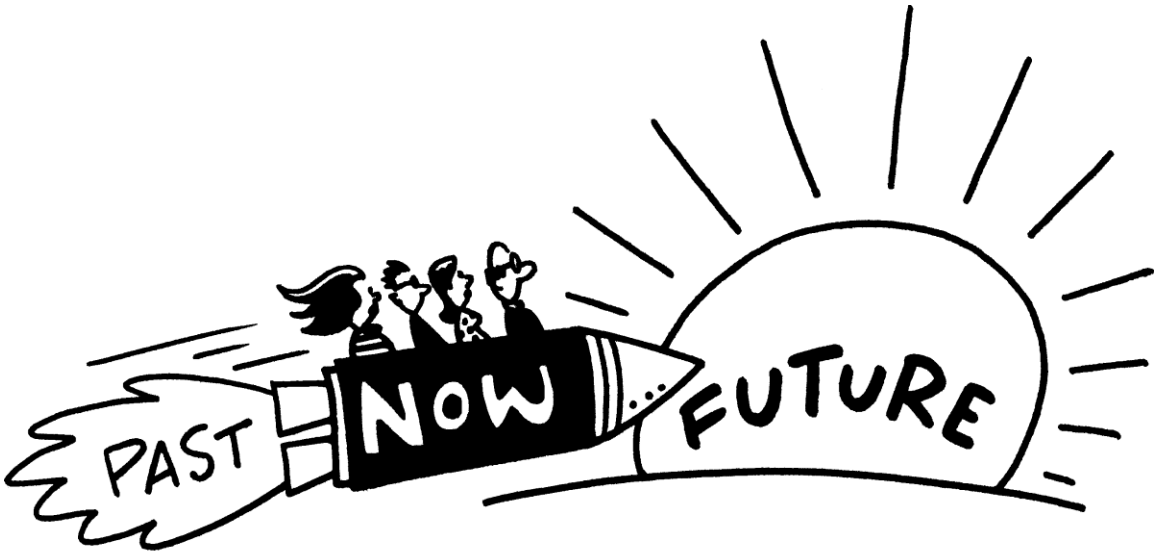
National Farmers Union

"Understanding Your Past, Looking Forward to Your Future"



Section 4: Grades 9-12

Contents:

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Lesson Plan 1: Cooperating for the Future

Unit Objective: Students will learn about the history and significance of cooperatives

Length: 1 hour

Materials Needed: The story of Dooville and NFU historical Co-op ads printed for each student

Preparation Needed: The story of Dooville and NFU historical Co-op ads printed for each student

Teaching Strategy:

1. Explain: *We often talk about the past: we tell stories, we use inside jokes with our friends, or we reflect on what we should have done. History plays a very integral role in our daily lives as you can see. However, when we start dreaming of the future we often forget the past.*
2. *The reason why I bring up this example is because today we are going to talk about the history and future of cooperatives. Make groups of 4 (or less if you must, depends on class size) and discuss about what is a cooperative?*
3. *Does anyone know where cooperatives have come from? Cooperatives were developed in the agriculture sector worldwide. The earliest form of cooperative activities are: land clearing, house & barn raising, road building, threshing ring, corn husking, harvesting activities, and community protection. Although technology has advanced a lot since the beginning of domestication of crops and animals, farmers still create cooperatives because it makes the workload more manageable.*
4. *Do any of you know what are the names of the three sides of the NFU triangle?* Give them a couple of minutes, if they don't get it then proceed. *Well there is legislation, education, and cooperation. Now, does anyone know how this organization was founded? It was founded by Issac Newton Gresham, who was barely scratching out a living. But he had a dream to create a cooperative. As time went on, he slowly garnered support convincing people that it is in their best interest to*

work together. During the 20th century Farmers Union was able to successfully lobby for the passage of the Packers and Stockyards Act. This act was designed to insure effective competition in the meat markets in the 1920's. To follow up with this, Farmers Union supported the Capper-Volstead Act which gave "associations" of persons producing agricultural products certain exemptions from antitrust laws. Farmers Union is a prime example of what an organized ***cooperative can do. A single member could not have successfully done this; however, if working together it was possible.***

5. *Did you know that Benjamin Franklin assisted in the creation of America's first formal cooperative in 1752. This cooperative pooled money from participating members of the community to ensure people's properties in case of a fire. This sounds a lot like a local insurance company.*
6. *The Rochdale pioneers were a group of weavers in Rochdale, England. In 1844, they created a consumer food cooperative that prospered. They were accredited with the "Rochdale Principles". These principles lead to the pioneers becoming the founders of the cooperative movement today. The Farmers Union reaffirms their belief in the basic Rochdale Principles of cooperation.*
7. *Some of the basic principles of cooperations are that it is open to all, and all participants are volunteers. The next, is that it is completely democratic, no member can get more of a say in group decisions than another. However, in terms of return of profits, every member gets different amount of profit depending on how much they put in. Cooperatives keep their autonomy even after making a business deal, this makes the democratic structure remain unadulterated. Another thing about cooperatives is that they are also committed to teaching members about the function and purpose of a cooperative. Cooperatives are also community based, this helps strengthen the stability of communities.*
8. Ask the students to return to their original groups. *Now, talk amongst yourselves, what role will cooperatives play in the future? Will cooperatives be used more in the future, or will they decline? Do you think the use of social media will*

transform the composition of state/local cooperatives into national/international cooperatives?

