

# Teaching climate effects on plant growth in primary schools of rural areas

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BACKGROUND:



- To build a **partnership** among teachers and scientists
- To bring **scientific activities** (hands-on, experiments, data analysis...) in class
- To create an **European network** of students and teachers

## ABSTRACT

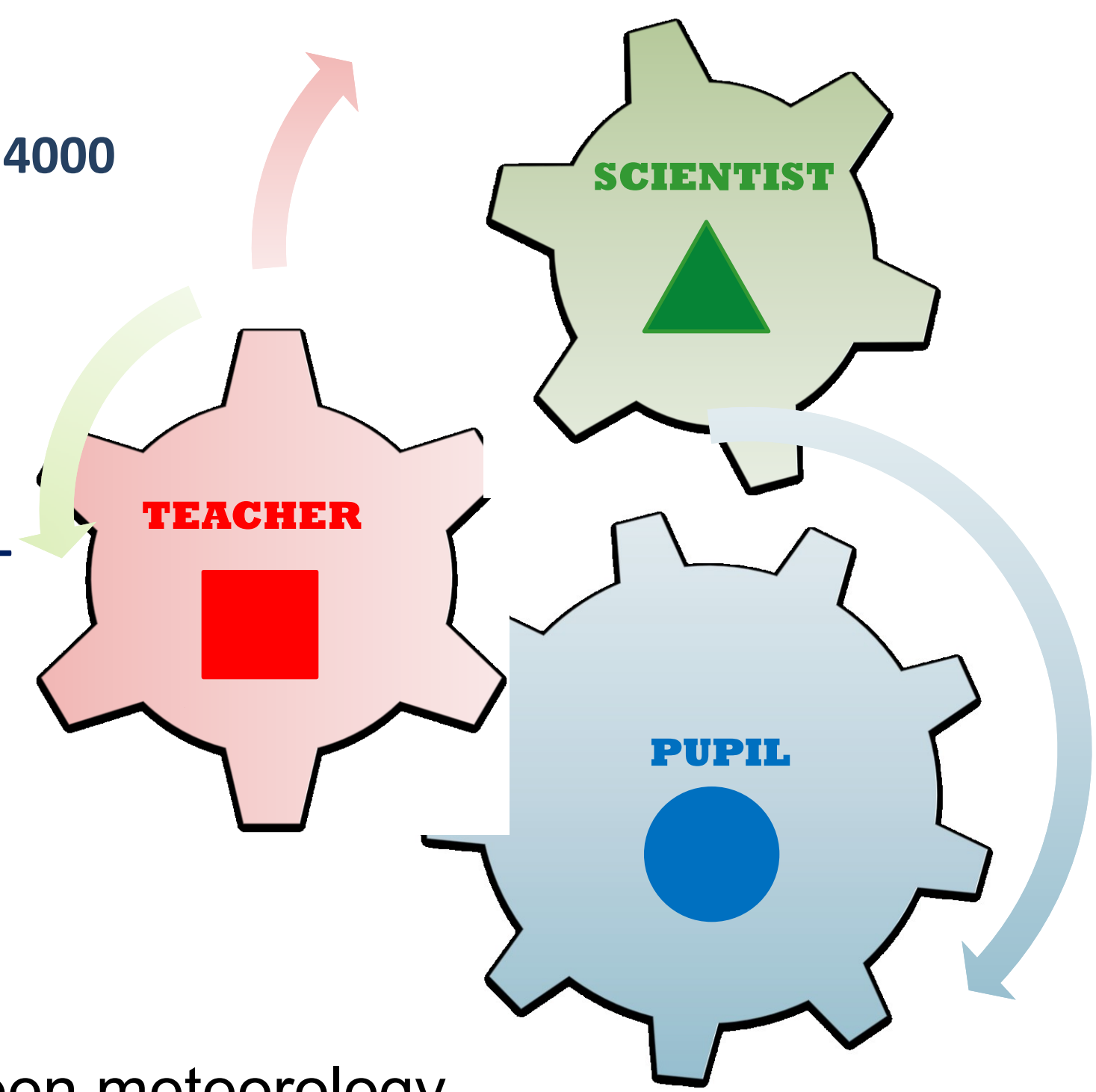
Since 2009 CNR-Ibmimet has developed activities on climate effects on plant growth as curricula activities for primary schools in rural areas, whose principal aim was approaching the pupils to the concepts of environmental and climatic factors that are necessary and influence plant growth. The activities were structured following the approach designed and promoted by CarboSchools, an European project where scientists met school teachers and pupils to introduce and experiment carbon cycle and local and global impacts of climate change on the environment. Tools and instruments were provided to perform experiments and hands-on activities on the base of the major teaching in CarboSchools experience: students' interest in science can be fostered by the application of experiments in school science. The aim of this work is to present the organization and structure of the activities performed in primary schools and the main outcomes. In the first part of the school year, traditional frontal lessons on meteorology and climatology, factors affecting plant growth and plant observation methods were performed with an extensive support of experiments and practical activities. In the second part, pupils monitored the growth and health of some plants to observe the reaction to meteorological conditions and particularly to temperature. Each classroom was provided by a maximum-minimum thermometer and phenological paper forms to describe plants according to a reference guide provided by the scientists. Finally they produced a diary where they described their work and their observations. In conclusion, the results of these activities showed that learning through observation and inquiry stimulates pupils' interest in Science and is an effective method to approach pupils to phytoclimatology and phenology.



