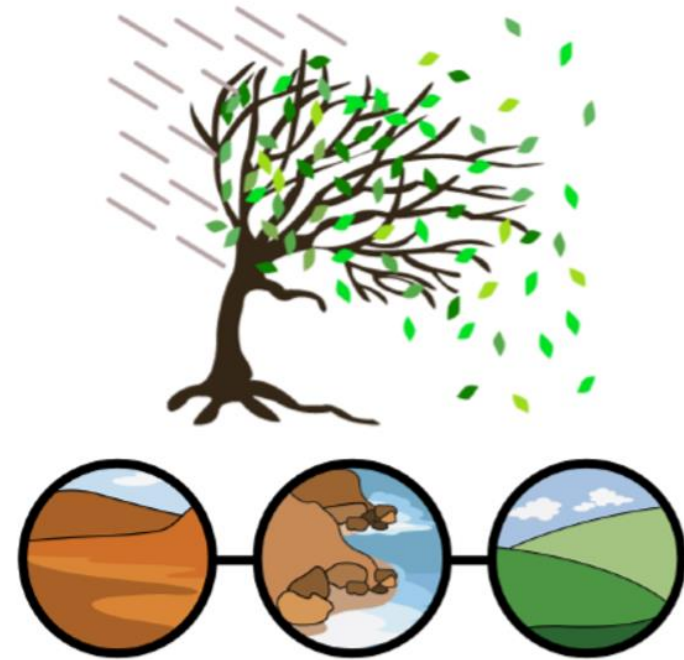
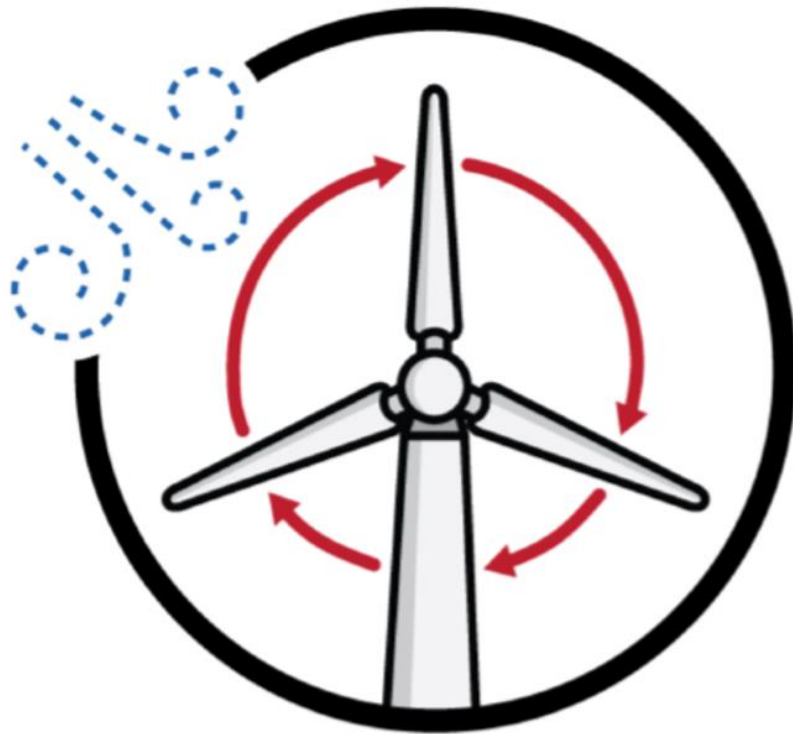


# Science

# Wind Speed



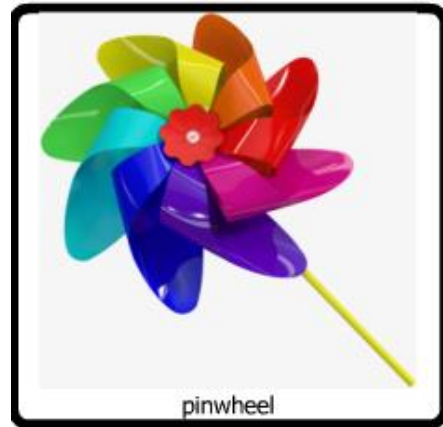
Today we are going to be learning about how the wind can help make energy and how we can transfer that energy to use it in our daily lives.