9. **Group Activity**: *Have the group read "The Story of Dooville". Have a discussion as a group on how cooperatives could have changed the situation in Dooville.*
10. **Additional:** *Hand out old Farmers Union Cooperative ads and discuss with the group.*

Cooperative Games

Activities from: http://www.pecentral.org/lessonideas/

Bird's Nest

Participants work in groups of 3. Each group has 3 similar objects (same colored balls, etc.) spread out in an open area beyond a designated line. Each group also has a basket per group in which they will place their gathered objects. One person per group assumes one of the following roles:

Gatherer – this person is blindfolded, non-verbal and the only member allowed across the designated line to gather the group's objects.

Instructor – this person is blindfolded as well but the only person in the group that can speak. It is his/her job to give directions to the "gatherer."

Spotter - this person can see but not talk. It is his/her responsibility to visually locate the group's objects and give non-verbal directions to the "instructor" in order for the "gatherer" to locate the objects.
Once blindfolded, the gatherer will move through the open area (bumpers up) attempting to locate and gather their objects. The "instructor" should be seated behind the designated line and the spotter should stand directly behind him/her. The challenge is for the "gatherer" to collect the group's objects and place them in the basket with the help of the "instructor's", directions. Allow participants to change roles.

Fire Escape!

Equipment: 2 large hula hoops.
Set Up: Stand in circle with joined hands.
Goal – get the entire group through the hoop as quickly as possible without touching the hoop.

- Each person must remain physically in contact with the rest of the class via at least one other person. Hoop holders must remain in contact with both the class and the hoop.
- If anyone touches the hoop, group must start over.

Pass It on

Objective: To move the ball from point A to point B without touching, trapping, throwing or walking with it.

Rules:
1. Cannot touch, throw, or trap the ball
2. Cannot walk with the ball
3. Everyone in the group must “handle the ball”
4. If the ball drops to the ground, you must start over

Lesson Plan 2: Conserving Energy for the Future

Unit Objective: Students will learn about various energy sources including solar.

Length: 1 hour

Materials Needed: Please see activity section

Preparation Needed: Please see activity section

Teaching Strategy:

1. Explain: *In present times we often have conversations regarding energy. How many of you are aware of different forms of non-renewables and renewables and the ways we obtain these?*
2. *We should first discuss about how we got to using non-renewables. The first non-renewable resource we used to produce energy is wood. However, during the course of this lecture series you will come to notice that the reason why we make these switches to alternative resources is because the new resource and system is more efficient.*
3. *Has anyone ever heard of the three laws of thermodynamics, they might have mentioned these laws in chemistry class? The first law is that energy (mass) cannot be created nor destroyed. The next and most important law in regards of renewables is that within a closed system, as time continues entropy (disorder) will increase. This is extremely important because it is a major factor in terms of making an efficient energy system.*
4. *With this information, create groups and try to make an explanation why burning wood is outdated in most of the United States?*
5. *The answer why wood is outdated is because when you burn it, it provides very little heat, and most of the heat escapes into the atmosphere because the fire is in an open space.*
6. *What lights faster? A magnifying glass focused on wood or using a lighter on a gas stove?*
7. *It seems pretty obvious that the lighter on the stove has a much more immediate response.*
8. *As time has continued we have seen steam rise and fall for the same reasons wood has, we are now observing both petroleum and coal becoming inferior to natural gas and renewable resources.*

9. *Does anyone know why we frack? The reason why we frack is because petroleum is a finite resource. This was proved in the 1970's by the U.S. Geological Survey team in which they designed the peak oil hypothesis, however their theory was proven wrong in some aspects, because they forgot to account for the progress of technology, and new reservoirs. The peak oil hypothesis is a hypothesis that our consumption levels will rapidly decline once we hit the maximum usage rate, because petroleum is finite and eventually it will run out. One of the reasons why the price of oil hasn't gone up as much as it should have is because new methods and technologies to obtain tight oil have been introduced like hydraulic fracking.*
10. *With all of this information presented, you should get back into your groups and answer the question: When should we see renewable resources like solar become a dominant source in the market for energy?*
11. *The answer is when the price of a barrel of oil is the same price for solar. One of the reasons why oil has not been completely replaced by renewables is because it is a heavily subsidized commodity; this drives the cost of a barrel of oil down which makes it a cheaper source of energy to consumers.*
12. *Now, in the future do you think we will be using renewable energy? Discuss amongst yourselves your opinions on the future of our energy consumption. I have two questions for you; the first, will our global energy consumption increase or decrease? The next question, how will we answer this change in consumption?*
13. *The answer to the first question is that energy consumption will increase, the reason why this will occur is because as time progresses, people who are not as fortunate as we are, will have enough wealth to pursue products that we are using. The answer to the second question is that with renewable energy, we would have an unlimited supply of fuel, we are only observing from a long-term perspective just to clarify.*
14. *However, there are three issues with renewable energy that need to be - addressed in order to pave the way for renewable energy. First, the transmission of energy needs to be reorganized where individuals can be producers. Second, is that the fixed initial cost of renewable energy is an expensive venture for the common American citizen. Third, renewable energy can be unreliable because it is dependent on*

the weather. If these three things get fixed or ameliorated, then we will have a very bright future.

