

## **General Tips for Butterfly in Space Experiment**

### **1. Lighting**

- a. For the space flight habitats, a 12/12 light cycle is provided. 6 LEDs (bright whites) are used in the butterfly habitat for day time lighting. For classroom purposes, a standard fluorescent bulb in a “shop” light fixture or desk lamp would work sufficiently. A simple plug-in timer can be used for the 12 hour on/off cycle of the lamp. Incandescent light can be used but should not be placed too close to the habitats since this type of lighting can get very warm.

### **2. Temperature**

- a. The habitats will be kept at approximately 25 degrees Celsius while on the International Space Station. However, a temperature range between 21-26 degrees Celsius will work fine in your classroom. Please keep in mind, the caterpillars will develop more slowly when kept in cooler temperatures. If you are able to use a portable temperature gauge to monitor temperature by your habitat, that may be useful for your class and comparison purposes to the space flight and ground control units.

### **3. Humidity**

- a. The environment in which the habitats will be kept on board the International Space station will have a humidity level of approximately 50%. However, the humidity level inside the space flight butterfly habitat will be closer to 80-90%. Your classroom habitat will most likely not be in an environment with this level of humidity. This should be OK and not have too much of an effect on your larvae. The food may dry out more quickly, but it should be able to maintain its moisture content long enough for your larvae to develop and form a chrysalis.

### **4. Clean habitat**

- a. Keeping the outside of your habitat clean and free of finger prints is important for clear visualization of your butterflies/larvae.

### **5. Butterfly larvae health**

- a. Once the butterfly larvae are hanging in the “J” formation, it is important to not disturb them. Your organism is very susceptible to damage during this stage of metamorphosis. A few hours after the full chrysalis is formed, you should be able to move the habitat gently without ill effects on your organisms.