name: _____

date: _____

class: _____

Welcome, teachers, to your guide for successful student completion of the Global Aquaculture Student-led Assignment, a webquest designed to help students further explore a career in global aquaculture. Your students will want to save a copy of this assignment to a cloud storage platform, flash drive or computer. They will follow your directions for submission of their assignment.

Before students begin this activity, they will need a computer with internet access and a writing utensil. Students will complete the assignment by visiting each of the linked items and answering the following questions.

Activity 1: Learn about careers in the industry

Students will watch **this video** (**grownextgen.org/career-videos/video/global-aquaculture/**) to learn about aquaculture and its role in meeting the global demand for protein, then answer the following questions:

1. Why is soybean meal valuable in fish diets?
    - ○ It aids in digestion
    - ○ It enables fish to swim faster
    - ● It has high protein content
    - ○ It aids in reproduction

2. How much is seafood consumption expected to increase by 2050?
    - ○ 25 percent
    - ● 50 percent
    - ○ 75 percent
    - ○ 100 percent

3. Where can fish be raised?
    - ○ In one-acre ponds
    - ○ Natural bodies of water
    - ○ Indoor fish farms
    - ● All of the above

4. What classes are strongly recommended if a person wants a career in the aquaculture industry?
    - ● Math and science
    - ○ English and history
    - ○ Marketing and business
    - ○ Speech and debate

Activity 2: Explore the industry

Students can complete the **"Aquaculture and Soy Protein" e-learning course** (**elearning.grownextgen.org**) to gain background knowledge about this topic. After taking the posttest, they should take a screen shot of their results and email them to you.

They should collect 5 interesting facts from the course about aquaculture and its impact on global agriculture. For example, "Soy meal can be used to feed the fish in aquaculture programs, making it a cheaper source of protein worldwide." (They may use this fact, but must collect 5 others; this example does not count toward their 5 facts). They will state their 5 interesting facts about the role and importance of soybeans in global agriculture here:

Answers will vary.

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After completing the e-learning course, find out where aquaculture research is taking place. For example, Read **the article** at **uidaho.edu/research/news/research-reports/2015/growing-fish**

1. What have they done here?

   Selective breeding to find fish that thrive on plant-based fish food

2. What are they feeding the fish?

   Plant-based food rather than fish meal

3. What are other risks that fish growers will have to deal with?

   Disease

4. How do they immunize fish?

   Immersion

Find an article online about one additional example of a place where they are practicing aquaculture and explain the situation and outcomes below. Be sure to include the article citation.

> ***Other possible articles:***
>
> ***Fish Farming Continues to Grow as World Fisheries Stagnate***
> **http://www.worldwatch.org/node/5444**
>
> ***Aquaponics Growing Fish and Plants Together (76 slide powerpoint)***
> **http://fisheries.tamu.edu/files/2013/10/Aquaponics-Growing-Fish-and-Plants-Together.pdf**
>
> ***Aqualibrium uses fish to grow plants, and plants to grow fish***
> **http://newatlas.com/aqualibrium-garden-aquaponics/29548/**

Activity 3: A big picture view of the industry

Visit **gaalliance.org/wp-content/uploads/2015/02/GAA-Food-Supply-Infographic-11x17-HiRes.pdf**
Study the infographic to learn more about aquaculture and its influence on global agriculture.

Students should state 3 facts learned from "Feeding a Growing World with Aquaculture".

Facts may include:
- ***62% of food fish will come from aquaculture by 2030.***
- ***To meet global seafood needs, aquaculture production will need to increases by 46.4 million metric tons.***
- ***Fish require less feed to gain a pound of body mass than do chickens, hogs, or cattle.***
- ***Fish require 1.1 pounds of food to gain one pound of body mass.***
- ***Cattle production results in much more greenhouse gas emissions.***

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