

APCD Clean Air Ambassadors, Lesson 3, Clean Energy = Clean Air!

California Science Content: K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Grade: 1st

Objectives: To demonstrate how clean energy, such as solar, wind, and hydroelectric power, helps improve air quality. Discuss how we can reduce our own energy emissions.

Materials:

- Laminated vocabulary cards
- Mason jar of water and oil
- Stapler
- Strips of paper with printed conservation ideas on them (1 for each student)
- Junior Clean Air Stickers (1 for each student)
- Pinwheels, glued and hole punched (1 for each student)
- Pipe cleaners threaded through straws (1 for each student)
- Thank you note for the teacher!

Introduction: (Start with all students on the rug)

- Hi friends! How have you guys been? We are so excited to be back in your classroom. Are you having a good day so far? Awesome, it is about to get even better! Just to remind you, my name is _____ and these are my friends _____ and _____!
- Awesome, today we have something new to talk to you about, and then we are going to move to two different stations!
- Do you friends remember when we first visited your classroom, we read that silly story *The Lorax*? Now, remember that big building they were making those ally thneeds in, can someone raise their hand and remind me what it was called?
- The factory, right!
- Now, was the factory making the air dirty or clean?
- Dirty, right!
- The next time we visited, we talked about some other ways the air can get dirty. Does anyone remember what else might make the air dirty? Raise your hand if you remember something!
- School bus, cars, volcanos, chimneys, etc.

- Today, I have to tell you about another thing that makes the air really dirty, and makes the animals really sad because it ruins their homes ... It is called oil.
- Can you say that with me?
- Oil. Good!
- Oil is used for a lot of stuff in this world. It is used as gas in cars, trucks, and buses (Hold up gas station card). It is used to turn our lights on (Hold up light bulb card). It is also used to make our homes warm and cozy when it is cold outside (Hold up home card).
- We get oil by digging deep into the ground and deep into the floor of the ocean. But when we dig for oil, a big bummer happens... look at how yucky it can make the air! (Hold up oil rig photo)
- Do you think the birds around here would like to fly in this yucky air? No way!
- (Hold up the oil spill photo) Do you think the fish in this ocean would want to swim through this sticky yucky oil? No way!
- Luckily, there are some ways we can use less oil to keep our air and our ocean more clean!
- Some ways we can use less oil are by turning off the lights when we don't need them on, going in the same car as your friends if you are going to the same place, or riding your bike instead of using a car! My friend _____ is going to talk to you more about how to use less oil in a little bit.
- Now, I have some really awesome news for you friends! Instead of making our air and ocean yucky by digging for oil, some really smart scientists came up with a new way to make our homes warm and turn on our lights! It is called a windmill. Can you all say that with me? Windmill! Great.
- This is what a windmill looks like, raise your hand if you have seen one of these before. (Hold up windmill card) Awesome!
- Windmills are so cool because they do not make the air dirty at all! They spin around and capture the wind and use it to do all the stuff oil does without making any animals sad.
- So, at my station, you each get to decorate your very own windmill!
- It is time to split into two groups now. You friends on this side of the room, you're going to be in group 1 with _____. You friends on the other side of the room, you're going to be in group 2 with me!
- Okay group 1, go ahead and follow _____ to station 1. Group 2, follow me to station 2 and then we will switch!

Dirty Energy Station:

- Mason Jar of Water and Oil
- Oil Spill Card
- Strips of Paper

- Stapler
- Markers / Pens
- Hi friends! So remember how we were talking about how oil can harm our air and water? Look at this... (Hold up jar).
- I want you to pretend this jar is our ocean, and look at what is on top... that's right.. Oil.
- Do you think the fish would have fun swimming through this yucky oil?
- No way! That is why we should be careful to use less oil so that the animals don't get too sad and our air doesn't get too yucky.
- There are many things we can do to use less oil. We can turn off the lights when we are not in the room, turn off the TV when we are not watching it, and turn off the water while we brush our teeth!
- I have little pieces of paper here with each of these things written on them. Can each of you help me decorate one piece of paper and then we can link them all together like this to create a big energy chain?
- (Pass out one sheet of paper to each student and staple together to create a chain when they finish up).
- Awesome friends, look at our chain!

Clean Energy Station:

- Pinwheels, Pipe cleaners, Straws
- Laminated Renewable Energy Cards
- Windmill
- At this station, I want to talk to you guys about wind! Wind can be turned into energy by using something called a wind turbine. A wind turbine is a tall tower with three long blades that spin when the wind blows. Has anyone seen these before? (Hold up the wind card).
- Here's how it works: when the wind blows, it causes the blades of the wind turbine to spin. As the blades spin they create electricity.
- Wind turbines are usually built in places where the wind blows a lot, like on the tops of hills or in open fields. Sometimes, lots of wind turbines are built together in a big group called a wind farm.
- So that's how wind can be turned into energy! By using wind turbines, we can warm up our homes and turn on the lights in a way that doesn't make our Earth yucky!
- Would you guys be up for creating your very own windmills to take home with you today? Awesome! (Pass out a windmill to each student) Once you are finished decorating the turbine, we will thread the pipe cleaner and straw through for you to make the windmill!
- (Have the extra ambassador help with this process!)

Conclusion: (Gather both groups back on the rug)

- Before we go, we would love to give each of you a “Junior Clean Air Ambassador” sticker. You’ve learned so much about air pollution from us and we want you to have these stickers to remember all that cool stuff we learned together!
- (Pass out a sticker to each student or leave enough stickers with the teacher)
- Now that you are all officially Junior Clean Air Ambassadors, can we do our Clean Air chant one more time? Great!
- Can everyone stand up on their feet and take one step back? Great! Watch _____ and I do it first, then we will do it all together!

When I say “Clean”, you say “Air”;

“Clean”, “Air”; “Clean”, “Air”;

slap slap - clap clap - snap snap;

“Clean Air!!”

- Awesome! Go ahead and take a seat back on your rug. Thank you all so much for hanging out with us today, we had a lot of fun with you! Have a great rest of your day!

Don't forget to sincerely thank the teacher for sharing her space with us and give her a thank you note!!!!