Farm to Fork 1 Notebook
Semester 2: UNIT 3 Our Carbon Footprint and UNIT 4 Feeding the World

- Open your Notebook to the Center where the book is sewn.
- Number the Right side of the page 1
- Turn the page, number the left side of the page 2
- Odd's on the right, Evens on the left
- Number to page 8

Farm to Fork

UNIT 3: Our Carbon Footprint

Lesson 1: Resource Management/Conservation Resources
Week 12

10/24 Our Carbon Footprint: Resources Management

Obj. TSW understand and explain how our resources can be limited and our actions have negative impacts on the planet. P. 8 NB

1. What resources do we need to live our lives?
2. How are these resources managed?
3. How is pollution created as a result?

At the Garden:

Finish Irrigation, water, weed, fertilize.

Omnivore's Dilemma
October 24 – October 28

- Read Chapters 10 & 11 by Friday. Part II Industrial Organic Meal
- We will discuss the chapters.

Processed Corn Products
10% of US corn p. 68 – 69 Omnivore's Dilemma

- Sweetener for soft drinks
- Starch for hamburger bun
- Corn oil, used for cooking or salad oil
- Margarine – hydrogenated trans fats
- Mill starch make animal feed
- Cornstarch is made
- High Fructose Corn Syrup discovered by Japanese chemists
- Maltodextrin – used to make pudding & gravy
- Fermented starch can be used to make plastic

Wet Mill – industrial digestive system

- Corn is broken down into different parts.
- 25 major wet mills in the US
- Cargill and Archer Daniel Midland own the majority of them
- At the mills the corn is grinded , soaked in acid & reduced to sugars

$ Breakfast Cereal & Fast Food $

- General Mills – a box od cereal contains 4 cents worth of corn, but sells for $4.
- McDonalds make $ by selling a "Chicken Nugget" not a recognizable piece of chicken because it is processed.
- " There's money to be made in food, unless you're trying to grow it." George Naylor
  - For every $1 the consumer spends on eggs, the farmer earns 40 cents.
  - For every $1 the consumer spends on HFCS in Soft drinks, or cereal, the farmer only earns 4 cents.

Footprintnetwork.org p. 9 NB

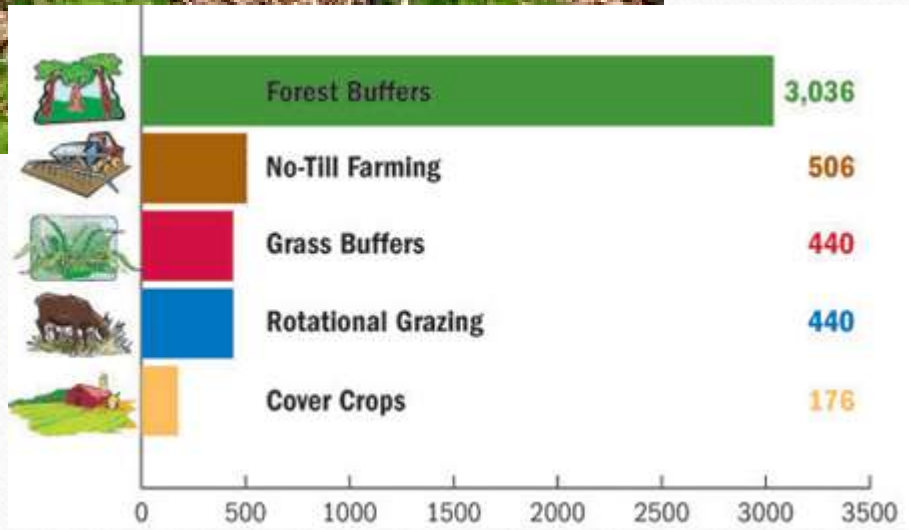
# of Earth's Activity

- Calculate your own ecological footprint in the USA by taking this lifestyle survey regarding: food consumption, energy usage and transportations choices.
- Write # of Earth's it takes to live your lifestyle in your Notebook.
- What steps could be taken to realistically decrease your footprint.
- Then do the Activity again but, with a different country.
- Why is your Ecological Footprint different is different countries? Who is one of the largest contributors to pollution?

10/25 Our Carbon Footprint

Obj. TSW learn about our impact as a population on our available resources.

Page 10 NB



1. Monday you listed resources that needed to be managed: water, food, air, soil. What happens when they are not managed properly?
2. Name some "best practices" we use at the garden.
3. How will conservation techniques help us be more sustainable as a society?

10/26 Our Carbon Footprint

Obj. TSW learn how many Earth's it takes to live their life style. P. 12 NB

1. What is a Carbon footprint?
2. What factors might contribute to your carbon footprint?
3. Predict how many Earth's does it take you to support your lifestyle, if everyone lived like you.

School buying local food to feed students

Vocabulary List
UNIT 3 Due November 10th

- Page 9 notebook
- You can use it on your quizzes and tests.
- READ Omnivore's Dilemma CH 9 & 10

Computer Lab Activity: Biocapacity of Countries . 9 NB

- Use the Website: www.footprintnetwork.org
- Research Biocapacity of 5 – 7 Countries. Record the trends and Biocapacity for each country.

