

# InterActive Science Notebook: AP Biology

InterActive notebooks will be used in this class to help you learn and remember key scientific concepts. Why does this type of notebook work? This notebook style uses both the right and left brain hemispheres to help you build neural networks. By providing space for you to record information and refer to it quickly, this too increases your ability to remember and use the information later. You'll also have an opportunity to interact creatively with the new knowledge you're gaining.

InterActive Notebook supplies due by the first day of school.

1. An 8½ X 11 spiral notebook with at least 100 pages
2. Glue stick(s) – must have one all year
3. Highlighter
4. Colored Pencils/ Pens
5. Pen and pencil with eraser

### Notebook Grading Guidelines:

- Visible interaction with your notes
- 3 output pages per unit
- Thoughtful reflection that refers to EK and Big Ideas
- TOC up to date and all work neatly glued in

### Instructions

See the sample below for the set-up for the first seven pages. Number all the pages that follow in the upper right hand corner. Left side pages are even; right side pages are odd.

Input pages are for writing down information you are given or you have read – when your teacher lectures, or you get input from books, videos, scientific articles, NPR audio clips or speakers. When you get information about how to set up a lab, or safety requirements – this is also considered input.

Output pages show your understanding of information. Basically it's your manipulation of the information given to you in class. You work with input from lecture notes, etc., but **present** it in your own way.

Pages don't have to be specifically left or right sides. You can put pages in order according to completion during the progress of the class. When gluing information, handouts, etc. in your notebook, use a **glue stick** only. Do not use rubber cement or Elmer's glue as pages will stick.

|   |   |  |   |
|---|---|--|---|
| <p><b>(inside cover)</b></p> <p>Glue/tape in a copy of the InterActive Notebook rubric.</p>   | <p><b>(right side) 1</b></p> <p>Notebook Title Page: Course, Teacher, Room, Student's Name, Picture, etc. (student constructed – be creative)</p> | <p><b>(left side) 2</b></p> <p>Glue/tape in copy of <i>Notes and reading guidelines</i>. Remember, <b>ONLY USE GLUE STICKS!</b></p>                                  | <p><b>(right side) 3</b></p> <p>Glue/tape in copy of <i>output</i> guidelines. Remember, <b>ONLY USE GLUE STICKS!</b></p> |
| <p><b>(left side) 4</b></p> <p>Glue in a copy of the Student Reflection page guidelines. Remember, <b>ONLY USE GLUE STICKS!</b></p> | <p><b>(right side) 5</b></p> <p>Glue in a copy of the quick start guide (this tells you how to do test corrections etc)</p>                       | <p><b>(left side) 6</b></p> <p>Begin constructing a title page for the first unit (this will be an output page so put in details)<br/>Title: Graphics:<br/>Date:</p> | <p><b>(right side) 7</b></p> <p>Glue in the table of contents for the first unit. Remember,</p>                           |

## Interactive Notebook: Grading Scale

| Points | Expectations   |
|--------|--|
| 50     | Nothing missing, complete notes, summaries, excellent organization, detailed output pages, and thorough reflection |
| 45     | No more than 1 missing or incomplete assignment.   |
| 42     | No more than 2 missing or incomplete assignments.  |
| 40     | No more than 4 missing or incomplete assignments.  |
| 37     | No more than 5 missing or incomplete assignments.  |
| 32     | Missing more than 5 assignments. No note summaries and partial notebook reflection                                 |
| 20     | Missing more than 5 assignments. No note summaries. No notebook reflection. Missing details in outputs.            |
| 10     | Missing the majority of the work for the notebook check.   |

## UNIT TABLE OF CONTENTS

| Units  | Title Page Number |
|--|-------------------|
| Unit 1: An Introduction, Animal Behavior & Natural Selection |                   |
| Unit 2: Cells, Membranes and Cell Transport                  |                   |
| Unit 3: Energy Dynamics                                      |                   |
| Unit 4: Meiosis & Mendel                                     |                   |
| Unit 5: Genetics, DNA and Protein Synthesis                  |                   |
| Unit 6: Evolution in Populations                             |                   |
| Unit 7: Bacteria, Viruses and the Immune System              |                   |
| Unit 8: Nervous & Endocrine Systems                          |                   |

