

# **Greenhouse Technology**

## **NTI Day Packet**

## NTI Day One

### *Agricultural Business and Marketing – Employee Schedule*

KOSSA Standard(s): Horticulture – Employability – Time, Task, and Resource Management  
(EB 1 – 5)

Businesses are able to run and operate very efficiently. This is due to countless hours of organization and time management. Businesses, each week, will have someone make out schedule of shifts. These shifts will list out who works on what day and time, and what position they will work (if each person works different positions).

By doing this, everyone knows what time and day each person is to work. All employees will also know what their responsibilities are on each day.

Today, you will try your hand in creating a work schedule for a greenhouse business.

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***Directions: Recall all of the students in class. Create an employee schedule for the greenhouse. This employee schedule will involve the hours between 8 am and 5 pm; Monday through Friday. Each member of the class must also be placed into positions ON the schedule. All of the following positions must be used: General Manager, Sales Manager, Marketing Manager, Propagator, and the rest of students will be labeled as General Laborer. All of the positions must be used during all hours. Use the table to schedule employees for labor hours. Use the other table to list who has what position (title).***

**Example:**

General Manager: Callie L. and Jake C.

Sales Manager: Joe D. and Holly L.

Marketing Manager: Jack B. and Sally G.

Propagator: Jerry F. and John A.

General Laborer: Gerald H. and Ruth B.

**Example:**

	Monday	Tuesday	Wednesday	Thursday	Friday
8 am	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.
9 am	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.
10 am	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.
11 am	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.
12 pm	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.	Callie L. Joe D. Sally G. John A.
1 pm	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.
2 pm	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.
3 pm	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.
4 pm	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.
5 pm	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.	Jake C. Holly L. Jack B. Jerry F. Gerald H.

Assignment

Create a table much like the one above. The table can be made using a spreadsheet, word document, or even hand-sketched. Below the table, give each person a position or title.

	Monday	Tuesday	Wednesday	Thursday	Friday
8 am					
9 am					
10 am					
11 am					
12 pm					
1 pm					
2 pm					
3 pm					
4 pm					
5 pm					

General Manager(s):

Propagator(s):

Sales Manager(s):

General Labor(s):

Marketing Manager(s):

## NTI Day Two

### *Agricultural Business and Marketing – Job Description*

KOSSA Standard(s): Horticulture – Employability – Time, Task, and Resource Management  
(EB 1 – 5)

Businesses have many different positions, and all of these positions have a specific purpose. Much similar to a jigsaw puzzle, workplace employees have different purposes that come together to create a picture. Systems much like these spread out different responsibilities in order to create a very organized system to get work done.

For example, a manager will do the day-to-day administrative work and oversee all employees. Under the general manager, you may have an employee whose sole job is to oversee finances. This goes on and on.

All jobs have a 'job description.' These jobs descriptions give specific details on what the specific duties and responsibilities lie for that specific job title. Here is an example below from Harlan County Public Schools:

Position Title: Custodian (second shift)

Location: Harlan County High School

Length of Employment: 2018-2019 School Year

Salary Range: 2018-2018 Salary Schedule

Qualifications: High School Diploma/GED

***Job Description: Perform routine custodial activities at an assigned school site or facility to maintain buildings, locker rooms, and adjacent grounds areas, orderly and secure condition.***

This job description gives an applicant an idea what they would be expected to do. Employees that are hired under this job description would be expected to what is detailed in the job description.

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***Directions: Today, your assignment will be to write a job description for the following greenhouse positions: General Manager, Sales Manager, Marketing Manager, Propagator, General Laborer. Each job description must be at least 2 sentences in length.***

**Some brief information will be given about the typical things that these people do in greenhouses businesses so that you will have a firm understanding of how to write out the job description. Please feel free to further research these types of positions on the internet (if possible).**

Brief descriptions are on the next page.

General Manager: General managers are typically in charge of the overall operation. They complete day-to-day administrative tasks to keep the business running.

Sales Manager: These types of managers are in charge of analyzing costs, setting prices, and creating price and/or merchandise promotions.

Marketing Manager: Marketing managers work closely with sales managers in terms of setting price or merchandise promotions. Chiefly, marketing managers are in charge of advertisement, social media, websites, etc.

Propagator: Propagators are in charge of germinating seeds, grafting, and/or doing cuttings.

General Laborer: General labors typically do whatever is needed to be (i.e., watering, propagating, sweeping, cleaning, etc.).