Answer the following questions:

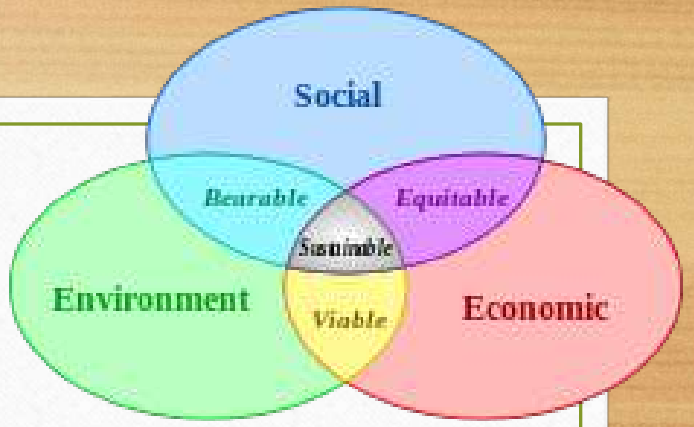
- What trends do you see?
- What are these trends related to?
- What are the implications of these trends?
- What needs to happen to increase our Biocapacity for the world?

Finally, write a paragraph to justify the need for sustainable management of resources and practices across countries.

10/27 How many more Earths?

Obj. TSW learn about how we need to conserve our resources now to have resources for future generations.

P. 14 NB



1. How close was your prediction as to the number of Earth's you thought you would use?
2. What ways can you be more conservative in your day to day life?
3. What does it mean to have a world average of 1.4 Earths?

READ chapters 10 & 11 in Omnivores Dilemma

sus.tain'abil'i.ty:

n., the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.

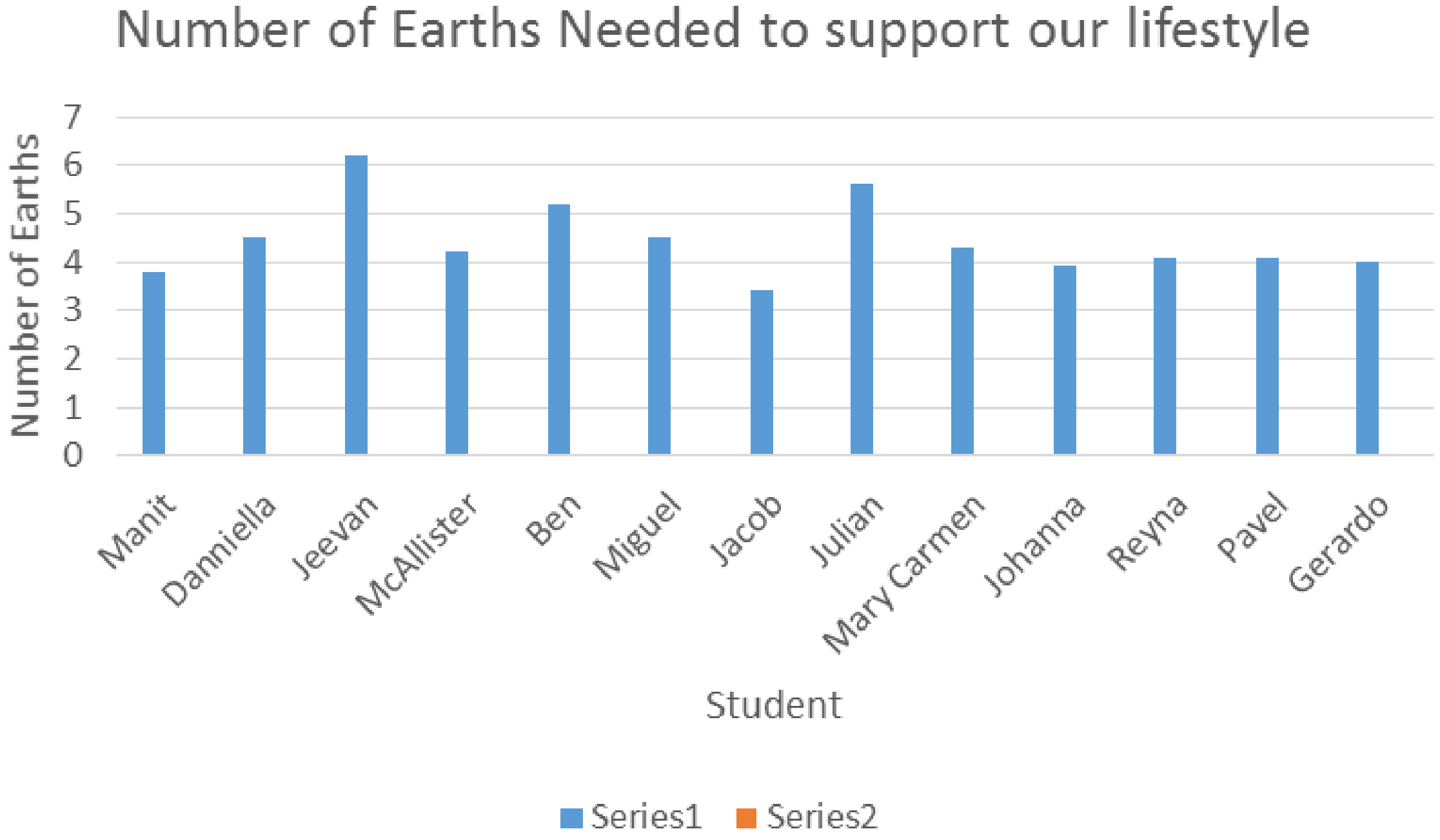
Student	Earths - USA	Earths – Other Country
Manit	3.8	India = .6
Danniella	4.5	Italy = 2.5
Jeevan	6.2	Canada = 5.7
McAllister	4.2	
Ben	5.2	Austria = 2.9
Miguel	4.5	Canada = 5.6
Jacob	3.4	Australia = 2
Julian	5.6	Argentina = 2.0
Mary Carmen	4.3	Canada = 1.9
Johanna	3.9	Switzerland = 1.3
Reyna	4.1	England = 2.4
Pavel	4.1	Switzerland = 2.0
Gerardo	4.0	Africa = 2.0
Quincy	4.8	
Justin		
Emiliano		

