

DP Matrices Unit Planner

Teacher(s)	Robinson	Subject group and course	IB Analysis & Approaches		
Course part and topic	Matrices (Non-IB Topic) GSE PreCalculus Standards: MGSE9-12.N.VM.6- 12 MGSE9-12.A.REI.8 & 9	SL or HL/Year 1 or 2	SL, Year 1	Dates	4/11 - 5/16
Unit description and texts		DP assessment(s) for unit			
In this unit, students learn to represent data rectangular arrangements of numbers. These arrangements of numbers into rows and columns are called matrices. Students should learn to compute with matrices and recognize the similarities and differences between the properties of real numbers and the properties of matrices. They will learn to use matrices in order to represent and solve more complex problems such as a system of equations and the area of a plane.		Operations of Matrices Quiz Matrices Unit Assessment: 5/4 & 5/5			

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:

- The tasks in this unit are designed to introduce matrix algebra and to provide practical applications for matrix transposes, determinants, inverses, and powers. Although the units in this instructional framework emphasize key standards and big ideas at specific times of the year, routine topics such as estimation, mental computation, and basic computation facts should be addressed on an ongoing basis. Ideas related to the eight practice standards should be addressed constantly as well. To assure that this unit is taught with the appropriate emphasis, depth, and rigor, it is important that the tasks listed under “Evidence of Learning” be reviewed early in the planning process. A variety of resources should be utilized to supplement this unit. This unit provides much needed content information, but excellent learning activities as well. The tasks in this unit illustrate the types of learning activities that should be utilized from a variety of sources.

ACTION: teaching and learning through inquiry

Content/skills/concepts—essential understandings	Learning process - Check the boxes for any pedagogical approaches used during the unit. Aim for a variety of approaches to help facilitate learning.
<p><u>Students will know the following content:</u></p> <p>Add, subtract, multiply matrices</p> <p>Calculate the determinant</p> <p>Find the inverse of a matrix</p> <p>Properties of matrices</p> <p>Matrix vocabulary</p> <p><u>Students will develop the following skills:</u></p> <p>Solve systems using matrices</p> <p>Solve matrix equations</p> <p>Determine if a matrix has an inverse and when it does not</p> <p>Utilize technology to perform operations on matrices and solve matrix equations</p> <p><u>Students will grasp the following concepts:</u></p> <p>Encoding/decoding matrices</p> <p>Apply commutative and distributive properties to matrix operations</p> <p>Understand additive and multiplicative identities with regards to matrices</p>	<p>Learning experiences and strategies/planning for self-supporting learning:</p> <p><input checked="" type="checkbox"/> Lecture</p> <p><input type="checkbox"/> Socratic seminar</p> <p><input checked="" type="checkbox"/> Small group/pair work</p> <p><input checked="" type="checkbox"/> PowerPoint lecture/notes</p> <p><input type="checkbox"/> Individual presentations</p> <p><input checked="" type="checkbox"/> Group presentations</p> <p><input checked="" type="checkbox"/> Student lecture/leading</p> <p><input type="checkbox"/> Interdisciplinary learning</p> <p>Details:</p> <p><input type="checkbox"/> Other/s:</p>
	<p>Formative assessment:</p> <p>Hwk Quiz: Matrix Operations</p>

	<p>Summative assessment: Matrix Unit Test 3/26, 3/27</p>
	<p>Differentiation:</p> <ul style="list-style-type: none"> <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 <p>Details:</p>

<p>Approaches to learning (ATL)</p> <p><i>Check the boxes for any explicit approaches to learning connections made during the unit. For more information on ATL, please see the guide.</i></p>
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Thinking <input checked="" type="checkbox"/> Social <input checked="" type="checkbox"/> Communication <input checked="" type="checkbox"/> Self-management <input checked="" type="checkbox"/> Research <p>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.</p>

Language and learning <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 the guide.</i>	TOK connections <i>Check the boxes for any explicit TOK connections made during the unit</i>	CAS connections <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 Details: Students must utilize background knowledge of algebraic properties to perform matrix operations.	<input type="checkbox"/> Personal and shared knowledge <input type="checkbox"/> Ways of knowing <input type="checkbox"/> Areas of knowledge <input type="checkbox"/> The knowledge framework Details: N/A	<input type="checkbox"/> Creativity <input type="checkbox"/> Activity <input type="checkbox"/> Service Details: N/A
Resources <i>List and attach (if applicable) any resources used in this unit</i>		
Resources include: --DOE resources --Teacher guided notes		

Stage 3: Reflection—considering the planning, process and impact of the inquiry

<p>What worked well</p> <p><i>List the portions of the unit (content, assessment, planning) that were successful</i></p>	<p>What didn't work well</p> <p><i>List the portions of the unit (content, assessment, planning) that were not as successful as hoped</i></p>	<p>Notes/changes/suggestions:</p> <p><i>List any notes, suggestions, or considerations for the future teaching of this unit</i></p>