### **Assignment**

Write your description either on here or on another sheet of paper:

**General Manager:**

**Sales Manager:**

**Marketing Manager:**

**Propagator:**

**General Laborer:**

## NTI Day Three

### Agricultural Business and Marketing – Wages

KOSSA Standard(s): Horticulture – Employability – Time, Task, and Resource Management  
(EB 1 – 5)

Everyone loves money! They say that money cannot buy happiness, but it buys us a lot of things that can make us happy!

By law, employees are required to be compensated for their hard work. By law, we are required to receive a monetary award for us working for the business. The process is simple; we put in our time and labor, and we are given a paycheck in return. This way we are able to pay our bills, rent, food, and whatever needs to be paid.

Each business is unique, and every business normally keeps pay competitive to other business nearby. Businesses do this so that can receive people to do the work that is needed.

People are paid either one of two ways: salary or hourly. People who are paid salary are paid an annual sum, and that annual sum is divided evenly among 26 paychecks for the year. For example, a person is paid a salary of \$50,000 a year; then they will receive a gross pay of \$1,923.07 every two weeks. The pay is the same whether you more hours or not. People who are paid an hourly wage, and are paid for every hour that is worked. For example, a person is paid \$10.00/hour and that person works 40 hours that week (8 hours/day for 5 days), then that person will receive a gross pay of \$400.00 for that week.

**Today, you will determine the pay type and the wage of the job titles that we have used in the previous NTI Day Lessons. You will use the following job titles: General Manager, Sales Manager, Marketing Manager, Propagator, and General Laborer. You will create a table, similar to the one below. You will be required to determine a pay that is very similar to other general businesses in the surrounding areas. The businesses that not necessarily need to be a horticulture business to use as your comparison.**

Example:

Job Title	Wage Type	Pay
General Manager	Salary	\$45,000/year
Sales Manager	Salary	\$40,000/year
Marketing Manager	Salary	\$40,000/year
Propagator	Hourly	\$10.00/hour
General Laborer	Hourly	\$7.50/hour

**Assignment**

Job Title	Wage Type	Pay
General Manager		
Sales Manager		
Marketing Manager		
Propagator		
General Laborer		



## **NTI Day Four**

Agricultural Business and Marketing – Advertisement

KOSSA Standard(s): Horticulture – Employability – Time, Task, and Resource Management  
(EB 1 – 5)

Every day and everywhere, we see advertisements, and we see advertisements in all different forms. We see and hear commercials; we see advertisements in the newspaper, social media platforms, and banners/flyer; we even taste advertisements when samples of food are given a grocery markets.

Businesses must advertise in some way, shape, or form in order to attract customers to purchase the product or service. If they don't, then customers will not be aware that the business's product or service exists.

Advertisements answer very basic questions about products or services: who, what, when, where, why, or how. These questions can be answered in many different avenues: radio/television commercials, banners, signs, flyers, stickers, and the list can go on and on and on.

**Today, you will create some form of advertisement for a greenhouse business. You will choose whatever form of advertisement you wish to choose. You must create the name of a greenhouse business and sell whatever plans you would like (as long as it is a legal plant in the state of Kentucky). Use your computer or sketch something out. You only need to create one advertisement for a greenhouse business.**

## NTI Day Five

Horticultural Science – Choosing Plants to Grow

KOSSA Standard(s): Horticulture – Critical Thinking and Problem Solving  
(AC 1 – 3)

All greenhouses are different! Greenhouses are different in shape, size, and even what plants are grown. Greenhouse operators will focus plant types of what people are interested in. Some greenhouses specialize in products such as perennial plants or shrub plants, while others may specialize in annual bedding plants or vegetable plants).

Greenhouse operations will do this because there is no need to waste time and money on plant seed or plugs that no one will buy after the seeds germinate or the plugs have matured. Operations will raise plants to sell that are popular in the local area. Some plants may not do well in local terrain, soil types, and many other factors; which is one good reason that the plants would not sell very well.

**Today, you need to think of plants that are very popular. Today's assignment is going to revolve around you decided what your greenhouse business needs to grow. You can decide whatever plants you would like to raise (i.e., annual bedding plants, perennials, shrubs, vegetable plants, trees, etc.)**

**Select 10 plants that you would like to raise and sell to people in the community. After you have selected your ten plants, you need to write down the cost to purchase the plants and then you need to tell me how much you plan on selling the plants. (Hint: annual bedding plants such as petunias, marigolds, and others are the easiest to find).**

Example:

Name of Plant	Cost to Buy Seeds/Plugs	Individual Selling Price
Petunias – Lavender Dream	Plugs (100 count tray) \$36.75	\$1.50/4-pack
California Wonder (Green Bell Pepper)	Seeds (approx.. 500 seeds/pack) \$15.00	\$1.75/4-pack



## **NTI Day Six**

Horticultural Science – Controlling the Greenhouse Environment  
KOSSA Standard(s): Horticulture - Occupational (Environmental Factors)  
(OA – 6)

The greenhouse is a very interesting place, and the environmental factors play a very important role in greenhouse production. Despite popular belief, we can very easily manipulate the environment in the inside of the greenhouse. We can control many environmental factors inside the greenhouse with just the push of a button, such as: temperature, air flow, humidity, and moisture.

