Course Outline



1) Course Description

Project Science for Grade 4/8 pupils is designed on the belief that children construct their knowledge by building or modifying the understandings they have in place. The course recognizes that the pupils come to school with a lifetime of experience, knowledge, understanding, interest, and question. This course view teaching as an interactive process with a balance between teacher-initiated and pupil initiated activities, concrete exploration, and group and individual projects or works.

2) Grade-Level Indicators (The Basic Education Core Curriculum)

- 1. Experiment and explain responses of plants to light, sound and touch.
- 2. Explain behaviour of animals responding to light, temperature and touch, and apply acquired knowledge for useful purposes.
- 3. Experiment and explain motion of light from its source.
- 4. Experiment and explain reflection of light on objects.
- 5. Experiment and classify objects based on visual characteristics from sources of light

6. Experiment and explain refraction of light that passes though two kinds of transparent mediums.

7. Experiment and explain transformation of light into electrical energy, and apply the knowledge gained for useful purposes.

8. Experiment and explain that white light comprises various coloured lights, and apply the knowledge gained for useful purposes.

- 9. Explore and explain soil formation.
- 10. Specify kinds and properties of soil used for growing plants in the local area.
- 11. Explain that water, carbon dioxide, light and chlorophyll are some of the factors essential for growth and photosynthesis.
- 12. Make a model to explain the characteristics of the solar system

3) Learning Objectives (1st Semester)

Indicators of Semester	In accordance with government curriculum
1. Classify the things around as living, non-living or once-living	Indicators 1 and 2
2. Begin to describe the processes of life	Indicators 1 and 2
3. Explain why the seven characteristics are essential for life	Indicators 1 and 2
4. Describe how different animals obtain by eating plants and/or animals	Indicators 1 and 2
5. Describe the functions of different plant parts	Indicators 1 and 2
6. Explain how plants make food by photosynthesis in their leaves	Indicators 1, 2 and 11
7. State the difference between vertebrate and invertebrate	Indicators 1 and 2
8. Describe how animals are adopted to survive in different conditions	Indicators 1 and 2
9. Describe some of the properties of different materials	Indicators 3 to 8
10. Describe the properties of solids, liquids, and gases	Indicators 3 to 8
11. Describe the composition and structure of the Earth	Indicators 9 and 10
12. Explain how igneous, sedimentary and metamorphic rocks were formed	Indicators 9 and 10

4) Analyze the course description to be the contents for teaching. (1st Semester)

Contents		Lipito of lograins / Amounto	Teaching	How to E	Evaluate	Maximum
(Strand)/	Indicators	of Periodo	Materials	Evaluations	Tools	marks
Standards						
Strand 1:	1. No. 1 - 8	Unit : 1 LIVING THINGS	- a plant	1. Quizzes	1. Standardized	
Living Things		(20Periods)	- drawings of	2. Homework	test.	
and Life		- Life Processes	the following:	3. Drawings		
Processes		- Plants	a) fish, insect,	4. Projects	2. Projects /	
		- Animals	car , fire, river		Demonstration	50
Strand 2:		- Environment	b) food chain,			
Living Things			energy			
and the			pyramid, food			
Environment			web			
Strand 3:	2. No. 9 - 10	Unit: 2 MATTER AND	- stone, wood,	1. Quizzes	1. Standardized	
Substances		MATERIALS (10Periods)	metal, plastic,	2. Homework	test.	
and Properties		- Materials	rubber, fibers,	3. Drawings	2. Projects /	25
of Substances		- Matter and Heat	glass,	4. Projects	Demonstration	
			ceramics			
Strand 6:	3. No. 11 - 12	Unit: 3 OUR EARTH	- model of the	1. Quizzes	1. Standardized	
Changes and		(10Periods)	Earth	2. Homework	test.	
Processes of		- Rocks and Minerals	- different	3. Drawings	2. Projects /	25
the Earth		- Oceans	types of rocks	4. Projects	Demonstration	

1st Semester/2014

Time Duration	Subject Contents
Beginning of the session – Mid-term	- UNIT 1: LIVING THINGS
	A. Life Processes
	B. Plants
	C. Animals
	D. The Environment
Post – Midterm – Final	- UNIT 2: MATTER AND MATERIALS
	A. Materials
	B. Matter and Heat
	- UNIT 3: OUR EARTH
	A. Rocks and minerals
	B. Oceans

6) Evaluation

Average marks for evaluation

Authentic Assessment: Written / Practical Exam = ...60...: ...40...

