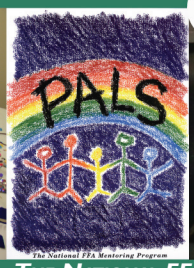
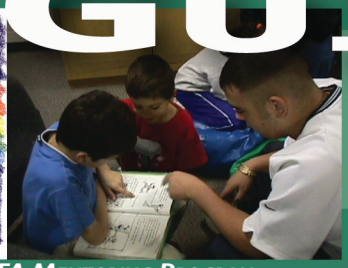
Grow Your PALS Program Guide





The National FFA Mentoring Program

Sponsored by Campbell's

LESSON 1.37

Ants, Ants, Ants

Unit: Environmental Science

Precepts

D. Character
D3. Accept responsibility for personal actions.

Lesson Type:
Large Group

National Standards

CS.08.02.01.a. Use the appropriate procedures for the use and operation of specific tools and equipment.
PS.03.03.02.b. Diagram the life cycles of major plant pests and diseases.
NL-ENG.K-12.12 – Applying Language Skills
NS.K-4.3 Life Science

Student Learning Objectives

As a result of this lesson, the student will …

- Build an ant farm.
- Record data on ant behavior.
- Discuss the "life cycle" and social behavior of ants.

Time

Instruction time for this lesson: **45 minutes.**

Resources

www.lala.com – search for "Ants Go Marching" songs – may have to purchase mp3 file or other suitable song search engine and retail point.

National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success

Tools, Equipment and Supplies

- **Glass jar with lid**
- **Knife or something to put small holes in jars lid**
- **Small piece of screen**
- **Paper towel/or wrapping paper roll**
- **Gloves**
- **Funnel**
- **Dark piece of construction paper**
- **Very small pieces of food (so food won't spoil) –** ripe fruit, seeds, breadcrumbs dipped in honey or other small foods
- **Cotton ball soaked in water**
- **Pre-made ant booklets, cover and three pages inside –** one per student
- **Crayons**
- **PALS1.37.LG.ASSESS.A –** one per student

Key Terms

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

Queen

Worker

Summary of Content and Teaching Strategies

Objective 1. | Build an ant farm.

I. Tips for building an ant farm

1. Use the jar (jelly or mason) as the ant farm
2. Place a paper towel roll inside the jar and trim so that the edge of toilet paper roll is level with the top of the jar and the lid is able to screw on
3. Fill tube with garden soil
4. Punch holes in top of lid and fix a small piece of screen under the lid so ants will not get out through the holes

5. Find an ant hill
6. Begin to fill the outside (next to glass) with soft soil from ant hill
7. Find and identify ***queen*** ant and eggs to add to the ***worker*** ants
8. Gently place all ants into jar
9. Place lid with screen onto jar
10. Gently fix construction paper to outside of jar so that ants believe they are underground and ants will begin to tunnel

Objective 2. | Record data on ant behavior.

I. Create a diagram of how the ants move
   1. Draw a picture of what the jar looked like when the ants first "moved in"
   2. Remove the construction paper from jar
   3. Draw what the ant farm looks like now. (It may take weeks for tunnels to be created)
   4. Talk about how the ants move through the soil

Objective 3. | Discuss the social behavior of ants.

I. Discuss behavior of ants
   1. How do they move?
   2. How do you think they know where to go?
   3. Who do you believe is in charge?

Interest Approach

Before class begins, make a sample ant farm so students can see what ants have been living and working in for a few days.

Sing "The ants go marching one by one!"

If you need to, you can look the song up on the Internet and buy a copy. There are a lot of versions to this old children's song. Use sites such as lala.com or iTunes to purchase song.

Today we will get to watch just how the ants will march as we make our very own ant farm.

Objective 1. | Build an ant farm.

Let's first talk about how we take care of a pet. By raising your hand, how many of you have pets at home?

Wait for response.

Great! What does a pet owner do everyday for their pets?

Feed and water them and make sure they have a clean, safe place to live.

That's right. We will be doing the same for our new "pet"-- ants. We will feed, water and build them a safe place to live.

Where might we find an ant?

Look for: outside in the dirt.

Right, and our rule for today is that only the teacher will be able to touch the ants. They are small and some ants may bite and that is not safe.

What questions do you have about our safety rule today?

Wait for response.

Let's start to make our very own ant farm by taking this jar and putting a tube inside the jar. I brought with me today some dirt from my garden. Does it look soft or hard?

Look for: hard.

It is hard and we are going to fill the inside of the tube with some hard soil and when we find our ant hill today, we will borrow some soft soil to put on the outside of the tube. We want to make sure the ants make their tunnels on the outside of the jar so we can see them at work.

We will also need this lid that I have punched holes in. Why do we need a lid with holes?

Look for: so they can breathe and not get out.

Right, and I have some screen that I am putting underneath just to make sure that we don't let out any ants.

We are going to head outside and discover an ant hill. I was looking around earlier and I think I found the perfect spot. Where do you think this spot may be?

Look for: by a bush or a large pile of dirt.

Wow, you are great scientists and I can tell you will make a wonderful ant farmer too!

Just to be sure, let's talk about the rules our class follows when we leave this classroom.

Look for: stay together, use inside voices--even though we are outside---because it is not recess, raise our hands to share our thoughts and ideas, and listen for direction from the teacher. Remind students about not touching the ants.

