

Biology

August 20 – August 30, 2013

THE CHEMISTRY OF LIFE

- Tuesday August 20 Introductory Handouts, Dice Game, Online Textbook
HOMEWORK: Partnership Agreement
Read Chapter 1 Section 1 pp. 4-9
What 3 things are unique about the online textbook?
- Wed August 21 Chapter 1 Section 1 The Nature of Science Lecture and Power Point Notes
HOMEWORK: CH 1.1 The Nature of Science Directed Reading Worksheet
Read Chapter 1 Section 2 pp 10-13
- Thursday August 22 Chapter 1 Section 2 Scientific Methods Lecture and Power Point Notes
Chapter 1 Section 2 Review Questions pg. 13 as a Group
HOMEWORK: CH 1.2 Scientific Methods Directed Reading Worksheet
Read Chapter 1 Section 4 pp 17-19
- Friday August 23 Chapter 1 Section 4 What is Biology Power Point Lecture and Notes
HOMEWORK: Poster Project Chapter 1 pg 24 Question 28
Read Chapter 1 Section 3 pp 14-16
- Monday August 26 Monty Python Teaches Science
Chapter 1 Section 3 Tools and Techniques Power Point Lecture and Notes
HOMEWORK: Chapter 1 Section 4 Review Questions 1, 3, 4, 5, 8 pg 19
- Tuesday August 27 Microscope How-To Demonstration
LAB: Microscope
HOMEWORK: Review Lab Handout
- Wed August 28 **LAB:** Microscope
HOMEWORK: Finish Microscope Lab Handout
Tools and Techniques Directed Reading Worksheet
- Thursday August 29 Review for Chapter 1 TEST
HOMEWORK: Study for Chapter 1 TEST
- Friday August 30 CHAPTER 1 TEST
HOMEWORK: Read Chapter 3 Section 1 pp 48-54

Welcome to Biology 2013-2014

I will strive to ensure that God's physical world is viewed, in all aspects, in light of spiritual truths. Because it is evident in the scripture that God calls us to honor Him with all aspects of our lives, I will challenge you to use this class opportunity to do 'All things as unto the Lord.' I look at our time together as a special gift from our heavenly Father and look forward to developing an authentic relationship with you.

From this basis, I want to give you a better picture of what I expect our time together to be like so that you can be as successful as you want to be. Remember, we both have a role in your success.

Your Role

Take responsibility for creating your success in this class. Actively participate, come prepared, bring a positive God centered attitude, be a proactive learner, put your best effort into every assignment, seek out help when you need it, and treat yourself, your classmates, and your teacher with respect that God demands of you.

My Role

Work for the success of every student. Make the class a positive experience for all students, make the class as interesting and relevant as possible, bring a positive God centered attitude to class, be a proactive educator, put my best effort into every class, give meaningful performance feedback, and treat all students with the respect that God demands of me.

The attached guidelines will answer your more specific questions. If they don't, please ask!

I am truly looking forward to working with you this year and cannot wait to see what wondrous things GOD has in store for us!!!!!!!

Contact Information

Dr. David Haak
Room 1121

Email: dhaak@westminsterchristian.org

Welcome to Biology 2013-2014

Grading – I work hard to be a fair and consistent grader. If you honestly feel I have made an error in grading your work (it has been known to happen!), please come see me separately so we can have a mature discussion about it.

Grades are not curved and the following scale is used.

93 – 100% = A	87 - 89% = B+	77 – 79% = C+	67 – 69% = D+	60 – 59% = F
90 – 92% = A-	83 – 86% = B	73 – 76% = C	63 – 66% = D	
	80 – 82% = B-	70 -72% = C-	60 – 62% = D-	

Grading will be based on the following weighting.

Tests / Quizzes = 50% **Labs / Projects = 25%** **Homework = 25%**

Late Work – If work is not turned in on due date, students will receive a zero and parents will be emailed. This assignment will remain a zero until it is turned in. For each day the assignment is late, 20% will be taken off the grade. After five days, the assignment will no longer be accepted for credit.

Homework – Homework assignments are designed primarily to help you practice and reinforce the concepts and skills learned in class. We will go over selected portions of homework assignments as needed. For additional help, I encourage you to first check with your classmates, and then, if you still need help, come see me.

