

Using LEGO bricks to practice Taxonomy

General information			
Respective blueprint	Using LEGO bricks to practice Taxonomy		
Description	Taxonomy in biology classes is not a very attractive topic. In fact, it can become motivating if we put students in a situation where they have to do a classification. This is a simple lesson where we use LEGO or LEGO-like blocks that take on the roles of different organisms that need to be sorted into groups. This is about finding common characteristics among «organisms» and classifying them, as Carl Linnaeus did in his time with real organisms, and scientists who deal with systematics today do it in a similar way.		
Learning objectives	<ul style="list-style-type: none"> • discovering similarities and differences • classifying based on common characteristics • giving names that are based on characteristics 		
Related curricular subjects	Art, Mathematics, Science		
Duration	90 minutes		
Level of difficulty	Basic	Medium	Advanced
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Inclusivity guidelines			
How to integrate students with SLD	Depending on the disorder, use smaller amounts of bricks or bigger bricks (for example, LEGO Duplo) Avoid distractions and unnecessary information.		
How to integrate students who work faster	Students who work faster can go on with the division of bricks as there are more categories in the taxonomy.		

Step-by-step description of the lesson

Step 1: Introduction to taxonomy

Estimated time: 10

Ask students what taxonomy is and if they ever heard that word. To explain the taxonomy and work of Carl Linnaeus, use the presentation *Carl Linnaeus and Taxonomy*.

To explain to students their task, use presentation, too.

Step 2: Work in groups

Estimated time: 60

Students are divided into groups. Each group gets a bag of bricks and printed tables. They discuss about common characteristics of bricks and make the first division (type). Then second (size), then third (colour)... Invite students to discuss common characteristics. In the end, they can give names to the bricks according to their characteristics.

Step 3: Conclusion and evaluation

Estimated time: 20

Ask students their opinion about the work of Carl Linnaeus. Was it an easy work? How did he feel when he got a dried plant that someone sent to him, and he had to name it?

Assessment activities

Activity 1: Evaluation of the group work

Each student gets a template for evaluation of the group work.

Activity 2: Answer the questions

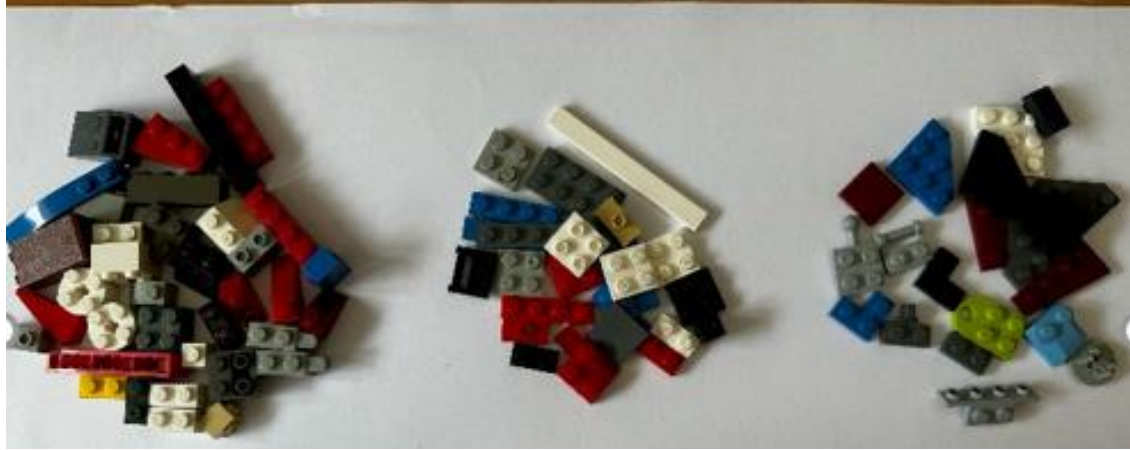
Each student gets a worksheet with questions.

Attachments

- Presentation of Carl Linnaeus and Taxonomy
- Table_Lego_example
- Table LEGO empty(template)
- Self-evaluation of group work template
- Questions worksheet

Table Lego example:

TYPES OF THE BRICKS:



TYPE: THICK

TYPE: THICK – RIGHT ANGULAR

TYPE: THICK – NOT RIGHT
ANGULAR

GROUPING BRICKS INSIDE TYPE:

TYPE: THICK	SIZE:
	SIX DOTS
	FOUR DOTS (LINE)
	FOUR DOTS (ANGLE)
	THREE DOTS
	TWO DOTS
	ONE DOT

GROUPING BRICKS INSIDE SIZE:

SIZE	COLOUR
SIZE 6 DOTS 	BLACK
SIZE 4 DOTS (LINE) 	GREY RED
SIZE: 4 DOTS (ANGLE) 	GREY WHITE
SIZE: 3 DOTS 	RED GREY
SIZE: 2 DOTS 	WHITE GREY


	<p>RED</p> <p>BLUE</p> <p>BLACK</p> <p>BROWN</p> <p>YELLOW</p>

Table Lego empty (template)

TYPES OF THE BRICKS:

TYPE:	TYPE:	TYPE:

GROUPING BRICKS INSIDE TYPE:

TYPE:	SIZE:

GROUPING BRICKS INSIDE SIZE:

SIZE	COLOUR

Evaluation:

SELF-EVALUATION OF THE GROUP WORK

WHAT IS EVALUATED?	✓ OR -
A. We completed the task successfully.	
B. All members of the group participated in the execution of the task.	
C. Each member of the group performed their part of the task responsibly.	
D. During the work in the group, we respected each other's different opinions.	
E. My participation in the execution of the task significantly contributed to the final results of the work.	
F. Working in a group makes it easier for me to understand the topic.	
G. I can successfully explain the topic we learned about by working in a group.	

