

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

Sponsored by



LESSON 1.3

Let's Beautify Our School: Installing a Pond

Unit:
PLANTS AND GARDENING

PRECEPTS

- A. Action
 - A8. Evaluate and reflect on actions taken and make appropriate modifications.
- B. Relationships
 - B2. Interact and work with others.



Lesson Type:
Large Group

NATIONAL STANDARDS

- NL-ENG.K-12.12 – Applying Language Skills
- NS.K-4.3 Life Science
- B. Relationships

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- Explain the importance of maintaining a healthy *landscape*.
- Construct a small pond in a *landscape*.





TIME

Instruction time for this lesson: **50 minutes.**



RESOURCES

Lee, T. (2006, June 19). 5 Tips For Fish Pond Maintenance. Retrieved February 28, 2010, from <http://ezinearticles.com/?5--Tips--For--Fish--Pond--Maintenance&id=223488>

(1996) Pond Maintenance. Retrieved February 28, 2010, from <http://www.bestfish.com/pondmain.html>

(2010) Plan and Build a Water Garden. Retrieved May 8, 2010, from http://www.lowes.com/cd_Plan+and+Build+a+Water+Garden_784739003_

National FFA Organization. (2003). LifeKnowledge Precepts



TOOLS, EQUIPMENT AND SUPPLIES

Supplies needed for an approximate 2'x2'x3' pond installation:

- ✓ **Approved area for *pond* installation**
- ✓ **Gloves - one pair per student**
- ✓ **Shovels - as many as available to accommodate students**
- ✓ **Sand - approximately 1.5 cubic feet**
- ✓ **Heavy plastic *pond* liner - 7'x10'**
- ✓ **Utility knife to cut plastic *pond* liner**
- ✓ **Smooth, flat stones or bricks for *pond* edging - number will vary depending on size**
- ✓ **Plants and aquatic animals - Waters lilies, water snails, fish**
- ✓ **Extra T-shirts - as back-up dress for students in the event they get wet**
- ✓ **Large tarps - optional – for kneeling to install *landscape***
- ✓ ***Landscape* spray paint**

Supplies needed for instruction of content in classroom:

- ✓ **PALS1.3.LG.TM.A**
- ✓ **Colored pencils, markers or crayons**
- ✓ **Plain, drawing paper - one per student**

KEY TERMS



The following terms are presented in this lesson and appear in ***bold italics***:

Landscape

Pond



CONTENT OUTLINE

Objective 1. | Explain the importance of maintaining a healthy *landscape*.

- I. Define *landscape*
 - A. Using plants to beautify the environment
- II. Requirements for a healthy *landscape*
 - A. A healthy balance between living and non-living organisms
 1. Living organism examples: plants or animals
 2. Non-living organism examples: rocks, air and water
- III. Explain why it is important to have a healthy *landscape*
 - A. Make sure to provide a good community of living and non-living things

Objective 2. | Construct a small *pond* in a *landscape*

- I. Define *pond*
 - A. A *pond* is a body of water smaller than a lake that is sometimes artificially formed.
- II. What role does a *pond* play in a *landscape*?
 - A. *Ponds* can provide an appropriate environment for living and non-living things as long as it is well-maintained.
- III. Activity: Construct a *landscaped pond*
 - A. Materials:
 1. Gloves
 2. Shovels
 3. Sand
 4. Heavy plastic sheeting
 5. Rocks
 6. Plants/bulbs
 7. Fish/other aquatic life
 - B. Procedure:
 1. Make sure to receive prior approval to place a new *pond* in the ground at a given location
 2. Dig a hole in the ground about 20” deep and about one yard across
 3. Line the hole with a least 2” of sand. Cover the sand with the plastic
 4. Fill the *pond* with water
 5. Pile rocks around the plastic sheet at the edge of the *pond* to hold it in place
 6. Add plants and stock with fish and other aquatic *pond* life
- IV. Maintenance of a *landscape pond*
 - A. Check *pond* once every two weeks for debris, such as leaves, and refill *pond* to top if needed