Make-up Tests – If you miss a test day, you must be prepared to make up the test on your first day back at school. Extenuating circumstances can change that, but only after discussion and agreement with me.

Days Absent – While it is not a good idea to be absent from class, sometimes it is unavoidable. If you miss a day of class, you are responsible for finding out from me what you missed and working out a make-up schedule. Note that lab experiences cannot be made up, but on some labs I will allow you to get the data from a classmate and you will be allowed to complete the Analysis portion of the lab for credit. Work missed from an unauthorized absence will receive a grade of “0”.

Extra Help – My job (and calling from God) is to create an environment for you to have a successful learning experience. While I strongly encourage you to develop study partner relationships with your classmates, I also want you to feel free to come see me when you have any questions or concerns about the class. My “normal” office hours are attached. You can almost always find me in my room during these times, unless I am called away momentarily.

Office Hours:

Before school

M,T,W,TH,F: 6:30am – 7:50am

During School

2nd and 5th period M,T,W,TH,F



Classroom Partnership Agreement

Student:

By affixing my signature here I Your Name , state that I have read and understand the terms listed in the Welcome to Biology handout. I understand that this class is a partnership between myself and my teacher and I agree to continuously work at that partnership.

Signature

Parent:

By affixing my signature here, I Your Name , state that I have read and understand the terms listed in the Welcome to Biology handout. I understand that this class is a partnership between my child and their teacher and I agree to support both of them in that partnership

Signature

Teacher:

By affixing my signature here, I Dr. David Haak, state that I have read and understand the terms listed in the Welcome to Biology handout. I understand that this class is a partnership between myself and my students, and I agree to continuously work at that partnership.

Signature

Science: 9812200: Biology

2013-2014

Instructor:

Dr. David Haak
Room 1121
Email: dhaak@westminsterchristian.org

Office Hours:

Before school
M,T,W,TH,F: 6:30am – 7:50am
During School
2nd and 5th period M,T,TH,F:

Course Description:

Course Description: Biology is an introductory course into the study of life and living organisms. Biology introduces students to the foundations of living organisms, their habits, their anatomy and physiology, and their purpose in God's creation. Students are encouraged to apply this knowledge to their personal environments enabling them to lead a more productive life for honoring God.

Text:

Biology Holt, Rinehart, and Winston

Objectives:

1. Students completing this course will demonstrate a mastery of the biology concepts.
2. The students will incorporate this information by utilizing higher order thinking skills, enabling them to have a clear understanding of how these concepts impact their daily lives.
3. Ultimately, through the completion of this course, students will begin to recognize and appreciate the intricacy and diversity of God's Creation.

Evaluation:

1. Homework Assignments 20%
2. Labs / Projects 30%
3. Quizzes / Tests 50%

Late Assignment Policy:

If work is not turned in on due date, students will receive a zero and parents will be emailed. This assignment will remain a zero until it is turned in. For each day the assignment is late, 20% will be taken off the grade. After five days, the assignment will no longer be accepted.

Striving to Honor God:

I will strive to ensure that God's physical world is viewed, in all aspects, in light of spiritual truths. Because it is evident in the scripture that God calls us to honor Him with all aspects of our lives, I will challenge you to use this class opportunity to do 'All things as unto the Lord.' I look at our time together as a special gift from our heavenly Father and look forward to developing an authentic relationship with you.

Outline of Course Content:

Unit 1: Foundations of Biology

Chapter 1 The Science of Life

Unit 2: Biochemistry

Chapter 2 Chemistry of Life

Chapter 3 Biochemistry

Unit 3: Cell Structure and Function

Chapter 4 Cell Structure and Function

Chapter 5 Homeostasis and Cell Transport

Unit 4: Cellular Respiration and Photosynthesis

Chapter 6 Photosynthesis

Chapter 7 Cellular Respiration

Unit 5: Cellular Reproduction (Mitosis & Meiosis) DNA, RNA, Protein Synthesis

Chapter 8 Cell Reproduction

Unit 6: Genetics

Chapter 9 Fundamentals of Genetics

Chapter 10 DNA, RNA, Protein Synthesis

Chapter 11 Gene Expression

Chapter 12 Inheritance Patterns and Human Genetics

Chapter 13 Gene Technology

Unit 4: Creation, Evolution & Intelligent Design

Chapter 14 History of Life

Chapter 15 Theory of Evolution and Creationism

Chapter 16 Population Genetics and Speciation

Chapter 17 Classification of Organisms

Unit 5: Bacteria and Viruses

Chapter 23 Bacteria

Chapter 24 Viruses

Unit 6: Human Systems and Dissections

Chapter 45 Skeletal, Muscular, and Integumentary Systems

Chapter 46 Circulatory and Respiratory Systems

Chapter 47 The Body's Defense Systems

Chapter 48 Digestive and Excretory Systems

Chapter 49 Nervous System and Sense Organs

Chapter 50 Endocrine System

Personal Profile

Name: _____

Birthday: _____

Brothers/Sisters:

How many: _____

Names/Ages: _____

Pets: _____

Favorite:

Candy: _____

Band: _____

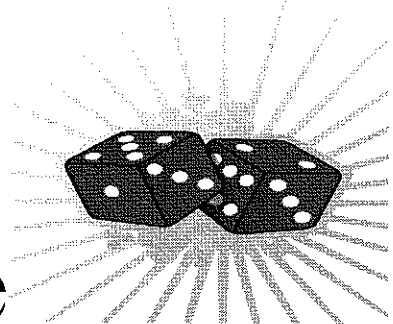
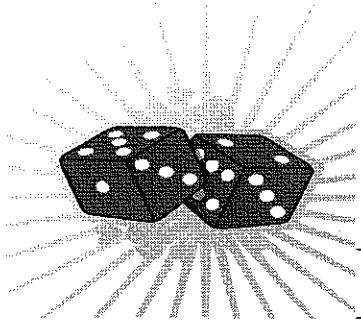
Song: _____

Favorite TV show: _____

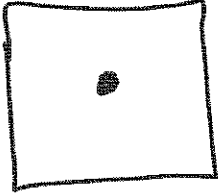
Movie of all time: _____

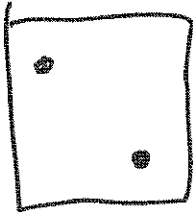
Tell me something about you that I would never have guessed on the first day of class.

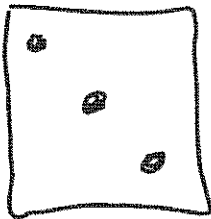
Your Name _____

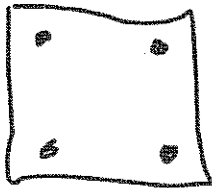


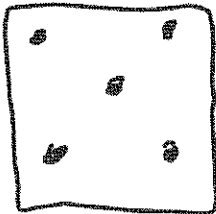
Dice Game

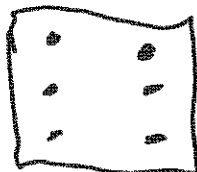












Interactive Online Edition

Username _____

Login Instructions

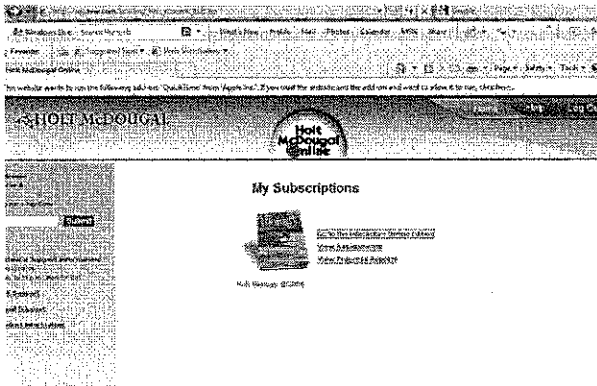
Password _____

Log in at <http://my.hrw.com>

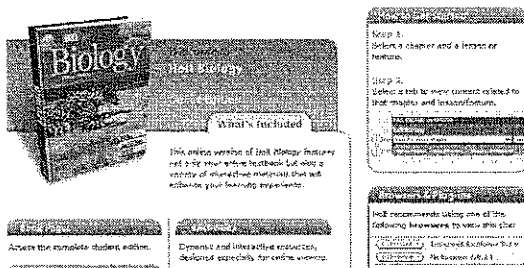
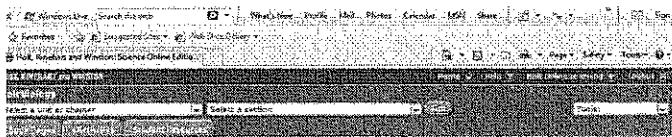
Once there you will see this screen. You will need to enter your Username, and Password then click LOGIN tab.