Personal Carbon Footprint

Copy the pie chart, the global acres, and # of Earths

Why is there such a huge difference between the USA and other countries?

P.9 NB


Number of Earths Needed to support our lifestyle
Number of Earths
7
6
5
4
3
2
1
0
Manit
Danniella
Jeevan
McAllister
Ben
Miguel
Jacob
Julian
Mary Carmen
Johanna
Reyna
Pavel
Gerardo
Student
Series1
Series2

FFA Creed Practice P. 15 NB

- Open the Official FFA Manual to page 35.
- How does the FFA Creed support the FFA Mission in making a positive difference in lives of students?
- One Officer practice with a partner(s) to recite 2 paragraphs of your choosing. Students have the FFA Manual open, follow along and only correct if they pronounce the word wrong or pause or say the wrong word.

Notebook Check
Tuesday 10/27 P. 8 – 15 40 points

Date	Title/ Topic	Page #
10/19	WU – Our Carbon Footprint: Resource Management	8
10/23	Vocabulary List – Our Carbon Footprint	9
10/20	WU – Our Carbon Footprint	10
10/20	Video - GATTACA	11
10/22	WU – Our Carbon Footprint	12
10/22	Activity: # of Earth's	13
10/23	WU – How many more Earth's?	14
10/26	Brainstorm – Major Pollution Situation World Wide	15 Notebook Check p. 8 – 15 40 points

Activity: As a Class Brainstorm Major Pollution Situations in the World p. 11 NB

- List Examples Below:
- Pacific Garbage Patch
- China's Air Quality

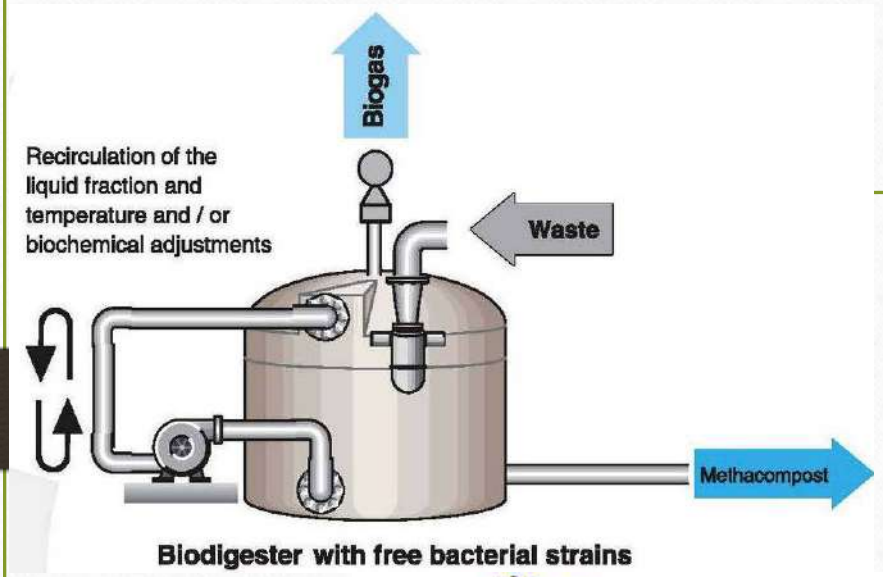
Pollution in the World: P. 11 NB

- Individual Research on a Pollution Situation in the World:
  - Where, What, How does it impact our available resources?
  - How does it impact our growing food to feed families?

- Don’t forget to do your vocabulary!!!

What if…

10/28 Obj. TSW think about ways we produce products and how they become obsolete. P. 16 NB



Biodigester with free bacterial strains

1. What is planned obsolescence?
2. How can we reduce, reuse & recycle products?
3. What if everything we produced could be biodigested, composted or recycled at the end of it's life?