Sounds like we are ready to explore.

Head outside. It is a good idea to identify ahead of time an ant hill. Take students around and identify where they believe an ant hill may be found. If they find one great; if they don't, "lead" them to the ant hill you found earlier.

We did it. Now, for the next step. We are going to collect some ants from this hill to add to our very own ant farm. Before we can do this, we needed to add what to our farm?

Look for: soft soil.

That's right, I will scoop some of this soft soil from their hill into our farm.

Scoop: use funnel if needed.

Now, we are ready for our ants. In class how do students know what to learn, or what to do on a project?

Look for: they need a teacher.

Ants are a lot like you--they also need someone to help them. Who knows what the name of the ant who does this?

*Look for: **queen**.*

The ***queen*** ant helps the other ***workers*** know what needs to be in their colony. We will need to find a ***queen*** ant for our farm. What else might the ***queen*** do?

Look for: has the baby ants.

Yes, she has many jobs!

*Identify the **queen** ant and place her along with many* **worker** *ants into the jar. Do not put too many ants as they will not have room to work. 10-12 is sufficient. Make sure lid is on tightly.*

Let's take our new farm back into class.

Allow for group to make it back to class appropriately.

Just like other pet owners, we will be responsible to feed and water our ants. What kinds of food do you think they will eat?

Look for: fruits and small things like breadcrumbs.

I brought some tiny pieces of food for us to set inside our ant farm as well as a cotton ball to use for their water. We can soak this cotton ball and set it on the soil for them to drink from. We need two volunteers to help us.

Call on two students to set food in farm and the other to soak the cotton ball and set on the soil.

Thank you, they will really like that. Where do ants make their tunnels in their ant hill?

Look for: inside.

Will it look light or dark in their hill?

Look for: dark.

Let's use this dark piece of construction paper to wrap around our farm, just under the lid so they can still breathe. That way our ants will feel right at home. It might take some time for our ants to make their tunnels. As they work lets create our own ant farm story book.

OBJECTIVE 2. | Record data on *ant* behavior.

We will use these special ant story books that I brought today. Let's write our names on the front.

Allow time to write names. Turn to the first page.
Allow time to turn page.

Here we will draw a picture of what our ant farm looks like today. What might that look like?

Look for: jar, tan soil, lid, ants, etc. Encourage them to use color crayons; you may want to bring some.

We may have to wait a week or so and then check back on our ant tunnels. I will keep your ant stories until then.

Collect all the story books so they don't get "misplaced."

After the ants have made some tunnels, show students their progress. Make sure to feed and water daily, not letting food spoil or water get dry.

Look here! Our ants have been so busy!

Share with class the progress of the ants.

This is something that we really need to get in our ant story books. I will pass them out and on the second page we will draw how our ants have been creating their tunnels. What might that look like on your page?

Share ideas, and discuss how the tunnels are being made. Show a pre-made example.

I did mine earlier just so you would have an idea of what we are going to draw. What questions do you have?

Allow time for drawings. Use one student's work as an example to share during the drawing process.

These are looking wonderful. Let's look at (student's name). They have been working so hard and this drawing looks just like our ant farm. Good job.

OBJECTIVE 3. | Discuss the social behavior of ants.

The last page in our story book will be about how the ants move. How do ants move?

They use six legs.

That's right, and how do they know where to go?

*The **queen** tells them.*

So who is in charge?

*The **queen**.*

We now know about the "*life cycle*" of ants: how they move, who moves and who is in charge. You may draw a ***worker*** ant or a ***queen*** ant from our farm to show more about the "*life cycle*" of ants in your story books!

Just as the ***queen*** ant gives instructions and runs the daily operations of the ant hill, we are going to participate in an activity that works on our listening skills and how well we follow orders.

Review/Summary

*May need a large open space or a gym. Play red light, green light with class. One person is the **queen** ant who says red light, green light. The first person to touch them becomes the **queen**. They must crawl like ants to reach the "**queen**."*

We are going to play the ant version of red light, green light! The ***queen*** will be the person giving directions, such as red light or green light. The rest of the ants will line up on this line. They will move on their hands and feet as if they really did have all six legs. They can move when the ***queen*** says green light and stop on red light. The person to reach the ***queen*** first becomes the ***queen*** and the remaining ***workers*** go back to the start line. Questions?

*Answer questions and begin the game as **queen**.*

As you can tell, it takes a lot of work to be an ant. Who here can tell me two things they have learned about ants today?

Elicit responses.

Great, thanks for sharing! We learned that we need to take care of our ant hills just like we take care of our pets, and every ant has an important role.

Application

Small Group Suggestion
Discuss in small groups how ants and people are alike. When do we play the role of queen and when do we play the role of worker ant?

One-on-One Suggestion
Go to the library and find books on ants. Have the student create a poster on the many different types of ants.

PALS1.37.LG.ASSESS.A | Evaluation Answer Key

Students will complete a drawing of the "Chef Ant" worksheet where they will fill in a drawing of what ants eat based upon their observation of the food that was fed to the ant farm that was built and observed in Objective 1 and 2 (PALS1.37.LG.ASSESS.A).

Responses will vary based upon actual classroom experiences and set up.

PALS1.37.LG.ASSESS.A

Name_____

Date _____

Please draw a picture of what "Chef Ant" is thinking of eating. Remember to only draw what ants really eat!