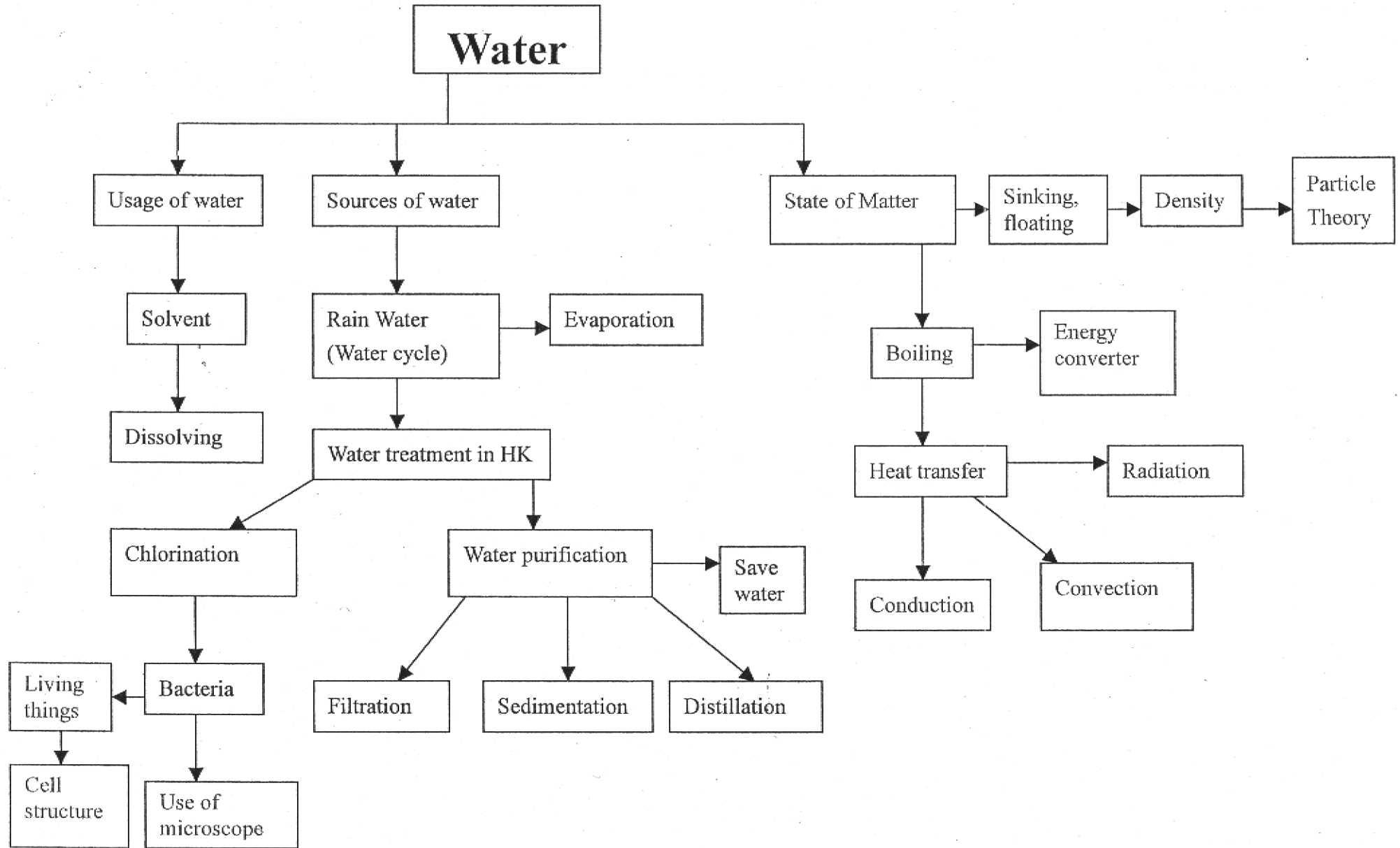


Revised Curriculum framework for F.1 Integrated Science (2003-3004)



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**Form 1 Integrated Science (03 – 04)
Curriculum Plan**

Title	Objectives	Activity	Time allocated (lesson)	Remarks
Introduction	Introduce the content of in this year		2	Standardize file and TB (assessment)
Grouping		Design group name Collaborative game Group leader	2	
What is Science?	Introduce the concept of science	Small experiment	1	
Understanding the Lab	Understanding the Lab	Floor plan + drawing	2	
	Safety equipment	Video		
	Fire drill		1	
	Lab safety rules	Discussion	2	Powerpoint
Mixing solution	Observation skill	Experiments	3	
Library skills	Introduce the library system and call number IT skills – log in and out	Visit to library	2	
What is water?	Students able to <ul style="list-style-type: none"> ● know more about water' properties and uses ● acquire the mind mapping skills ● work collaboratively with classmates 	Brainstorm activity (Individual) Mind mapping activity (Group Work)	2	Notes P.1, OHP is needed Supplementary WS