Contact local Farmers to show us their fields and their conservation practices. Fieldtrip November 15th UC Davis

- Ideas of Names of local farmers & conservation practices

11/03 Fall Harvest Festival

Obj. TSW create ideas for the Harvest Festival November 3rd at 5:30 at Bryte Campus.

1. Our Goal with F2F is to educate others about the benefits of eating locally, produce food for the Caffe.
2. Create ideas for a vender booth- How can we make $?
3. Create ideas for an informational booth that is fun for all ages.

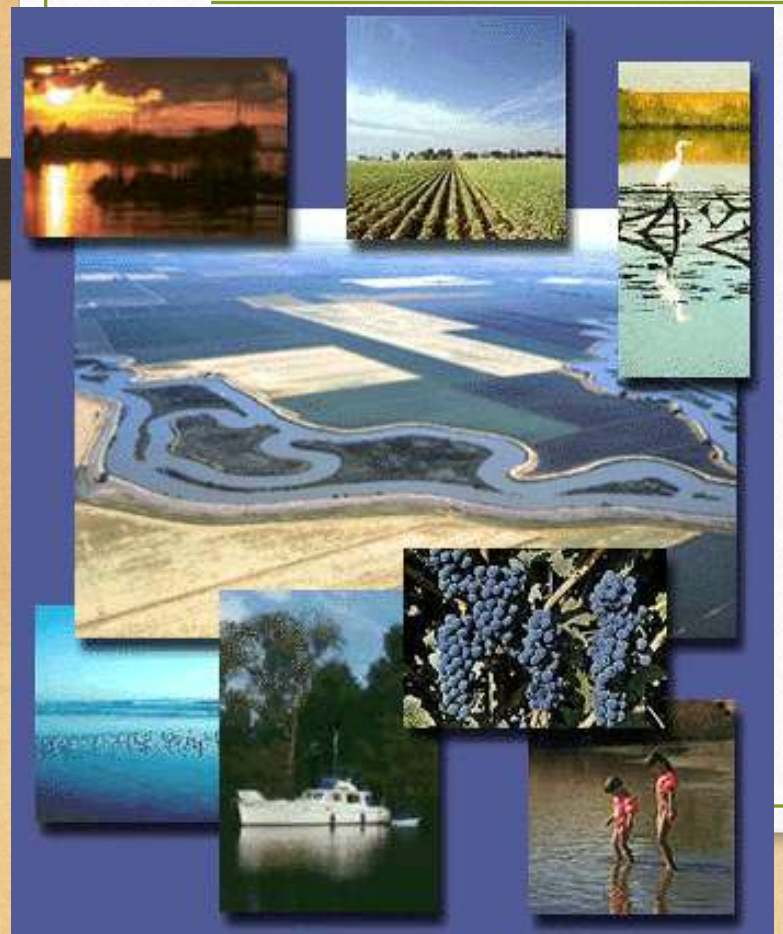
Ideas for Harvest Festival

Discuss ideas for the Harvest Festival to educate the community about what we do, what Farm to Fork is and sustainable agriculture, promote FFA.

1. What activities/ games can we do/ make to help educate others at the Harvest Festival about Farm to Fork & FFA?
2. What sort of fundraising ideas do you have?
3. What materials do we need for the Harvest Festival?

Pacific Garbage patch

10/31 Land as a Resource
Obj. TSW learn about organizations that protect our land. P. 18 NB



1. What benefits does land (Parks, Nature Reserves) provide for us?
2. What organizations manage our land?
3. From your experience, how would you manage land differently?

Land is a Resource
How is it managed? P.21 NB

- Research Bureau of Land Management
- National Park Service
- National Fish and Wildlife
- National Forest Service
- Choose one of these 4 Organizations and explain it's history. Why it was created, its purpose now, how they educate the public about their purpose? Name 3 interesting facts.
- Be prepared to share out in groups.

National Resource Organizations p. 21NB

Choose one of these 4 Organizations and explain it's history. Why it was created, its purpose now, how they educate the public about their purpose? Name 3 interesting facts. What website did you use? _____.

