Nitty Gritty Science presents:

INTRO TO SCIENCE INTERACTIVE NOTEBOOKS

The **ONLY** guide you'll need to get started!

Dr. Erica Colón ©2013

NITTY GRITTY SCIENCE

Intro to

Science Interactive Notebooks

Introduction

A Science Interactive Notebook is a great tool to use in the science classroom at any level. Not only do interactive notebooks help with students' organization, but they are also a creative way to engage students to process information and demonstrate critical thinking. At the end of the year, the students will have a working portfolio that can be assessed to show what they have learned throughout the school year.

Where to Begin

Introduce the Science Interactive Notebooks to your students as a tool that they will be using daily/weekly to help them learn and understand the science concepts that will be taught throughout the year.

Materials Needed

Students provide:

- Spiral notebook designated ONLY for Science (I prefer three or five subject college ruled because you won't have to trim down 8.5 x 11" paper).

Teacher provides (* required, other items optional):

- Glue sticks *
- Colored pencils *
- Scissors * (those with fun edges work too!)
- Crayons
- Colored paper
- Tape
- Post-its
- Stencils
- Index cards

Do not use marker (bleeds through pages) or staples in Interactive notebooks.

Many times I have my students work in groups when they are working on the left side of the notebook, so I have a Tupperware for each group with supplies in it.

Putting Science Interactive Notebooks Together

Day 1

Have students personalize their Interactive Notebooks by dedicating the first page to an All About Me poem using the following:

ALL ABOUT ME

First Name

Four Descriptive Traits

Sibling/Daughter/Son of (choose 1)

Lover of (2 things)

Who fears (2 things)

Who would one day like to see (1 thing)

And try (1 thing)

Resident of (City, State)

Last Name

Example:

ALL ABOUT ME

Erica

Energetic, Friendly, Sassy, Busy

Sibling of Jennifer and Brendan

Lover of Animals and Sports

Who fears small spaces and running out of time

Who would one day like to see the Pyramids

And try hang gliding

Resident of Jacksonville, FL

Colón

Besides the poem, requirements for the page

- Minimum of three colors used
- Three pictures drawn

Day 2

Have students set up notebook so they stay organized for the year. To be successful, the following will need to be completed so that all students are on the same page and so that you're not pulling your hair out in a couple of weeks ☺

1. Explain to students that this notebook will be used for science ONLY. They are not to rip out any pages for any reason.

2. Have students begin to number pages beginning with their *All About Me* page being page number 1. Have students number the lower, outer corners of each page. Fronts and backs of pages should be numbered. Suggestion: Have students number pages 1 - 50. By the time they get to that page, they will have the idea of the Interactive Notebook and the next time you ask them to number pages it will go much faster and smoother.

3. Glue an envelope inside the front cover of the notebook. This will be used for extra pieces where students can safely tuck inside and finish for homework if they didn't get enough time to finish in class.

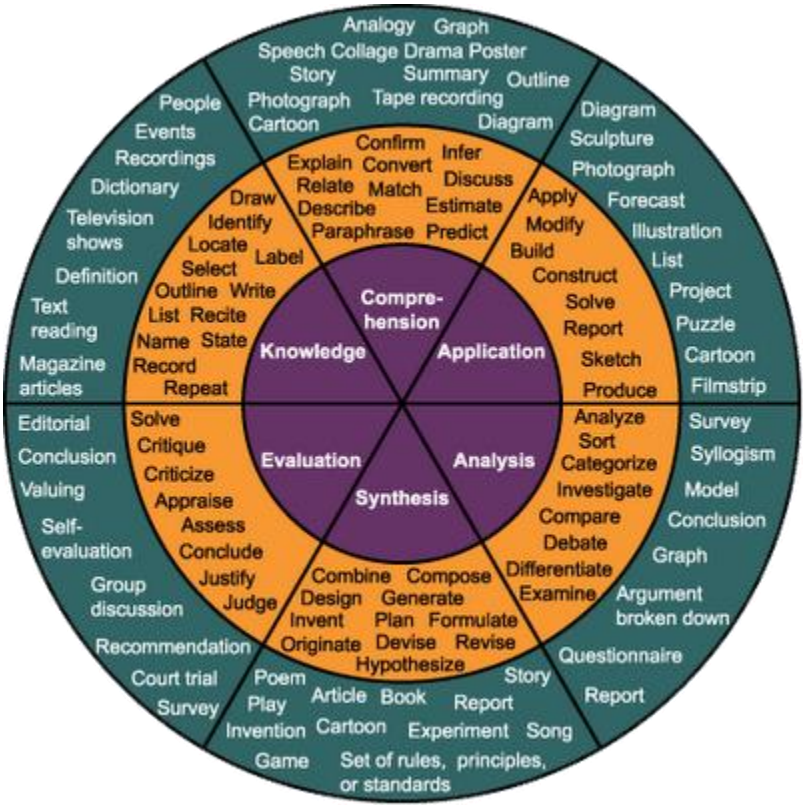
4. Designate pages 2-5 to the Table of Contents. Have students set up their pages according to the following:

Last thing, you as the teacher, need to keep a master copy of the notebook all year long, so if a student is absent, they have a resource to help them get caught up. I use a binder with page protectors so I can change assignments from year to year - just use a washable marker on page protectors to number pages).

Keeping Science Interactive Notebooks

Science Interactive Notebooks are based around the idea that students will use both their right and left brain hemispheres to help them gain and understand new science knowledge. Each two-page spread is used to teach the daily science concept.

The **Right Side** of the Science Interactive Notebook is the Teacher Input side. This is all the information that you want the students to learn and know. This side uses a lot of the knowledge/comprehension levels of Bloom's Taxonomy (see wheel below).



Source: *http://www.alline.org/euro/images/bloomwheel.png*

The **Left Side** of the Science Interactive Notebook is the Student Output side. This side is where students use information from the teacher input side (right), and creatively processes that information. Students will be using application, analysis, synthesis and evaluation skills from Bloom's taxonomy.

Here is a list of examples to use on both sides of the Science Interactive Notebook.

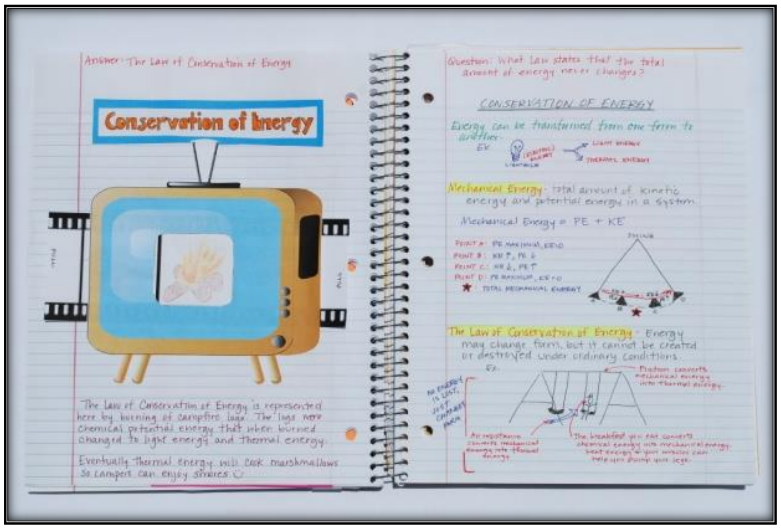
- Concept Maps
- Comic strips
- Venn diagrams
- Drawings
- Writing prompts
- Metaphors & Analogies
- Posters
- Foldables
- Newspaper/Magazine Ads
- Brochures
- Data/Graphs
- Possibilities are ENDLESS!