Water as a solvent	Students should be able to <ul style="list-style-type: none"> ● know more about solvent, solute, solution, saturated solution, solubility 	Demonstration on dissolving copper II sulphate in water	1	Notes P.2 and 3
		Activity 1		
Introduction on Scientific investigation	Students should be able to <ul style="list-style-type: none"> ● understand the process of scientific investigation step by step 	Activity 2 and 3	2	Notes P. 4 to 7
		Case study ETV- watching Brief history of scientific inquiry	2	Notes P.7 and 8
		ETV- watching Identify the steps in Scientific Investigation	3	Supplementary WS
Investigation on Dissolving	Students should be able to: <ul style="list-style-type: none"> ● identify dependent, independent and control variable ● identify errors and improvements ● understand the importance of Fair Test 	Investigation (A. Stirring)	2	Notes P. 9- 11
		Discussion and ETV watching Fair Test	3	
		Investigation (B. Size of sugar) Introduction, doing experiment and discussion	4	Notes P. 12-14
	Students should be able to: <ul style="list-style-type: none"> ● learn the structure and use of Bunsen burner 	Lecturing, demonstration	2	Notes. P.15-16
		Students should be able to: <ul style="list-style-type: none"> ● light the Bunsen burner 	Light up Bunsen burner (individually)	2
		Investigation (C. Hot water)	4	Notes. P.16-20
	Mini-project on PL	<ul style="list-style-type: none"> ● Collaborative skills ● Laboratory skills ● Design and perform experiments ● Analyzing data 	Investigation on flames of Bunsen burner	2
Introduction, Preparation and discussion Perform experiments and finish the report			2	

Title	Objectives	Activity	Time allocated	Remarks
Water cycle	Students should be able to: <ul style="list-style-type: none"> ● search and collect the information from the internet ● use the Excel ● describe the process of water cycle 	Internet search Plotting the graph with the use of Excel Activity 1 (Rain simulator)		Search engine assessment Assignment: Internet Exercise + Story writing
	Students should be able to: <ul style="list-style-type: none"> ● state the meaning of evaporation ● learn the Word ● state the factors that affect evaporation rate 	Activity 2 (What is evaporation?) Investigation + Word		Assessment: Investigation on the factors that affect evaporation rate
Microscope	Students should be able to: <ul style="list-style-type: none"> ● learn how to use the microscope ● calculate the magnification used to view the object ● record their observations by sketching what they see 	Activity 1 (Using microscope)	6	
	Students should be able to: <ul style="list-style-type: none"> ● state the characteristics of living things ● understand that the cell is a basic unit in animals and plants ● state the names of the parts of a cell ● state the differences between a plant cell and an animal cell 	Activity 2	6	Assignment: Cell and School

Title	Objectives	Activity	Time allocated	Remarks
Sedimentation	Students should be able to: <ul style="list-style-type: none"> ● understand the main processes of water purification through experiments 	Group discussion on the ways to purify water. Experiment on sedimentation (group work)	1	Notes P. 1- Textbook P.52-53-
Filtration and Sterilisation	<ul style="list-style-type: none"> ● understand the processes of sedimentation, filtration and distillation ● understand the different advantages and limitations of these various ways of water purification techniques. 	Experiment on filtration (group work) Experiment to find out if the filtered water has any solid left. (demonstration) Group discussion on the methods to kill microorganisms.	2	Notes P. 2 -3 Textbook P.54-66
Presentation skills	Students should be able to: <ul style="list-style-type: none"> ● acquire presentation skills 	Video watching Practice	2	Notes LCD projector and Notebook computer are needed
Scientific investigation	Students should be able to <ul style="list-style-type: none"> ● know more about filtration using filtering column ● design a good filtering column ● design and carry out a fair test on filtration 	<ul style="list-style-type: none"> - Work in group to write a research proposal - Carry out the designed fair test 	7	
	Students should be able to <ul style="list-style-type: none"> ● -present their plan in front of the class 	Work in group to present their proposal	2	
Distillation	Students should be able to <ul style="list-style-type: none"> ● recognize the setup of distillation ● understand the processes in distillation ● compare the differences among sedimentation, filtration and 	<ul style="list-style-type: none"> - Teacher demonstrates the distillation of muddy water - Students discuss the note problems in groups - Teacher discusses the answers with students 	2	1Word puzzle sheet and 1 worksheet are given as homework

	<p>distillation</p> <ul style="list-style-type: none">● know distillation also occurs in nature which is called water cycle	<p>- Teacher reinforces the idea of distillation in nature (the water cycle) by posing questions like why wet hair can dry naturally? Where does the water go?</p>		
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St. Francis' Canossian College
F.1 Integrated Science (2003-2004)
Working Schedule

Unit	Topic	IT/ Library/ Presentation skills	No. of lesson
1	Understanding the Laboratory	Library search	12 (Cycle 1- 2)
2	Water – Water as a solvent		31 (Cycle 2-8)
3	Water – Water cycle	Internet search. WORD, EXCEL	26 (Cycle 8-11)
4	Water – Microscope & Living things		6 (Cycle 12)
5	Water – Purification	Presentation	15 (Cycle 13-15)
Mid-Term Examination			
6	Project Learning	Powerpoint	2 nd Term
7	Matter (+ Heat Transfer)		
8	Energy		
Final Examination			