You will now need to select Go to the Interactive Online Edition tab. This will bring you to the next



page.



Once you are on Interactive Online Text page you can select

from any of the Orange/yellow tabs and follow the instructions that are on the page.

Online Textbook

Specific Assignment Instructions

In the address bar enter **“go.hrw.com”**

You need to make sure that you do not enter the www. It is not needed.

This should bring up this screen.



You will now need to enter the code that you have been given in the box at the bottom of the screen and press enter.

Click on the blue highlighted words and follow the instructions on the screen.

Name _____ Hour _____ Date _____

Laboratory Skills Checkup: Following Directions

Read all of the following directions before you do anything.

1. Print your name, last name first then your first name and middle initial (if you have one), at the top of this page.
2. Draw a line through the word "top" in direction 1.
3. Underline the word "middle" in direction 1.
4. In direction 1, circle the words "your first name."
5. In direction 2, place an "X" in front of the word "through."
6. Cross out the numbers of the even-numbered directions above.
7. In direction 6, cross out the word "above" and write the word "below" above it.
8. Write "Following directions is easy" under your name at the top of this page.
9. In direction 8, add the following sentence after the word "page." "That's what you think!"
10. Draw a square in the upper right-hand corner of this page.
11. Draw a triangle in the lower left-hand corner of this page.
12. Place a circle in the center of the square you just drew.
13. Place an "X" in the center of the triangle.
14. Now that you have read all of the directions as instructed above, follow only directions 1 and 15.
15. Please do not give away what this activity is about by saying anything or doing anything to alert your classmates. If you have reached this direction, make believe you are still writing. See how many of your classmates really know how to follow directions.

Chapter Outline

Chapter 1 Biology and You

Section 1: The Nature of Science

KEY IDEAS

- > How can someone practice scientific thought?
- > What are universal laws in science?
- > How do ethics apply to science?
- > Why should someone who is not planning to become a scientist study science?

SCIENTIFIC THOUGHT

- > How can someone practice scientific thought?
- > Scientific thought involves making observations, using evidence to draw conclusions, being skeptical about ideas, and being open to change when new discoveries are made.
 - Scientists carefully observe the world and then ask questions about what they observe.
 - Scientific thought requires skepticism. Skepticism is a habit of mind in which a person questions the validity of accepted ideas.
 - Scientific discoveries can change the way people view the world.

UNIVERSAL LAWS

- > What are universal laws in science?
- > Science is governed by truths that are valid everywhere in the universe. These truths are called *universal laws*.
 - Though branches of science address different aspects of the natural world, universal laws apply to all branches of science and every person.

SCIENCE AND ETHICS

- > How do ethics apply to science?
- > Scientific experimentation and discovery can have serious ethical implications. Because of this, scientific investigations require ethical behavior.
 - Ethics are a system of moral principles and values.
 - Scientists performing investigations must report only accurate data, must allow peers to review their work, and must behave ethically with the people involved in their investigations.

Biology and You *continued*

WHY STUDY SCIENCE?

- > Why should someone who is not planning to become a scientist study science?
- > An understanding of science can help you take better care of your health, be a wiser consumer, and become a better-informed citizen.
 - The same critical thinking process that scientists use is a tool that you can use in your everyday life.
 - You can use science to investigate a problem in your community and discover helpful solutions.
 - By applying scientific thinking to a problem, you can help yourself and improve the world around you.

Directed Reading

Section: The Nature of Science

Read each question, and write your answer in the space provided.

1. List and describe four aspects of scientific thought.

2. Define the term *universal law*. Give an example of a universal law, and describe how a biologist might relate this universal law to an area of study.

3. What are ethics? Give three reasons that scientific investigations require ethical behavior.

4. What are four ways in which studying science can help you?

Biology and You *continued***Section 2: Scientific Methods****KEY IDEAS**

- > How do scientific investigations begin?
- > What are two methods scientists can use to test hypotheses?
- > What is the difference between a theory and a hypothesis?

BEGINNING A SCIENTIFIC INVESTIGATION

- > How do scientific investigations begin?
- > Most scientific investigations begin with observations that lead to questions.
 - Observation is the act of noting or perceiving objects or events using the senses.
 - To answer a question, scientists first formulate a hypothesis that leads to scientific investigation.
 - A hypothesis is a possible explanation that can be tested by observation or experimentation.

