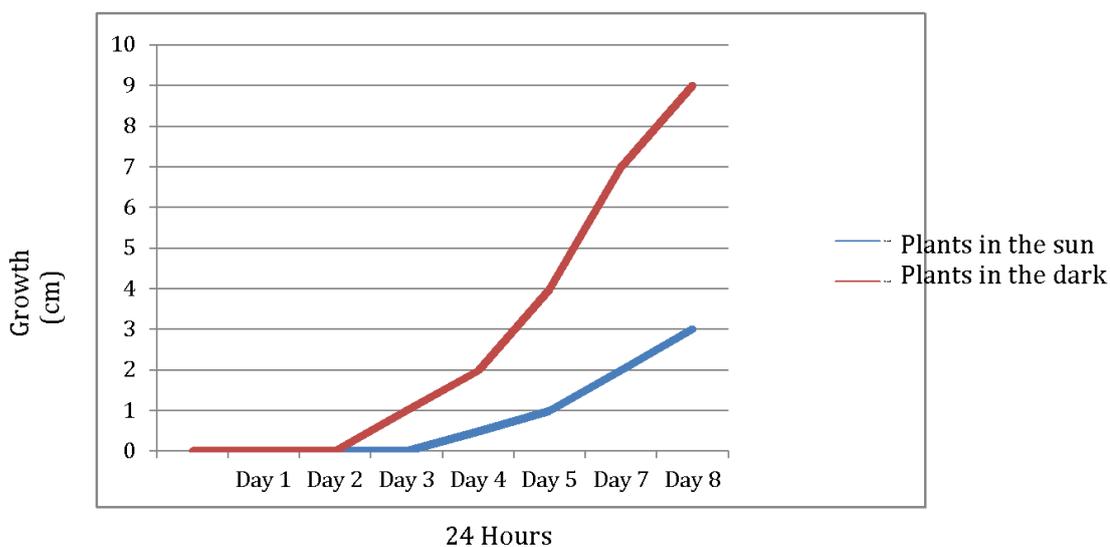
Inclusion of the variables of amounts of light/dark and temperature would improve the validity of this investigation.

## Results:

Day	Plants in the Sun	Plants in the Dark
Day 1	0cm	0cm
Day 2	0cm	0cm
Day 3	0cm	1cm
Day 4	0.5cm	2cm
Day 5	1cm	4cm
Day 7	2cm	6.5cm
Day 8	3cm	9cm

The method requires five samples to be tested. Some evidence of this in the results would improve the report.

**Do plants grow better in the dark than the light**



## Discussion:

My experiment was does plants grow better in the dark rather than the sunlight. It was a successful experiment that worked but my hypothesis was wrong. The plants in the dark room grew much better than the ones outside it tripled in size. The plants left in the dark grew at an average of 3.2 cm per day as they grew they turned yellow. I have learnt that the increased height is a response to low light levels - the plant is trying to grow over anything that may be blocking the light, and will grow towards any source of light. The plant they turn yellow because the chlorophyll (which gives plants its green hue) is unable to absorb energy from light to start the process of photosynthesis.

The discussion shows evidence of research done after the investigation to try to explain the results. Prior research would have assisted in distinguishing plant growth from seed germination.

## Conclusion

The hypothesis of my experiment was that the plant should grow better in the sunlight than darkness because the plant needs the sunlight to grow. My results reject the hypothesis.

The conclusion is a statement reflecting the purpose of the investigation and is based on the evidence collected.

## Acknowledgements

Pot Sizes- [http://www.crocus.co.uk/html/pot\\_size.htm](http://www.crocus.co.uk/html/pot_size.htm)

Types of beans-

[http://www.grow-cook-eat-beans.com/types\\_of\\_beans.html](http://www.grow-cook-eat-beans.com/types_of_beans.html)

Independent-Dependent variables- [http://en.wikipedia.org/wiki/Dependent\\_and\\_independent\\_variables](http://en.wikipedia.org/wiki/Dependent_and_independent_variables)

How to make a scientific report- <http://unilearning.uow.edu.au/report/2b.html>

Why do plants grow faster in the dark? -  
[http://wiki.answers.com/Q/Do\\_plants\\_grow\\_faster\\_in\\_light\\_or\\_dark](http://wiki.answers.com/Q/Do_plants_grow_faster_in_light_or_dark)

Why do plants turn yellow in the dark? -  
[http://wiki.answers.com/Q/Why\\_do\\_the\\_leaves\\_of\\_plants\\_become\\_yellow\\_or\\_pale\\_green\\_when\\_they\\_are\\_kept\\_in\\_the\\_dark](http://wiki.answers.com/Q/Why_do_the_leaves_of_plants_become_yellow_or_pale_green_when_they_are_kept_in_the_dark)

### Grade Commentary

Lou has demonstrated an ability to plan and conduct a scientific investigation. It shows a basic understanding of variables but only a limited understanding of scientific phenomena within the choice of topic. Lou's scientific report would benefit from greater detail and analyses of data. This work sample demonstrates characteristics of work typically produced by a student performing at grade D standard.