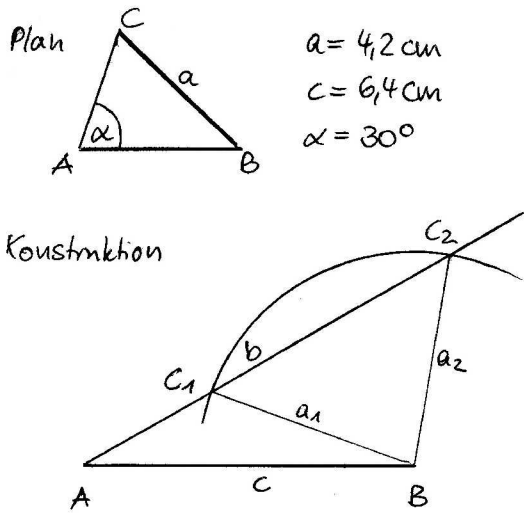


Mobile Learning Scenarios

<p>Title: Construction of Triangles as a trickfilm with iStop Motion</p>	<p>School: Georg-Christoph-Lichtenberg-Schule</p>
<p>Picture</p> 	<p>Type of School/ Learner Group</p> <p>The G.C.Lichtenberg-Schule is a German Gymnasium from 5th to 12th grade with about 1400 students. Normal class size in the lower grades are 30 students. Students have different social and cultural backgrounds, mainly eager to learn and motivated. Social problems occur randomly therefore conditions of teaching are good in general.</p> <p>The school is rather well equipped with iPads which can be borrowed for the classroom. Most students are familiar with smartphones and laptops. There is a high motivation for learning with iPads and students use it in other classes as well so in general they know how to use them.</p> <p>My project took place in an 7th grade class. The students are about 13 years old.</p>
<p>Description (supporting the title):</p> <p>Students in Partnerteams produce a trickfilm with iStop Motion at the end of the unit „Construction with ruler and compass“ which shows and describes the construction of a triangle step by step. The work with modern media is a counterpoint to the centuries-old mathematics that follows rules from the ancient greeks.</p> <p>First the students have to learn the mathematical basics so that they become able to produce a trickfilm later on. The basics are planning a construction, constructing with ruler and compass and describing the construction step by step with mathematical terms. After basic constructions where sides or angles of the triangle are given the tasks become more complicated because informations like the height of the triangle is given instead. The tasks for the films come from the Mathematics Competition of the State of Hesse that every student in Hesse has to take in the 8th grade.</p> <p>So producing a trickfilm has two goals. On the one hand students get more motivated in learning mathematics because they know that they need the mathematical basics to produce a good film afterwards. On the other hand the films can be reused for repeting ans increasing knowledge when the students prepare themselves for the mathematics competition halv a year later.</p> <p>Finally the creative exploration of mathematics makes it possible to remember the new knowledge better.</p>	
<p>Learning outcomes</p> <p>The students</p> <ul style="list-style-type: none"> – know the mathematical basics (planning, doing and describing a construction with ruler and compass) – use the app iStop Motion in a correct way to create a trickfilm – can add sound (oral description of the construction) to their trickfilm – criticise the films of other students according to the points correctness, clarity, creativity 	

Preparation

Content. The students have to know how to do the basic constructions (with sides and angles of the triangle) and further constructions (with height, median or bisector in addition to or instead of sides and angles). They should know and practise the steps that have to be done in general like planning, constructing with ruler and compass and describing the construction.

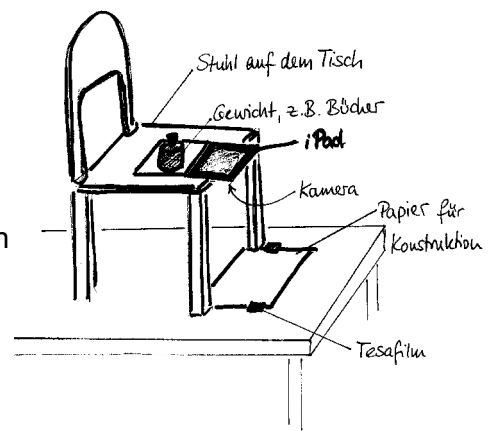
Technics. Each two-persons-group needs an iPad with camera, iStop Motion and for example Dropbox. Charging cable could be useful because the project needs several days. For the last lesson you need a beamer and adapters to connect the iPads to it.

Organisation. You have to borrow the same iPads for several days so that the students can continue their work on one device. You need a locker or another save place to store the iPads for this time. The students have to bring black pens or pencils and – of course – their geometric triangle and compass. Finally you need with paper and scotch tape to stick the paper on the table.

Realisation (step by step)

1st and 2nd lesson

The students draw the plan and write the given information next to it. This should be the first picture of the trickfilm. Then they fix the iPad above the piece of paper to get a trickfilm without vibrations. If you have no staves you can use a chair on the table instead. At last the students do the construction with ruler and compass and take a picture of each step with iStop Motion.



3rd lesson

Before the students can add sound to the film they have to duplicate some of the pictures so that every picture stays long enough to explain the description. The text of the description is written down first. The recording of this text has to happen at a calm place in school outside the classroom. You can use the iPad-microphone.

4th lesson

The students show each other their trickfilms and give feedback.

Opportunities



The simultaneity of „very old“ and „brand new“ is attractive and motivating.

Using the mathematical knowledge to create a product gives more learning stimulation and helps to remember the new informations.

The sustainability of learning is higher because the students have to deal intensiv with the theme. (many good results in a test three months later)

Challenges (tips)



The technical preparation needs much time because each iPad has to be checked if everything is right.