SCIENTIFIC EXPERIMENTS

- > What are two methods scientists can use to test hypotheses?
- > Scientists conduct controlled experiments or perform studies in order to test a hypothesis.
 - An experiment is a procedure that is carried out under controlled conditions to test a hypothesis.
 - There are often cases in which experiments are not possible or not ethical. In these cases, researchers perform studies.
 - After conducting an experiment, researchers analyze their results to learn whether the results support their hypothesis or not.
 - Scientists draw conclusions that explain the results of their experiments.
 - Scientists verify their conclusions by conducting their experiments many times and by checking to see if other scientists have found similar results.
 - Every person has his or her own point of view. A particular point of view is called a *bias*.
 - Scientists try to prevent bias from affecting their work, but bias can still influence an experiment.
 - Sources of funding, personal involvement in a product, and other conflicts of interest can affect an experiment.
 - It is wise to view all scientific claims in their context and think critically about them.

Biology and You *continued*

SCIENTIFIC THEORIES

- > What is the difference between a theory and a hypothesis?
- > The main difference between a theory and a hypothesis is that a hypothesis is a specific, testable prediction for a limited set of conditions and a theory is a general explanation for a broad range of data.
 - In science, a theory is a system of ideas that explains many related observations and is supported by a large body of evidence.
 - Constructing a theory often involves considering contrasting ideas and conflicting hypotheses.
 - If the results of a scientific experiment can be reproduced many times, the research may help develop a new theory.
 - Future research may cause a theory to be revised or even rejected.
 - By investigating and challenging theories, scientific understanding grows.

Seven Steps of the Scientific Method (from video)

1.

2.

3.

4.

5.

6.

7.

Directed Reading

Section: Scientific Methods

Read each question, and write your answer in the space provided.

1. What is observation?

2. What observation did Charles Paine make about Canada geese in the Chicago area?

3. What is a hypothesis?

4. What are three possible hypotheses related to Paine's observations of Canada geese in the Chicago area?

Complete each statement by writing the correct term or phrase in the space provided.

5. A planned procedure carried out under controlled conditions to test a hypothesis is called a(n) _____.
6. In a controlled experiment, a group that receives no treatment is called a(n) _____ group.
7. In a controlled experiment, the factor that is varied is called the _____ variable.
8. In a controlled experiment, a factor that is measured in response to the factor that is varied is called a(n) _____ variable.

Directed Reading *continued*

Read each question, and write your answer in the space provided.

9. What did Paine do to test his hypothesis about the Canada goose population?

10. What did Paine's data show? What new hypothesis did Paine come up with?

11. How did working with another scientist help Paine? What would these scientists do to verify their conclusions?

Study the following steps in a scientific investigation. Determine the order in which the steps commonly take place. Write the number of each step in the space provided.

- _____ 12. forming a hypothesis
- _____ 13. asking a question
- _____ 14. making observations
- _____ 15. drawing a conclusion
- _____ 16. designing and carrying out one or more experiments

Complete each statement by writing the correct term or phrase in the space provided.

- 17. A(n) _____ unites and explains a broad range of observations and data.
- 18. Future _____ may cause a theory to be revised or discarded.
- 19. The word _____ is used differently by scientists than by the general public.

Biology and You *continued*

Section 4: What Is Biology?

KEY IDEAS

- > What are some of the branches of biology?
- > What are seven characteristics that all living things share?

THE STUDY OF LIFE

- > What are some of the branches of biology?
- > Some of the branches of biology are biochemistry, ecology, cell biology, genetics, evolutionary theory, microbiology, botany, zoology, and physiology.
 - Biology is the scientific study of living organisms and their interactions with the environment.
 - It would be impossible for one person to become an expert in all aspects of biology, so scientists specialize.