# The materials needed for this lesson are...

## Life Skills:

- Straws (1 per student)
- Cotton balls
- Marshmallows
- Pinwheels x6

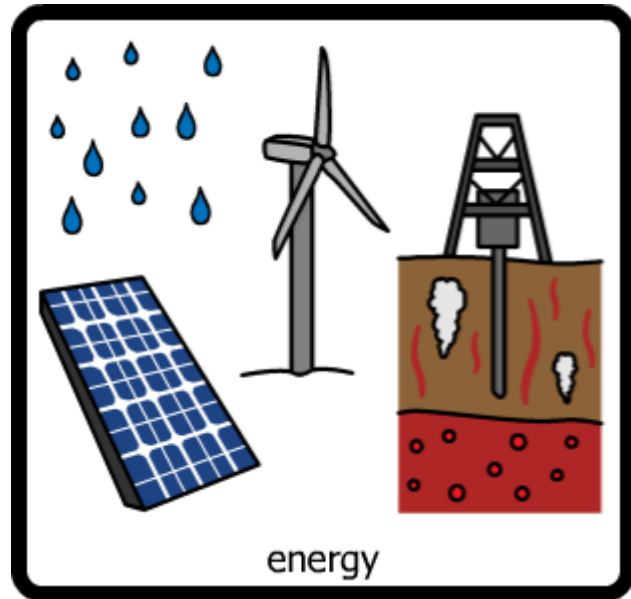


## Multi-Needs:

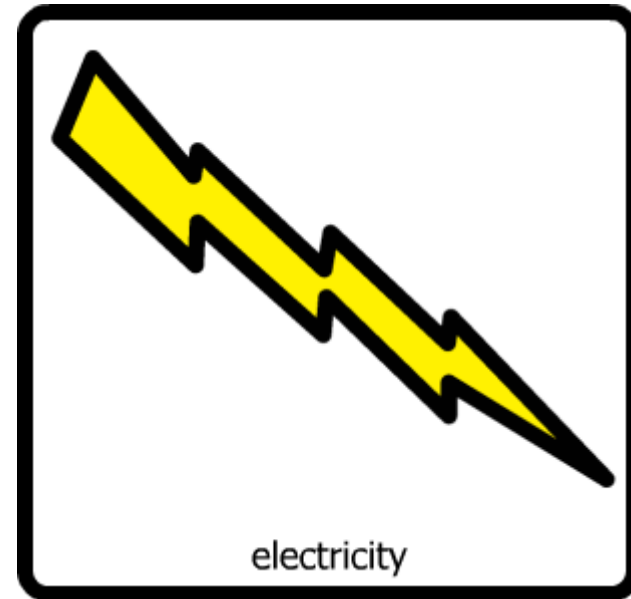
- Cotton balls
- Tissue paper
- Penny
- Crayon
- Hand held fan
- Pinwheels x6