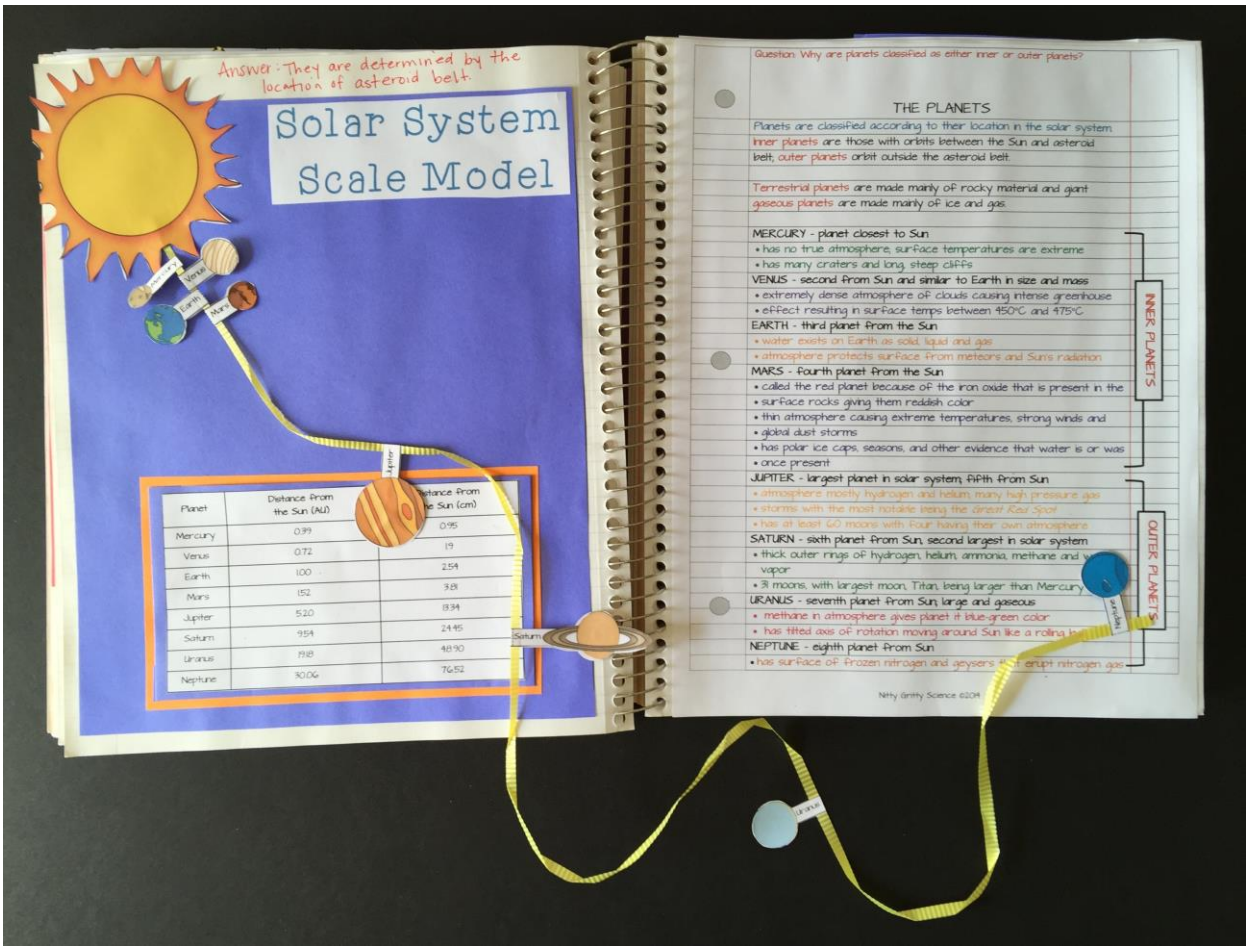
- Lecture Notes
- Vocabulary words
- Reading notes
- Essential Questions
- Teacher Models
- Readings
- Sample Problems
- Q & A