PROPERTIES OF LIFE

- > What are seven characteristics that all living things share?
- > The seven properties of life are cellular organization, homeostasis, metabolism, responsiveness, reproduction, heredity, and growth.
 - Cellular Organization
 - All living things are made of one or more cells.
 - A cell is the smallest unit capable of all life processes.
 - Homeostasis
 - All living organisms must maintain a stable internal environment in order to function properly.
 - The maintenance of a stable internal environment in spite of changes in the external environment is called *homeostasis*.
 - Metabolism
 - Living organisms carry out different chemical reactions in order to obtain energy.
 - The sum of all the chemical reactions carried out in an organism is called *metabolism*.
 - Almost all of the energy used by living things originally comes from the sun.
 - Responsiveness
 - In addition to maintaining a stable internal environment, living organisms respond to their external environment.
 - Can you think of a way that you have responded to your environment today?

Biology and You *continued*

- Reproduction
 - Most living things can reproduce. Reproduction is the process by which organisms make more of their own kind from one generation to the next.
- Heredity
 - When an organism reproduces, it passes on its own traits to its offspring in a process called *heredity*.
 - Inherited characteristics change over generations. This process is called *evolution*.
- Growth
 - All living organisms grow.
 - As organisms grow, many change. This process is called *development*.
 - Development differs from evolution because development refers to change in a single individual during that individual's life.

Section 3: Tools and Techniques**KEY IDEAS**

- > Why do scientists use SI units for measurement?
- > What are some tools and techniques that scientists use in the laboratory?
- > What can you do to stay safe during an investigation?

MEASUREMENT SYSTEMS

- > Why do scientists use SI units for measurement?
- > The International System of Units is used by all scientists because scientists need to share a common measurement system. SI is also preferred by scientists because it is scaled in multiples of 10, which makes the system easy to use.
 - Measurements taken by scientists are expressed in the International System of Units (SI), the official name of the metric system.
 - SI is a decimal system, so all relationships between SI units are based on powers of 10.
 - Most SI units have a prefix that indicates the relationship of that unit to a base unit. For example, the prefix kilo- means 1,000. So, a kilogram is equal to 1,000 grams.

LAB TECHNIQUES

- > What are some tools and techniques that scientists use in the laboratory?
- > In the lab, scientists always keep detailed and accurate notes and perform precise measurements. Many scientists also use specialized tools, such as microscopes, and specialized procedures, such as sterile technique.
 - Scientists use microscopes to view objects and organisms that are too small to see with the unaided eye.
 - Sterile technique is a method of keeping unwanted microorganisms out of a lab in order to minimize the risk of contamination.
 - Scientists also collect data remotely using devices such as satellites. These devices help scientists conduct research that would not have been possible in the past.

Biology and You *continued*

SAFETY

- > What can you do to stay safe during an investigation?
- > Scientists must use caution when working in the lab or doing field research to avoid things like chemical burns, exposure to radiation, exposure to infectious disease, animal bites, or poisonous plants.
 - Carefully follow all guidelines and procedures for working safely in the lab. Know the location and proper operation of all lab safety equipment.
 - If an accident occurs while in the lab, remain calm. Make sure you are safe and that no one else is in danger. Then inform your teacher.

Microscope Mania!

I. Parts-o-the scope! And LENSES

a) The magnification of the ocular or eye piece is _____

b) Please identify the magnification on each of these lenses found on the revolving nosepiece:

Lens	Magnification	Use/purpose
Scanning power		
Low power		
HIGH POWER		

c) Please explain here how total magnification is calculated: _____

Lens	What is the TOTAL Magnification
Scanning power	
Low power	
HIGH POWER	

d) Locate the **light source** on your microscope. Turn it on.
 _____ (check when completed)

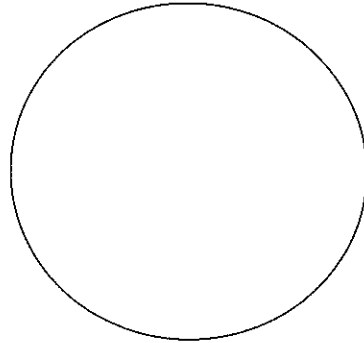
e) Locate the **diaphragm**. Look through the eyepiece and move the diaphragm.