# This is our vocabulary for today...

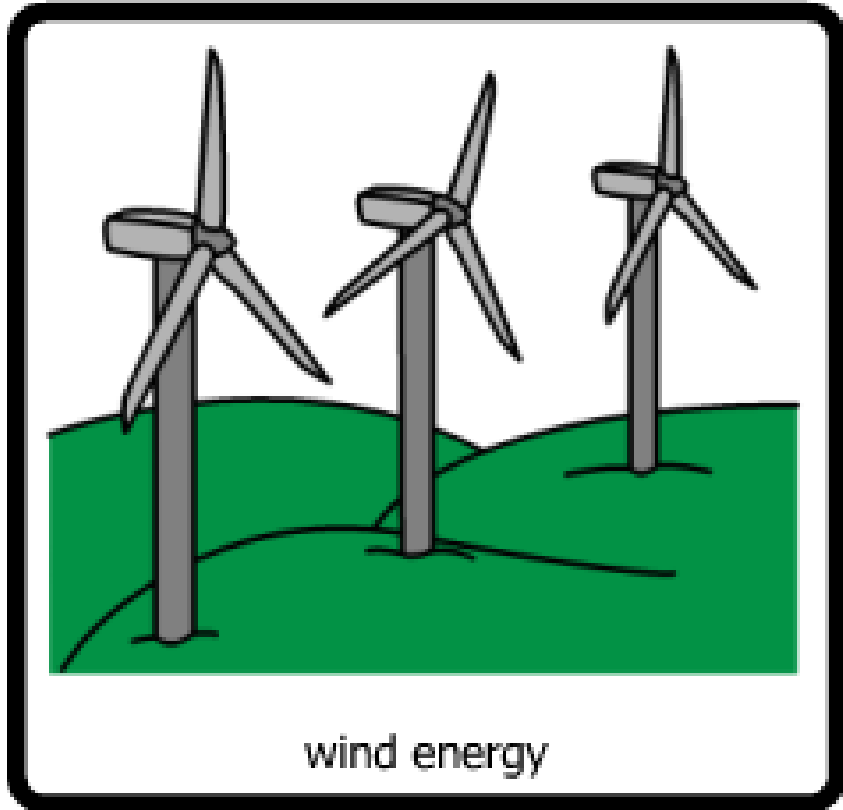


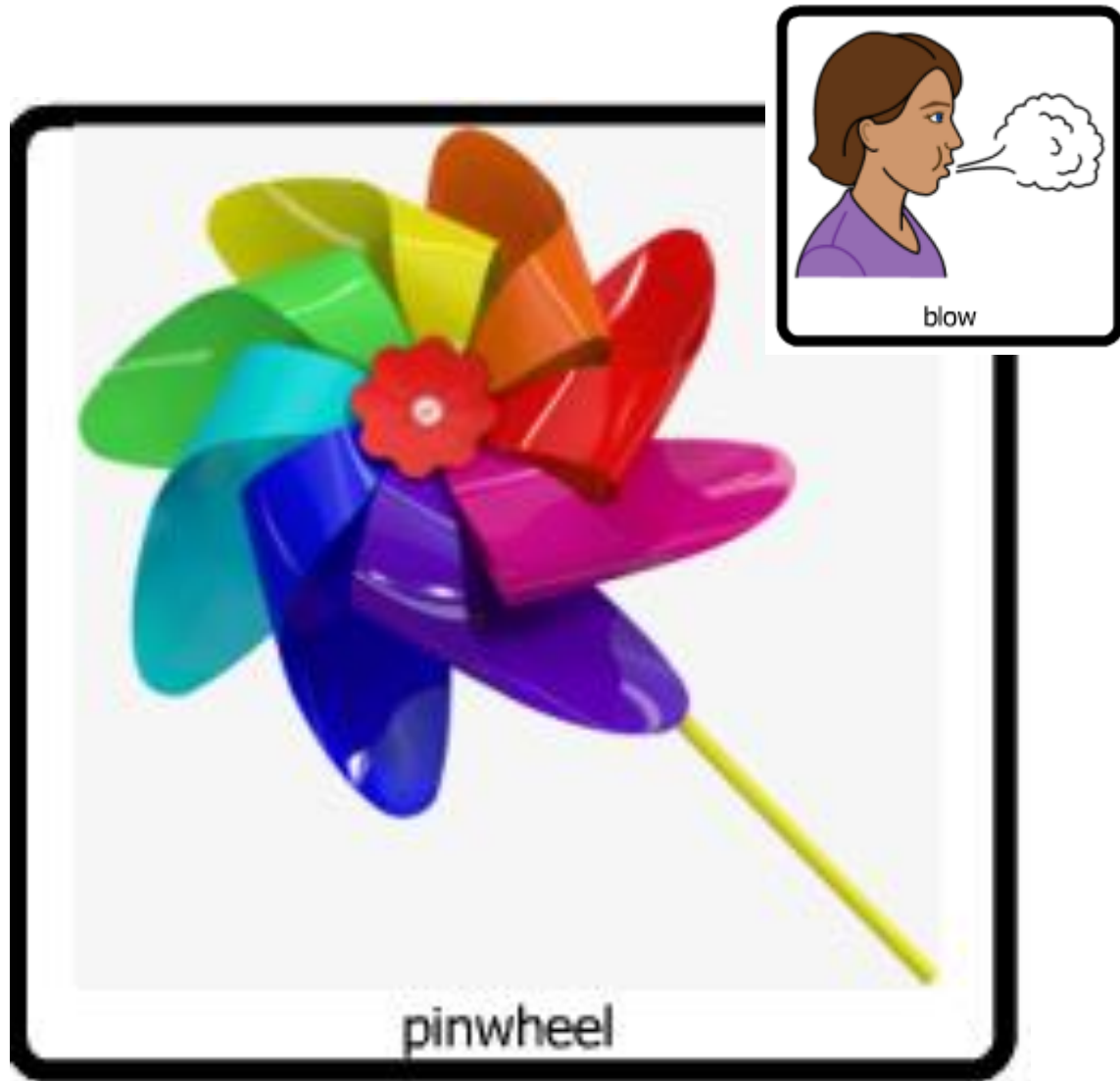
energy- power that is used to make something work



