



LESSON PLAN

Subject: Grade 3 Science

Lesson: Natural Balance

Standards Addressed:

- Explain how environmental conditions effect how plants survive and how the basic properties of soil contribute to the growth and survival of plants. (3.L.2)

Objectives:

- Students will predict how well plants grow and survive according to a combination of environmental conditions.
- Students will engage with the different textures of soil for retention of water and nutrients to support plant life.

Materials Needed:

- A device for watching the “The Balance of Survival” video
- “Natural Balance” activity sheet
- A bag of dried black beans, disposable cups, sand, clay, and humus
- Drawing supplies

Outline:

- Before the lesson, students should know the components of soil and how plant life is affected by environmental conditions. (Consider beginning the “Take it further” activity in advance.)
- Show “The Balance of Survival” video and discuss with the class.
- Allow the students to complete Activities 1 - 3 individually. Review and discuss after each activity.
- Teacher will take the class outside and assist students in identifying plants for Activity 4. Then students will complete the activity individually.

Take It Further:

Conduct an experiment as a class where you plant black beans in twelve cups, four with sand, four with clay, and four with humus Water each lightly every 1-2 days and have students write multiple predictions and observations about how the mediums hold water and how the plants will grow. This should take about two-to-three weeks and can actually begin in advance of the unit about soil and plants. Use this lesson as a conclusion.

Cross-Curriculum Connection:

Students will write a paragraph about what type of environment they would look for if they were to start farming in the 1700’s. Have them create a drawing of this landscape and include three types of plants that would grow well.





Natural Balance

Grade 3 Science

Name: _____

Date: _____

Activity 1:

Which of these choices are the three components found in soil?

Circle three:



Pebbles

Humus

Clay

Dirt

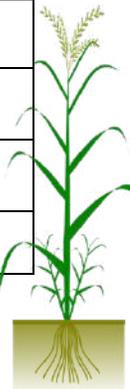
Sand

Which of the choices above holds the most water? _____

Activity 2:

Listed below are several plants and three environments. See if you can match each plant to the environment in which it would grow best.

Pumpkins	Like lots of sun	Like loose soil with lots of humus	Like lots of water
Rice	Likes lots of water	Likes clay soil with some humus	Likes warm weather
Corn	Likes lots of sun	Likes loose soil with lots of humus	Likes a breeze to pollinate
Peaches	Likes warm seasons	Likes loose soil with lots of humus	Wind can break branches
Cabbage	Likes cold seasons	Likes sandy soil with some humus	Does not like wet soil



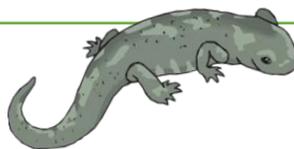
An open grassland with full sun and a breeze. The soil is loose with lots of humus. A stream runs through. Warm Springtime and hot Summers. Plenty of rain.

- 1 _____
- 2 _____
- 3 _____



A coastal wetland with full sun and hot, wet weather. The soil is a humus and clay mix with large deposits of clay in the water.

- 1 _____



A windy clearing on a forested mountainside. Sunny but cold, even in the Spring. Soil is a rocky sand mixed with humus from the forest. Plenty of rain but the soil does not hold onto much water.

- 1 _____



Natural Balance

Activity 3:

April, 1755

“There was a frost so bad that the acorns were hurt... The cold has continued for this entire month, though now by day it is warmer. People here in Carolina say it has been a cold and extraordinary winter.”

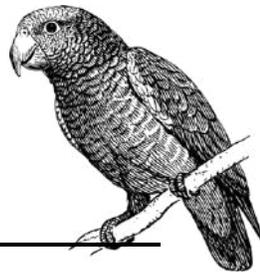
Based on the quote above, what kind of environment do you think acorns do well in?

Circle one:

Rainy

Warm

How do you know this?



Activity 4:

Go outside and find a plant. Look around the dirt and notice what kind of soil it grows in. Think about how much it rains in your area and if the plant is near water or not.

What plant did you find?	
Did the soil contain more sand, clay, or humus?	
How does this plant get water?	

Describe what kind of environment you think this plant likes best:



Natural Balance

ANSWER KEY

Activity 1:

Which of these choices are the three components found in soil?

Circle three:



Pebbles

Humus

Clay

Dirt

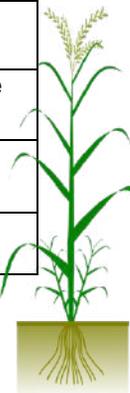
Sand

Which of the choices above holds the most water? Clay

Activity 2:

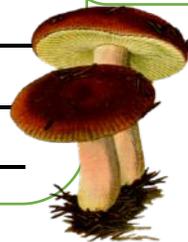
Listed below are several plants and three environments. See if you can match each plant to the environment in which it would grow best.

Pumpkins	Like lots of sun	Like loose soil with lots of humus	Like lots of water
Rice	Likes lots of water	Likes clay soil with some humus	Likes warm weather
Corn	Likes lots of sun	Likes loose soil with lots of humus	Likes a breeze to pollinate
Peaches	Likes warm seasons	Likes loose soil with lots of humus	Wind can break branches
Cabbage	Likes cold seasons	Likes sandy soil with some humus	Does not like wet soil



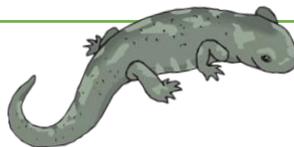
An open grassland with full sun and a breeze. The soil is loose with lots of humus. A stream runs through. Warm Springtime and hot Summers. Plenty of rain.

- 1 Pumpkins
- 2 Corn
- 3 Peaches



A coastal wetland with full sun and hot, wet weather. The soil is a humus and clay mix with large deposits of clay in the water.

- 1 Rice



A windy clearing on a forested mountainside. Sunny but cold, even in the Spring. Soil is a rocky sand mixed with humus from the forest. Plenty of rain but the soil does not hold onto much water.

- 1 Cabbage



Natural Balance

ANSWER KEY

Activity 3:

April, 1755

“There was a frost so bad that the acorns were hurt... The cold has continued for this entire month, though now by day it is warmer. People here in Carolina say it has been a cold and extraordinary winter.”

Based on the quote above, what kind of environment do you think acorns do well in?

Circle one:

Rainy

Warm

How do you know this?

_____ If the frost hurt the acorns, then acorns must like warm weather better than cold weather.

Activity 4:

Go outside and find a plant. Look around the dirt and notice what kind of soil it grows in. Think about how much it rains in your area and if the plant is near water or not.

What plant did you find?	Help the students identify the plants.
Did the soil contain more sand, clay, or humus?	Students may list a mix, but humus will likely be the most common ingredient.
How does this plant get water?	Answers may include, rain, human watering, nearby creek, etc.

Describe what kind of environment you think this plant likes best:

_____ Student answers should reflect the responses in the table above as well as comments on the weather.