Explain what happens:

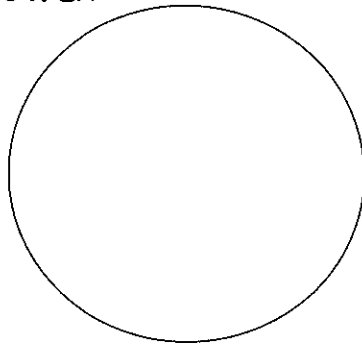
II. Using the Scope How does it work?

a) Obtain the letter "e" slide. Place it on the **stage** over the hole. Use the **stage clips** to hold in place.

b) Draw how the letter "e" appears on the stage facing you **BEFORE** you look into the microscope:



Now draw the letter "e" as it appears once you look through the microscope on **LOW POWER**

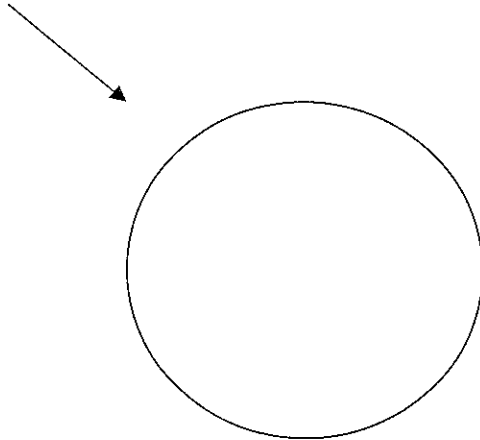


c) Explain what happened (how does a microscope view an object?)

d) Have your partner push the slide to the left as you look through the lens. What happens?

e) Rotate to **HIGH POWER**. The lens is now very close to the slide. **DO NOT USE THE COURSE ADJUSTMENT KNOB, ONLY USE THE FINE FOCUS KNOB.**

Draw what you see now:



f) Slides will often crack because someone uses the coarse adjustment while on HIGH POWER.

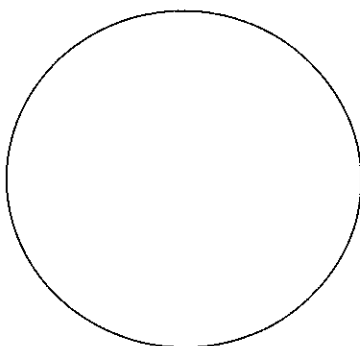
_____ I understand that I only use the coarse adjustment on **LOW POWER** and not on **HIGH POWER** because I will crack a slide!

Coarse adjustment=low power
Fine adjustment=high power

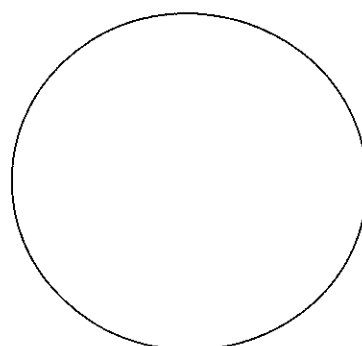
III. More focusing Practice

a) Make a wet mount of a piece of your hair. Sketch under **low power** and under **high power**.

Low



High



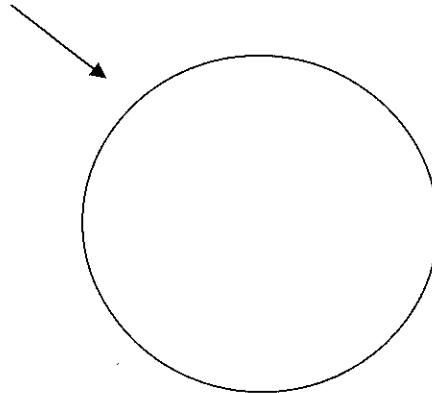
IV. Depth Perception

- a) Obtain a slide with the three colored threads. Focus under **LOW Power**

Sketch the threads on the slide

b) Indicate:

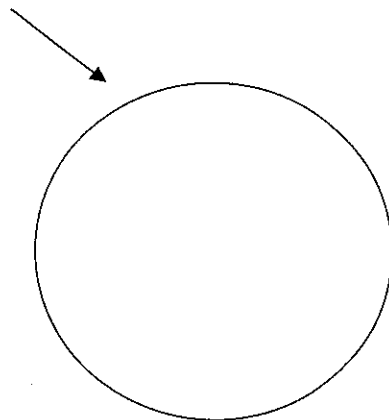
Top color _____
Middle color _____
Bottom Color _____

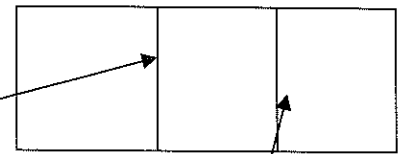


V. Staining and Low Power vs. High Power

unstained

1. With a razorblade, scrape the surface of a potato
2. place a drop of water on a slide
3. mix the potato with the water
4. add a coverslip
5. observe under low power
6. sketch the "unstained" starch grains