If greenhouse operators are unable to control these conditions, then plants will not thrive. Plants need these nutrients, moisture, temperature, etc., but there are still extreme levels that are involved in each of these factors that can harm or be fatal to the plants. Plants need these things, but too much of a good thing can be bad.

**Today, you will recall how the greenhouse operates in terms of environmental control. On the first week or so, we toured the greenhouse facility and spoke about these control systems. Recall all of 5 systems that we have in our greenhouse. List them below:**

1. –
2. –
3. –
4. –
5. –

## NTI Day Seven

Horticultural Science – Safety Plan Development  
KOSSA Standard(s): Horticulture – Health and Safety  
(EN – 1-3)

Safety! We are constantly annoyed about safety every single day and in many different capacities. However, safety is what keeps us free of harmful or fatal injuries or illnesses. In Agriculture and Horticulture, there are many unsafe tools, chemicals, animals, etc. that can harm our well-being. Nobody enjoys being sick or in pain. Safety plans and guidelines are in place so that we are no hurt or receive an illness.

Government agencies such as the Occupational Health and Safety Administration (OSHA) are employed to create laws and regulations that protect employees and give employees rights in the workplace to have a safe and healthy work environment. When jobs require dangerous tools or equipment, OSHA comes into play to create protocols and require Personal Protective Equipment (PPEs) that will keep us safe from injury or illness.

OSHA can require workplaces to have safety items such as: gloves, safety glasses/goggles, hard hats, rubber gloves, respirators, HazMat suits, and a plethora of other PPEs. OSHA can also require workplaces to create certain policies and guidelines for the shop, factory, etc. that keep people safe, such as: a certain distance from machine to machine, blast cabinet for combustible materials (i.e., oil, gasoline, etc.), specialized cans for oily rags, required distances of acetylene or oxygen tanks from torches and welders, and other policies to keep us safe.

**Today, you will be developing a ‘plan’ of sorts for the greenhouse. You need to identify at least 3 different hazards in the greenhouse here at Harlan County High School. You will also need to determine how to minimize the risk. Two things you need to think about in order to complete this assignment: What hazards are present in the greenhouse? How do I minimize the risk in order for someone to not get hurt?**

	Hazard	Hazard Risk Mitigation
Hazard 1		
Hazard 2		
Hazard 3		

## **NTI Day Eight**

Horticultural Science – Landing a Job

KOSSA Standard(s): Horticulture – Job Acquisition and Advancement

(EK – 1-7)

Jobs are what supply us with the means in order to survive! Without jobs, we are not able to adequately and efficiently fund our homes, food, utilities, etc. However, in order to work and make money for the home and family, we must first ‘land a job.’

More often than not, jobs do not just land into our laps. Jobs do not just jump off the screen of a computer and offer themselves to us. We have to jump off the couch, search for jobs, prepare for the interview, interview for the job, and then hope there is a job offer. That sounds somewhat easy, but it can be very challenging.

At some point in your life, you have heard of the term, “resume.” A resume is just simply a sheet of paper that tells somewhat about you. Your contact information, what you are trying to accomplish, your education and training, personal accomplishments, previous work history, references; the list goes on and on of what you can put on a resume.

**Today, you are going to create a resume! You need to sit and think about the following questions:**

- **What is my objective? Answer: “To work as a bank teller for BB&T Bank.”**
- **Who do I want/need as references? Answer: People who will speak well about you.**
- **What is my education? Answer: High School, College, Technical School, GED, etc.**
- **What type of awards have I earned?**

On the next page is an example of what a resume would look like, your assignment will be to create a resume of your own that looks similar and answers the same type of questions. The point of a resume is to make you look very good, and to make you jump off the page. So make sure you look impressive on your resume!