LESSON PREP-WORK

*Before the day of the lesson, permission from administration or faculty of the school to create a **landscape**, including a **pond**, must be secured. Some schools may have restrictions on landscaping or will need to understand who will be in charge of maintenance once the **landscape** is in place. Make sure to have a short-term and long-term plan in place for the **landscape** so that everything can be discussed prior to installing the **landscape**. Also, include an alternate plan without a **pond** just in case approval is not granted.*

*Once approval has been granted, determine the location where the **pond** will be placed with the group leader from the school. Make sure that the location of the **pond** is not in an extreme low spot and also is not in direct sunlight for the entire day. On the day of the installation, it is helpful to use **landscape** spray-paint to mark out the exact location the **pond** will be located before the lesson begins. This will be a visual for students and the group to make sure that it is placed in the approved location. To speed up installation, begin digging the whole in the middle of the outline so that the ground is broken up and ready for the students.*

*Finally, it will be important to notify the group before the event to dress appropriately. Installation of the **landscape** will be a messy event, so students need to have on clothing that they can get dirty. Depending on the time of year, appropriate clothing, such as shorts or pants, will need to be determined by the group leader.*

INTEREST APPROACH

Once all students arrive, welcome them. Make any proper introductions if needed.



Look at these two pictures. *Display PALS1.3.LG.TM.A.* When you hear the word, GO, take 10 seconds to think about and identify one difference between the two pictures. There are many different things in this picture that are different – try to pick something that your neighbor might not! What questions do you have?

Answer any questions there might be. Great!

GO!

Allow students to think quietly to themselves for 10 seconds about the pictures. When 10 seconds are up, refocus the group.



Great job thinking quietly! Who will share one difference they discovered in the two pictures? *Allow several students to share, however do not take up too much time on this activity.*

Excellent job! Those are all great examples of things that are different in these two pictures. Raise your hand if you think picture A is better than picture B.

Picture A on PALS1.3.LG.TM.A is the picture that has no landscaping. Allow students to raise their hands.



OK, now raise your hand if you think picture B looks better.
Allow students to raise their hands – this should be the majority of the group.



Why do the majority of you think picture B looks better?

Allow a few students to give an answer.



When we look at picture A, there is something missing from there; something that makes the picture look incomplete. In picture B, the addition of plants and other non-living materials around the structure allow it to look complete.

Wow! What a difference these items make! We identify these differences here in these pictures, but have you ever thought about your home or your school? The final touches placed on a structure can make them more inviting and be that finishing touch to make it look complete. Today, let's look at why adding these types of finishing touches is important and how we can make sure we do it in a way that is healthy for the environment. We'll be in construction mode today, not only in learning, but also in creating something special here for us to enjoy! Put on those working gloves and let's get down to learning!

SUMMARY OF CONTENT AND TEACHING STRATEGIES

*Make sure the following material is ready to go for **pond** installation: shovels, sand, heavy plastic sheeting, rocks, plants/animals for the **pond** and gloves.*



Raise your hand if you have heard the word **landscape** before.

Allow students to raise their hands.



Great! Who will share what the word **landscape** means to them?

Allow two to four students to share, making sure to not consume too much time.



So **landscape** really can mean many things! If we were to actually give a definition to **landscape**, it would mean to use plants to beautify or improve the environment.

OBJECTIVE 1: | Explain the importance of maintaining a healthy landscape



I. Define **landscape**

A. Using plants to beautify the environment



There can be good and bad **landscapes**. Who will share with the group an example of what a good **landscape** would look like?

Allow students to respond.



Who will share with the group what a bad landscape might look like?

Allow students to respond.



Depending on the place where a **landscape** is being installed, we can actually put better plants and other items that will make for a healthier **landscape**. Who will share one item, other than plants, that we could place in a **landscape**?

Allow students to respond, again making sure not to consume too much time.



Those are great! When installing a **landscape** we can actually add living things, like plants or animals, and non-living things, like rocks or water, to make our **landscape** well balanced for the environment it is in.

II. Requirements for a healthy **landscape**

A. A good balance between living and non-living organisms

1. Living organism examples: plants or animals
2. Non-living organism examples: rocks, air and water



Who will share why we would want a healthy **landscape**?

Allow students to respond. Listen for ideas such as a place for things to live and “be happy.”



