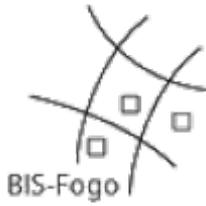


Activity 06: Taxonomy and identification of species

Systematics - Bringing order to the chaos



Objective: Creating one's own classification system for animals and getting an insight into different criteria and possibilities for classification.

Learning outcomes: Learners are able to classify animals on the basis of individually chosen criteria. They are able to justify this classification. They can come to a reasonable conclusion of whether an animal fits into a group of related animals.

Previous knowledge: none

Duration: 30 min

Materials / Conditions: worksheet, (internet access)

Methods / Techniques: Describing, criteria-based comparison, creative thinking

Learning subject: Biodiversity / Module 3: Collecting, editing and analysing environmental data / Level: First contact

Introduction:

Earth is inhabited by millions of different animal species of which many are still unknown. How can one get an overview of this chaos? To describe animals and assign them to other related species we need a sensible classification system. Based on which characteristics can we create such a system?

Instruction:

1. Group the animals on the worksheet and describe according to which characteristics you did so. If you work with a partner or in a group, discuss your characteristics. In case you do not know the animals you can check their names on the internet.
2. Now, try to find a heading for each of the groups you created.
3. The quiz on the worksheet lists 4 animals of which three are related more closely than the fourth one. Find out which one of the 4 does not belong to the others and give reasons for your choice.

Resources:

Worksheet: Systematics-Bringing order to the chaos

Task 1:

brown-necked raven, gorilla, horse, goanna, rhino, sardine, dog
whale, lion, stork, hamster, degu, ant, goat cream-coloured
courser, turtle, scorpion, guenon, rat, butterfly, dolphin
eel, cat, mouse, bee, iguana, coral fish, cockroach, brown bear
chimpanzee, gecko, osprey, cow, orang-utan, seal, spider

Task 3:

1. wolf, mouse, tiger, polar bear
2. lark, osprey, grey-headed kingfisher, bat
3. gorilla, dolphin, turtle, elephant
4. clown fish, parrotfish, surgeon fish, whale
5. camel, chimpanzee, donkey, goat

6. squirrel, guinea-pig, hamster, deer
7. scorpion, alligator, snake, gecko
8. snout beetle, spider, cockroach, wasp

Possible results / Results:

1. Criteria could be: morphologic characteristics, habitat, nutrition (carnivores/herbivores/omnivores), locomotion, size, reproduction (egg-laying/live-bearing), relationship to humans (domestic animals/farm animals/wild animals), emotional criteria (disgusting/dangerous/beautiful/exotic animals)
2. For example: mammals (monkeys, carnivores, hoofed animals, rodents, marine mammals), birds, fish, reptiles, arachnids/spiders, insects
3. (1) mouse, (2) bat, (3) turtle, (4) whale, (5) chimpanzee, (6) deer, (7) scorpion, (8) spider

This unit is based on an idea taken from: Galland, B. (1982): Wir ordnen häufige Frühblüher. Unterricht Biologie 68: 25-27. and Kattmann, U., M. Fischbeck und E. Sander (1996): Von Systematik nur eine Spur: Wie Schüler Tiere ordnen. Unterricht Biologie 218: 50-53.

Related activities:

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