Learning Design for: Do insects know chemistry?

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Context

Topic: Science

Total learning time: 6 hours and 15 minutes

Designed learning time: 6 hours and 15 minutes

Size of class: 18

Description: After studying inorganic chemistry, I present my students a video about the bombardier beetle, which emits a gas to defend itself that makes the enemies run away. What is this gas? How does it produce it? Let's find out together.

Mode of delivery: Classroom-based

Aims

To know how to use the scientific method to investigate reality

Outcomes

Knowledge: Know the main imorganic chemical compounds

Comprehension: Understand that the main functions of organisms are related to chemical reactions

Evaluation: Understand the importance of your mistakes to find alternative means

Synthesis: Correctly write the results of a scientific investigation

Teaching-Learning activities

Stimulating curiosity

Read Watch Listen *30 minutes* *18 students* *Tutor is available* *Online*

We'll watch the following video to stimulate students' curiosity and interest in finding solutions https://www.youtube.com/watch?v=54h1I9ykq8k

Linked resources

https://www.youtube.com/watch?v=54h1I9ykq8k

Read Watch Listen *15 minutes* *1 student* *Tutor is not available* *Online*

Individually the students will reflect on the video displayed. The students try to ask themselves questions on the video

Discuss *30 minutes* *3 students* *Tutor is not available* *Online*

Divided into 6 groups of 3 students each.
Brainstorming group activities to try to find hypotesis to what has been observed

Let's try

Investigate *2 hours* *3 students* *Tutor is not available* *Online*

Each group of students will have at their disposal the following material: concentrated hydrogen peroxide, brewer's yeast, dishwashing detergent, graduated cylinders, plastic caps, water, balloons.
They will experiment, using the available material, to verify the validity of their hypothesis

Produce *1 hour* *3 students* *Tutor is not available* *Online*

Each group will fill out a page on the netboard.me platform.
They will be inserted in it:
the initial hypotheses,
the materials they use,
the data collected,
the results of the experiments,
the resulting theory.
Everything will be completed with the photos taken during the experiments

Evaluate

Discuss *2 hours* *18 students* *Tutor is available* *Online*

For the evaluation a spokesperson from each group will present to the class the netboard page created.
The teacher will use the attached section for evaluation. It also includes a section for self-evaluation of students.

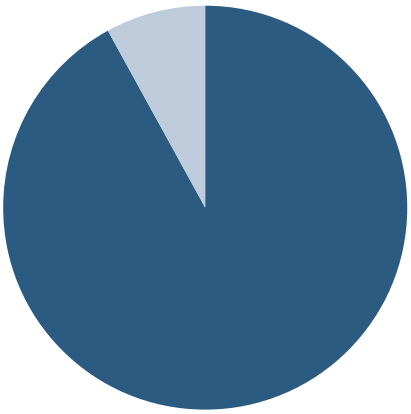
Linked resources

https://www.europeanschoolnetacademy.eu/documents/3648645/4658471/Appendix+A.pdf/310e3395-4d3d-4d96-be50-61d57800d5f7

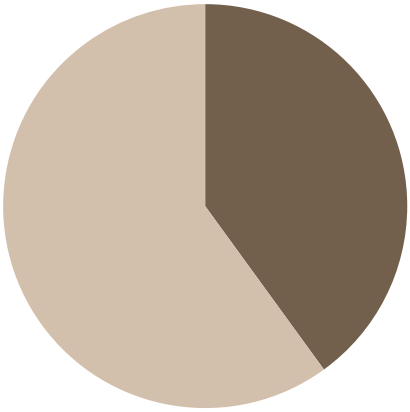
Representations of the learning experience

Learning through	Minutes	%
Acquisition (Read, Watch, Listen)	45	12
Investigation	120	32
Discussion	150	40
Practice	0	0
Collaboration	0	0
Production	60	16

	Minutes	%
Whole class	150	40
Group	210	56
Individual	15	4



	Minutes	%
Face to face	345	92
Online	30	8



	Minutes	%
Teacher present	150	40
Teacher not present	225	60