Detailed Plan for the Second Term:

Cycle		Teaching	Project Learning	Teacher-in-charge
After exam	Jan.	Checking paper, Self reflection, Assessment mark sheets (5)	Choose a topic (3) How to set a research question (2) (Source of information/reference)	Ms J. Wan Ms V. Yan
15		Matter (20)		
16	Feb.		Find a research question (2) (Worksheets for Outing)	Ms J. Wan Ms V. Yan
			Preparation for outing (2)	Ms. D. Mak
			Financial matters (2)	Ms S. Wong Ms V. Chan
17			16/2 outing Science Museum (2)	All subject teachers
			Finalize a research question (2)	Ms J. Wan Ms V. Yan
18			Drafting proposal (5) (Group discussion)	Ms Esther Wong
19	Mar.		Submit proposal	Ms Esther Wong

20			Practise the technique: Data recording eg. Photo taking, video taking (3) Doing experiment (2) (Booking equipments for taking photo)	Mr. K. Law
21			Doing experiment (5)	Ms Esther Wong
22			Use of WORD + Report writing + Preparation of report (12)	Mr. K. Law
23	Apr.		Use of powerpoint + preparation of presentation with assessment (10)	Ms D. Mak
24				
25	May		Presentation 20 minutes each group (5) (Booking equipments for presentation)	Ms D. Mak
26		Energy (14)	Self reflection	Ms Esther Wong
27				
28	June			
29			Students' and teachers' evaluations (2) (Including analysis)	Ms D. Mak Ms Esther Wong

St. Francis' Canossian College
Integrated Science (2003-2004)
Introduction (**Teachers**)

1. Objectives of the new curriculum

A. Knowledge

Students should be able to understand scientific ideas, concepts and theories about the following topics: Water, Cells and living things, Energy, Heat transfer, Matter.

B. Skills

Students should be able to demonstrate generic skills:

- (1) Collaboration skills
 - to work with students harmonically
 - to divide the work effectively
 - to solve problem arising from group interaction and group learning
- (2) Communication skills
 - to express oneself verbally
 - to hold and conduct discussion efficiently
 - to present in groups and in class
 - to express ideas effectively in self reflection and written report
- (3) Information Gathering skills
 - to search and extract relevant materials from internet, library or other sources e.g. newspaper, books / magazine
- (4) Investigative skills
 - to propose hypotheses and devise methods for testing them
 - to plan and conduct scientific investigations effectively
 - to measure and present data accurately
 - to evaluate the results and the fairness of test, and draw conclusions based on findings
- (5) Information Technology (IT) skills
 - to use internet search, WORD, EXCEL, powerpoint presentation effectively

C. Values and Attitudes

Students are expected to:

- (1) maintain curiosity and continued interest in science
- (2) be aware of the importance of the safety of oneself and others in the laboratory and be committed to safe practices in daily life.
- (3) appreciate the wonders of Nature and show respect and care for all forms of life.
- (4) be critical towards evidence, hypotheses and experiments
- (5) develop open-mindedness, be able to show tolerance and respect towards different opinions, viewpoints, and people with different beliefs and value systems.

2. Structure

- No. of lessons per cycle: 7 (ONE triple and TWO double lessons)

● Division of Labour

Class	1A	1B	1C	1D
Teachers	Ms. D. Mak Ms. J. Wan	Ms. D. Mak Ms. V. Yan	Mr. K. Law Ms. Esther Wong	Ms. V. Chan Ms. S. Wong

● Venue

Location	1A	1B	1C	1D	
I.S. Lab	Day 4 (3) Day 6 (2)	Day 2 (2) Day 6 (3)	Day 1 (3) Day 3 (2)	Day 3 (3) Day 5 (2)	
Computer rooms	Day 2 (2) Day 4 (3)	Rm A & B Day 4 (2) Day 6 (3)	Geog. Rm & Rm A Day 1 (3) Day 5 (2)	NW Rm & Rm A Day 1 (2) Day 3 (3)	Rm A & C

● Scheme of work:

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8	Energy		
Final Examination			

3. Teaching materials

- Science Textbook (*Living Science Book 1B*, Longman)
- Notes and IT materials (A4 file)
- Exercise Book x 2 (Assignment and Quizzes)

4. Assessment

Written examination (40%) 1 st & 2 nd Terms	Science concepts & investigative skills
CAS (60%)- 1 st Term	- small projects - assignments - dictation & quizzes - self reflection - practical examination
CAS (60%)- 2 nd Term	- Project Learning (process, written report & presentation)[40%] - assignments - dictation & quizzes - practical examination

- Students are strongly advised to take an active part in class.
- Bonus marks will be given to students who can complete the extra assignments for each topic, eg. further reading, challenging exercises