Having a healthy **landscape** provides a good community for living and non-living things.

Raise your hand if you like to read.

Allow students to raise their hand.



Where can we go if we want to borrow a book to read?

Allow students to respond library.



That’s right – a library is a place we can borrow a book whenever we want. Having libraries in our schools and community provides places for us to go to enjoy books we may not have access to any other way.

If we build this **pond** it is just like a library would be to us – a much needed place for animals and plants to live. A healthy **pond landscape** provides homes that might not be there any other way.

III. *Explain why it is important to have a healthy **landscape***

a. Make sure to provide a good community of living and non-living things



If you would like to install a healthy **landscape** here so we can beautify our environment, please raise your hand.

Allow students to raise their hands.



Wow! That’s a lot of willing landscapers! Installing a **landscape** can be difficult and very tiring, so turn your listening ears on.



Simulate turning your ears on by touching them and making a “click” sound



And make sure you hear the directions to keep everyone safe!

OBJECTIVE 2 | Construct a small *pond* in a *landscape*



I. Define *pond*

A. A **pond** is a body of water smaller than a lake that is sometimes artificially formed

II. What role does a *pond* play in a *landscape*?

A. **Ponds** can provide a good environment for living and non-living things as long as it is well-maintained



Who will share a definition of a **pond**?

Allow several students to respond.



Thank you! We can define a **pond** as a body of water smaller than a lake that is sometimes man-made. What does man-made mean?

Allow students to answer.



That's right. By man-made, we are saying that, instead of naturally happening in the environment, the **pond** is actually made by us! But why would we want to add a **pond** to our *landscape*?

Allow students to respond.



We actually add **ponds** to our *landscapes* because they provide a good environment for both living and non-living things. What's an example of a living thing again?

Allow students to respond.



Thank you! And what are some examples of non-living things?

Allow students to respond.



You all are such great listeners! Thank you! Raise your hand if you have seen a **pond** that provides a good environment for living and non-living things?

Allow students to raise their hands.



Well, that's just what we're going to do – install a **pond** in our *landscape*! Let's all listen to the instructions and save our questions and comments until they are asked for. If you're ready, clap once!

Allow students to clap.



Thank you! Then here we go!

*Before starting installation, make sure that all students have the appropriate clothing to install a **landscape pond**. It is not a bad idea to bring a few extra T-shirts to loan out for students to wear over their clothing and also large tarps to allow students to kneel on, instead of the ground, to keep from getting too dirty, especially if it has rained recently.*

At the front of the class, have all the materials to help students visualize as an explanation occurs of what will be needed in the process.



Creating a **pond** in a **landscape** can be very challenging, so let's listen to understand all the materials needed and the proper procedure for installation.

Let's go over the materials we will need to install our **pond landscape** today. Everything we have will be important to making sure our **landscape** is installed correctly.

As an item is discussed, hold that item up so that students are able to make the connection between the item and what its use will be in the process.



An important item to wear during installation to make sure our hands stay safe is gloves.

Hold up the gloves.



In order to dig the hole to place the **pond** in, we will need a variety of different size shovels. *Hold up the examples of shovels.*

To help even out the hole we dug, we will need some sand.

Hold up the bag of sand.



To create a nice smooth **pond** bottom and to ensure the water stays in the **pond** for our living things, we will line our hole with a thick plastic liner.

Hold up the plastic liner.



To keep the plastic liner in place, we will line the edge of the liner on the outside with smooth, flat rocks so that it doesn't move.

Hold up examples of larger rocks.



And, finally, we need our living things to place in our new **pond landscape**.

*Hold up examples of plant or animal life that will be placed in the **landscape**.*

III. Activity: Construct a **landscaped pond**

A. Materials:

1. *Gloves*
2. *Shovels*
3. *Sand (separated into bags for each group of students)*
4. *Heavy plastic sheeting*
5. *Rocks*
6. *Plants/bulbs*
7. *Fish/other aquatic life*



We need each and every one of those items to make our **pond** installation go smoothly. Are we ready to get dirty?

Allow students to respond.



Great! Let's head outside to where we will install our **pond**!

