

## EXPERIMENT: MY SPACE GARDEN FOR LIFE ON MARS

**AIM:** To find a suitable control of garden pests to use in a greenhouse on Mars.

**WHY?** In a space habitat on moon or Mars or for that matter the international space station insecticides cannot be used because the life support system is not able to absorb or filter out the harmful chemicals of the air the astronauts must breathe. Every breath the astronaut takes any insecticide will accumulate inside their body and eventually place their life at risk or killing them.

**METHOD:** Purchase direct from “Bugs for Bugs” an educator Lacewing kit from <https://bugsforbugs.com.au/>.

When they arrive, you are ready to go. For this experiment the larvae from the eggs you have obtained are believed to be ferocious predators of aphids, caterpillars and other crop and garden pests. Follow the instructions from Bugs for Bugs and release your predators into the garden. On the experimenter’s sheet below mark on the map where you have released your predatory bugs. Check each day for 2 weeks and then send in your results to [bees@beecafe.org](mailto:bees@beecafe.org)

IMPORTANT DO NOT USE ANY INSECTICIDES OR LEAF SPRAYS DURING THE EXPERIMENT

**PROCEDURE** (your steps to follow)

**STEP 1:** Place your kit containing the eggs and larvae on the middle shelf of your kitchen fridge. This will not kill them but allow you a few days to find where you will release them in your garden.

**STEP 2:** In your garden look for plants with signs of pest infestation. The signs are: -

- Brown spots on the leaves (scale and mealy bugs)
- Holes in leaves (caterpillars)
- Edges of leaves eaten away (Beetles)
- Yellow blotchy leaves, Leaf curl or poor flower development, Look closely for tiny (2mm long) green or yellow aphids under the leaves and on the outer new plant stem. (aphids)

Take a photo or draw a map of your garden where the infestations are. Copy this onto the attached experimenters log.

**STEP 3:** Get four or five postcard size envelopes and open these to make open baskets. Cut or tare some thin strips of paper 6mm 200-250mm and scrunch these up and stuff them into the envelope. Then using some string or bag ties make a loop and attach each envelope on a branch on the infected plant. Record on your Map where you placed the baskets.

**STEP 4:** Take your Lacewings from the fridge. Carefully sprinkle some into each envelope. Record the date and time you did this on the attached experimenters log.

**STEP 5:** Once a week inspect your garden. Write and changes to your plants and if you can do a count of each type of insect you find.

**STEP 6:** After 5 weeks and again 10 weeks write what you observe has happened. Copy your conclusion and results then email these to: - [bees@beecafe.org](mailto:bees@beecafe.org)

Welcome aboard the next great science adventure; The human mission to Mars.

### Resources

#### Books

- *Garden Guardians* by Jane Davenport
  - <https://ecoorganicgarden.com.au/>

Email your map and experiment diary to [bees@beecafe.org](mailto:bees@beecafe.org)