## WHERE



- Location:** Valsugana Valley and Tesino Valley  
 South-Eastern part of the Alpine chain,  
**Altitude range:** ~400-860 m a.s.l. **Climate:** Alpine  
**Place:** Scurelle Villagnedo Castel Tesino **Total population:** ~ 4000  
**Participants:** 6 classes, 87 pupils 7-10 y.o
- Location:** Casentino Valley  
 North-Eastern part of the Appenine chain,  
**Altitude range:** ~400-700 m a.s.l. **Climate:** Mediterranean - Continental  
**Place:** San Piero in Frassinio **Total population:** ~ 876  
**Participants:** 5 classes, 56 pupils 7-10 y.o



## PRECONDITIONS:

- Need that pupils know more about the local vegetation and climate
- Need of promotion of good and sane alimentation and use of season vegetables

## STRENGTH POINTS:

- 6-10 years old pupils are curious, observe, discover
- Scientist is available for the scientific guidance
- Teachers help in organization and communication

## AIMS:

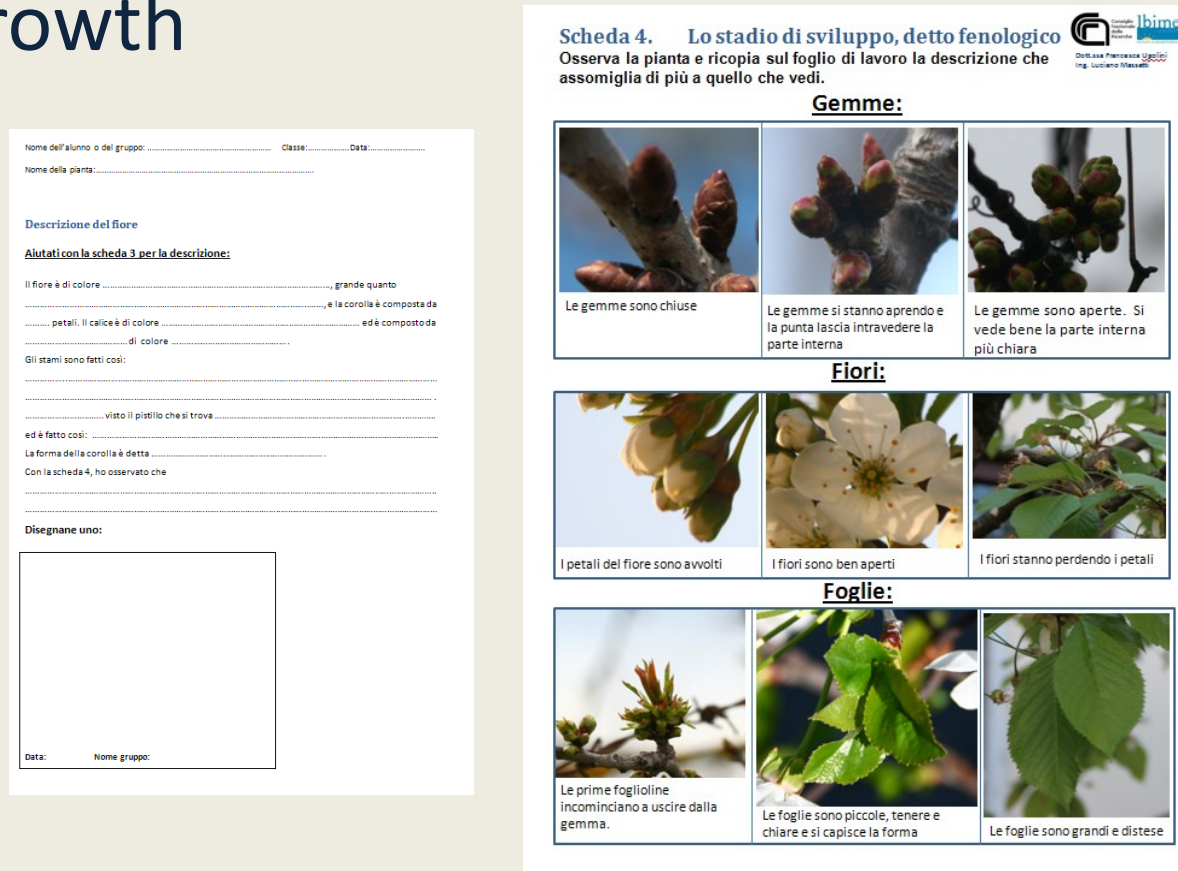
- Understand the difference between meteorology and climatology
- Understand plant adaptation to the Alpine and Appenine climate by morphology's characteristics and phenology
- Understand the needed factors for plant growth