*At this point, instruct students to leave their belongings where they are and delegate who will carry the materials out to the **pond** location. If there are students who do not have on the proper clothing and extra T-shirts and other clothing items were brought, then allow them to change. This would also be a good opportunity to pass out one pair of gloves for each student. Once everyone is ready, travel outdoors together and make sure that all students are accounted for in the process.*

B. Procedure:

1. *Make sure to receive prior approval to place a new **pond** in the ground and a given location*
2. *Dig a hole in the ground about 20" deep and about a yard across*
3. *Line the hole with a least 2" of sand. Cover the sand with the plastic*
4. *Fill the **pond** with water*
5. *Pile rocks around the plastic sheet at the edge of the **pond** to hold it in place*
6. *Add plants and stock with fish and other aquatic **pond** life*

Once students arrive at the location, have a central spot that all materials can be placed. Make sure this remains organized so that when materials are needed during the process, they are easy to locate.



Here is where we will install our **landscape pond**. Before we decided on this location, we made sure we asked an adult, like our principal or someone in charge of the land, to make sure it was OK to place it in this location.

The first task we must complete is digging out the area for the **pond**. If you notice on the ground there is an area that we have marked out to show where the **pond** will be placed. We want to make the **pond** around 20 inches deep.

Depending on the number of students in the group, you can have students either pair up or get in groups of three so that they can work together with their shovel.



When you hear the word DIG, divide into your groups, select a shovel, and select the order in which you will share the task of digging the **pond**. Digging is very physical and can be a difficult task. We will take turns digging the **pond**, so that no one will get too tired. When a person gets tired, switch it up and take a turn! Make sure everyone gets a change to dig! Before we get started, what questions are there?

Answer any questions asked.



Thank you. Let's get dirty and DIG!

*This task may take a while. Make sure that students are switching up digging in their groups and that none of the students are doing too much physical work. If it is warm outside, allow students to get water when needed. When students have completed digging the hole for the **pond**, refocus them by instructing them to put their shovels back at the location where all the materials are located.*



Wow! That's an impressive hole! Everyone worked very hard to dig the hole for our **pond**! The next step is to add sand to the bottom of our hole to help even the surface out.

When we hear the word SPREAD, select one person from your group to pour a bag of sand in the hole. Once the sand is on the bottom of the hole, someone else spreads it out with a shovel. Make sure and get the sand and smooth as possible. What questions are there?

Answer any questions.



Thank you! Then let's...

SPREAD!

Monitor students as they work through this step. This should not take as long as the digging step; however, make sure that all students are helping and participating. When everyone has spread sand and it is evenly spread on the bottom, refocus the group for the next step.



Our **pond** is really coming together! Just a few steps left to go! To make sure our water stays in the **pond**, let's place a plastic liner over the bottom and sides. Who will serve as our two volunteers to complete the next task?

*Select two students. Hand the two students the piece of plastic for the bottom of the **pond**.*



Thank you! Our volunteers are holding the piece of plastic that will keep our water in. Please lay this out flat over top of the hole and carefully help it take the shape of the hole.

Assist the volunteers so that the plastic form fits to the inside of the hole.



Wow! We're almost there. One of the important last steps is to make sure the plastic stays put so the water stays in our **pond**. Over with all of our supplies are the large smooth, flat rocks that we brought outside. When you hear the word **ROCK**, collect one rock per person and place it around the edge of the plastic to make sure it stays in place. How many rocks are you getting?

Students should respond one.



What questions are there?

Answer any questions students might have.



OK, then – let's...

ROCK!

*Help students with this task, if needed. Make sure the rocks are evenly placed around the **pond** to ensure the plastic stays in place. If additional rocks are needed to complete the task, send groups back to get more rocks. Once students complete this task, refocus the group's attention.*



Awesome! Who will guess what comes next? *Allow students to guess. It's that time – let's add the water!*

*Depending on the water source for your location, students can assist, such as filling buckets of water and filling the **pond** or assisting with a hose to help fill it up. As the water is added, smooth out the liner to make sure there are no bumps in the bottom of the **pond**. When all of the water is added, the excess line that extends past the rocks can be cut with a utility knife by one of the group leaders. This will give it a complete look.*



Alright – just one more step to go! We need to add our living and non-living things to make our **pond** complete. Remember, these living and non-living things will help create an environment that was not here before, but will encourage new things to grow! There are a variety of items we can add to our **pond**, from more rocks, to plants and even different aquatic life. Let's add those things together!