# InterActive Notebook: INPUT/INTERACTION

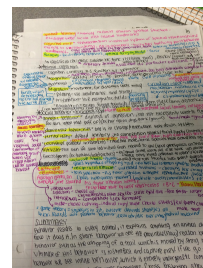
InterActive notebooks will be used in this class daily to help you learn and remember important science concepts. *Why do they work?* This notebook style uses both the right and left hemispheres of the brain to help you sort, categorize, remember and creatively interact with the new knowledge you are gaining. The more you process information the more you begin to understand it. This leads to longer retention. Check out my [pinterest board](#) for some good ideas

**What goes on the input pages? ANYTHING NEW THAT YOU ARE LEARNING!** Input is all information that you are supposed to learn.

*Always start the page by recording the date and subject title at the top.*

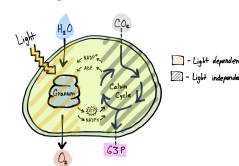
- Input pages are for **writing down** information you are **given in class**.
- Take notes in any manner/style that fits your learning. A sample of Cornell-Style is below.
- **Interact** with your notes at the end of lectures. Do this ASAP so you start to retain concepts and can ask questions early on
  - ✓ Use diagrams
  - ✓ Add Color – not too much, think of a system and stick to it.
  - ✓ QUESTION! Students who ask questions learn more
  - ✓ Label things
  - ✓ Add examples

Biology is a VISUAL subject – use drawings in your notes and pay close attention to diagrams as you read



## Sample Cornell-Style Notes

| Student Questions  | Notes/Factual Information  |
|--|--|
| Why are plants green instead of red or blue?   | Scientists note that plants are green. Many hypotheses have been proposed to understand plant color.   |
| How does photosynthesis work to make food?   | <b>Photosynthesis</b> means “to put <b>together</b> with <b>light</b> ” meaning that plants use a process to <u>produce food</u> and energy from light.                              |
| What’s the difference between transmit and absorb?   | Plants are green b/c they <b>transmit green</b> light.   |
| *Ask in class tomorrow: What is the key difference between Photosystem I and Photosystem II? Do all plants need both? What about shade plants? (L2)  | <p><b>Photosystem I:</b> Sun’s energy breaks water in two. are set free and boost the levels...</p> <p><b>Chlorophyll</b> (pigment) absorbs the E during sunlight hrs. NADPH+...</p> |
| <p><b>SUMMARY:</b> According to the textbook, all plants use the process of photosynthesis. First, photosynthesis means a process that plants use to produce food and energy from light. You can see that from the name: Photo=light, synthesis=put together. Second, all plants are green. They are green because they transmit, not absorb green light. Lastly, chlorophyll is a pigment that absorbs energy in Photosystem I. Since plants transmit green light, chlorophyll must be green because of this as well. In conclusion, the color of light plays an important role in the production of food through photosynthesis.</p> |  |



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# InterActive Notebook: Output/Analysis

