SASTA OLIPHANT SCIENCE AWARDS

Prize Winner

Programming, Apps & Robotics

Year 3-4

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ROWE SCIENTIFIC PTY. LTD. www.rowe.com.au

Australian Government Department of Defence

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SASTA South Australian Science Teachers Association

Pollination

By Tristan Vallance

The aim of the entry, and its scientific purpose and potential applications

The aim is to help farmers pollinate their crops and so I can see pollination up close.

The type of robot or computer/device required to run the program

A drone and a computer with drone blocks on it.

Clear instructions on loading or using the entry

1. Turn on drone
2. Go to settings on your device and change the Wi-fi to be linked to the drone
3. Open Drone Blocks
4. On Drone Blocks open the program called Pollination or buzz pollination (this will depend on what type of flower you want to pollinate).
5. Click on launch mission to take off and pollinate the flowers.

These steps are easy to follow if your flowers are placed at the same measurements that mine were. If the flowers are placed in a different spot you need to measure the height and distance in centimetres and change the height and distances that you need to move into the block coding (this isn't a waste of time, you could put your flowers in the exact same spots and you would be covered)

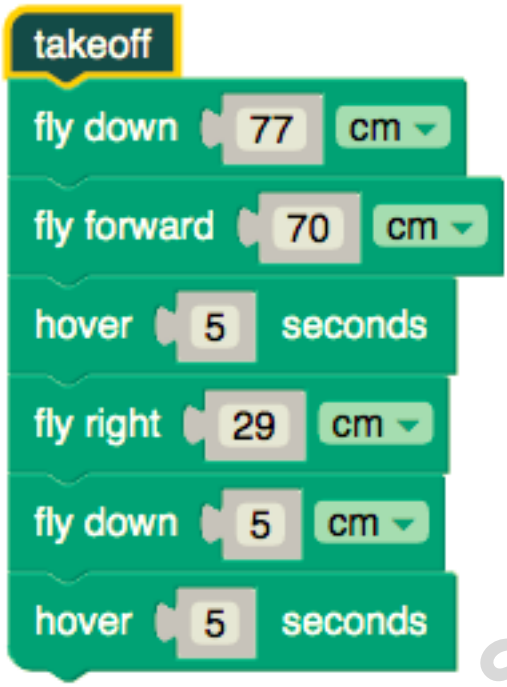
You would do this by:

1. Use drone blocks - which is a block coding app for kids.
2. Measure (using a tape measure) the height that the flower is from the launch spot. My drone takes off to a height of 1 meter so I needed to make the drone drop in height by 77cm.
3. Measure (using a tape measure) the distance from your launch spot to your flower.
4. Enter the height measurement into the program
5. Enter the distance you will need the drone to move forwards into the program.

The two pollinations are buzz and normal. The bees that I tried to copy are native bees for example: teddy bear bees and blue bandit bees.

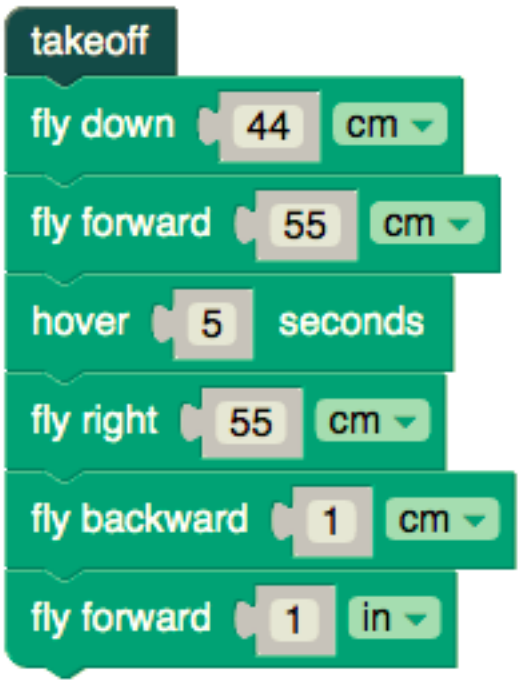
A hard copy of the program and an explanation of what the sections of the program do

This is normal pollination



The take-off putting the drone 1 meter in the air then you fly down 77 cm putting it 23 cm in the air you then fly 70cm forward evening it with the first flower you then hover for 5 seconds collecting all the pollen then you fly right getting 29cm evening you with the next flower then down and even yourself with the next flower then you hover and mix the pollen.

This is buzz pollination



You take off flying 1 meter up you then you move down you then fly down 44 cm you then Fly forward 55 cm hover to collect the pollen then fly right 55 cm and line up with the next flower then you fly back and forth shaking the pollen off.

Acknowledgment of any external support provided to the entry

Mum helped me by typing my words for the report.

A bibliography that acknowledges relevant sources of information.

This Vibrating Bumblebee Unlocks a Flower's Hidden ...

Buzz Pollination | Yates Gardening
https://www.yates.com.au › ... › Protecting Bees