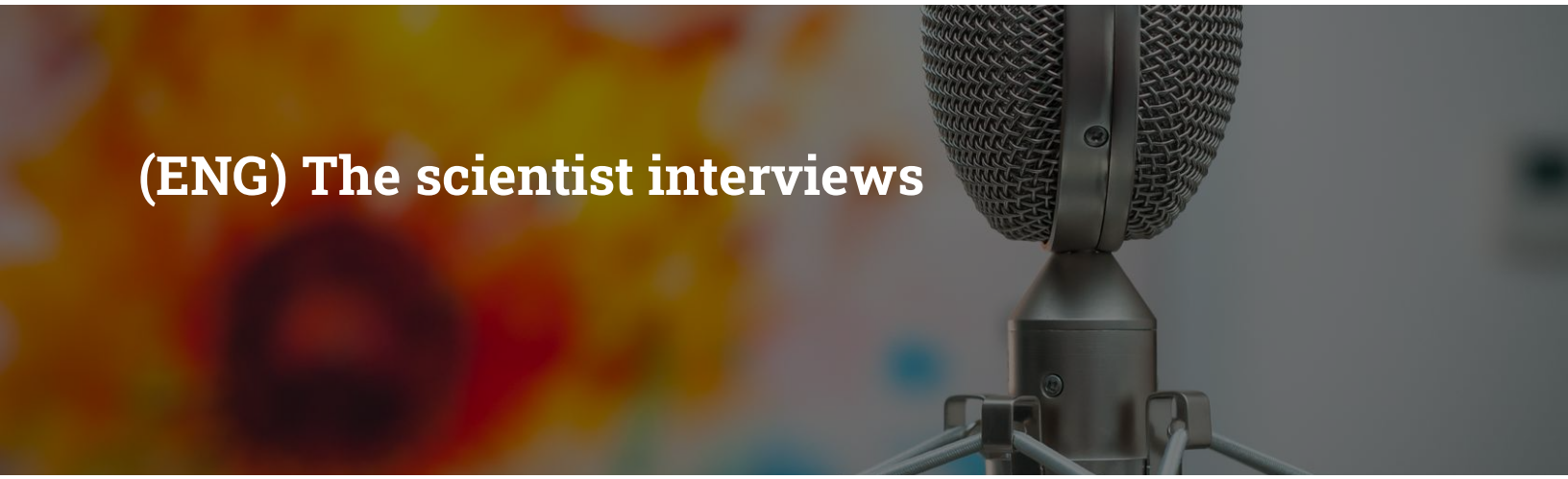

(ENG) The scientist interviews

Introduction

Step 1 - Motivational Stage

Step 2 - Investigational Stage

Step 3 - Consolidation Stage

Introduction

#Online activity #In-class activity #Experiential learning #Simulation #Teamwork #Gamified learning

This activity must be carried out after first dealing with the subject of mixtures and solutions. After the theoretical part, the pupils will be asked to personally investigate what the concepts they have learnt mean and act as scientists or journalists for an hour.

Pupils will use subjects that are part of their daily lives and repeat gestures that they probably see at home but from a scientific perspective through a role-playing game.

Learning Objectives

- [ ] Define what a solution is, what the solvent is and what the solute is.
- [ ] Recognise within a solution the solvent and the solute.

ACTIVITY DETAILS

Activity Details

Connection of the activity with Art

Experiments, acting

Link to local, national School Curriculum

Solutions/Solutions as examples of mixtures and distinguish between solvent and solute

Equipment required

- Interview sheets
- Tablets
- Scientist's kit:
    - Experiment 1: iron foil, salt, bowl/plate/glass
    - Experiment 2: one glass, one spoon, water, iron foil, magnet
    - Experiment 3: a glass, a spoon, water, and pepper
    - Experiment 4: one glass, one spoon, water, salt

Duration of activity

45 minutes

Sources

Step 1 - Motivational Stage

15 minutes

Split the pupils into small groups (maximum 4-5 pupils per group) and let them assign these roles to each other:

- At least two journalists (the interviewer and the cameraman)
- Scientists

Each group will be given:

1. A sample sheet with definitions that are useful for the activity (find the worksheet at the end of the activity)

   - what a mixture is
   - types of mixtures
   - what is a solution
   - what is a solvent
   - what is a solute

2. A scientist's kit

3. A tablet and tables for taking notes

Have a short 5-minute brainstorming session, discussing examples of mixtures and then give each group 5 minutes to study the definitions together and organise the work that will follow.

Step 2 - Investigational Stage

30 minutes

Before starting, give pupils some advice related to the second part of the activity about the interview in front of the camera:

they will have to use a relaxed and clear voice and pay attention to posture instead of saying ah, uh, eh, take a breath or swallow your saliva etc

When pupils are recording, pass between the desks to put them at ease and act well

STUDENTS' TASKS

1

Task 1

The scientists in groups will have to take the elements in the kit and note what happens when they interact with each other.

Those in the role of cameramen will have to take pictures of the experiment.

2

Task 2

They will have to decide whether what they have in front of them is a mixture, what kind of mixture, whether it is a solution, and whether they can distinguish between the elements of the solute and the solvent.

3

Task 3

After coming up with answers to these questions, the interviewer will ask them the questions in Appendix A and fill in the table. In turn, the scientists will answer while the cameraman films them.

For each experiment, they will have 5 minutes to mix the elements and decide what it is + 1 minute for the interview

Experiment 1: salt and iron foil

The scientists will mix salt and iron foil in a bowl.

Experiment 2: Water and iron foil

Scientists will energetically mix water and iron foil in a glass with a spoon.

Experiment 3: Water and pepper

Scientists will mix energetically water and pepper in a glass with a spoon.

Experiment 4: Water and salt

Scientists will energetically mix water and salt in a glass with a spoon.

Step 3 - Consolidation Stage

10 minutes

Each group will present one of the experiments they have done and in the process show the photos taken during the experiment. Open the discussion immediately after the presentation:

"Are there different data you want to show? Do you agree with what your classmates did?""

Use this moment to highlight the results and make them understand the definitions.

If you have time left, you can hint at the methods of separating a mixture; especially for experiment 2, you can use a magnet to make the pupils notice what happens to the iron filaments when the magnet moves.

Worksheet for pupils

PDF

Solutions as examples of mixtures and distinguish between solvent and solute_Worksheet.docx.pdf

45.8 KB

End of the activity

EXIT