**Requirements:**

- **Name and contact information (contact information can be made up).**
- **Previous work history (make up at least 2 if needed)**
- **Explain what you done at your previous job**
- **Education**
- **Additional skills**

**Use the example on the next page to use as a guide!**

# JOHN SMITH

123 Your Address  
City, State, Zip Code  
(xxx)-xxx-xxxx  
[your@email.com](mailto:your@email.com)

*Administrative Assistant with 6+ years of experience flawless preparation of presentations, preparing facility reports and maintaining the utmost confidentiality. Possesses a B.A. in History and expertise in Microsoft Excel. Looking to leverage my knowledge and experience into a role as Project Manager.*

## PROFESSIONAL EXPERIENCE

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**REDFORD & SONS**  
*Administrative Assistant*

**Boston, MA**  
*September 2011 – Present*

- Schedule and coordinate meetings, appointments, and travel arrangements for supervisors and managers
- Trained 2 administrative assistants during a period of company expansion to ensure attention to detail and adherence to company policy
- Developed new filing and organizational practices, saving the company \$3,000 per year in contracted labor expenses
- Maintain utmost discretion when dealing with sensitive topics
- Manage travel and expense reports for department team members

**BRIGHT SPOT LTD**  
*Secretary*

**Boston, MA**  
*June 2008 – August 2011*

- Typed documents such as correspondence, drafts, memos, and emails, and prepared 3 reports weekly for management
- Opened, sorted, and distributed incoming messages and correspondence
- Purchased and maintained office supply inventories, and being careful to adhere to budgeting practices
- Greeted visitors and determined to whom and when they could speak with specific individuals
- Recorded, transcribed and distributed minutes of meetings

## EDUCATION

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**RIVER BROOK UNIVERSITY**  
*Bachelor of Arts in History, May 2008*

**Chicago, IL**

- Graduated Cum Laude

## ADDITIONAL SKILLS

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- Expert in Microsoft Office, with a focus on Excel
- Bilingual in Spanish and English
- Web and tech savvy, require little to no training

## NTI Day Nine

Horticultural Science – Determining Profit and Analyzing Costs  
KOSSA Standard(s): Horticulture – Organization, Systems, and Climates  
(EJ – 1)

When buying and selling things, you always hear about one thing: profit! But what is a profit? A profit is simply the money that you earn after expenses. This is what drives a successful business. When a business do not book a profit, the business will lose money; and if the business continues to lose money, then the business will close. If a business 'breaks even,' then the business did not make or lose money during the transaction.

Another term that it is important is, "Revenue," and "Expense." Revenue is money that is coming into the business. Expenses are costs that are made to create the product.

Let's look at an example of expenses and revenue to determine what profit was made. Ferns in the greenhouse will be our example! Let's look at all of the expenses PER individual fern!

<b>Expenses</b>	<b>Cost</b>
Pot	\$1.25/fern
Growing Media	\$2.36/fern
Pot Hanger	\$0.25/fern
Fern	\$2.15/fern
Total=	<b>\$6.01/fern</b>

This table shows that we have spent \$6.01 on each fern!

Now, we need to determine how much we will sell each fern for. If we make the price LESS THAN \$6.01, then we will not make a profit. If we make the price \$6.01, then we will 'break even.' If we make the cost GREATER THAN \$6.01, then we will make a profit!!

Let's say that we sell each fern to the public for \$15.00/fern. To determine the profit PER fern all we need to do is take the selling price (\$15.00) and subtract the individual cost per fern from that (\$6.01) and that gives us our profit!

$$15.00 - 6.01 = 8.99$$

So with the calculations above, we determined that we will profit \$8.99 on each fern that we sell in the greenhouse.

Your assignment is on the back!



## Assignment

Directions: Use the table and information give below for each scenario and determine the profit.

Scenario 1: You have a field of corn. You need to buy the corn, diesel fuel, and herbicide. At harvest, you sold your corn for \$200.00. Use the expense table to determine your profit.

Expenses	Cost
Seeds	\$35.00
Diesel Fuel	\$60.00
Herbicide	\$30.00
Total Expenses =	

How much profit did you make?

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Scenario 2: You buy a car. The car you bought has problems, so you need to buy parts for it. After you fix the car, you decide to sell the car. You sold the car to a person for \$12,000.00. Use the expense table to determine your profit.

Expenses	Cost
Car	\$6,000
Power Steering Pump	\$180
Transmission	\$1500
Total Expenses =	

## **NTI Day Ten**

Horticultural Science – NTI “Final”

KOSSA Standard(s): Horticulture – Information Technology  
(AG – 1-2)

You are to create a presentation using the following NTI Day Lessons:

- NTI Day 1 – Employee Schedule
- NTI Day 2 – Job Description
- NTI Day 3 – Wages

Requirements:

- All three lessons must be included into your presentation.
- Your presentation must be at least 2 minutes.
- You need to explain your business, and how it operates.