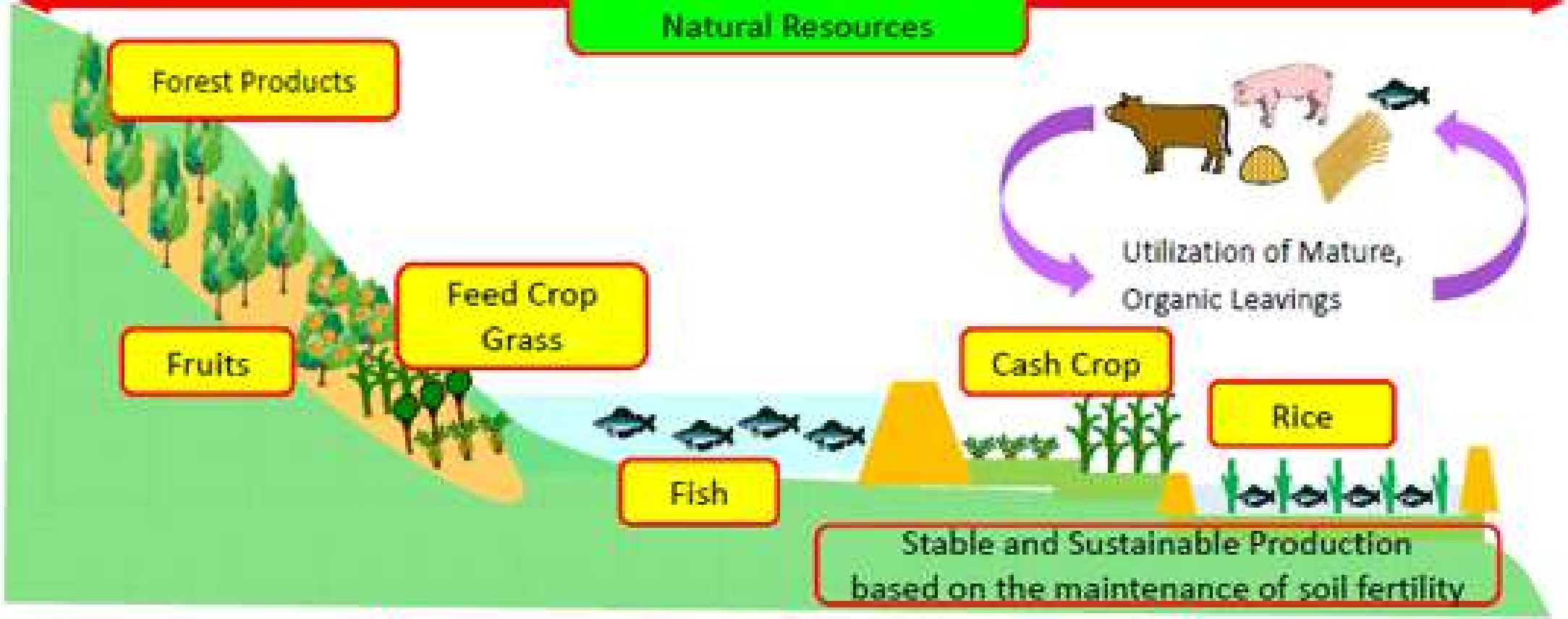
- NPS = Carah, Reyna, Julien
  - Created 1916, conserving ecological habitats
  - Theodore Roosevelt founder
  - HQ – Washington DC
- NFS = Johanna, Pavel, Emiliano, Mary, Cristal, Daniella, Ben Justin
  - Began in 1905
  - Sustain healthy, productive forests
  - People share and enjoy forests
  - Conserving the environment for future generations
  - Natural, cultural, social, management of resources
- NFW – Sydney, Omar, Jacob, Miguel, Jeevan
  - Created to prevent overhunting
  - Protect Biodiversity
  - Supports conservation efforts in all states & territories
  - Prevent extinction of animals/ plants
  - Created Closed seasons to prevent overhunting
- BLM – Hailey, Manit
  - Round up horses
  - Some are sold
  - Allow cattle to feed on open range

Rangelands Trust

- http://www.rangelandtrust.org/
- Watch Video on Rangeland Trust
- Write a short summary about why it is important that we have organizations that help protect our Natural Resources such as open land, or open water on the ocean, forests, etc.

Establishment of Stable and Independent Farm Household Economy

Sufficient Utilization of Natural Resources



Appropriate Resource-Management according to the Types of Land Utilization

Conservation of Biodiversity and Ecosystem

11/01 Conservation Practices

Obj. TSW understand and explain conservation practices such as water conservation and pest management. P. 20 NB

Filter strips intercept undesirable contaminants from runoff before they enter a waterbody.

1. Companion planting is a conservation practice, how does it work?
2. Why might using mulch in each of our garden beds over the summer be a good idea?
3. What practices do we have for soil conservation?

Fall Harvest Festival Thursday Nov. 3rd 5:30

- Decorations/ Materials
  - Lights
  - Hog Fencing & Zip ties
- Education
  - Plant a seed Station
  - Color the Rainbow – Color Fruits & Vegetables
  - Basket of Chicken Food
- Food
  - Capresse Salad – use basil leaves
  - Pico De Gallo – use all peppers
- Fun
  - Bean Bag Game
- Fundraising
  - Sell Eggs $5/dozen, $7/ 18 eggs, $9/2 Dozen
  - Chicken Races Donate $ to watch – NO betting
  - Sell Basil in bunches $1/sprig
  - Chicken Squat – pay $ to see if the hen poops on your Number in the pen
    - Winner – gift card to Starbucks/ Target

