



ENLIGHTIUM  
ACADEMY

## Honors Biology Course Supply List

Below are the required materials needed to complete the projects in the Honors Biology course. Projects are organized by semester and then unit. These projects have been designed so that most can be completed using materials commonly found in the home, borrowed from neighbors or friends, or purchased for cheap from local or online sources.

Common supplies such as pens, paper, water, etc. have been omitted from this list but are often listed within the Ignitia assignment. All projects within a unit become available as soon as the first lesson in that unit is assigned. It is highly recommended that you open each project at the beginning of a unit and start planning for the project and acquiring the needed materials. Some projects may extend over a few days, so start them well before the end of the unit if you can.

### **What to do if you don't have the required materials:**

1. Ask your family, friends, or neighbors if they have the materials and if you can borrow them for the project.
2. See if the materials are available for purchase from a local source. Most materials can be bought at a grocery store, drug store, or gardening supply store for less than 10\$. Call the store ahead of time to see if they have the materials in stock.
3. See if the materials are available from an online source such as amazon. Again, most materials are less than 10\$ and are easy to ship.
4. If the supplies are not available locally, online sources are not an option, or anything at all is unaffordable for your family, please message the instructor in the helpbox for the assignment with the *specific materials you are missing*. I will be more than happy to help you identify other ways to get the materials or list alternative or cheaper materials. If it is not possible for you to get the required materials, I will provide you with either virtual resources to do the project, sample data you can use to complete the experiment, or assign you an alternative project that you can do instead of the original project.

**\*Not having the required materials is not an excuse to skip the project, submit the project blank, or skip over portions of the experiment. Message your instructor first.\***

**The following materials will be needed throughout the course:**

- Access to research materials (internet, local library, etc.)
- A metric/imperial ruler
- A stopwatch or a timer (smartphone app is OK)
- Word processing program. Examples include
  - Microsoft Word© (purchase required, but often included with PC computers)
  - Apple Pages© (available free on most Macbook computers)
  - OpenOffice Writer© (open-source program available for free, PC and Macbook)
  - Google Docs as a browser alternative
- Spreadsheet processing program. Examples include
  - Microsoft Excel© (purchase required, but often included with PC computers, also available for Macbooks)
  - Apple Numbers© (available on most Macbook computers)
  - OpenOffice Calc© (open-source program available for free, PC and Macbook)
  - Google Sheets as a browser alternative
- Access to a computer with Adobe Flash
- Access to a printer

\*If you do not have access to these materials or they are not budget friendly, please message the instructor.

## **Semester A**

### **Unit 1**

#### **Assignment 1.8: Project Dichotomous Key**

- No extra supplies needed
- Having five or more types of fruit to manipulate and observe might be useful

#### **Assignment 1.14: Project: Create a Product (Taxonomy)**

- Supplies depend on what product students choose to create; options will include creating a children's book, essay, speech, song, etc.
- Might require audio or recording devices. Message the instructor in the helpbox if you need more guidance.

### **Unit 2**

#### **Assignment 2.4: Experiment: Static Electricity**

- Two inflated latex balloons
- Piece of nylon (a old nylon stocking will work)
- Piece of wool (a sweater will work) or fur
- Thread

#### **Assignment 2.17: Experiment: Protein Denaturation**

- Four eggs
- Two cups of milk (preferably whole/full cream, or made from powdered milk)
- Your own hair from a hairbrush or comb
- Small saucepan
- Mixing bowl
- Baking tray or cookie sheet
- Aluminum foil
- Candy thermometer or cooking/meat thermometer
- Stove/oven (with oven mitts/pot holders)

### **Unit 3**

#### **Assignment 3.3: Experiment: Introducing the Microscope**

- No extra supplies needed - virtual project
- If you have a physical microscope available, you can use it instead

#### **Assignment 3.4 Experiment: Plant, Animal, and Algae Cells**

- No extra supplies needed - virtual project
- If you have a physical microscope available, you can use it instead

#### **Assignment 3.8: Experiment: Osmosis Activities**

- Three large eggs (+1 or more extras)
- White vinegar (cheap vinegar will do)
- Three large cups
- One plate
- Large slotted spoon
- Tap water
- Corn syrup
- Liquid measuring devices: cups and tablespoons
- Kitchen balance

### **Unit 4**

#### **Assignment 4.4 Experiment: Mitosis**

- Microscope
- [Prepared slides](#) of onion (Allium) root and whitefish blastula stained to show chromosomes

\*If you do not have access to these materials or they are not budget friendly, please message the instructor. The images needed to complete the project can be provided to the student.

