


# Mobile Learning Scenarios

<p>Title:</p> <p><b>iPad in the biology lessons – Open experimentation in the open land</b></p>	<p><b>School:</b> Georg-Christoph-Lichtenberg School, Kassel, Gymnasium des Landkreises</p> <p><b>Subject:</b> Biology (in the upper stage)</p>
<p>Picture/ Photo:</p> 	<p><b>School learning group:</b></p> <p>Q2 and teaching post students of the neighbouring university</p> <p>The students at our school are used to the contact with new media, because the school has several media rooms at disposal. Three of the students own iPads. Most have already got to know the presentation programme <i>keynote in the 7<sup>th</sup> class</i>, so that only a revitalisation was necessary. All together they are interested in working with iPads very much and it is easy for all work independently after short instructions in new programmes.</p>
<p><b>Description:</b></p> <p>The <b>open experimentation in the biology lessons</b> focusses on the independent researching and learning. The students develop questions, hypotheses and test realisation. For this more time is required, so that a complete day (5 hrs) is included. Within the scope of the half-year subject Ecology the obliging excursion to the nearby nature reserve „Dönche“ is carried out. The scientific processes are documented with the iPad in the open land and are presented in the classroom later.</p>	
<p><b>Learning outcomes</b></p> <p>The students are able</p> <ul style="list-style-type: none"> <li>• to apply independently (with support by a student) the scientific knowledge way in a selfselective research object</li> <li>• to provide a good presentation with <i>keynote</i> which makes clear the scientific knowledge way</li> <li>• to provide suitable photos and films with the iPad and insert them in another use (App)</li> </ul>	

## Preparation

The students get to know the ecological basic concepts in the lessons. The excursion serves as an end of the teaching unit and repeats and deepens the qualified aspects.

## Realisation (step by step)

2 hrs: The students receive an introduction in the presentation programme *keynote* and work out criteria for a good presentation. Afterwards they repeat the scientific knowledge way with the help of a game, e.g., "*Experimenta*"

1 hr: During the exploration from the nature reserve they consider a subrange which they want to examine closer. They are accompanied and supported by students. Thereby it is possible to carry out this project day in several small groups with varying selfselective contents.

3 hrs: Afterwards „*they do research like the researchers*“:

With the open experimentation the most possible freedom concerning the question to an elective object is given to the students. There are restrictions, however, concerning the available material.

During the experimental process the students take merely photos and sometimes make videos to insert them in a keynote presentation later.

1 hr: Result protection - construction of the presentation. Every group member works on 1 step of the knowledge way to distribute responsibilities and to make sure that everybody can handle with the programme.

2-hrs presentation: Results are presented in the classroom with the help of a video projector or alternatively as a „*market of the possibilities*“ directly in the open land.

## Opportunities



- There was not "tiresome" protocol writing
- Integration of photos and videos in the result protection was very motivating,
- Additional treatment and result protection gave pleasure to the students by the new digital possibilities obviously
- Enlargement of the result protection by other uses (explain everything) or the main settlement on co-operative learning forms (common work on the one and same presentation with so-called webbased-Apps. On this occasion, everybody accesses the presentation, it works on his iPad and makes available them again to the whole group).

## Challenges (tips)



If the optimum situation is not given by the company of students, the contents can be reduced and be fixed to a biotope, e.g., investigations in the water.

Through the material choice for the realisation of experiments can be steered accordingly and be focused.

Name of teacher/ contact details: Eva Lorenzana: [evalorenzana@me.com](mailto:evalorenzana@me.com)