

## **Possible goals regarding this experimental kit.**

**This is not an exhausting list. It is only indicative.**

**The stated list varies according to the age of the students. They should be build up gradually. Not all goals will be reached with this kit, it will only help to reach them.**

### **1 Health:**

The students

- 1.1 apply safety regulations
- 1.2 pay attention to possible risks related to experiments
- 1.3 can cope with stress, disappointments and a strict working schedule.

### **2 Learning:**

The students

- 2.1 Can adapt and adopt learning styles, visions on learning and motivation for learning
- 2.2 Can gather information from different sources in view of a better understanding of phenomena and analyse them critically
- 2.3 Can memorise, synthesise and apply information
- 2.4 Can find strategies to find solutions for problems
- 2.5 Can work according a working schedule
- 2.6 Can adapt a schedule if this should be necessary
- 2.7 Should realise that success and failure have objective reasons
- 2.8 Should get insight in their own interest, capacities and develop them according to the best personal strategy
- 2.9 Should be able to make strategic choices

### **3 Environment**

The students

- 3.1 Should use materials according to environmental rules
- 3.2 Should be aware that solutions for environmental problems depends on many factors

## **4 Social skills**

The students

- 4.1 Should develop social skills such as engagement, leadership, responsibility, cooperation, criticism.
- 4.2 Should develop communication skills such as communicative techniques, active listening, taking decisions on their own point of view, having respect for others' point of view.
- 4.3 Should build personal relationships, should respect others' feelings and personality.
- 4.4 Should learn to work together, do research in group, participate in group discussions and group building activities, should be able to give feedback on cooperation projects.

## **5 Technology**

- 5.1 The students should understand the role of technology in our society and get insight in the historical development of it.

## **6 Attitude**

- 6.1 The students develop a positive attitude towards science and technology.

## **Common goals for all sciences**

### **7 Investigative learning-learn to do research**

- 7.1 The students
- 7.2 Can find relevant parameters for a phenomenon, find information on them and apply them in their search for understanding
- 7.3 Can formulate the conditions of investigation
- 7.4 Can find information and arguments to support their opinion or to counter others' opinions
- 7.5 Can find different ideas regarding the solution of problems or explanation of phenomena, select them and give an opinion on each of them
- 7.6 Can link phenomena to daily life processes or apparatus
- 7.7 Can observe precisely certain processes and express their observations orally and written in correct wordings
- 7.8 Can report on a research project alone or in group

## **8 Science and society**

The students

- 8.1 Can give examples of milestones in history of sciences
- 8.2 Can give an example of how new ideas gradually get accepted by society
- 8.3 Understand that cooperation between natural sciences can lead to fruitful new knowledge
- 8.4 Can illustrate with an example that natural sciences are part of the culture
- 8.5 Realise how important natural sciences are if it comes to solving environmental problems

## **9 Attitudes**

The students

- 9.1 Are motivated to give their own opinion
- 9.2 Take other opinions into account
- 9.3 Are prepared to present results in an objective way
- 9.4 Draw conclusions which can be argued
- 9.5 Stick to rules and regulations if it comes to performing tasks

## **Goals, specifically for physics**

The students

- 9.6 Can use quantities and their units in a consequent way
- 9.7 Know the definitions of the quantities used
- 9.8 Know formulae related to these quantities
- 9.9 Apply the principles and formula of hydrostatic pressure, the gas laws, Hooke's law, work, energy and power, heat, charge, electricity and magnetism, velocity, speed, acceleration, forces and momentum, Matter en radiation, vibrations, harmonic motions and waves, and in general all major laws of physics
- 9.10 Understand the use of measuring instruments and can determine which instrument is best for a certain measurement.
- 9.11 Understand the role of physics in certain professions