



Teaching climate science

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In Portugal, geosciences are included in the program of study of the primary (grade 1-9, for students between the ages of 6-14 years) and secondary school (grades 10-12, between the ages of 15-18 years) in the disciplines of geography, natural sciences and in physical sciences. The concepts of temperature, pressure, precipitation, humidity and radiation are introduced. Weather and its spatial and temporal variable behavior are discussed. Climate classification, climate change and the relation between climate and the biosphere are explored. Special attention is devoted to the development of capabilities of observation, using instruments, record and analyzes the compiled data.

We develop a set of procedures to explore the statistical nature of the climatology and to put in evidence the relation and differences with the weather. We intent to expose the relation between the different meteorological variables, to evaluate and represent their spatial and temporal variability, in particular the daily and annual cycles, the monthly climatology and the occurrence of extremes.

We start by explaining the functioning of the meteorological instruments, to measure and to record the value of some meteorological variables. Then, students are invited to use the available long time series or to search and download such data from the web. Finally, they have to use their mathematical and statistical knowledge to extract and expose major climate characteristics from the data.