Opening /Closing Ceremony Practice

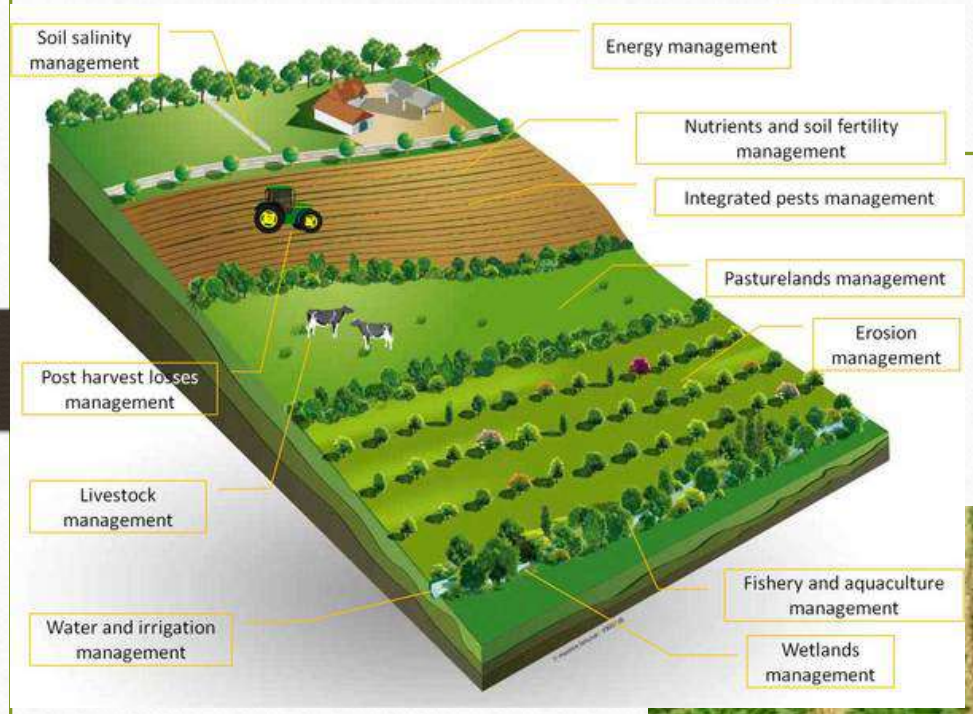
- Officers & Greenhand participants practice your lines with other students to memorize your parts/knowledge.
- We will play FFA Kahoots on Thursday.
- Everyone can take home a FFA Official Manual to practice.
- There will eventually be a test for your Greenhand Degree. The degree will be Awarded Dec. 15th at the FFA Banquet.

Activity: List Our Best Practices Brainstorm conservation techniques we have in the garden that make it sustainable. P. 23 NB

- Write class responses here:

11/2 Conservation Practices

Obj. TSW learn about conservation practices used in agriculture. P. 22 NB



1. How do these practices (to the left) improve soil productivity or water retention?
2. Why do we want to conserve soil/ water?
3. What are some of the threats to soil, water?

No till farming

Next FFA Meeting Thursday November 10th

- Cristal = Need Previous Meeting Minute written up.
- Emiliano = Update on Twitter, FB & pictures reviewing our activities as a chapter in a PPT
- Syed= Update on $ in chapter account, summary of fundraising for Fall Festival
- FFA Awards Banquet = Students earning Greenhand degree will be awarded their Greenhand pins, STAR Greenhand degree, and others

Conservation Practices we use in the garden. P.23 NB

- Suggest ways to improve our effectiveness in the garden and describe some conservation techniques to include.
  - Crop Rotation – Make a map of each season, so we don't plant in the same beds with the same crops. This helps keep pest #'s down.

11/3 Conservation Practices

Obj. TSW understand how cover crop, intercropping and integrated pest management help conserve our soil. P.24 NB

1. What is a Cover Crop?
2. What is Intercropping?
3. Name some integrated pest management practices.

Cover Crop: growing a second crop in the same season of another that will improve soil health.

- Suppressing weeds
- Protecting soil from rain or runoff
- Improving soil aggregate stability
- Reducing surface crusting
- Adding active organic matter to soil
- Breaking hardpan
- Fixing nitrogen –clover, fava beans
- Scavenging soil nitrogen
- Suppressing soil diseases and pests

http://covercrops.cals.cornell.edu/

Innercropping – growing two or more crops at the same time in the same field.

- Reduces insect/ pest infestations
- Reduces plant diseases
- Reduces erosion & Protects topsoil
- Attracts beneficial insects
- Minimize labor to control weeds
- Increase in production of land
- 2 crops harvested instead of one

http://www.oisat.org/control_methods/cultural__practices/intercropping.html

Integrated Pest Management (IPM)

- **Examples:** Use natural predators in your garden. Lady bugs, Preying Mantis', Butterfly's
- Use Less pesticides, to decrease the resistance of pests to toxic chemcials.
- Increase Biodiversity
- Decrease the resources needed by the bad pests: water, food, shelter.
- Seal all cracks in buildings.
- Watch IPM video from YCOE.

Fertilized Chicken Eggs

1. Possibly Lavender Orphington
2. Possibly Lavender Orphington or Lemon Cuckoo Orphington
3. “Mystery” Brown Egg – Probably Half Orphington
4. “Mystery” Brown Egg – Probably Half Orphington
5. Ameraucana
6. Ameraucana
7. Rooster is Cream Legbar; Hen is French Blue Copper Maran x Black Cochin Bantam

11/7 Biodiverisity

Obj. TSW learn about what biodiversity is and why it is important. P.26 NB

1. What picture shows the highest number of different species (greatest biodiversity)?
2. What is Biodiverisity? How can it be measured?
3. Why is Biodiversity important?