## Scientists provide materials

Meteorological instruments: to collect min-max temperature and precipitation



Forms to observe and collect phenological stages of plant growth



## Scientists meet the teachers

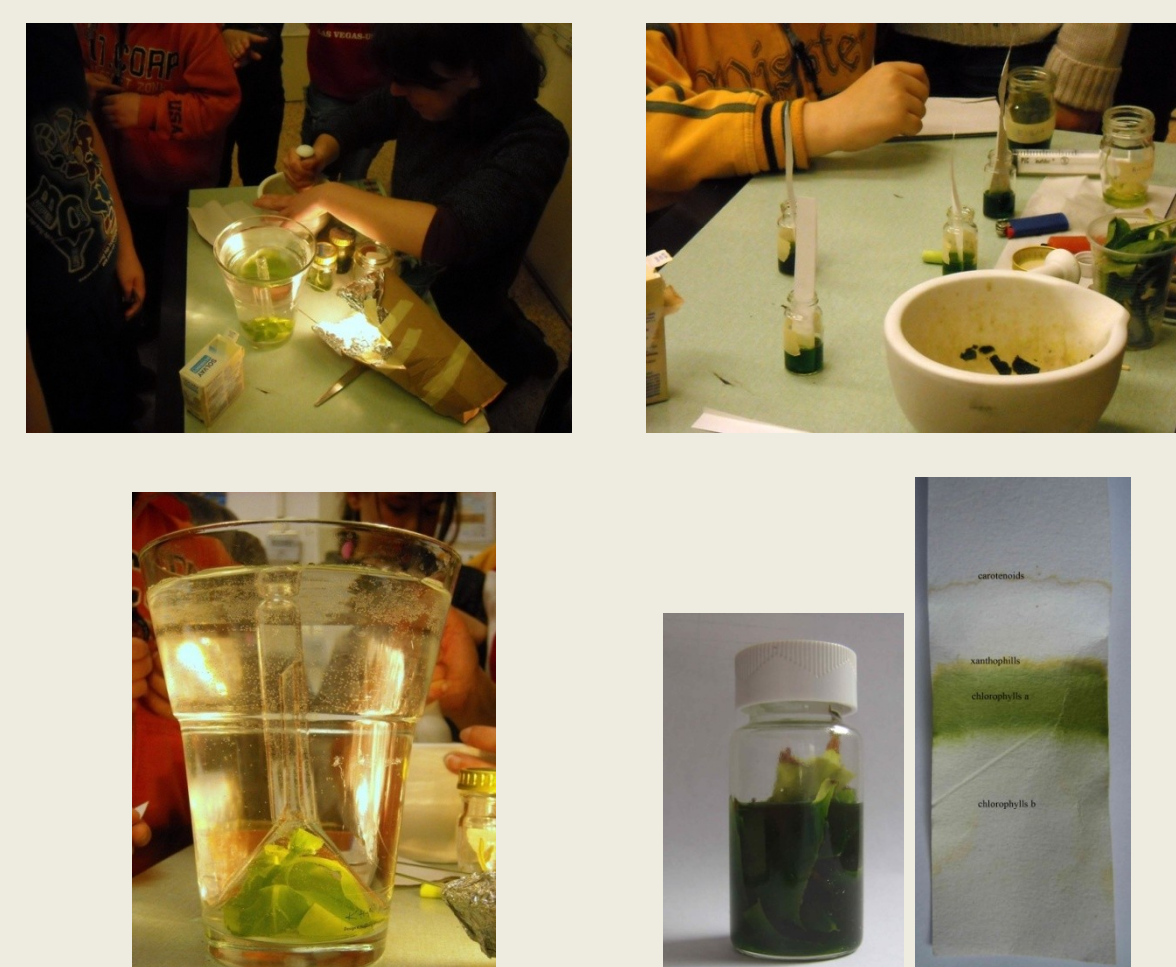
Pre-meeting to set up the activities and give them manuals, discuss and produce worksheets