Activity

This activity is from ScientificAmerican.com

Background

Solar ovens use solar energy—light and heat emitted from the sun—to cook food. They can also be used to pasteurize water or even sterilize instruments. How does a solar oven work? The simple answer is that it is designed to absorb more heat than it releases.

The solar oven you will build in this activity is a relatively simple one made out of a pizza box, aluminum foil, plastic wrap and a sheet of black paper. You will cut a flap out of the pizza box's lid and line this flap with aluminum foil. This will reflect sunlight into the box. You'll also seal the opening with plastic wrap. This plastic "window" works like a greenhouse roof, allowing (direct and reflected) sunlight to pass into the box, while also retaining heat. At the bottom of the box, you will place black paper. This will act as a heat sink that absorbs direct and reflected sunlight to warm it, which will heat food placed on top of it. This activity also includes instructions for making a tasty s'mores treat that you can heat up in your own solar oven!

Materials

- Pizza box (the larger the box, the better the oven should work)
- Pencil or pen
- Ruler
- Utility knife (always make sure you have an adult help when using knives and other sharp objects)
- Aluminum foil
- White school glue
- Plastic wrap
- Shipping tape or black electrical tape
- A sheet of black paper
- A wooden skewer or pencil
- Warm, sunny day (to do some cooking with your solar oven, you will need sunlight and fairly warm outside temperatures—above 85 degrees Fahrenheit is recommended, and the hotter the better. It should also not be windy.)

- Graham crackers, marshmallows and a chocolate bar (optional, if you want to cook some s'mores in your solar oven),

Preparation

- If needed, clean out the pizza box so it is ready to become a solar oven. Remove any liners that the box came with.
- Adult assistance is recommended for using the utility knife. And use caution when cooking with the solar oven as it can get quite hot!

Procedure

- On the top of the pizza box's lid, draw a square that is about one inch inward from each edge.
- Get an adult's help to use a utility knife (and the ruler as a straightedge) to carefully cut along each side of the square you just drew except for the side that runs along the hinge of the box. Cut all the way through the cardboard on those three sides of the square. Then fold the flap back slightly along the attached side.
- Line the inside of the cardboard flap with aluminum foil. Fold the edges of the foil over the flap to help hold the foil in place and glue the foil onto the flap. Keep the foil as smooth as possible. *What do you think the purpose of this foil is?*
- Cover the opening made by the flap (in the lid) with a layer of plastic wrap. Attach the plastic wrap to the opening's edges using shipping tape or black electrical tape. Make sure there are no holes in the plastic wrap and that all of its edges are completely attached to the lid. *Why do you think it's important to make sure the plastic wrap completely seals the lid's opening?*
- Line the inside of the box with aluminum foil so that when you shut the box the entire interior is coated with foil. It is easiest to do this by covering the bottom of the box with foil and then covering the inside part of the lid (going around the plastic-covered opening) with foil, too. Glue the foil in place. *Why do you think you should coat the inside of the box with foil like this?*
- Glue or tape a sheet of black paper, centered in the bottom of the box. This will act as your solar oven's heat sink. *How do you think it will help cook your food?*
- Lastly, use a wooden skewer or pencil (and some tape) to prop the solar oven's lid up, at about a 90-degree angle from the rest of the box.
- Leave the solar oven outside on a hot day (non-windy days of at least 85 degrees Fahrenheit works best). *Does the oven get very warm?*

Lesson Plan 3: Farmers Union History

Unit Objective: *This lesson plan takes an in depth look into the history of Farmers Union. We also encourage each Farmers Union state to incorporate their own history into this history plan as they see fit.*

Length: 1 hour

Materials Needed: Clothespins, string/rope, construction paper, markers

Preparation Needed: You will need to a make a Farmers Union History card per student. You can make these cards by putting a Farmers Union historical event on a single card, please use the Farmers Union worksheets to find events. The cards should be made of events scattered throughout time so students will be able to make a thorough timeline when all of the event are put together.

1. Hand out a *Farmers Union History Card* to each student.
2. Have the students line up in the order they think the cards happened by date. You will have the correct order on your *Farmers Union Timeline* sheet. Give the students around 5 minutes to line up in order by card, read off the order of the cards given out and move students around in the line so they are in the correct order.
3. Have everyone sit down and give each student a *Farmers Union History* sheet and a *Farmers Union Timeline* sheet.
4. Go over both sheets with the students, have time for questions. Have the class pick out one event per student.
5. *Activity*

Activity

Materials:

- Clothes Pins
- String/Rope
- Construction paper
- Markers

1. Give each student a piece of construction paper and have them write their chosen event on the paper with marker.
2. Put up a rope/string and have each student hang their Farmers Union *historical event* in order on the string.

**You can also do this with National Farmers Union Presidents or State Presidents*