Computer Lab Activity – Examine your Carbon Footprint for Foods

http://www.eatlowcarbon.org/ p. 25 NB

- What is your food carbon footprint?
- How do your food choices affect your carbon footprint?
- What are 5 easy tips to reduce your food carbon footprint?
- List the food selection with the highest and lowest carbon footprint for: breakfast, soup, side order, entrée, dessert
- What do the Carbon footprint scores actually mean?
- How were they calculated?

11/8 Threats to Biodiversity

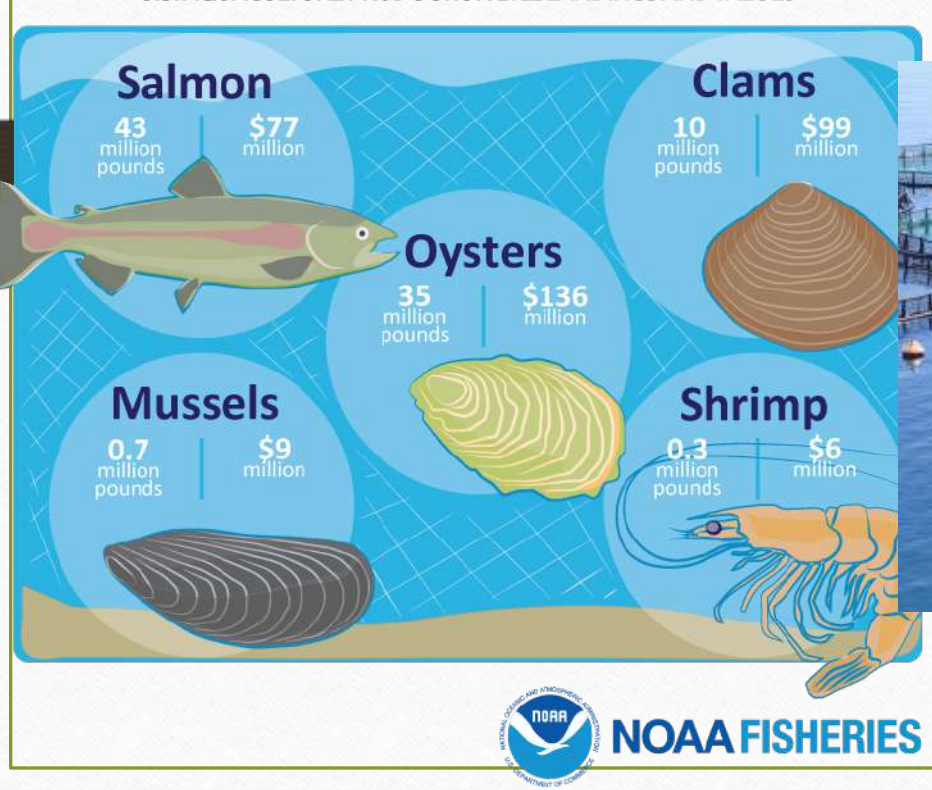
Obj. TSW realize that unlike any other mass extinction event, the current mass extinction now is directly related to human activities. P.28 NB

1. What is mass extinction?
2. What are some threats to Biodiversity?
3. What human activities are related to the our decline in biodiversity and mass extinction of species on the planet?

11/9 Applying Biodiversity to our Garden
Obj. TSW learn how our garden is biodiverse, and areas of improvement. P.30 NB

1. How would you describe the biodiversity of our garden?
2. Why is biodiversity beneficial in natural environments?
3. How can we increase the biodiversity in our garden?