## Lessons



## Experiments



## Hands-on activities



Pupils are trained by the scientist

## Outcomes

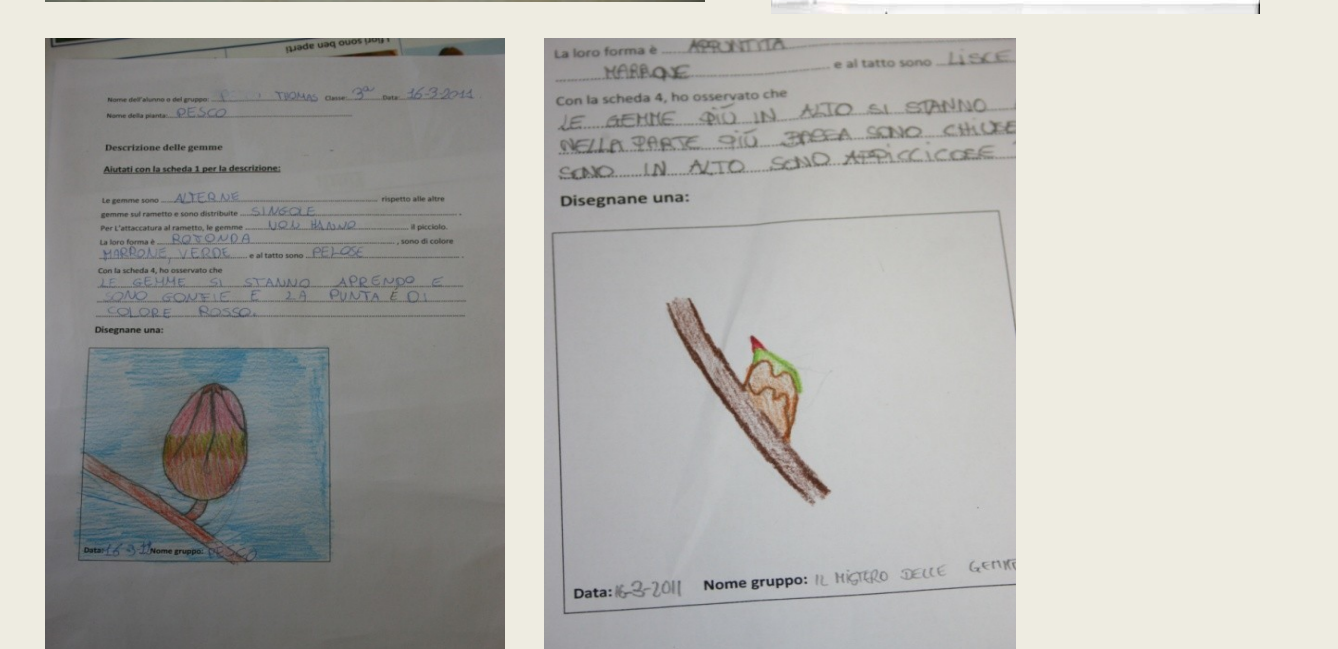
### Meteorology



### Report plant growth and suitable vegetables



### Phenology and plant observation



### Pupils present their results



## APPRECIATION

- Frontal lesson 😊😊😊
- Experiments 😊😊😊
- Hands-on activities 😊😊😊