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**Lesson Scenario 4**

**School: I Społeczne Gimnazjum im. UE in Zamość, Poland**

**School Subjects: Biology and Maths**

**Topic: Applying functional Maths in Biology; Migration of storks across Europe.**

**Teaching aids and materials :** a map, a model of a stork, photographs, atlases, charts (wall charts),
a geographical atlas, worksheets and task sheets

**Methods and techniques:**

* teamwork
* working with worksheets

**Introduction**

Students present information about bird anatomy gained so far and discuss birds’ various adaptations for flight.

**Procedure**

1. Teacher explains teamwork rules to students. Each team picks one worksheet. Next each team members search for necessary information using available resources or analyse prescribed texts or maps.
2. Students complete their worksheets.
3. The teacher supervises their work
4. Students present the results of their work to the whole class.

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**WORKSHEETS**

**Workstation I**

Complete the chart. An interview with the manager of the local zoological garden.

Take measurements : a stork’s height and wingspread – a model.

Worksheet.

|  |  |
| --- | --- |
| Height |  |
| Wingspread |  |
| Weight |  |
| Lifespan |  |
| First hatchings |  |
| Number of eggs in a nest  |  |
| Length of clutching  |  |
| Nestlings – when they perform their first flight after hatching |  |

**Workstation II.**

Worksheet.

Mark a stork’s flight route on the world map.

Knowing that a stork makes 200 km a day, calculate the flight speed. Use appropriate formula to you’re your calculation.

Measure the length of a stork’s flying route from your country/place of living to Africa.

Check the map’s scale. Calculate the real distance that storks make.

|  |  |
| --- | --- |
| Flight speed |  |
| Distance from your place to Africa |  |
| Map’s scale |  |
| Real distance |  |

**Workstation III**

Worksheet.

Text analysis. Breeding area of the white stork covers almost the whole territory of Europe ( excluding the British Isles and Scandinavian Peninsula), Asia Minor and northern part of Africa. In the years 2004-2005 the world breeding population number of white storks was estimated as 230 000 couples, out of which 52500 nested in Poland. In the same period of time 33 217 couples nested in Spain, 30 000 in Ukraine, 20 342 in Belarus, 13 000 in Lithuania and 10 700 in Latvia. In Denmark, Sweden or Italy, the white stork is a very rare bird. According to the latest census, the number of breeding couples in these countries amounted to 3.29 and 63 respectively.

Draw a bar chart presenting storks nesting in individual countries.

Make analysis and draw conclusions.

Calculate the percentage number of storks nesting in Poland.

|  |  |
| --- | --- |
| Bar chart |  |
| % of storks nesting in Poland |  |
| Conclusions |  |

**Worksheet II**

Mark a stork’s flight route on the world map.

Knowing that a stork makes 200 km a day, calculate the flight speed. Use appropriate formula to make your calculation.

Measure the length of a stork’s flying route from your country/place of living to Africa.

Check the map’s scale. Calculate the real distance that storks make.

|  |  |
| --- | --- |
| Stork’s flight speed V =distance : time | Calculations |
| Route length on the map (straight line) |  |
| Map’s scale |  |
| Real distance | Calculations |