IB AA SL Y1 Unit 3 - Topic 4 Planner

Teacher(s)	Mikayla Smith Baillio	**Subject group and course**	IB Analysis & Approaches		
Course part and topic	Unit 3 - Topic 4: Probability & Statistics	**SL or HL/Year 1 or 2**	SL, Year 1	**Dates**	5 weeks
Unit description and texts		**DP assessment(s) for unit**			
Statistics is concerned with the collection, analysis and interpretation of data and the theory of probability can be used to estimate parameters, discover empirical laws, test hypotheses and predict the occurrence of events. Statistical representations and measures allow us to represent data in many different forms to aid interpretation. Probability enables us to quantify the likelihood of events occurring and so evaluate risk. Both statistics and probability provide important representations which enable us to make predictions, valid comparisons and informed decisions.		Topic 4 Section 1 Test Section 2 Formative Quiz Topic 4 Section 2 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:

- The aim of the SL content in the statistics and probability topic is to introduce students to the important concepts, techniques and representations used in statistics and probability. Students have the opportunity to approach this topic in a practical way, to understand why certain techniques are used and to interpret the results. The use of technology can greatly enhance this topic. It is expected that most of the calculations required will be carried out using technology, but explanations of calculations by hand may enhance understanding. The emphasis is on understanding and interpreting the results obtained, in context.

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.*
<u>Students will know the following content:</u> Concept of population, sample, random sample, discrete data Sampling techniques Measures of central tendency & variability Quartiles of discrete data Box/Whisker plots Linear correlation Complementary events, basic probability, outcomes, sample space Conditional probability Independent/dependent probability Mutually exclusive events Expected value Normal distribution Binomial distribution <u>Students will develop the following skills:</u> Determine reliability of results Interpret outliers Use data/graphs to find mean, median, mode, IQR, standard deviation Determine line of best fit, linear regression lines, correlation coefficient Calculate probability of combined events <u>Students will grasp the following concepts:</u> The equation of a regression line can be used to make predictions. Expected value can inform decisions.	Learning experiences and strategies/planning for self-supporting learning: ☒Lecture ☐Socratic seminar ☒ Small group/pair work ☒ PowerPoint lecture/notes ☐ Individual presentations ☒ Group presentations ☒ Student lecture/leading ☐ Interdisciplinary learning Details: ☐ Other/s: 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.

	Formative assessment: Quiz: Statistics
	Summative assessment: Topic 4 Part 1 Topic 4 Part 2 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.
	Differentiation: ☒Affirm identity—build self-esteem ☒Value prior knowledge ☒Scaffold learning ☒ Extend learning Details: This unit will utilize prior knowledge of theoretical probability to build and extend their knowledge on expected value and real world applications including statistics and probability.

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 or create set of data to use to compute measures of central tendency and dispersion. Students will compare data with pairs.

Language and learning *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.*	**TOK connections** *Check the boxes for any explicit TOK connections made during the unit*	**CAS connections** *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.*
☒Activating background knowledge ☒ Scaffolding for new learning ☒ Acquisition of new learning through practice ☒ Demonstrating proficiency Details: Students must utilize background knowledge of content vocabulary from Geometry to complete many of the probability concepts in Topic 4. New learning is scaffolded through progression practice. Topic 4 will build new vocabulary through exploration and practice.	☐ Personal and shared knowledge ☐ Ways of knowing ☐ Areas of knowledge ☐ The knowledge framework Details: Students should ponder the question "How easy is it to be misled by statistics?"	☐ Creativity ☐ Activity ☐ Service Details:

Resources *List and attach (if applicable) any resources used in this unit*
Resources include: --IB Thinking Platform --IB Resources (www.ibo.org) --IB Question Bank --Teacher guided notes _MyiMaths