Unplugged Activity

Title: WHO 's WHO?

Educational level: **Second Cycle.**
Curricular areas: **Natural Science.**
Timing: **1 session of 45 minutes (second term).**

Summary

In this activity, students will be introduced to binary code and animal classification. They must guess which animal corresponds to the binary number given to them at the beginning of the lesson. Write down number 1 if it meets the classification criteria otherwise number zero.

Aims

- Introduce binary code and promote computational thinking.
- Learn to classify animals based on various criteria.
- Develop communication and cooperation skills.
- Make quick decisions and solve problems in real-time.
- Respect other's different opinions.
- Learn to take turns.

Key competencies to develop: Personal, social and learning to learn, mathematical competence and basic competencies in science, technology, and engineering.

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How do we do it?

1. Before the activity, print the sheets double-sided and place them in a visible area of the classroom where students can access them. It is also advisable to laminate them.

2. In a large group, explain the basic concepts of the activity:

    a. **Binary Code:** Computers and mobile phones use zeros and ones to process and display information. In this case, a 0 means that the animal does not meet one of the classification criteria (e.g., does not eat meat) and a 1 means it does (e.g., eats meat).

    b. **Animal Classification in Computational Language:** The questions are framed so that they can be answered with a yes or no (1 and 0). To classify by diet, ask if they eat meat. Omnivores and carnivores fall within those that meet the condition (1), while vegetarians do not (0).

3. On the board or posters distributed around the classroom, display the criteria or conditions corresponding to each figure in the binary number.

4. Students are divided into pairs. Each group receives three binary numbers and moves around the classroom searching for the animals that meet those criteria and noting their names. In case of doubt, the characteristics of the animal are written on the back side of its sheet.

5. Once the activity is completed, gather the whole class in a large group and discuss the classification criteria, relating them to commonly used ones (carnivore, mammal, etc.).

Suggestions

The activity can be conducted collaboratively with groups from the upper primary cycle. Older students can select the animals, criteria, calculate the binary number, etc.

The activity is suitable for any type of classification and can be adapted to various levels and content.

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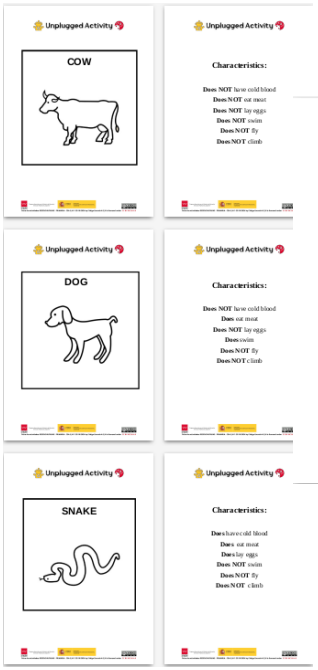
Resources

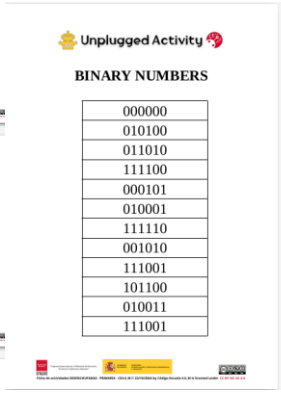
- **Human:** teacher and students.
- **Material:** 12 double-sided printed A4 sheets.

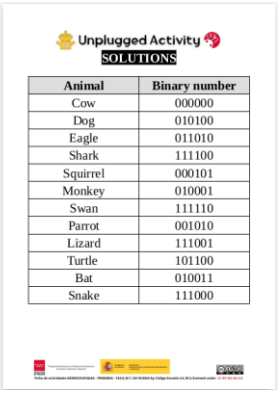
Space: classroom.

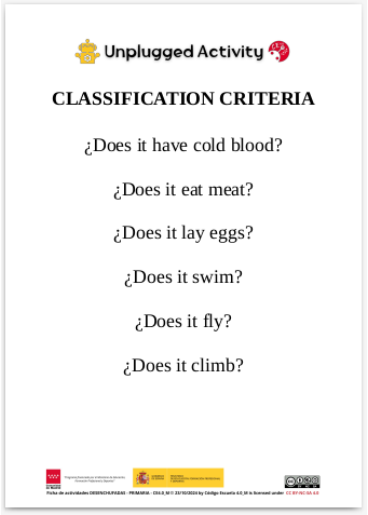
Type of activity: small groups.

- PDF Animals and characteristics.
- PDF Animals' binary numbers.
- PDF Classification criteria.









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What have we learned?

Assessment Criteria	4 Excellent	3 Very good	2 Satisfactory	1 Needs improvement
Identify animals logically and systematically.	Identifies animals logically and systematically.	Identifies all three animals but not systematically.	Identifies 1 or 2 animals but not all 3.	Does not identify any animals.
Learn the main characteristics of animals.	Knows the characteristics of the animals.	Knows almost all the characteristics of the animals.	Does not know all the characteristics of the animals.	Does not know the characteristics of the animals.
Understand how binary code works.	Understands how it works and uses it to complete the activity quickly.	Understands how binary code works.	Understands how it works but is frequently confused.	Does not understand how binary code works.
Relate characteristics to the classification of animals.	Knows and relates the classification to the characteristics .	Knows the classification and relates it to some characteristics.	Knows the classification but does not identify the criteria.	Does not know the classification of the animals.

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Computational Thinking

Logic (prediction and analysis): thinking to solve problems and make decisions based on available information.

Algorithms (steps and rules): is a step-by-step process that solves a problem or completes a task.

Decomposition (breaking down into smaller parts): breaking down problems into smaller and more manageable parts, which are easier to understand and solve.

Patterns (recognise and use similarities): recognising similarities or patterns in problems or data, which means come up with solutions quickly and effectively.

More information

QR codes to the activity resources:

Animals and characteristics

Animals' binary numbers

Classification criteria

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