

都立国際高校 年間授業計画 / Tokyo Metropolitan Kokusai High School Course Syllabus

○ 科目基礎情報 (Course information)

開講年度 (Academic year)	令和4年度 (2022 年度)
開講学科 (Department)	国際学科国際バカロレアコース / IBDP(International Baccalaureate Diploma Programme)
教科 (Subject Area)	Science
科目 (Subject)	Basic Chemistry
担当者 (Subject Teacher)	
学年・クラス (Grade・Class)	1st Grade Class A-F
単位数 (Number of units)	7
使用教科書 (Text Books)	化学基礎(東京書籍)
校外学習 (Field trip)	None

○ 教科の目標 (Goals of the subject area)

<p>【知識及び技能】 (Knowledge and Skills) Acquire a body of knowledge, methods and techniques that characterize science and technology. Develop an understanding of the relationships between scientific disciplines and their influence on other areas of knowledge.</p> <p>【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves) Apply and use the a body of knowledge, methods and techniques that characterize science and technology . Develop an ability to analyze, evaluate and synthesize scientific information. Develop experimental and investigate scientific skills including the use of current technologies.</p> <p>【学びに向かう力、人間性等】 (Motivation to learn, Humanity) Appreciate scientific study and creativity within a global context through stimulating and challenging opportunities. Develop a critical awareness of the need for, and the value of, effective collaboration and communication during scientific activities.</p>
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○ 科目の目標 (Goals of the subject)

【知識及び技能】 (Knowledge and Skills)	【思考力、判断力、表現力等】 (Ability to think, make judgements, express themselves)	【学びに向かう力、人間性等】 (Motivation to learn, Humanity)
Demonstrate knowledge and understanding of: a. Facts, concepts and terminology b. Methodologies and techniques c. Communicating scientific information	Apply a. Facts, concepts and terminology b. Methodologies and techniques c. Methods and communicating scientific information	Demonstrate the appropriate research, experimental, and personal skills necessary to carry out insightful and ethical investigations.

○ 授業計画 (Course schedule)

Allocated hours

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	領域			評価規準 Evaluation Criteria	知 ①	思 ②	態 ③	配 当 時 数
			話 ・ 聞	書	読					
1学期 (1st semester)	単元名を記載 【知識及び技能】 【思考力、判断力、表現力等】 【学びに向かう力、人間性等】	・指導事項 ・教材 ・一人1台端末の活用 等	○			①【知識・技能】 ②【思考・判断・表現】 ③【主体的に学習に取り組む態度】	○	○	○	6
	Unit 1: Stoichiometry -Particulate Theory of Matter 【Knowledge and Skills】 Develop understanding on the concept of matter 【Ability to think, make judgements, express themselves】 Be able to explain the processes involved in the transition of matter. Be able to interpret the cooling and heating curve of various substances using data and conduction od experiments. 【Motivation to learn, Humanity】 Enggages activiely in the practicals Work collaboratively with other classmates during practicals	・Contents Matter Kinetic/ Particulate Theory Cooling and Heating Curve Separating Techniques ・Teaching materials Textbook, Powerpoint slides	○			①【Knowledge/Skills】 Short Test, Examination, Lab Report, Home Work ②【Ability to think/make judgements/express themselves】 Examination, Presentation, Class Discussions ③【Attitude towards learning proactively】 Reflection	○	○	○	4
							○	○		1
	Unit 2: Atomic Structure 【Knowledge and Skills】 Develop understanding of the atomic structure Develop understanding of the origination of the subatomic particles Be able to differentiate amongst the subatomic particles 【Ability to think, make judgements, express themselves】 Be able to calculate the mass, proton, neutron and electron numbers. Be able to predict the electronic configuartion of elements. 【Motivation to learn, Humanity】】 Engages actively in the practicals Work collaboratively with other classmates during practicals.	・Contents Atomic structure Discovery of the sub-atomic particles Determination of the proton, electron, neutron numbers and the mass number Electronic configuration ・Teaching materials Textbook, Powerpoint slides	○			①【Knowledge/Skills】 Short Test, Examination, Lab Report, Home Work ②【Ability to think/make judgements/express themselves】 Examination, Presentation, Class Discussions ③【Attitude towards learning proactively】 Reflection	○	○	○	6

	単元の具体的な指導目標 Unit Objectives	指導項目・内容 Topic / Contents	領域			評価規準 Evaluation Criteria	知 ①	思 ②	態 ③	配当 時数
			話 ・ 聞	書	読					
3学期 (3rd semester)	Unit 6: Acids and Bases 【Knowledge and Skills】 Develop understanding on pH, Acids, Bases and indicators 【Ability to think, make judgements, express themselves】 Be able to make calculations related to pH Be able to predict the acidity, Basicity of various substances Be able to recall the use of indicators and the appropriate indicators to use in chemical experiments. 【Motivation to learn, Humanity】 Engages actively in the practicals Work collaboratively with other classmates during practicals	・Contents Definition of terms related to pH (Arrhenius Acids and Bases) Relation of Acidity, Basicity and Neutrality to the pH scale Indicators, its use and selection. Calculations related to pH ・Teaching materials Textbook, Powerpoint presentation				①【Knowledge/Skills】 Short Test, Examination, Lab Report, Home Work ②【Ability to think/make judgements/express themselves】 Examination, Presentation, Class Discussions ③【Attitude towards learning proactively】 Reflection				12
	Unit 7: Redox Properties 【Knowledge and Skills】 Develop understanding of electrochemical reactions Develop understanding of Quantity of Electricity and Faraday's constant, F. 【Ability to think, make judgements, express themselves】 Be able to interpret electrolytic cells and predict ions that will be preferentially discharged at the electrodes. 【Motivation to learn, Humanity】 Engages actively in the practicals Work collaboratively with other classmates during practicals	・Contents Definition of electrochemical terms Electrolytic cell diagram The electrodes and rules for ions to be preferentially discharged. Quantity of Electricity Faraday's constant and relation to moles. ・Teaching materials Textbook, Powerpoint presentation				①【Knowledge/Skills】 Short Test, Examination, Lab Report, Home Work ②【Ability to think/make judgements/express themselves】 Examination, Presentation, Class Discussions ③【Attitude towards learning proactively】 Reflection				8
	定期考査 Examination									1

総授業時数 Total hours	78
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