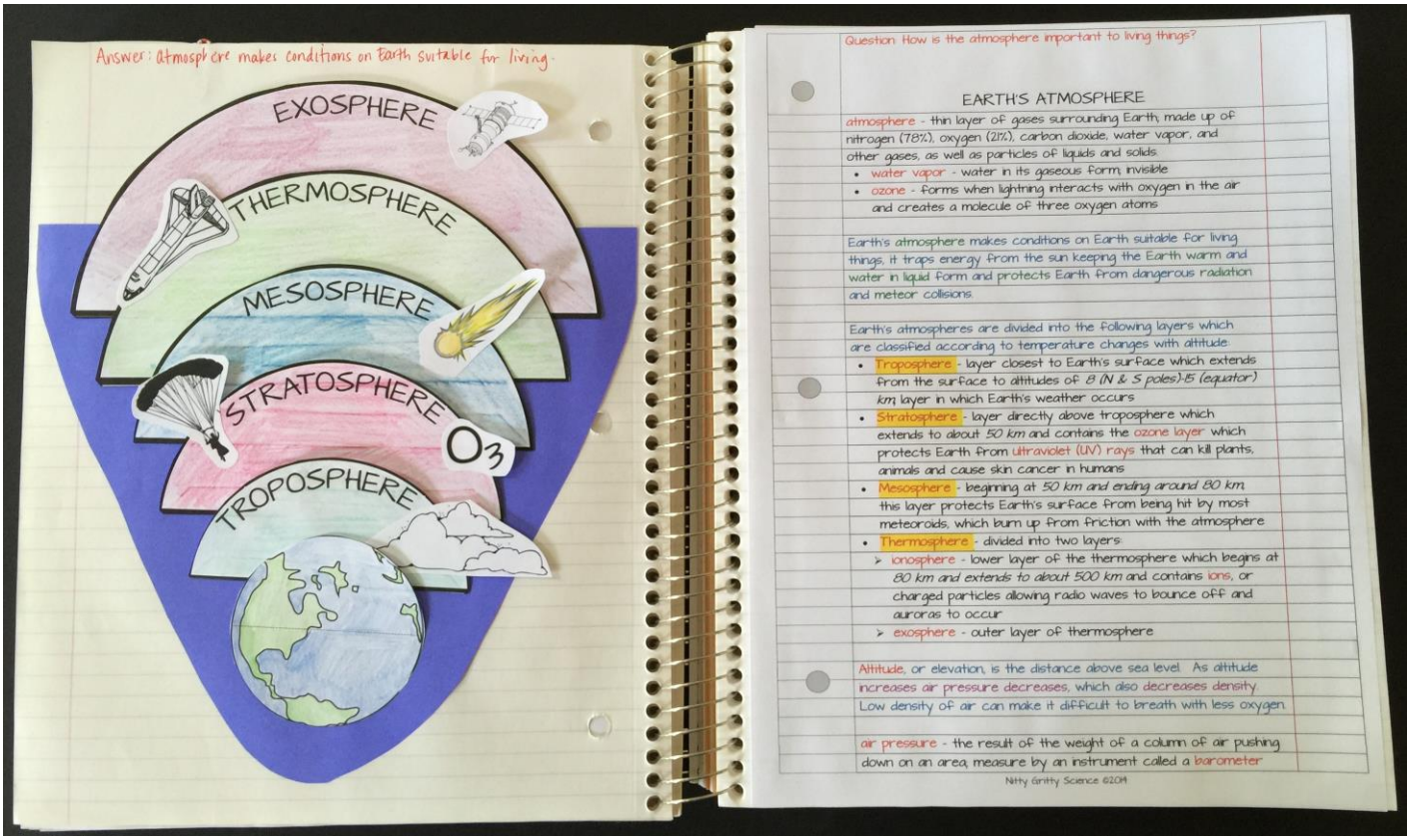
Examples

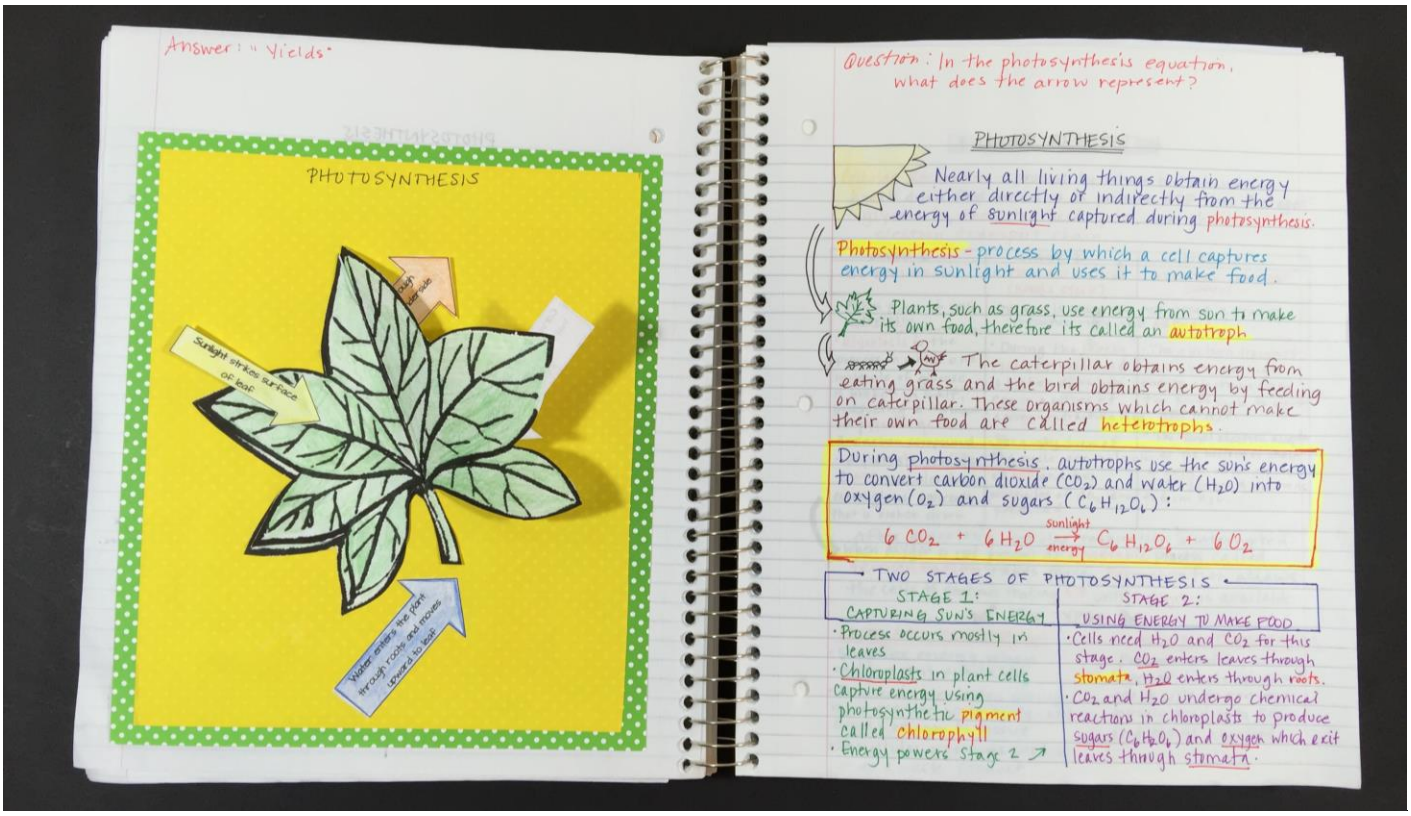
Here are a few examples from my Science Interactive Notebooks:

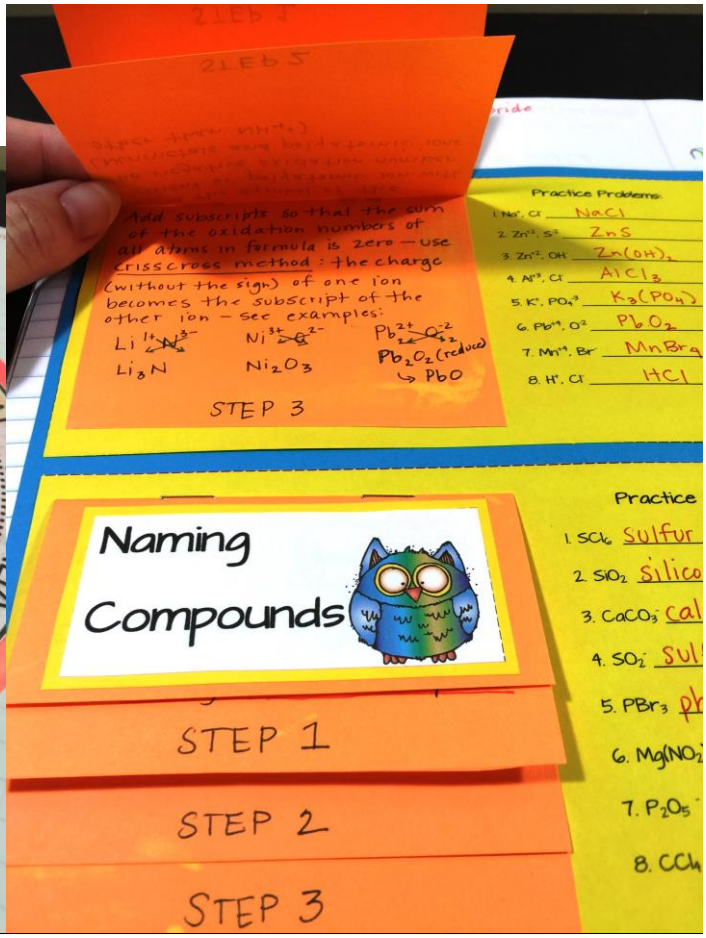
- Life Science
- Earth Science
- Physical Science











Science Interactive Notebook Parent Letter

I wanted to share this parent letter with you since I think it's important that parents see what their students are doing in the science classroom. As students move on to middle and high school, parents are less involved since students are more independent, but I know many still love to see their child's work and what a great way to give each the opportunity to have a positive conversation about school work!

This letter is intended to go home with the students every 9 weeks. I had my students all designate a page for it and glue it in before they took it home to ensure the parent was handed the notebook as well as the letter.

Just wait until you the feedback you get from the parents - you're going to wish you started your Science Interactive Notebooks sooner!

(see next page for letter)

Dear Parents/Guardians,

The students have worked very hard on their Science Interactive Notebooks and will continue to do so for the remainder of the school year. The Science Interactive Notebook is an engaging tool that students use to show that they are understanding what has been taught in class each day and gives them an opportunity to share some of their creativity with the entire class.

I invite you to take a look at what your child has accomplished so far and feel free to ask him/her about the pages they have completed. I know they are proud of their work, as am I.

Please sign below to verify that your child has shared their work with you and feel free to make a special comment to him/her in the space provided or use it to share any of your thoughts or concerns you may have at this time.

Thank you for your time.

My child, _____, has shared their Science Interactive Notebook with me on _____ (date).

Parent Signature _____

Grading the Interactive Science Notebooks

Everyone has a different way of doing this. Some paste in rubrics and use that to track student progress. Others have students turn in notebooks at the end of each unit and grade accordingly. What I have found works for me is a quick "sticker-check". I feel that I have enough summative assessments that help me measure students understanding, so I use my students' Interactive Science Notebook as a daily formative assessment - graded with a sticker (or a stamp).

How the Sticker-Check works is that every day when students come into the classroom, they automatically know to have their Interactive Science Notebooks open to the most recent assignment. I walk up and down the aisles with a pack of stickers, if the left (or student output) side is completed they get a sticker in the upper left hand corner square. If it's not, I don't make a big deal, the student just doesn't get a sticker and I move on.

When it comes to the day of the test of the particular unit we're working on, students stack their notebooks on my desk with the last page being open. While students are testing I quickly grade notebooks with a completion grade. For example, if students are to have 8 different assignments done during the Plant Unit, then I quickly count back the last 8 upper, left side corners of their notebook. They should have 8/8 stickers - if they only have 7 stickers then they get a 7/8 or an 88%.

This system works for me, but there is no right or wrong way. I also include a parent signature page that I ask to have signed and dated (every quarter) that they have seen the notebook and students have explained what they are learning. I usually get great messages from parents telling me they love seeing their kids' creativity.

Need More Science??

Are you looking for engaging activities and original ideas for Science interactive Notebooks? Maybe you're just needing to bulk up what you already have. The next pages share the Table of Contents for my COMPLETE Science Interactive Notebooks for Earth Science, Life Science and Physical Science. Each chapter is aligned to the **Next Generation Science Standards** and can be bought individually or as a complete bundle.