#### **Assignment 4.12: Experiment: Sexual Reproduction**

- Microscope
- Prepared slides of animal egg and sperm cells
  - [Possible online source here](#)

\*If you do not have access to these materials or they are not budget friendly, please message the instructor. The images needed to complete the project can be provided to the student.

#### **Assignment 4.15: Experiment: Tissue Structure**

- Microscope
- Prepared slides of muscle tissue, an internal organ tissue, and blood cells
  - [Option 1](#)
  - [Option 2](#)

\*If you do not have access to these materials or they are not budget friendly, please message the instructor. The images needed to complete the project can be provided to the student.

### **Unit 5**

#### **Assignment 5.3: Experiment: Probability**

- Two coins
- Box (shoebox will work)

#### **Assignment 5.12: Experiment: Exploring Molecular Genetics**

- 100 radish seeds
- Potting soil (1-lb bag)
- Ten small plates or tins
- Microwave
- Microwave safe plate
- Water and a dropper (or spray bottle)
- Sunny windowsill or table
- Marker and tape
- Large cardboard box

## **Semester B**

### **Unit 1**

#### **Assignment 1.3 Experiment: Fungus All Around (Part 1)**

- Compound microscope *or* 5X or 10X hand lens
- Slice of hard cheese
- 3 sealable plastic sandwich bags
- Slice of bread
- Sharp knife or razor blade
- Microscope slide with coverslip
- Flashlight or light source to examine samples

\*If you do not have access to these materials or they are not budget friendly, please inform the instructor.

#### **Assignment 1.11: Report: Microbial Pathogens**

- No additional supplies needed

## **Unit 2**

### **Assignment 2.9: Experiment: Photosynthesis**

- Elodea (an aquatic plant available at most pet, aquarium, garden stores)
  - [Online source here](#)
  - Other aquatic plants may work as an alternative to Elodea. Message instructor for advice if you cannot acquire Elodea at your location
- Test tubes or tall, thin glasses
- Large glass bowl
- Sodium bicarbonate (baking soda)
- Paper clips
- Thermometer
- Lamp
- Knife or scissors
- Kitchen scale

### **Assignment 2.15: Project: Create a Product (Plants)**

- Supplies depend on what product students choose to create; options will include creating a children's book, essay, speech, song, etc.
- Might require audio or recording devices. Message the instructor in the helpbox if you need more guidance.

## **Unit 3**

### **Assignment 3.6: Experiment: Heart Rate (Unit 3)**

- A partner
- Stopwatch (phone app will work)

### **Assignment 3.10: Project: Chicken Wing Dissection**

- Raw chicken wing
- Dissecting scissors (small, sharp scissors or kitchen shears will work)
  - [Online source for dissecting kit \(10\\$\) - not necessary but has many of the appropriate materials](#)
- Forceps or large tweezers
- Blunt probe (wooden skewer or dull wooden pencil will work)
- Cutting board
- Gloves, goggles, apron

## **Unit 4**

### **Assignment 4.7: Experiment: Quadrants**

- String or twine
- Large nails or stakes
- Meter stick

**Assignment 4.8: Experiment: Inventory**

- No extra materials required

**Unit 5****Assignment 5.10: Project: Create a Product (Principles of Biology)**

- Supplies depend on what product students choose to create; options will include creating a children's book, essay, speech, song, etc.
- Might require audio or recording devices. Message the instructor in the helpbox if you need more guidance.