*Depending on the supplies for the group, similar methods of having each group add something to the **pond** could work like before. If not, then a good way to complete this task would be to show the group the item that is going to be added to the **pond** and have a volunteer add the item in the desired location.*



Wow! Our **pond** really looks great! Who will share their favorite part of the **pond**?

*Allow students to share and talk about what they like about the **pond**. Have them focus on all aspects of the **pond**, even talk about the installation process if appropriate.*



Those are all wonderful! How would we feel if the **pond** did not get taken care of and did not look this way anymore?

*Allow students to share how they would feel if the **pond** was neglected.*



Taking care of our space is important to not only us, but to ensure that the plants and animals that use the area as their home have a great place to live! In order to make sure our **pond** stays healthy, we should make sure to remove anything that might be floating in the water, such as leaves or sticks so that the water stays clear.

If the water level gets low, we should make sure and refill it to the top when needed. And finally, if we have fish living in our **pond** we should set up a feeding schedule to make sure they have food to eat!

IV. *Maintenance of a **landscape pond***

A. Check **pond** once every two weeks to remove debris, such as leaves, and refill **pond** to top if needed.

B. If fish are present, develop a feeding schedule.



We all worked hard installing our **pond** today! This is sure to be an area that we will all enjoy for a long time. Let's take a look back at our new knowledge from today!



REVIEW / SUMMARY

Before reviewing the content from today, have students pick up the work area outdoors and return inside to the classroom. If possible, take the group to the restroom on the way back in to allow students to clean up and wash their hands.

For the review activity, make sure there is enough paper for each student to have one piece and access to colored pencils, markers, or crayons. Once everyone is done cleaning up, return to the class and refocus the students' attention.



Thank you for being such eager learners about **landscapes** and installing our **pond** today! There were lots of new ideas and concepts we talked about. Let's see how much we remember!

When you hear the word DRAW, take five minutes to show, through a picture, what a **landscape** is and the requirements of a healthy **landscape**. Who will raise a hand and share, in your own words, what a **landscape** is?

Allow students to respond.



Thank you. Who will share an example of what makes a **landscape** healthy?

Allow students to respond.



Thank you! Again, when you hear the word DRAW take five minutes to show, through a picture, what a **landscape** is and the requirements of a healthy **landscape**. What questions are there before we get started?

Allow students to ask any questions.



OK. One last bit of information – your picture must be in color!

Make sure to instruct students where the colored pencils, markers or crayons are located.

OK – DRAW!

Monitor students as they work on their drawings. If there is enough time left, once all students have completed their drawings, allow a few to share.



Thanks for being such great workers today! **Landscapes** make our outdoors spaces beautiful and fun to be a part of. I hope today you had a great time installing our **pond** and I look forward to coming back and seeing how it looks! Next time we meet, we'll take these ideas of landscaping in a different direction and actually install a garden! So keep these ideas and get ready to continue the beautification of our space!

APPLICATION



Small Group Idea

Students could tie this lesson in with seed germination where they germinate the seeds of plants that will be used in their aquatic environment.

*Have students research the plants and aquatic life they would like to add to their **pond** environment. This will allow them to better understand how to care for them.*



One-on-One Idea

*Set up a feeding schedule for the fish and assign groups to feed them and record observations of the **pond**.*

*Read together What's in the **Pond?**, by Anne Hunter.*



PALS1.3.ASSESS.A | EVALUATION ANSWER KEY

1. Answers may vary but should be important because landscapes help beautify our outdoor spaces.
2. Answers may vary but most likely will include plants or animals.
3. Answers may vary but most likely will include rocks, air or water.

PALS1.3.LG.TM.A

Which One Looks Better?

Picture A



Picture B





PALS1.3.LG.ASSESS.A

Let's Beautify Our Space!

Answer the following questions about landscapes.

1. Why is having a landscape important?
2. What is one example of a living thing we could place in a landscape?
3. What is one example of a non-living thing we could place in a landscape?