

Introduction to GeoGebra

Presenting GeoGebra Practical Session

General aspects:

1. *Learning Goals:*

To develop an understanding of the use of GeoGebra in mathematics teaching

To develop problem solving skills using GeoGebra as a technological tool

2. *General strategy:*

Working practically in GeoGebra in pairs and/or groups, alongside discussing the use of technology

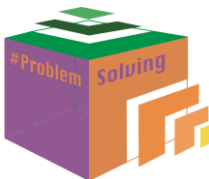
3. *Structure*

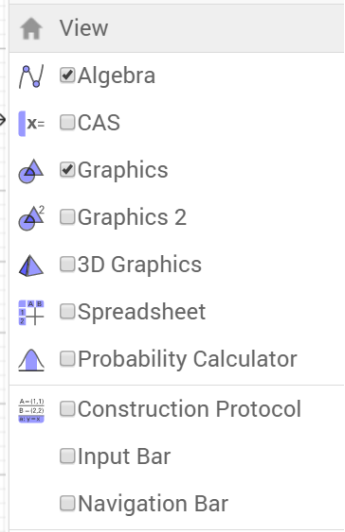
Lesson segments: Introduction, short presentation of the program/GGb content, presentation of settings in GGb and the website, trying out some of the tools in GGb, work in pairs investigating GGb, drawing special tasks, work in pairs, (logging in to the GeoGebra materials on the website, logging in to a GGb group and sharing materials).

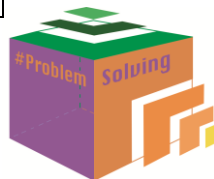
4. *Resources:*

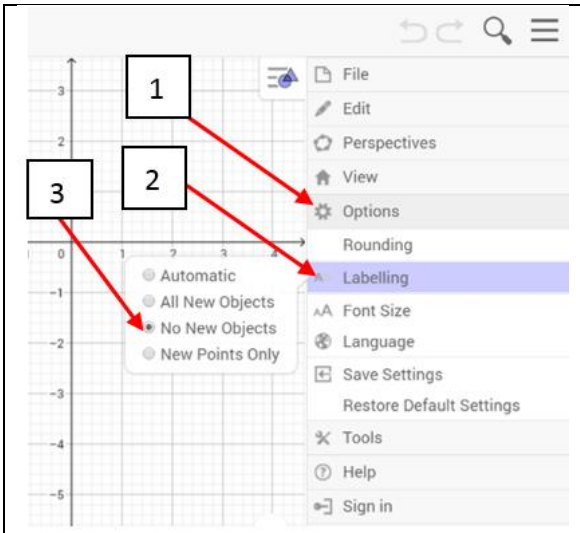
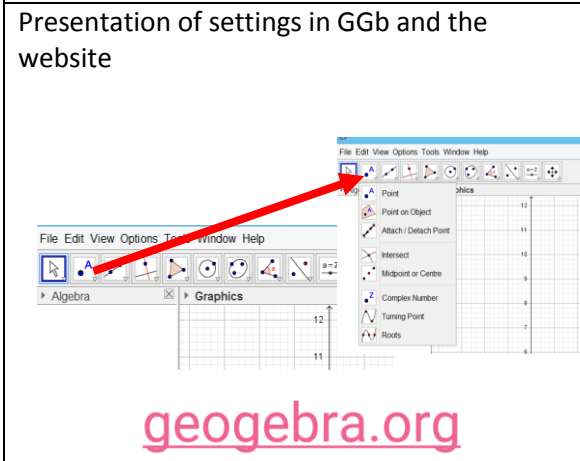
PowerPoint presentation, GGb Cards and pc/tablet

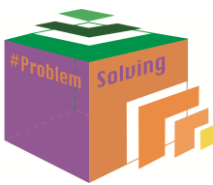
Development of the Lesson:

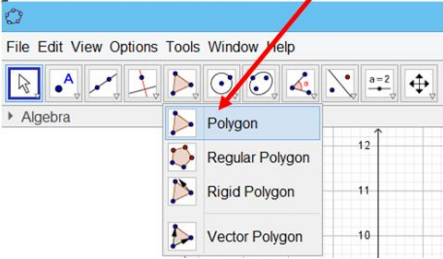



Task and Learning Activities	Expected Duration	Class Activity (potential difficulties)	Instructor Support	Goal and Assessment
Introduction	10 mins	Ask if anyone knows the program, and if they do, what have they been working with?		<i>Goal:</i> As teacher to know the level among the students <i>Assessment:</i> Class response
Short presentation of the program/GGb content 	10 mins	Presentation of some of the facilities (geometry, spreadsheet, CAS, language settings) in GGB that will be necessary for the following activities.		<i>Goal:</i> The students will get knowledge of the different facilities in GGB



		<p>A special possibility to avoid having letters on angles and lines must be presented before the activity 'Drawing a house'.</p>		
<p>Presentation of settings in GGb and the website</p>  <p>geogebra.org</p>	<p>15 mins</p>	<p>Presentation of the menu-bar, the dropdown menu and the icons that are going to be used (arrow, point, polygon, colours etc.)</p>	<p>Show the students that you can move to the arrow by pressing the 'escape' button on the keyboard.</p>	



<p>Trying out some of the tools in GGB</p> <p>Try the tool polygon: you have to click in</p> 	15 mins	<p>Open GGB through geogebra.org. It is appropriate to choose which edition you want to present to the students, because it will be easier when you work in the same edition. Try the tool polygon.</p>	<p>Be sure that everybody knows:</p> <ul style="list-style-type: none"> First click marks the starting point - next click draws the line between the two points - click as many times as you want lines in your polygon and end clicking in your starting point. 	<p><i>Goal:</i> The students develop competencies in working with the tools.</p>
<p>Drawing special tasks</p> 	25 mins	<p>Draw a house using different shapes and colours add a tree with branches, a chimney with smoke coming out etc. Share your drawings with other in the class.</p> <p>This is an open task, where the students may choose any house they want to, but there are some criteria they have to fulfil.</p>	<p>If the students have trouble drawing some of the shapes, it will be appropriate to ask them if they have an idea, or they can ask their partners if they have an idea.</p>	<p><i>Goal:</i> The students practice different tools and learn to change colours in polygons and lines</p> <p><i>Assessment:</i> Let the students comment on each others houses and ask how they are constructed. Give time to explanations from the students - that is important if you want to make sure they have knowledge of the different tools and possibilities.</p>

