



Grade Level: 4th-8th

Objectives:

- Student will learn about the 4 R's (Reduce, Reuse, Recycle, and Rot)
- Students will learn about at least 3 alternative energy resources in Nevada
- Students will learn appropriate action plans for helping to protect the environment

Materials Needed:

- Markers and crayons
- Butcher paper
- As many bandanas as you have students
- Tape
- 'Fridge Cards and 5 (Reduce, Reuse, Recycle, Rot, and Trash) signs

Prep Time: 10 minutes

Activity Time: 80 minutes

Follow-up Activities:

- Writing Letters to local Politicians
- The Lorax (town hall)

Conservation Proclamation

Let's stop talking about saving the environment and start doing something about it! Students learn about the 4 R's, renewable energy resources in Nevada, and make an action plan of what we can do on a small AND large scale to keep Nevada healthy.

Nevada State Standards Addressed:

- N.5.B.2 - Students know technologies impact society, both positively and negatively.
- N.8.B.1 - Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.

NAAEE standards Addressed:

- 1.3 Openness to inquiry
- 3.1 Critical and creative thinking
- 3.2 Applying skills to issues
- 4.1 Sense of personal stake and responsibility.
- 5.1 Learner-centered instruction
- 5.2 Different ways of learning
- 5.3 Connection to learners' everyday lives
- 6.7 Fit with national, state, or local requirements

Key Vocabulary:

Conservation: The protection, improvement, and wise use of natural resources to provide the greatest social and economic value for the present and future.

Renewable Resource: A resource that can be used continuously without being completely depleted, because it regenerates itself within a useful amount of time. Examples include water (hydro) and wind power, solar energy, and geothermal energy.

Non-renewable Resource: A resource which cannot be replaced once it is used up, for example fossil fuels (oil, natural gas and coal).

Lead-In Information

There is a lot of talk these days about global warming, pollution, and the uncertainty of human life as we know it. Sometimes it seems really overwhelming and it's almost like there isn't anything we can do about it! Not anymore! Did you know that:

- Every ton of recycled paper saves about **380** gallons of oil.
- Recycling **1** aluminum can saves enough energy to run a TV for **3** hours.
- Turning off the faucet while brushing your teeth can save about **9** gallons of water.

These are just a few of the things that all of us can do to help!

Preparations:

Make sure you have all of the markers and paper together for “Create and Destroy”. The students will be ready to go, and you should be too! There are 3 main activities: “The ‘Fridge””, “Resource Tag”, and “Create and Destroy”.

Activity:

“The ‘Fridge”- This is a fun activity where students get to go through a series of items and decide if they should be recycled, reused, reduced, or if they can rot (be composted). Mark 4 corners of the room (or field / playground) with the 5 signs (Reduce, Reuse, Recycle, Rot, and Trash). You will stand in the middle and tell them an item from the list of cards (which should include a variety of items including everything from water bottles to tires to old cloths and banana peels). They will then have 10 seconds to decide what they would do with the item when they are done with it. For example, let’s say you say “water bottle”. Some of the students will go to Recycle, some to Trash, and some to Reuse. Ask one student at each station why they are there. For students in the Trash corner, ask what they could do next time with that bottle. Ask why no one went to Reduce. What would happen if we all reused our water bottles all the time, we would be reducing without even knowing it! Each round will be different depending on the item. Follow up with a brief discussion on impacts we can have just by doing little things like reusing or reducing.