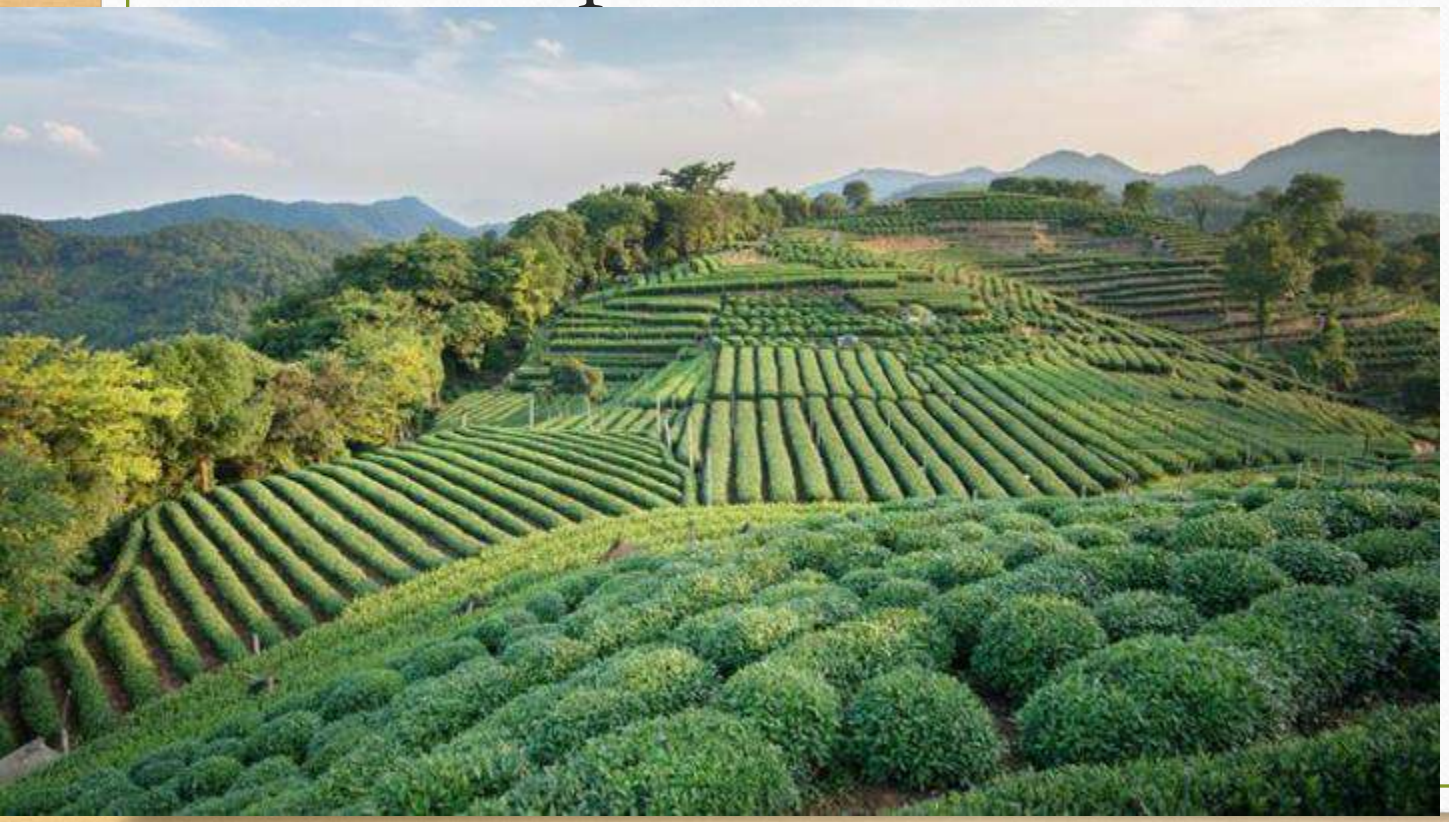
11/10 Aquaculture and Hydroponics
Obj. TSW learn about exciting occupations in growing sustainable food. P.32 NB



1. What is Aquaculture about?
2. What is Hydroponics about?
3. Have you heard of Permaculture?

11/14 Green Revolution

Obj. TSW watch a video about synthetic pesticides and fertilizers. P. 34 NB



1. What is the Green Revolution?
2. What is the difference between synthetic and organic?
3. What suggestions do you have for our garden?

Computer Lab Activity:
Choose one: Research Aquaculture, Hydroponics or Permaculture.

1. What is the history behind the science?
2. How is the product cared for/ produced?
3. What is the demand for the industry? Is it growing?
4. Describe some challenges to having one of these programs in our school district.
5. What would be some benefits?

Permaculture AXES Paragraph

- What is Permaculture in your own words?
- What are some examples of Permaculture?
- What examples of permaculture do we have in our garden?
- Why is Permaculture important?
- Do you see it catching on in agriculture? Why or Why not?

http://www.openthefuture.com/cheeseburger_CF.html

- Go to the website and read the article.
- Discuss what you have read with 2 other students around you.
- Class discussion on the energy needed to make a hamburger.
- **AXES Paragraph about the article in your notebook.**

Cheeseburger Video

11/15 Eating a Cheeseburger
Obj. TSW learn about the carbon footprint of eating a cheeseburger. P. 36 NB

1. What is a carbon footprint?
2. What kind of energy goes into making a cheeseburger?
3. Rank the carbon footprint of eating a cheeseburger: High, Medium or Low.

11/16 Along the Way… there are Jobs
Obj. TSW learn about potential jobs in the Agriculture & transportation industry. P.38 NB

1. What are some potential jobs in Agriculture?
2. How many people work in an area related to Agriculture?
3. Why is this significant?

Agriculture Careers

- Agricultural careers may be divided into various categories. These include: Agribusiness Management, Agricultural and Natural Resources Communications, Building Construction Management, Agriscience, Resource Development and Management, Parks, Recreations, and Tourism Resources, Packaging, Horticulture, Forestry, Food Science, and Fisheries/Wildlife
- http://www.agday.org/education/careers.php

11/17 Andy Warhal Hamburger
Obj. TSW understand the common denominator a fast food hamburger creates. P.40 NB

1. What do you expect from a fast food hamburger?
2. What is your favorite memory eating a fast food hamburger?
3. Why is eating a fast food hamburger a common denominator among all people?

http://www.agday.org/education/careers.php

- Go to the following link and research potential jobs in Agriculture.
- **Write a list of 5 potential jobs that are interesting to you and why.**

Read Article on Organic vs. Synthetic Fertilizers and Pesticides

- AXES Paragraph Page 33 NB