Build a welcoming classroom. Identify the particular light intensity needs in your classroom to perform a specific activity.

Collect data thanks to the board and its embedded sensors

In building a cosy classroom we need to ensure that we have the appropriate amount of light for the type of activity we need to perform. Which lighting needs do we have?
This activity could also be carried out with many variations, depending on the type of sensors available. For example, with temperature and CO2 sensors we could investigate how to keep a good air quality with a warm enough temperature or keep the classroom to an appropriate level of noise.

This project is focused on achieving good lighting for different types of activity (for example, an activity that needs concentration, and a general activity, such as listening to the teacher). The aim is that students identify that the lighting might need to be different according to the needs (both because of how it makes you feel and for visual health). So the main solution would be to use the light sensor.

Display the data to get the needed information

We need to show the data gathered about light intensity to study the different lighting requirements, or if we need to add an extra light (and where). Different ideas can be implemented, such as the use of a LED to show low levels of light. The optimal solution would be to transfer the data gathered to a computer so we could obtain a graph of the measure in real time.

Analyse the data and learn from them

As we are able to gather and display data, we can learn about different topics as:

- (Bio) Living beings interact with the environment and adapt themselves to external circumstances. A variation of this project could be to study how different plants are adapted to different light intensities, and which features make them to better capture the sun and where do they live so they are adapted to shadow and study these adaptations in relation to plant photosynthesis.
- (Phys) light travels in straight lines. The intensity of light declines as we are far from the light source (that is why in winter and at the beginning and at the end of the day there is less light intensity). We could also study how the light intensity declines (quadratic measure) to study which is the best high to install extra lights.

Data can be shown in real-time, but for longer data gathering it would also be good to download the gathered data in a CSV format and use a spreadsheet to analyse it.

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