Table of Contents

Physical Science Interactive Notebook

Click HERE to Learn More.

Section 5: Communicating with Radio Waves	PS4-3C
Chapter Six: Sound, Light, Mirror and Lenses	
Section 1: Sound	PS4-2B
Section 2: Music and Uses of Sound	PS4-2A
Section 3: Reflection and Refraction f Light	PS4-2B
Section 4: Mirrors	PS4-2B
Section 5: Lenses and Optical Instruments	PS4-2B
Chapter Seven: Matter	
Section 1: Composition of Matter	PS1-1A
Section 2: Types of Mixtures	PS1-2A; PS1-3A
Section 3: Describing Matter	PS1-2A; PS1-3A
Section 4: States of Matter	PS1-1A
Section 5: Changes in States of Matter	PS1-2A; PS1-4A
Section 6: Fluids: Behaviors of Liquids and Gases	PS1-1A; PS1-4A
Chapter Eight: Atoms and the Periodic Table	
Section 1: Atomic Structure	PS1-1A
Section 2: Masses of Atoms	PS1-1A
Section 3: The Periodic Table	PS1-3A
Section 4: Metals, Nonmetals and Metalloids	PS1-3A
Chapter Nine: Chemical Bonds and Equations	
Section 1: Types of Chemical Bonds	PS1-1B
Section 2: Writing Formulas and Naming Compounds	PS1-5B
Section 3: Chemical Reactions	PS1-2B; PS1-5B
Section 4: Balancing Chemical Equations	PS1-2B; PS1-5B
Section 5: Chemical Rxns - Types, Rates and Energy	PS1-2B; PS1-5B
Chapter Ten: Solutions, Acids and Bases	
Section 1: Solutions, Solubility and Concentration	PS1-4
Section 2: Acids, Bases and Salts	PS1-3B
Section 3: Strength of Acids and Bases	PS1-2A
Chapter Eleven: Thermal Energy	
Section 1: Temperature and Heat	PS3-1A
Section 2: Transferring Thermal Energy	PS3-1B
Section 3: Using Heat	PS1-4A

Table of Contents

Life Science Interactive Notebook

Click HERE to Learn More.

Chapter Six: Cell Processes & Energy	
Section 1: Photosynthesis	LS1-6C; PS3.D
Section 2: Cellular Respiration	LS1-7C; PS3.D
Section 3: Cell Cycle	LS1-2
Section 4: Mitosis	LS1-2
Section 5: DNA Structure and Replication	LS1-2
Section 6: Control System of a Cell	LS3-1
Chapter Seven: Genetics: The Science of Heredity	
Section 1: The Work of Gregor Mendel	LS4-6
Section 2: Mendel's Laws of Heredity	LS3-2A
Section 3: Punnett Squares	LS3-2A; LS4-4
Section 4: Meiosis	LS3-2A
Chapter Eight: Modern Genetics	
Section 1: Complex Patterns of Inheritance	LS3-1B
Section 2: The Genetic Code	LS3-1A
Section 3: Human Genetic Disorders	LS3-1
Section 4: Advances in Genetics	LS4-5
Chapter Nine: Change Over Time & Classification	
Section 1: Darwin's Theory of Evolution	LS4-4B
Section 2: Evolution of Populations	LS4-4C
Section 3: The Fossil Record	LS4-1A; LS4-2A
Section 4: Classification	LS4-2A
Section 5: Domains and Kingdoms	LS1-1
Chapter Ten: The Microbial World	
Section 1: Prokaryotes	LS1-1A
Section 2: Viruses	LS1-1
Section 3: Protists	LS1-1A
Section 4: Fungi	LS2-3B
Chapter Eleven: Plants	
Section 1: The Plant Kingdom	LS1-4
Section 2: Plants Without Seeds	LS1-4B
Section 3: Seed Plants	LS1-4B
Section 4: Flowering Plants	LS1-4B
Section 5: Roots, Stems and Leaves	LS1-2A
Section 6: Plant Responses and Growth	LS1-5B