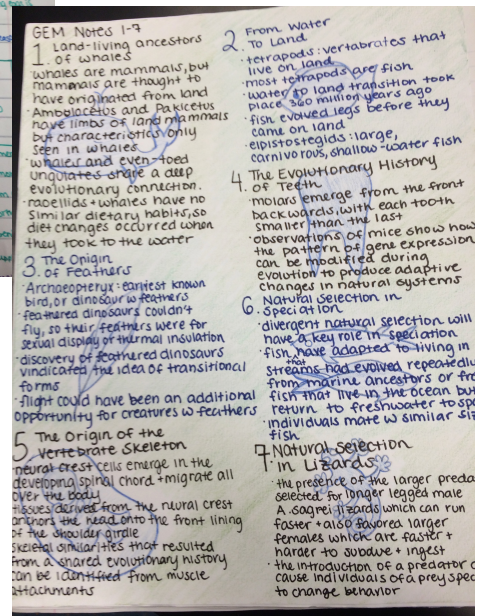
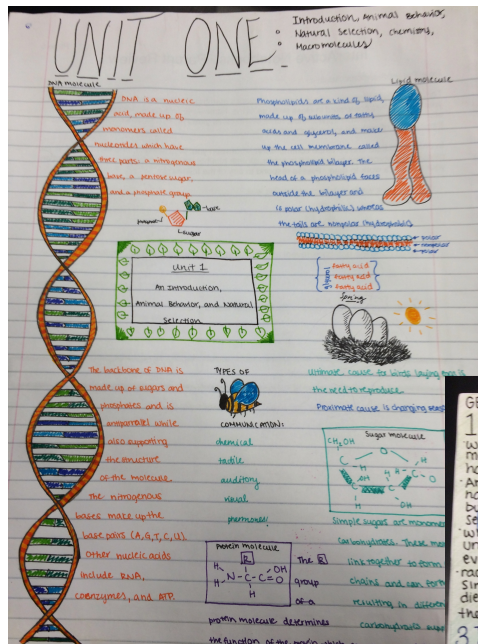
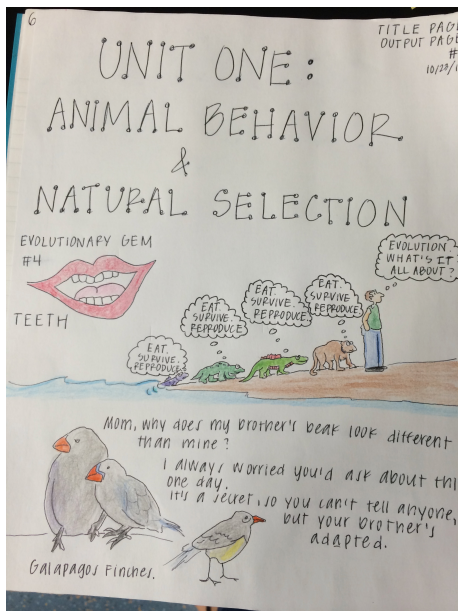
The output pages demonstrate your *understanding* of the information from the input pages. You work with the input, and INTERACT with the information in creative, unique, and individual ways. We'll use the 12 "clock" questions to help focus your attention and guide your learning of the science content and concepts.

## What goes on the OUTPUT pages?

- Brainstorming
- Explain the application of this info to real life
- Biography posters
- Your questions
- Cartoons
- Poetry /song lyrics
- Metaphors and Analogies
- Data and graphs you generate
- Analysis writing
- Mnemonics
- Graphic organizers
- Pictures/drawings
- Venn diagrams
- Other diagrams
- Reflections
- Flowcharts
- Significant statements
- Commentary
- Other creative avenues for processing information
- Make a visual illustration explaining the topic.

