Exploring the classroom environment

Duration	**1–2 hours on several consecutive days**
Time of year	**Any**
Place	**Classroom**
Materials	**Paper, thermo-hygrometer, poster paper**
Aims	• **To highlight the importance of environmental factors such as temperature and humidity in improving comfort in the classroom**
Methods	**Experiment, discussion, brainstorming**

DISCUSSION

Ideal indoor environment

- Before the activities, a class discussion should focus on whether the children feel comfortable in their classroom. The following facts should guide the discussion:
  - High indoor concentrations of CO_2 affect children's attention span and result in tiredness and a loss of concentration.
  - Higher indoor CO_2 levels have been associated with the increased probability of communicable infections, asthmatic symptoms, absenteeism and impaired academic performance among children.
  - Higher ventilation rates can reduce concentrations of indoor mould. There is evidence linking high microbial concentrations with general and respiratory symptoms in children.

- Ask the children whether they think the temperature in the classroom makes a difference to how well they study. Are they aware of differences in the classroom environment (temperature and humidity) during different periods of the school year?

GROUP WORK

Measuring temperature and humidity

- Show the children how to use a thermo-hygrometer. Divide the class into six or eight small groups and assign each group the task of measuring and recording air temperature and humidity inside the room and outside the window. In the course of one week each group should take measurements at a different time of the day, preferably between classes.

- At the end of the week the collected data should be presented on a chart or graph and discussed with the class:
  - Do the temperature and humidity values in the outdoor and indoor air change in the course of the day? By how much?
  - What might be some of the reasons for this variation?
  - Compare the indoor values with the optimal values for temperature (20°C to 24°C) and humidity (40 to 60 percent). How much do they differ?

GROUP WORK

Exploring the classroom

- Divide the children into small working groups and assign different tasks such as "temperature explorers" and "humidity explorers". The temperature explorers might, for example, identify the coolest and hottest areas in the classroom (including windows, doors and stairways). The humidity explorers might look for condensation or visible signs of humidity on the windows, walls and surfaces. This activity might be extended to the entire school building, including kitchens, cloakrooms and gym.

- Discuss the findings:
  - Which are the coolest, hottest and most humid spots in the classroom?
  - What might explain the differences in temperature or humidity?
  - Are there any visible signs of mould growth or distinctive smells?
  - What simple measures can be taken to help control temperature and humidity in the classroom?

During hot summers:

- increase indoor air movement by using fans
- make sure the windows can be opened easily
- wear lighter clothes
- drink plenty of water

During cold winters:

- check temperature and humidity levels
- check if windows and doors are properly closed and thermo-isolated
- ventilate or open the windows if the room is stuffy