

## IB AA SL Y1 Topic 2 Planner

Teacher(s)	Emily Foster	Subject group and course	IB Analysis & Approaches		
Course part and topic	Topic 2: Functions	SL or HL/Year 1 or 2	SL, Year 1	Dates	8 weeks
Unit description and texts		DP assessment(s) for unit			
Functions are models that are depictions of real-life events using expressions, equations or graphs, and relations involving one or more variables. Students will create different representations of functions.		Topic 2 Summative Test Questions for the cumulative assessments come from released questions in the IB Questionbank. Each summative assessment is cumulative with the majority (60-75%) of the test coming from the content covered between summative assessments.			

### ***INQUIRY: establishing the purpose of the unit***

#### **Transfer goals**

*List here one to three big, overarching, long-term goals for this unit. Transfer goals are the major goals that ask students to “transfer” or apply, their knowledge, skills, and concepts at the end of the unit under new/different circumstances, and on their own without scaffolding from the teacher.*

Students should be able to:

- Represent different functions, graphically and symbolically, and provide different ways to communicate mathematical relationships
- Understand the parameters of a function or equation that represent different physical quantities in spatial dimensions
- Move between different forms to represent functions
- Understand that equivalent representations of quadratic functions can reveal different characteristics of the same relationship
- Change the window when graphing functions to best suit the needs of the function application

## ***ACTION: teaching and learning through inquiry***

Content/skills/concepts—essential understandings	Learning process <i>Check the boxes for any pedagogical approaches used during the unit. Aim for a variety of approaches to help facilitate learning.</i>
<p><u>Students will know the following content:</u></p> <ul style="list-style-type: none"> <li>Parallel &amp; Perpendicular Lines</li> <li>Key Features of graphs</li> <li>Inverse functions</li> <li>Composite functions</li> <li>Quadratic functions/inequalities</li> <li>Rational functions</li> <li>Exponential functions</li> <li>Logarithmic functions</li> </ul> <p><u>Students will develop the following skills:</u></p> <ul style="list-style-type: none"> <li>Utilize function notation</li> <li>Perform transformations on different functions</li> <li>Use of technology to find the intersection of two functions</li> <li>Solve Quadratic functions in different forms</li> </ul> <p><u>Students will grasp the following concepts:</u></p> <ul style="list-style-type: none"> <li>The discriminant predicts the number and type of solutions of the quadratic equation.</li> <li>The domain and range set the parameters of the function and its characteristics.</li> </ul>	<p>Learning experiences and strategies/planning for self-supporting learning:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Lecture</li> <li><input type="checkbox"/> Socratic seminar</li> <li><input checked="" type="checkbox"/> Small group/pair work</li> <li><input checked="" type="checkbox"/> PowerPoint lecture/notes</li> <li><input type="checkbox"/> Individual presentations</li> <li><input type="checkbox"/> Group presentations</li> <li><input checked="" type="checkbox"/> Student lecture/leading</li> <li><input type="checkbox"/> Interdisciplinary learning</li> </ul> <p>Details:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Other/s:</li> </ul> <p>Each section will start with direct instruction and introduction from the instructor. Students will work in small groups to solve problems and complete explorations – some will be consistent across groups, some will be unique allowing for each group/individual to have time to present their work. Discussions regarding method, alternate approaches, and efficiency will be regularly included in the class.</p>

	<b>Formative assessment:</b> Topic 2 Section 1 Quiz Topic 2 Section 2 Quiz
	<b>Summative assessment:</b> Topic 2 Summative Assessment Questions for the cumulative assessments come from released questions in the IB Questionbank. Each summative assessment is cumulative with the majority (60-75%) of the test coming from the content covered between summative assessments.
	<b>Differentiation:</b> <input checked="" type="checkbox"/> Affirm identity—build self-esteem <input checked="" type="checkbox"/> Value prior knowledge  <input checked="" type="checkbox"/> Scaffold learning  <input checked="" type="checkbox"/> Extend learning  <b>Details:</b> This unit will utilize prior knowledge of solving quadratics and function characteristics to build and extend their knowledge on solving radical, rational, logarithmic and exponential functions.

### Approaches to learning (ATL)

*Check the boxes for any explicit approaches to learning connections made during the unit. For more information on ATL, please see [the guide](#).*

☒ Thinking

☒ Social

☒ Communication

☒ Self-management

☒ Research

Details: Thinking Social and communicating by working in pairs, warm ups, group presentations

Self-management: homework is always available but is not checked for completion. Homework and notes can be used for IB hwk quizzes

Students will research other patterns within Pascal's triangle and present to class

<b>Language and learning</b> <i>Check the boxes for any explicit language and learning connections made during the unit. For more information on the IB's approach to language and learning, please see <a href="#">the guide</a>.</i>	<b>TOK connections</b> <i>Check the boxes for any explicit TOK connections made during the unit</i>	<b>CAS connections</b> <i>Check the boxes for any explicit CAS connections. If you check any of the boxes, provide a brief note in the "details" section explaining how students engaged in CAS for this unit.</i>
<input checked="" type="checkbox"/> Activating background knowledge <input checked="" type="checkbox"/> Scaffolding for new learning <input checked="" type="checkbox"/> Acquisition of new learning through practice <input checked="" type="checkbox"/> Demonstrating proficiency  <b>Details:</b> Students must utilize background knowledge of content vocabulary from Algebra 2 to complete many of the concepts in Topic 2. New learning is scaffolded through progression practice. Topic 2 will build new vocabulary through exploration and practice.	<input checked="" type="checkbox"/> Personal and shared knowledge <input type="checkbox"/> Ways of knowing <input type="checkbox"/> Areas of knowledge <input type="checkbox"/> The knowledge framework  <b>Details:</b> Students will consider the following TOK question in pairs: Do you think mathematics or logic should be classified as a language?	<input type="checkbox"/> Creativity <input type="checkbox"/> Activity <input type="checkbox"/> Service  <b>Details:</b> n/a
<b>Resources</b> <i>List and attach (if applicable) any resources used in this unit</i>		
<b>Resources include:</b> --IB Thinking Platform --IB Resources ( <a href="http://www.ibo.org">www.ibo.org</a> ) --IB QuestionBank --Teacher guided notes		