Questions:

Answer the questions: Practising Taxonomy.

Choose the correct answer:

1. Who was Carl Linnaeus?

- A. He was a famous underwater explorer.
- B. He was a Swedish botanist known as the father of modern taxonomy
- C. He was a French botanist known as the father of modern genetics.

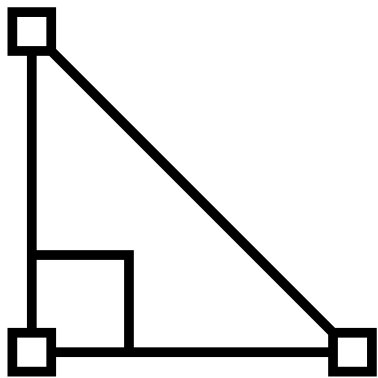
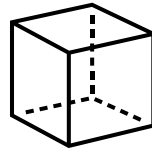
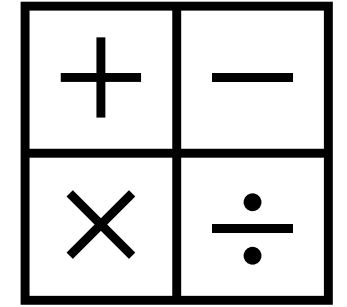
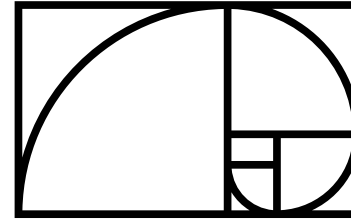
2. What is taxonomy?

- A. It is a science that helps us to understand how different species are related.
- B. It is a science close related to physics.
- C. It's a science that describes organisms from the past.

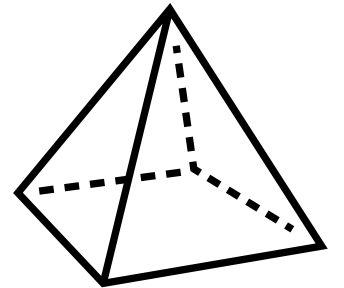
3. Write a few sentences about Carl Linnaeus's job.

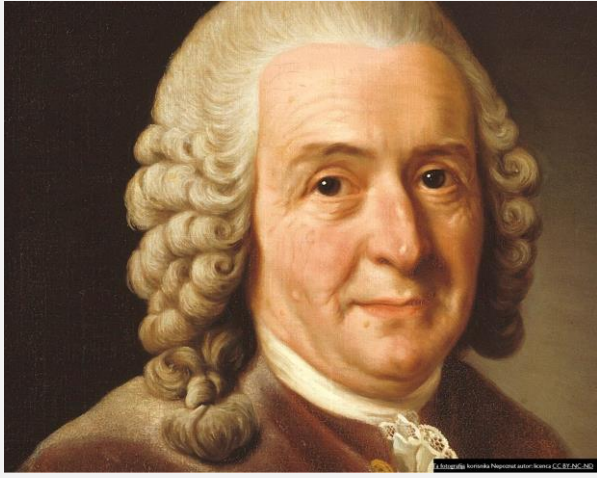
Help:

- Was his work easy?
- Did he use any kind of technology? Why?
- What do you think, in which kind of organisms was he particularly interested?



Carl Linnaeus and Taxonomy





Who was Carl Linnaeus?

- a famous scientist who revolutionized the way we classify and name living organisms
- a Swedish botanist who lived from 1707 to 1778.
- he is known as the father of modern taxonomy

What is Taxonomy?

- Taxonomy is the science of classifying and naming organisms.
- It helps us understand the diversity of life and how different species are related.

Linnaeus's contributions to taxonomy:

- Linnaeus developed a hierarchical system of classification.
- He introduced binomial nomenclature, a system of giving each species a unique two-part Latin name.
- This naming system is still used today.

FOR EXAMPLE...

- *Bellis perennis* L.
- is latin name for Daisy
- letter **L** at the end means that Carl Linnaeus named the species



What is the latin name for the human species?

Homo sapiens

The hierarchical classification system:

- Linnaeus organized organisms into a hierarchy based on their shared characteristics.
- The hierarchy starts with the broadest categories and narrows down to the most specific.
- The categories are Kingdom, Phylum, Class, Order, Family, Genus, and Species.

WHAT ARE WE GOING TO DO?

- Now imagine that you are Carl Linnaeus and somebody sent you a batch of different organisms and you have to classify and name them
- Instead of living organisms, you will get bricks (LEGO). Imagine they are organisms, and they have different characteristics

SORT THE BRICKS IN CATEGORIES AND NAME THEM

- For this example, categories are:
TYPE, SIZE and COLOUR
- Let's start practise taxonomy



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