

Framework/Synopsis of the module “Is air matter?”

Sequences	Initial question	Activities undertaken with the pupils	Knowledge and know-how brought into play	Linguistic activities
Sequence 1	What is in the bags hidden inside the boxes?	Handle the bags containing different materials without seeing them, feel, experience sensations, characterize these, name them, then pass on information about them and compare them with those experienced by fellow pupils.	A sensory approach to the states of matter. Distinguish these states by some of their properties: rigid, solid, soft, heavy, light, heat conduction (cold or warm feeling), etc.	The pupils describe what they have felt orally (name, describe). A collective written record is drawn up.
Sequence 2	What do we know about air?	The teacher arranges a collective discussion of the pupils' ideas about air: where do we find it? What is its purpose?, etc.	Pupils' ideas about air. Awareness of the fact that not everyone in the class agrees on the existence of air, where it is to be found, its role, etc.	Debate with fellow pupils. Give expression to spontaneous notions built up from everyday experience. Draw up a collective written record, maintaining a distance from the spontaneous notions.
	Can you catch air?	Think of a way of filling a bag with air: open the bag with the class; blow into it; run in the playground with the bag; etc.	Know how to perform a simple experiment: open the bag, fill it with air, seal it. Air exists and is matter because one can catch it and fill a container with it.	Describe an experimental procedure orally.
Sequence 3	How can one prove that the bag contains something?	Think of an experiment to answer the initial question. By analogy with situations in everyday life, the pupils suggest 'emptying' the bag after piercing it. They think they feel the air coming out. The perceived failure of this experiment leads the teacher to organize a debate to enable the pupils to overcome this setback by thinking up new experiments.	Perform an experiment according to an established procedure. Know how to extract information from it. Realize that an experiment 'is not working': air is not a palpable substance like a solid or a liquid. First distinction between gaseous and liquid states. Challenge the experimental procedure in order to work out a new one.	Write down an experimental procedure in small groups. Present it to the whole class and argue it through.
Sequence 4	How can one recover the air from the bag?	Think of a new experiment. Perform it and modify it if necessary to decant the air from the bag into a bottle filled with water.	Effective realization of an experimental approach. The air can be decanted: it is matter.	Write down an experimental procedure. Write down an account of the experiment.