## Things to know about output pages

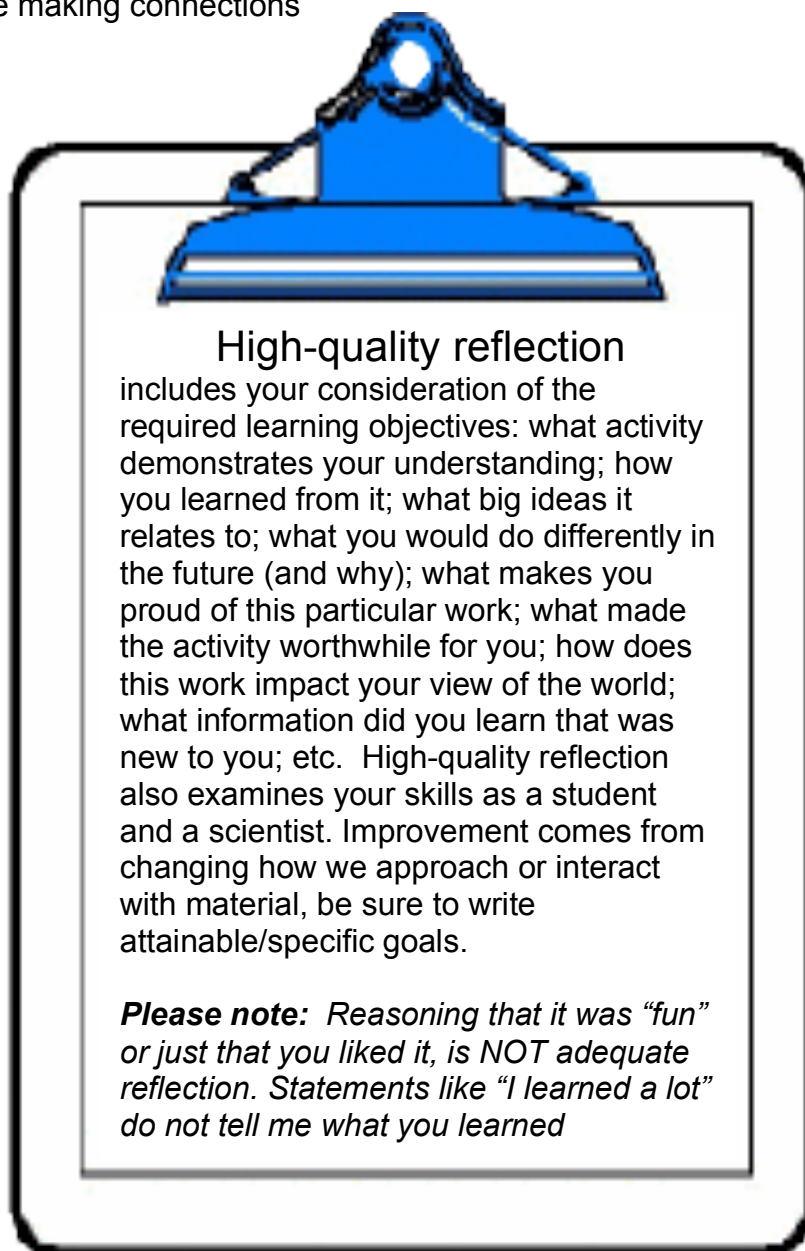
- ✓ Always use color... It helps the brain learn and organize information.
- ✓ Output pages require more synthesis and analysis of the information
- ✓ Title Pages are output pages (but they don't take the place of processing your notes!)
- ✓ Some class activities are output pages – check the rubric or ask in class



# InterActive Notebook: The Reflection

Toward the end of each unit, you will be called upon to reflect upon your work. This writing sample is completed in your notebook, although may be typed and glued into the notebook. While there is no required length, high quality reflection uses 1-2 pages of the notebook. The goal is for you to review what we have done over the unit and to put it into the context of the AP framework. This a great study strategy as well – please do not put this off until the night before the exam. Taking time to review learning objectives and essential knowledge statements throughout the unit will make your reflection MUCH easier!

1. Select and explain 2 of the essential knowledge statements from the unit. Describe one assignment, lab or activity and how it helped you to learn the concept.
2. What specific big ideas did we cover in this unit (remember there are four big ideas)? Explain – be sure to explicitly state how you are making connections between these 4 big ideas.
3. Briefly describe Which activities or study skills have you employed to help you learn these topics? List specific areas in which you feel you need to improve or need help improving.
4. Pick one topic or idea that was confusing to you. Using your notes and your book/reading guide explain the topic in depth. You can use diagrams to help. Highlight 3 questions you still have about the topic.
5. List 3 goals (bullet point form) for helping you learn or be more successful in the next unit  
Or  
Review your goals from the last unit – were you able to implement them? Use this to revise goals for this unit



## InterActive Notebook: Table of Contents

Unit \_\_\_\_\_ Chapters \_\_\_\_\_ Date \_\_\_\_\_

| Page # | Items (Only include the first page, use "To" & "From" for other pages) | Page # | Items (Only include the first page, use "To" & "From" for other pages) |
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