Electricity- a type of energy that is carried through wires and can be used to make things work

# This is a wind turbine



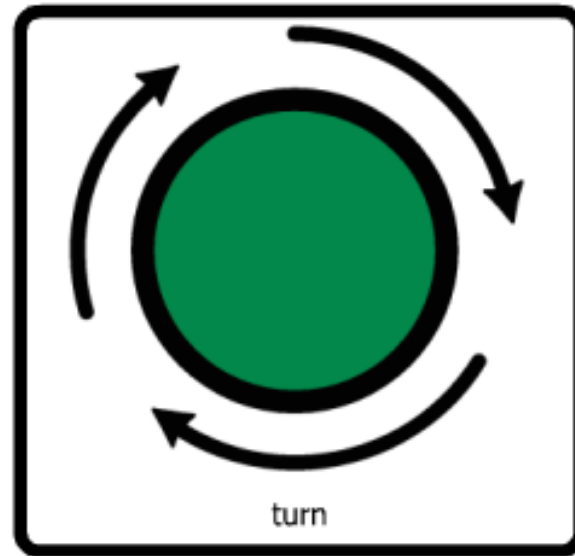
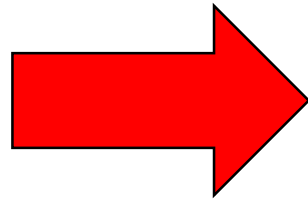
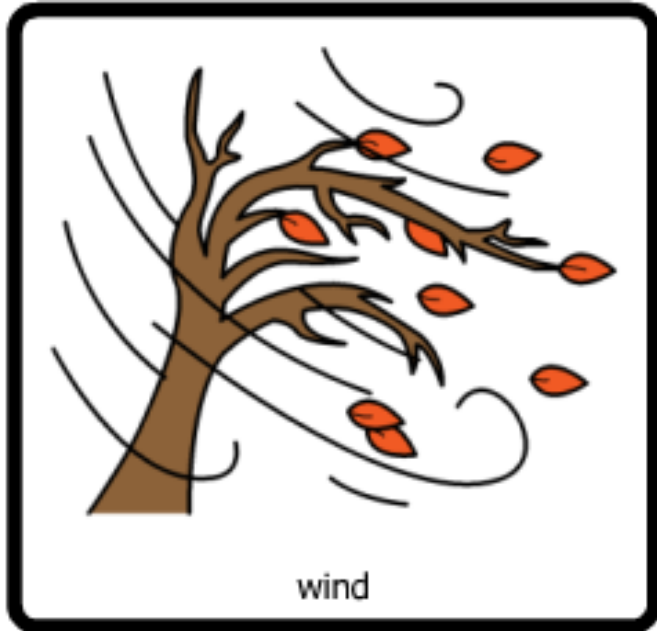


Today we can look at our pinwheels. They are like mini wind turbines!