Evaluation of Learning Objectives

Semester	Learning Objectives (Items)	
1	1 - 12	

7) Details of Evaluation

Learning Objectives	Criteria Followed for Assessment	
(Items)		marks
1-2	- Describe the processes of life (QUIZZES, HOMEWORK,	15
	DRAWINGS, PROJECTS)	
3-4	- Explain why the seven characteristics are essential to life	15
	(QUIZZES, HOMEWORK, DRAWINGS, PROJECTS)	

Pre-test marks: ...30...Marks (Authentic Assessment)

Mid-term marks: ...20...Marks (Written/Practical Exam)

Learning Objectives	Criteria Followed for Assessment	
(Items)		marks
5-6	- Describe the functions of different plant parts (IDENTIFICATION,	10
	STRUCTURED QUESTIONS)	
7-8	- Describe how animals are adopted to survive in different conditions	10
	(STRUCTURED QUESTIONS	

Post-Test marks:30....Marks (Authentic Assessment)

Learning Objectives Criteria Followed for Assessment		Maximum
(Items)		marks
9-10	- Describe the properties of different materials	15
11-12	- Describe the composition and structure of the Earth	15

Portfolio: Marks

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks

Final marks : ...20... Marks (Written/Practical Exam)

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks
9-10	- Describe the properties of different materials	10
	(IDENTIFICATION, MULTIPLE CHOICE)	
11-12	- Describe the composition and structure of the Earth	10
	(STRUCTURED QUESTIONS)	



3) Learning Objectives (2nd Semester)

Indicators of Semester	In accordance with government curriculum
1. List different forms of energy	Indicators 9 and 10
2. Explain why the human body needs energy	Indicators 3 to 8
3. Describe the main energy source and explain how we use them	Indicators 3 to 8
4. Explain the difference between renewable and non-renewable resources	Indicators 3 to 8
5. Describe how sounds travel as sound waves	-
6. Explain why we have two ears	-
7. Describe how musical instruments produce sounds	-
8. Name and describe the eight planets	Indicator 12
9. Describe the movement of the planets around the Sun	Indicator 12
10. Describe the motion and characteristics of moons, asteroids, comets, and meteors	Indicator 12

4) Analyze the course description to be the contents for teaching. (2nd Semester)

Contents		Lipite of learning (Amounto	Teaching	How to	Evaluate	Maximum
(Strand)/ Standards	Indicators	of Periods	Materials	Evaluations	Tools	marks
Strand 4:	1. No. 1 - 7	- UNIT 4: FORCES AND	- a balloon, a	1. Quizzes	1. Standardized	
Forces and		ENERGY(20Periods)	toy windmill, a	2. Homework	test.	
Motion		A. Energy	solar powered	3. Drawings	2. Projects /	50
Strand 5:		B. Sound	calculator, an	4. Projects	Demonstration	
Energy			old car tyre, a			

			sheet of			
			glass, a			
			thermometer,			
			rubber bands,			
			a card of			
			plastic box,			
			an alarm clock			
Strand 7:	2. No. 8 -	- UNIT 5 ASTRONOMY	- a tennis ball	1. Quizzes	1. Standardized	
Astronomy	10	A. The solar system	tied to a	2. Homework	test.	
and Space		B. Looking at the planets	string, a	3. Drawings	2. Projects /	
		- C. Asteroids, comets,	broom handle,	4. Projects	Demonstration	
		and meteors	different			50
			sized-balls,			50
			paper, glue,			
			paints, a			
			picture of the			
			Sun			

4) Contents of subjects (2nd Semester)

Time Duration	Subject Contents
Beginning of the session – Mid-term	- UNIT 4: FORCES AND ENERGY
	A. Energy
	B. Sound
Post – Midterm – Final	- UNIT 5 ASTRONOMY

A. The solar system
B. Looking at the planets
C. Asteroids, comets, and meteors

Evaluation

Average marks for evaluation

Authentic Assessment: Written / Practical Exam = ...60...:..40...

Evaluation of Learning Objectives

Semester	Learning Objectives (Items)
2	1-10

Details of Evaluation

Pre-test marks: ...30...Marks (Authentic Assessment)

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks
1-2	- List the different forms of energy (QUIZZES, HOMEWORK,	15
	DRAWINGS, PROJECTS)	
1-4	- Explain the difference between (QUIZZES, HOMEWORK,	15
	DRAWINGS, PROJECTS)	

Mid-term marks: ...20... Marks (Written/Practical Exam)

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks
5-6	- Describe how sounds travel as sound waves (IDENTIFICATION,	10

	MULTIPLE CHOICE, STRUCTURED QUESTIONS)	
7	- Describe how musical instruments produce sounds (STRUCTURED	10
	QUESTIONS)	

Post-Test marks: ...30....Marks (Authentic Assessment)

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks
8	- Name and describe the eight planets (QUIZZES, HOMEWORK,	15
	DRAWINGS, PROJECTS)	
9	- Describe the movement of the planets around the Sun (QUIZZES,	15
	HOMEWORK, DRAWINGS, PROJECTS)	

Portfolio: Marks

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks

Final marks: ...20... Marks (Written/Practical Exam)

Learning Objectives	Criteria Followed for Assessment	Maximum
(Items)		marks
10	- Describe the motion and characteristics of moons, asteroids,	20
	comets, and meteors (IDENTIFICATION, STRUCTURED	
	QUESTIONS	