

## Objective

By analyzing the data, we would like to study the feeding behaviour of the starved and fed flies, and their differences.

## Definitions

*Feeding period*: the fly stays on the sensing pad, where it drinks the sugar water, for at least 5 seconds.

*Resting period*: the fly stays off the sensing pad for at least 10 seconds.

Data is categorized as either feeding (1) or resting (0) period; there is only two categories (0, 1).

## Assumptions

Since the sensitivity of the pad may not be accurate at times, we make the following assumptions for the cases:

- If there is a break of less than 10 seconds in between two feeding periods, then the three periods altogether are considered as one feeding period.
- If there is a break of 10 seconds or more in between two feeding periods, then we have a feeding, a resting and then a feeding period.

The same assumption applies to the time on the sensing pad in between resting periods:

- If the fly is on the pad for less than 5 seconds in between resting periods, then the three periods altogether are considered as one resting period.
- If the fly is on the pad for 5 seconds or more in between resting periods, then we have a resting, feeding and then a resting period.

## Data Collection

For each collection of data, one fly is placed in a container with the sensing pad on which there is a small well of glucose water. Once the fly is released in the container, the data is collected for the next one hour.

## Method of Analysis

Boxplots were created for each feeding and resting period, and for fed and starved flies to compare the lengths of time. Then, a cumulative frequency graph was produced for each fed and starved flies to study the feeding behaviour.