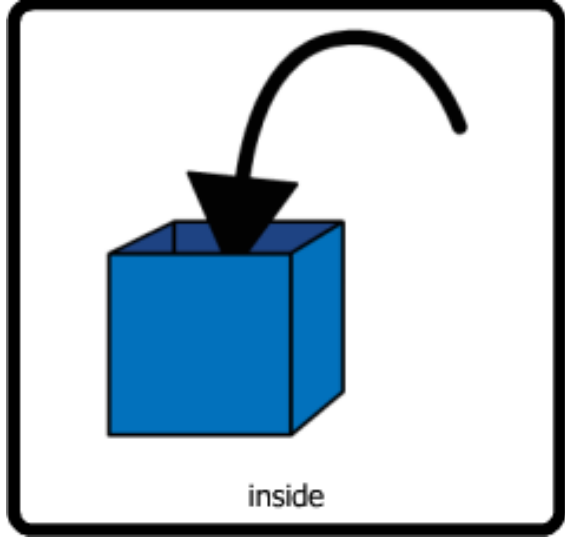
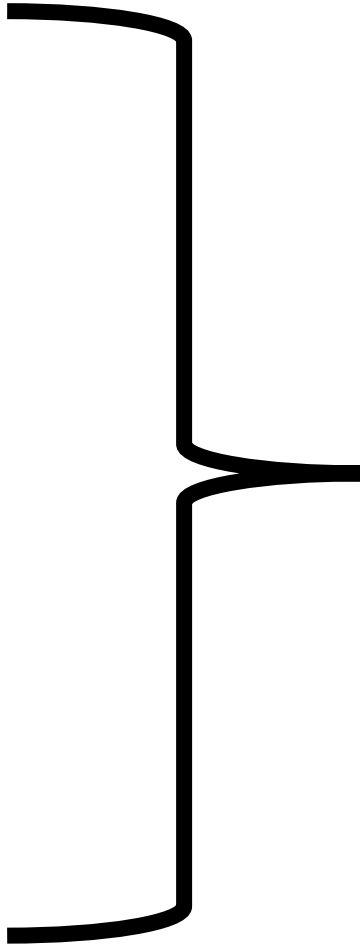
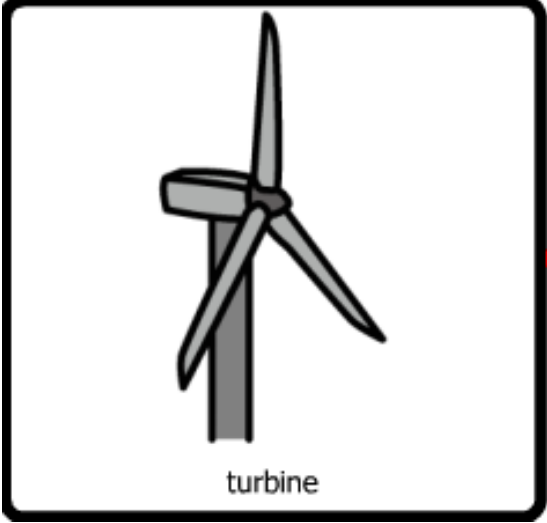
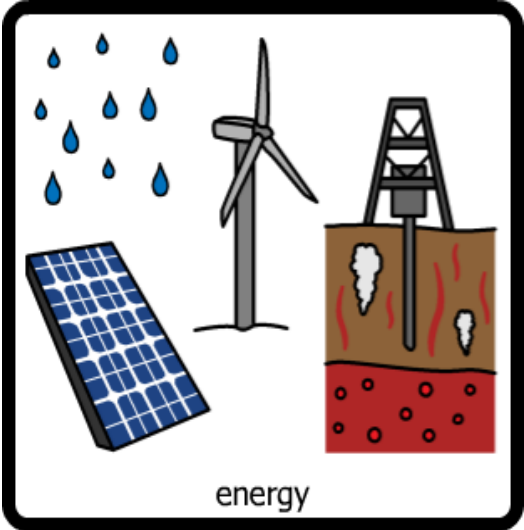
Show the pinwheels and practice blowing on them.

