

Life Science and Physical Science

Mrs. Linden

This year in science is going to be different (I believe in a good way) for all of us because we have new textbooks! Seventh grade will be studying Life Science and eighth grade will be studying Physical Science. I can't wait to jump in and start learning. I am confident you are going to enjoy the new books as much as I have already! With new textbooks comes a bit of a different grading system. Your grade will be determined by combining four different elements:

- 1. Lab preparation/participation:** Many labs will need your group to bring simple materials from home. You will sign up for these materials and can bring them in to me as much as a month ahead of time. You may also be asked to come up with a hypothesis, based on a question given in class, and a materials list and procedure given to you from the book. These should be ready the moment class begins. If you are shuffling around in your binder looking for your paper and running to your locker for your items you may lose a few points. Excessive tardies and absences will also cause you to lose a few points here.
- 2. Lab Write Ups:** The parts of the write ups will remain the same. However, each lab will be worth 15 points. I will work with you on the first few to be sure you know what is expected. The conclusions will be worth 5 of the 15 points and will need to tie directly back to the purpose part of the lab write up. Your data should be neat and easy to follow, in a T table, a graph or as directed by the teacher. Your materials list and procedure should be neat, numbered, and complete each and every time. As always, neatness counts!
- 3. Daily Work:** This will be reading that supports what we are doing in class and comprehension questions or related assignments and/or projects.
- 4. Tests and Quizzes:** These will cover all the material we cover in the book and during our labs. You may also have lab practicals where you are asked to find data by using lab skills learned in class. Included in your tests and quizzes may be one or two open-ended questions intended to test your higher level thinking which will challenge you to think independently. You may think to yourself, hey, we never did this! I will not be looking for a memorized answer, but a thoughtful answer, using scientific thinking skills.

Health is included in your science grade.

Contents

Unit 1	Life	9
	Chapter 1: An Introduction to Life Science	10
	Chapter 2: Characteristics of Life	27
	Chapter 3: Cells	46
	Chapter 4: Taxonomy	68
Unit 2	Viruses, Bacteria, Protoctists, and Fungi	85
	Chapter 1: Viruses	86
	Chapter 2: Bacteria	96
	Chapter 3: Protoctists	116
	Chapter 4: Fungi	136
Unit 3	Plants	151
	Chapter 1: An Introduction to Plants	152
	Chapter 2: Plant Activity	180
Unit 4	Animals	215
	Chapter 1: Simple Invertebrates and Echinoderms	216
	Chapter 2: Arthropods	238
	Chapter 3: Vertebrates	258
Unit 5	The Human Body	295
	Chapter 1: Organization, Nutrition, and Digestion	296
	Chapter 2: Cardiovascular, Respiratory, and Excretory Systems	314
	Chapter 3: Skeletal, Muscular, Nervous, Endocrine, and Reproductive Systems	334
	Chapter 4: Health	369
Unit 6	Genetics and Heredity	389
	Chapter 1: Genetics	390
	Chapter 2: Applications of Genetics	430
Unit 7	Ecology	449
	Chapter 1: The Ecological Landscape	450
	Chapter 2: Ecosystems and Community Dynamics	477
	Chapter 3: Biomes	504
	Chapter 4: Conservation	536
	Glossary	557
	Photo Credits	575

Contents

Unit 1	Matter	9
	Chapter 1: An Introduction to Physical Science	10
	Chapter 2: The Composition of Matter	26
	Chapter 3: The Nature of Matter	36
	Chapter 4: Atomic Structure and the Periodic Table	63
	Chapter 5: Chemical Bonds	75
Unit 2	Types of Substances	89
	Chapter 1: Metals	90
	Chapter 2: Nonmetals and Metalloids	103
	Chapter 3: Organic Compounds	117
	Chapter 4: Other Useful Materials	128
Unit 3	Interactions of Matter	147
	Chapter 1: Solutions	148
	Chapter 2: Chemical Reactions	171
	Chapter 3: Acids, Bases, and Salts	186
Unit 4	Matter in Motion	205
	Chapter 1: Forces and Motion	206
	Chapter 2: Work and Energy	243
	Chapter 3: Types of Machines	264
Unit 5	Energy at Work	285
	Chapter 1: Thermal Energy	286
	Chapter 2: Waves	307
	Chapter 3: Sound	321
	Chapter 4: Light	337
	Chapter 5: Nuclear Energy	386
	Chapter 6: Energy Resources	404
Unit 6	Electricity and Magnetism	423
	Chapter 1: Electricity	424
	Chapter 2: Magnetism	458
	Periodic Table of the Elements	482
	Glossary	485
	Photo Credits	503