“Resource Tag”- This is a really fun activity to get the students up and moving. This is a variation of “Everybody’s it” tag. Ask if every knows how to play everyone’s it tag. [Everyone is it. If you tag someone, they are out. If both participants tag each other at the same time, you “Rock, Paper, Scissors” to see who wins]. Explain that there will be two rounds. In the first round, we will be Non-Renewable Resources, such as gas, coal, and oil. Ask the students what resources are. What are the different kinds? How do we use them? Are they unlimited or in endless supply? Eventually, you will get to the point that most of the resources that we use here in North America are non-renewable. There is a limited supply. So, make a small boundary (no bigger than 20 feet by 20 feet for up to 30 students) area and tell the students that this is the Earth and all of us are becoming non-renewable resources. Give everyone a bandana and tell them to stick it in a pants pocket. It must be very visible and easy to grab. When you say the magic word, everyone is it and must safely remove bandanas for other peoples pockets. Whoever is left last wins. This round will go by very fast! Ask the students what happened to all of the resources. What will happen in North America when all of the non-renewable resources are all gone? Ask if they want to play again. This time, everyone will be Renewable resources. What are some examples of Renewable resources? (Hydro power, solar power, geothermal energy) Give each of these a hand motion. Tell the students that we will still play everyone’s it tag with the same boundaries, however, this time we are all going to be able to renew ourselves, with time.

When you say the magic word this time, we will be grabbing bandanas again. However, this round, if someone grabs your bandana, you will decide which kind of renewable energy you are and do that hand motion for 10 seconds. After you have renewed yourself, you can get back into the game! This round has the potential to go forever, so stop them after about 7-10 minutes. Ask the students what happened that round. How long could it have lasted? What should we think about renewable resources?

“Create and Destroy”- You will want to allow at least an hour for this activity, the more time spent on it the more meaning will come out of it. Explain that they will be creating their own forest ecosystem, and to be sure and include all the vital elements necessary for a healthy forest. Divide the class up randomly into no more than five groups, giving each group a large piece of butcher paper and some crayons, markers, or other fun stuff to draw with. Give them approximately 20 minutes to create their ecosystem. Now tell them that this ecosystem is becoming their legacy. With time they, of course, have aged and can no longer take care of the land. They will be passing it on to their children. (Rotate posters from one group to another). Now the class will be taking on the role of children who have just inherited this land / ecosystem. Because they are young and don’t know much about it, it’s a shame but they will destroy it. (Give the kids about 10 seconds to rip up the posters thus destroying the ecosystems).

This is a vital time in the activity as some kids will get a bit emotional about seeing their creation destroyed and some will just get frantic about ripping up paper. Remain in control of the group at all times!

**You can add a development stage in as well, letting one group develop the land that they have just inherited, then passing to another group for the destruction.

Now the process of putting it back together. Tell each group to gather up the pieces of their destroyed forest ecosystem, and then help them pass it off to another group. Give them all some tape and tell them they only have five minutes to put it back together as best they can. They will complain and say it is impossible, but just tell them to do what they can it is ok if they can't fix it.

Now comes the processing of this activity. There are a number of different directions the discussion can go in; I suggest putting away everything before you start the processing so that the kids will not be distracted from the discussion. Here is a list of questions I commonly ask: How did it feel to see your ecosystem destroyed? How did it feel to destroy that of the others? Did you take part in the creation and/or destruction? How long did the ecosystem take to create and how long did it take to destroy? How long did it take to fix it? How well could it be fixed? Was it easy to put back together? Why or Why not? Was it exactly the same as before? What was the point of this activity? Can you draw any parallels to society today? Out of the roles we played, caretaker/creator, destroyer, repairer, which role does our generation play? Our parents generation? Our children and our children's children?

I always end by saying that it is our job to try and fix what has been done to the natural ecosystems of the earth, and that this is the point of the activity. But how can we do it? It is a complex process, no doubt....

Encourage the class to come up with some solutions and help them to realize that just like the activity it can be a very emotional and difficult undertaking, but that it needs to be done.

Review Questions:

- What is a renewable resource? (Give examples)
- What is a non-renewable resource?(Give examples)
- What are a few ways we can make a difference?
- What are 3 things we can do with a water bottle instead of throwing it in the trash?
- Why is it important that we are thinking and talking about our resources?

Evaluation:

- Students will be able to name at least 3 different types of Non-Renewable and Renewable resources.
- Students will be able to think about future impacts of their current actions.
- Students will know what real steps they can take to help their environment.

Learning Intelligences addressed:

- Kinesthetic
- Logical-Mathematical
- Linguistic
- Spatial
- Interpersonal