# How does a win turbine work?

- When it is windy, the wind turns the propellers (blow into the pinwheel)

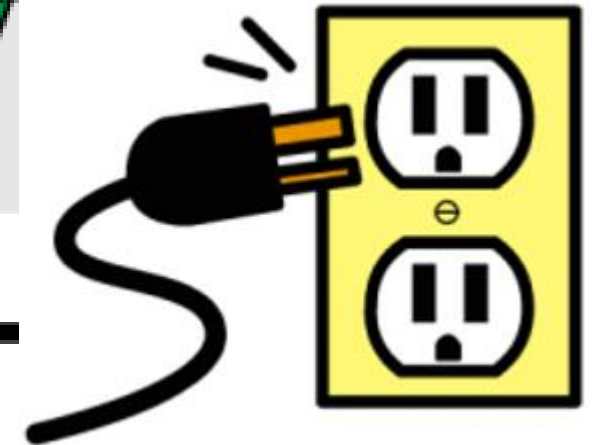
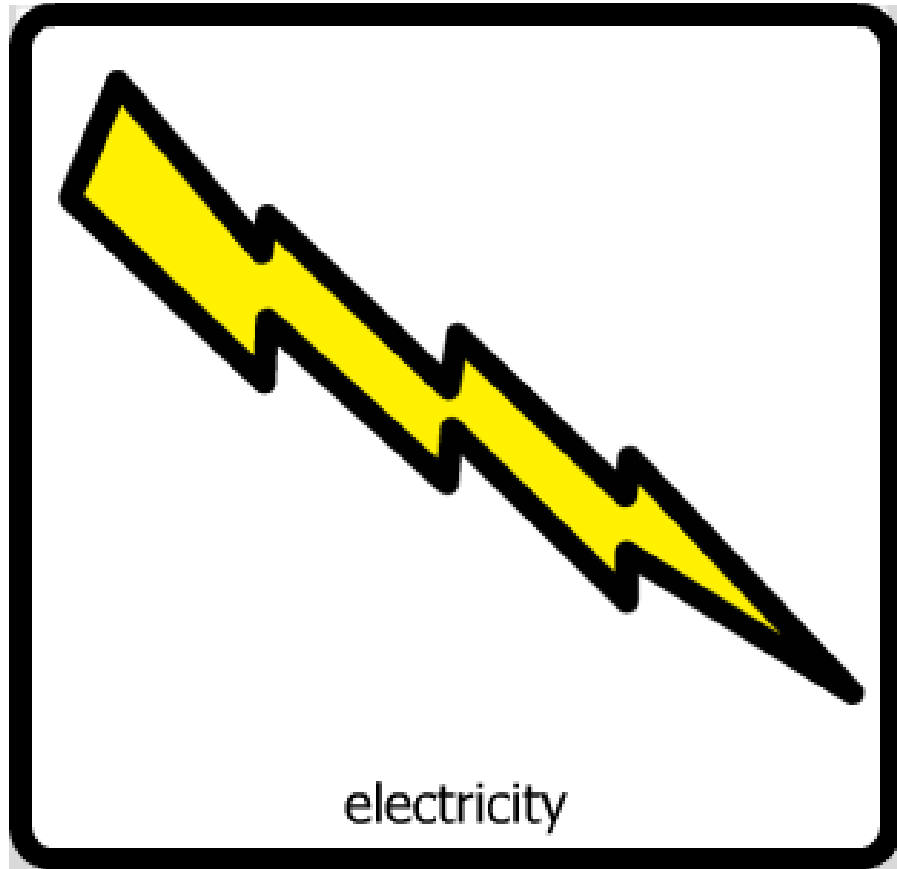


