The role of bogs as collectors and preservers of clean water

1. Background:

Bogs and peatlands make up about 20% of the area. Bogs are a later stage of peatlands where in too damp an environment half-decomposed peat moss and other mosses are deposited as peat, making up peat layers several metres thick. The main creator of peat is peat moss. About 1 – 2 millimetres of peat is added every year. Peat moss can filtrate ten times more water per year than a forest. Due to its construction peat moss is capable to absorb many more times of water than its own weight. The construction of peat moss leaves is peculiar. There are dead empty cells which act as small vessels of water. Springs and water lines have their start in the bogs, feeding the layers of groundwater with clean fresh water. Bogs also absorb carbon from the atmosphere because peat does not decompose to the end in damp environment.

In the course of dreinage the level of water lowers and peat decomposes with the help of oxygen, releasing a large amount of carbon oxide into the atmosphere and increasing the greenhouse effect. Drainage and peat mining also contributes to lowering of water level and springs are not able to feed the layers of ground water any more.

In bogs you can find special and very interesting plants which love humidity. For many centuries bogs have been the source of mushrooms and berries for people. Bogs were a hiding place from the enemy in the past. Today they are valuable resting places and have great aesthetic value.

2. Read the story and state the problems:

Behind a small village there was a bog where village people had been mushrooming and picking berries for years. The bog was a good place for nice walks, too. People went there to watch birds or skating in winter. The community was not rich and when someone suggested founding a peat mine in the bog and selling peat to Holland, after a sort hesitation people agreed to that. They hoped to get more working places and good money. Soon peat mining was going on at full speed. Next summer the wells were dry and there were almost no berries in the bog. The moss was dry and the plants had dried up. Local people blamed the peat mine for this.

2.1.First problem:

2.2.Second problem:

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3. Experiment

3.1.State the question:

3.2.State the presumption:

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* Equipment: scales, dry peat moss, other type of moss, bowls, sieves, tissues
1. Take 10 grams of dry peat moss and 10 grams of other kind of moss
2. Put the mosses into water for 20 minutes
* Half-fill the bowls with water
3. After 20 minutes weigh the mosses.
4. The weight of peat moss:

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5. The weight of other type of moss:

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6. The difference:

4.Conclusions:

4.1.Why was the moss heavier after having been submerged into water?

4.2.Which moss was heavier?

4.3.What is your conclusion?

4.4.Did you presume the result correctly?

4.5.What is the importance of bogs and peatlands in the circulation of water?

4.6.What are other ecological values of bogs and peatlands?

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5. Write a short report about the research work you have just completed and introduce the importance of bogs in water circulation.

* Take a dry leaf of peat moss
* Drop some water onto the leaf. What happens?
