# Dandelion design workshop 1

## Aim

To get the user perspective on the functions that the app should provide

## Overview

The main purpose of the app is to allow school students to record data from experiments related to growing plants, and to make that data available in various forms. In this workshop, you will be helping identify and structure the supporting function that must be present to allow this to happen.

In preparation, please take a look at the sections below. Each one covers a major element of the system design and includes a short set of questions. Please use the questions to note down any points about the design of the app that you think are important. Your ideas will provide useful input into the workshop event.

The agenda will be

1500 – 1520: Introduction

1520 – 1620: Interactive online exercises aimed at identifying important design factors

1620 – 1650: Interactive discussion on visual appearance and structure

1650 – 1700: Wrap-up and next steps

## Experiments

In the most formal sense, an experiment is the scientific method for testing a hypothesis. A hypothesis in turn is a theoretical relationship between variables. For example, one might suggest that a constant light level encourages faster plant growth which would lead to the following hypotheses:

**Null hypothesis**: the variability of the light level has no effect on the rate of plant growth

**Alternative hypothesis**: a constant light level has a positive influence on the rate of plant growth

The variables in this context are the light level and the rate of growth. Observations of both variables can be taken and recorded over time as part of an experiment. To test whether the hypothesis is true, the experiment would require two conditions – one with constant light levels and another with variable light levels.

At the other end of the scale, informal experiments may not define specific hypotheses or conditions and might just collect observations of a set of variables to see whether any identifiable patterns emerge.

**Questions:**

* Are there any other aspects of experiments that need to be included?
* What information needs to be captured to define/describe and experiment?
* What types of observation data does the app need to handle?
* How should the experiment definition page be laid out?

## Data visualisation

The data that is collected during experiments should be made available to interested people, and this can include the general public. This means that the app should provide functions that allow visitors to search and browse the available data, to visualise it using appropriate charts and download the data for their own use.

**Questions:**

* What search strategies do you expect users to employ when they are looking for a certain type of data?
* How should the search and browse pages be laid out?
* What sort of charts would you expect to be available?
* What interactive features would you like the charts to have?

## Projects

Some experiments may be related to each other. For example, the example used earlier may be repeated with different patterns of light level, and later experiments might be defined on the basis of findings from the earlier ones. We propose the project as a way of grouping related experiments. We also envisage the possibility of multiple schools collaborating on a single project.

**Questions:**

* What do you think of this approach?
* What information should be used to define/describe a project?
* Are collaborative projects a good idea?

## Roles

A role represents a certain combination of privileges within a system. Each user is associated with a role so that they have access to the appropriate functions. One of the main reasons for differentiating between roles is related to security. We expect there to be five roles listed below in increasing order of privilege:

* **Public**: anonymous user who can access the collected data
* **School user**: student or staff member in a participating school
* **Project participant**: student of staff member who is contributing to a project
* **School superuser**: staff member with responsibility for managing a school’s data
* **Sysadmin**: the overall system administrator who manages non-school data

**Questions:**

* Is this list of roles adequate?
* Are any of these roles unnecessary?
* What specific functions would each role need?