The energy from the turbine is stored inside

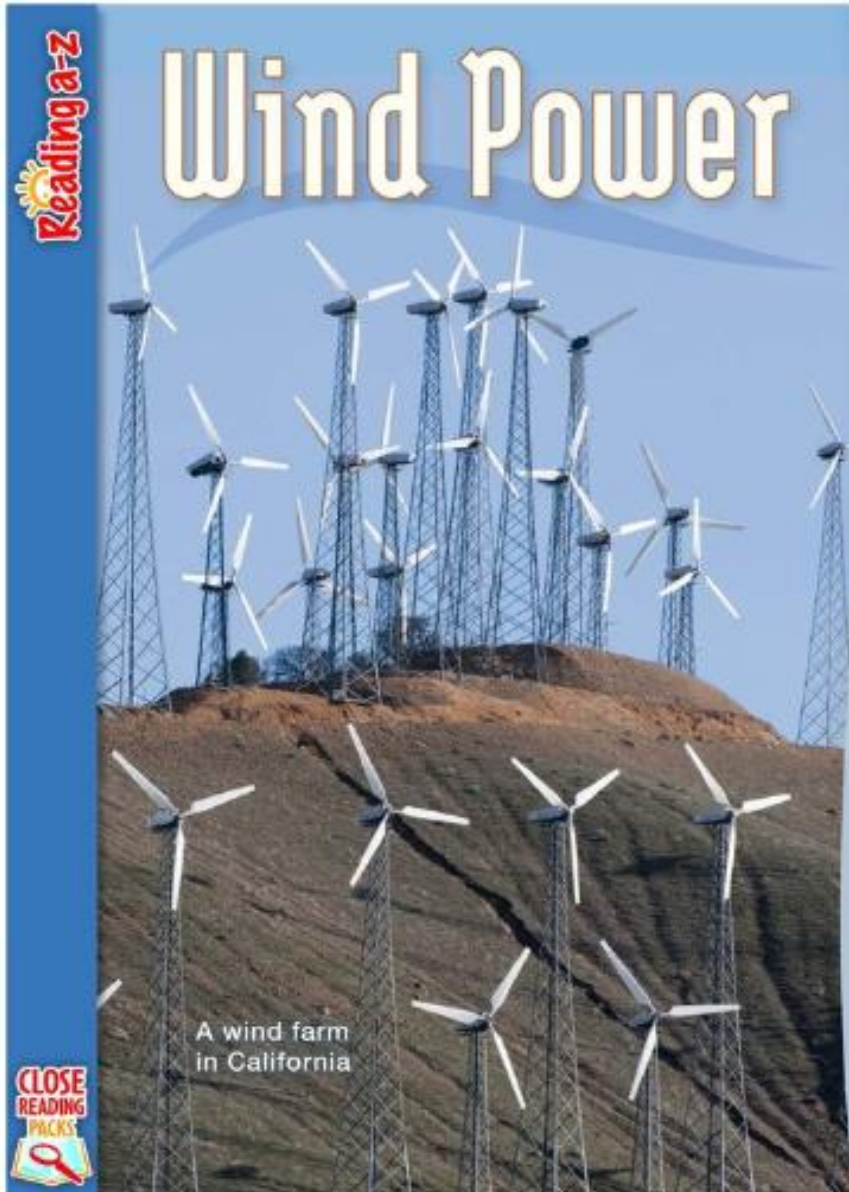




We can transfer (use) that energy in our homes!



Here is some more information on wind power and turbines.



**T**hink about how a pinwheel works. When you blow on it, it moves, because your breath is moving air. It has energy that makes the paddles move. The harder you blow, the faster the pinwheel turns.

Wind is moving air, too. Wind is caused by uneven heating of the Earth's surface by the sun. The air above land heats up more quickly than the air above water. The warmer air rises and cooler air rushes in beneath it, creating wind.

Look at the turbines on this wind farm near a California desert. They look a little bit like giant pinwheels or windmills, don't they? They work in much the same way. As wind flows over the tops of the blades, it causes them to turn. The blades are connected

Wind Turbines work like pinwheels. Wind flows over the tops of the blades and causes them to turn

to a rod inside the tower. The rod connects with a machine that changes wind energy into electricity. Towers and wires take this electricity into your home, where it powers lamps and tools.

Wind has been a source of power since ancient times. It has been the force behind sailing ships of all shapes and sizes. For hundreds of years, different types of windmills have used wind energy to do work such as grinding grain and pumping water. Wind pumps are still in use today on many farms and ranches.

There are good reasons to use wind power. It doesn't pollute the Earth, and besides, wind is free! Not everyone likes the wind turbines, however. They cost a lot of money to make. Some people think they are ugly. Also, the turning blades have killed birds and bats.

DID YOU KNOW?

Wind turbines can be as tall as a 20-story building! Each of their blades is about 200 feet long. They need to be so big and tall to catch the highest, strongest winds.

What is one of the biggest problems with wind turbines? If there isn't any wind, the blades don't turn! Scientists are working on this. One idea is to hook up the wind farms to a big power grid. If the wind stops blowing at one wind farm, there is still power coming from farms in other places. The grid

helps wind farms share the electricity they make.