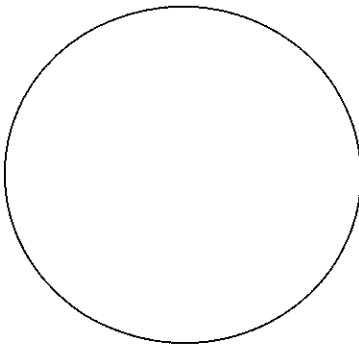




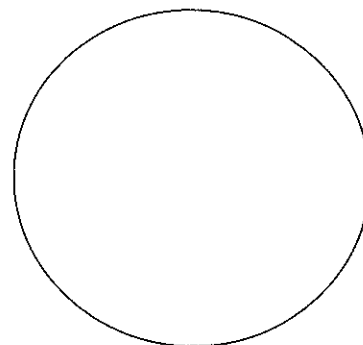
stained

7. Add a small drop of iodine on on any **edge** of the coverslip
8. take a small piece of paper towel and put across the coverslip on the other side of the drop of iodine
9. watch the iodine stain be draw across the slide! **AMAZING**
10. View the stained grains under low power and sketch them.
11. View the stained grains under **HIGH** power and sketch them

Low power



High Power



- a) What is the purpose of using stains?
- b) Which power allowed you to see **LESS** starch grains in your field of view?
- c) Which power allowed you to see **MORE** starch grains in your field of view?

Directed Reading

Section: Tools and Techniques

Read each question, and write your answer in the space provided.

1. What is the International System of Units commonly called? What is the abbreviation for International System of Units?

2. What are two reasons scientists use the International System of Units?

In the space provided, write the letter of the unit of measurement that matches what is being measured.

_____ 3. length

a. gram

_____ 4. mass

b. liter

_____ 5. volume

c. meter

In the space provided, write the letter of the number that matches the prefix.

_____ 6. *centi-*

a. 1,000

_____ 7. *kilo-*

b. 0.01

_____ 8. *milli-*

c. 0.001

Read each question about lab techniques, and write your answer in the space provided.

9. Why do scientists use microscopes, and what are two types of microscopes?

Directed Reading *continued*

10. What is sterile technique, and why is it important?

11. What do scientists do to collect data remotely?

12. List ten ways to stay safe in an indoor laboratory.

13. List four ways to stay safe if you are working on an outdoor science project.

14. What should you do if an accident occurs in your science lab?

Key Terms

Chapter 1 Biology and You

KEY TERMS

skepticism a habit of mind in which a person questions the validity of accepted ideas

observation the process of obtaining information by using the senses; the information obtained by using the senses

hypothesis a testable idea or explanation that leads to scientific investigation

experiment a procedure that is carried out under controlled conditions to discover, demonstrate, or test a fact, theory, or general truth

control group in an experiment, a group that serves as a standard of comparison with another group to which control group is identical except for one factor

theory a system of ideas that explains many related observations and is supported by a large body of evidence acquired through scientific investigation

SI Le Système International d'Unités, or the International System of Units, which is the measurement system that is accepted worldwide

biology the scientific study of living organisms and their interactions with the environment

cell in biology, the smallest unit that can perform all life processes

homeostasis the maintenance of a constant internal state in a changing environment

Biology and You *continued*

metabolism the sum of all chemical processes that occur in an organism

reproduction the process of producing offspring

heredity the passing of genetic traits from parent to offspring

evolution the development of new types of organisms from preexisting types of organisms over time



**Biology Chapter 1 2013-2014
Test Summary Report**

07/16/2013

QUESTION BANK	# OF QUESTIONS	POINTS
Chapter 1—Biology and You	21	24
Not associated with a question bank	11	19
TOTAL	32	43

QUESTION TYPE	# OF QUESTIONS	POINTS
Multiple Choice	20	20
Short Answer	1	4
Problem	11	19
TOTAL	32	43

LEARNING OBJECTIVE	# OF QUESTIONS
1.1.1	2
1.1.2	1
1.1.3	1
1.1.4	1
1.2.1	2
1.2.2	3
1.3.1	2
1.3.2	1
1.3.3	2
1.4.1	1
1.4.2	5