Chapter 12: Animal Diversity - Invertebrates	
Section 1: Introduction to Animals	LSI-3A
Section 2: Animal Behavior	LSI-8D
Section 3: Sponges, Cnidarians and Worms	LSI-4B
Section 4: Mollusks, Arthropods and Echinoderms	LSI-4B
Section 5: Insects	LSI-4B
Chapter 13: Animal Diversity - Vertebrates	
Section 1: Intro to Vertebrates: Fish & Amphibians	LSI-4B
Section 2: Reptiles and Birds	LS4-6C; LSI-4B
Section 3: Mammals	LS4-6C; LSI-4B
Chapter 14: Human Body - Part 1	
Section 1: The Skin	LSI-3A
Section 2: Muscular System	LSI-3A
Section 3: Skeletal System	LSI-3A
Section 4: Nervous System	LSI-8D
Section 5: Digestive System	LSI-3A
Chapter 15: Human Body - Part 2	
Section 1. Respiratory System	LSI-3A
Section 2: Excretory System	LSI-3A
Section 3: Cardiovascular System	LSI-3A
Section 4: Blood	LSI-1A
Section 5: Endocrine and Reproductive System	LSI-3A

Table of Contents

Earth Science Interactive Notebook

Click HERE to Learn More.

Section 4: Volcanic Landforms	ESS2-2A
Chapter Seven: Earth's Changing Surface	
Section 1: Weathering	ESS2-1A
Section 2: Soil Formation	ESS2-1A
Section 3: Erosion & Deposition: Wind and Water	ESS2-2C
Section 4: Erosion & Deposition: Glaciers	ESS2-2C
Chapter Eight: A Trip Through Earth's History	
Section 1: Fossils	ESS1-4C; ESS2-3B
Section 2: Determining Age of Rocks	ESS1-4C; ESS2-3B
Section 3: Geological Time Scale	ESS1-4
Section 4: Earth's Eras	ESS1-4
Chapter Nine: Earth's Waters	
Section 1: Earth - The Water Planet	ESS2-4C
Section 2: Fresh Water	ESS2-2C
Section 3: Characteristics & Composition of Ocean	ESS2-6C
Section 4: Ocean Waves and Tides	ESS2-4C
Section 5: Ocean Currents and Climates	ESS2-6D
Chapter Ten: Earth's Atmosphere	
Section 1: The Atmosphere	ESS2-2A
Section 2: Atmosphere Energy Transfer	ESS2-6D
Section 3: Wind and Water	ESS2-4C
Section 4: Air Quality	ESS3-5D
Chapter Eleven: Weather and Climate	
Section 1: Weather Patterns	ESS2-5C
Section 2: Weather Forecasts	ESS2-5D
Section 3: Climates of Earth	ESS2-5D
Section 4: Climate Cycles	ESS2-6D
Section 5: Recent Climate Change	ESS3-5D
Chapter Twelve: Astronomy and Space Science	
Section 1: Earth's Motion	ESS1-1A
Section 2: The Moon - Earth's Satellite	ESS1-1A
Section 3: Solar System	ESS1-2C
Section 4: The Planets	ESS1-3B
Section 5: Stars and Galaxies	ESS1-2
Section 6: Space Exploration	N/A

Chapter Thirteen: Natural Resources	
Section 1: Energy & Mineral Resources	ESS3-1A
Section 2: Renewable Energy Resources	ESS3-1A
Section 3: Land Resources & Human Impact	ESS3-1A; ESS3-3C; ESS3-4C
Section 4: Air/Water Resources & Human Impact	ESS3-3C; ESS3-1A

NITTY GRITTY SCIENCE

Thank you for your recent download!! I hope this resource helps you and your students have a successful year using Science Interactive Notebooks. I can guarantee students will show pride in their work and be willing to share their notebook entries with you and their classmates.

Want more Nitty Gritty Science? Check out my store for editable resources that correlate with my Science Interactive Notebooks including PowerPoints, chapter tests and notes. Don't forget to join me on Facebook (www.facebook.com/NittyGrittyScience) to get product updates, exclusive deals and fantastic science content and humor!

Enjoy,

Erica L Colón