

Thank you for
invite me
to this lovely city
and
beautiful island



Eggs collision and The bottles contains

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IBSE – what do students learn

- Hard to see and be clear about
- work by the scientific working or
- natural science knowledge
- Admitted to IBSE which can be seen as ends or as means

IBSE as ends or IBSE as means

- IBSE as ends:
 - The aim is to develop inquiry skills
 - Eggs collision
- IBSE as means
 - The aim is to help the students develop understandings of science knowledge
 - The bottles contains

IBSE four phases

- **Observation and wondering**
- **Planning and Design**
- **Surveys**
- **Conclusion and communication**
- In order to plan a course, as well as identify problems and opportunities, using each face its own approach

Eggs collision

- **The aim was that students achieve competences within the work by the scientific working.**
- Tested on a science-choice team for 7th grade (age of 13-14 years old) on a Tuesday afternoon 13:00 to 15:30



Observation and wondering

Presented to the problem

- "What factors make it possible for an egg to land safely"

Being able to transport safely, has a high priority in our lives. When using different vehicles is the main passenger safety. When developing safety it is important to understand the effect of different forces on the body during a collision. To understand what happens during a collision, we use an egg to examine what happens during a collision.

- Ex. the high, speed, what it land in.

Planning and Design

Find the variables in your experiment

- **Dependent variable:**
 - can be measured or observed
- **Continuously variable:**
 - constant
- **Independent variable:**
 - do not do anything about
- Make a plan for the procedures before the experiment is started

Surveys

- Completed surveys out side
- Materials available
 - flour, water, balloon, grain, sand, bowl

Evaluation "Egg collision"

- **The aim was that students achieve competences within the work by the scientific working.**
- Formulate a hypothesis
- Planning a study variables
- Conducting a study variables

Evaluation "Egg collision"

- At first it seems chaotic. But when you get there were signs that they learned something
- One group was very systematic, if we keep the egg here, so we can hit
- Were they gripped each other's tests
- Some began to explore a solution of some kind of parachute
- Some began to try to fill the flour into a balloon
- They did their own experiences

The bottles contains

- **The aim was that students could apply the knowledge and use the tests that they have acquired through the initial term.**
- Tested in my 7 th grade physics /chemistry class
- The students have up to the course work with basic knowledge of acids and bases.



The case :The bottles contains

Two boys aged 13 have fooled around in the laboratory. They have taken a few bottles and have come to pour some of it over the themselves and one has got something in his eye.

They flushed with the eye shower and has since been rushed to the emergency room. They have taken the bottles with them to the emergency room, but unfortunately they have poured some of the contents from the bottles over the label so it is impossible to see what the bottles contains.

The doctor is very unsure of how he must treat the boys, as he actually does not know what has been in the bottle. Before the doctor can give the right treatment, he must to first find out what the bottles contains. Then he may find a way to defuse the contains in the bottles .

Planning and design

- To solve the case study, students should prepare an Photo Story movie, with their own pictures, taken during the education
- In the movie they will present their ideas on
 - how to identify the contents of the bottles,
 - as well as how to defuse the content.

Surveys

- After a discussion based on their presentations, the students now identify the contents of the bottles, using appropriate test



Evaluation "The bottles contains"

- **The aim was that students could apply the knowledge and use the tests that they have acquired through the initial term.**
- Understand chemistry concepts
- Understand a test purpose

Evaluation "The bottles contains"

- Most found out that there where a base in one bottle and a strong acid in the second bottle
- Some came with alternative solutions ex smell to it, Electricity used experiment to demonstrate
- They learned a lot from watching and listening to each other

- "I found out that in the one that was acid that was strong and in the other there was the base".
- "The stronger the acid, the more water you have to use the thinner it is the less water you have to use".

78% agreed or strongly agreed that they learned a lot about acids and bases by working with the assignment.

"It was obvious what the students had understood the substance and the misunderstandings were corrected in the final debate and testing."

Thank you for
your attention!