A wind pump in the Australian Bush

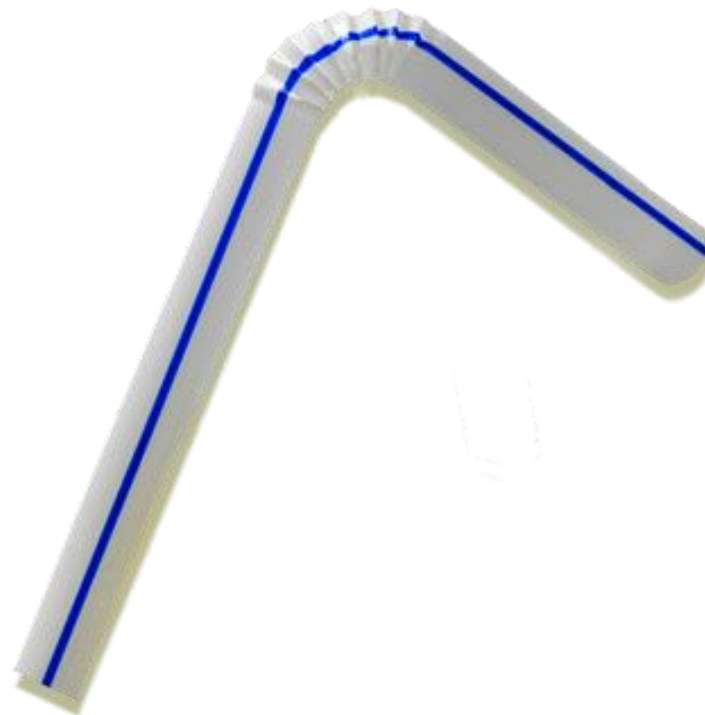
There is a machine inside the turbine that turns the wind energy into electricity.

That electricity can be used to power things in our home like lamps and tools.

You do not always have to have a windmill to get power from the wind. Wind has been used for hundreds of years to sail ships.

People like wind energy because it does not pollute the earth and because wind is free!

Activity (life skills): Lets make our own wind energy.

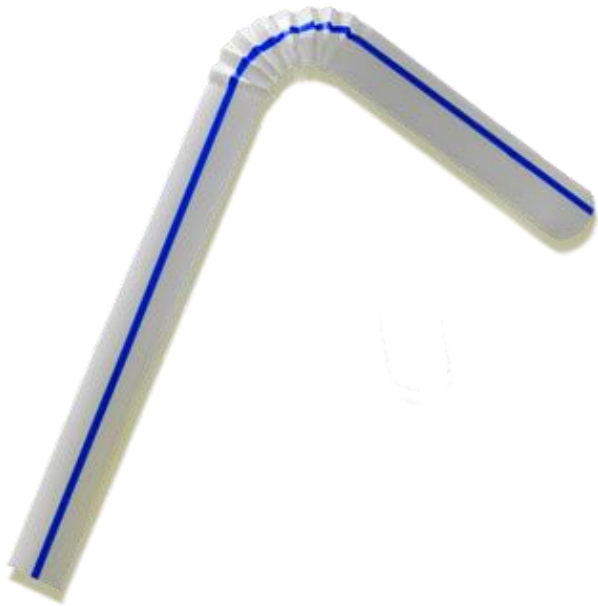


We can make our own wind by blowing on a pinwheel.

Try blowing air on your pinwheel fast and slow. I will model this for you. Breathe in and out.



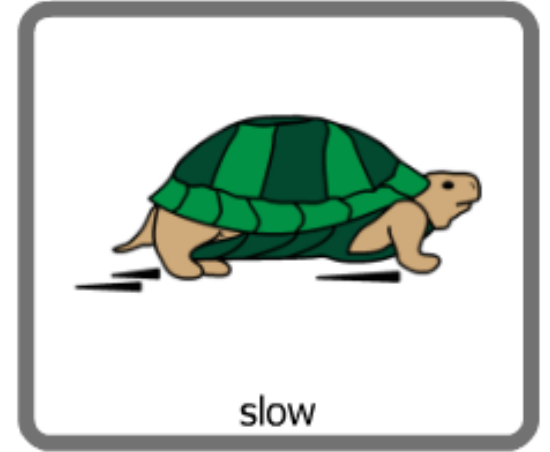
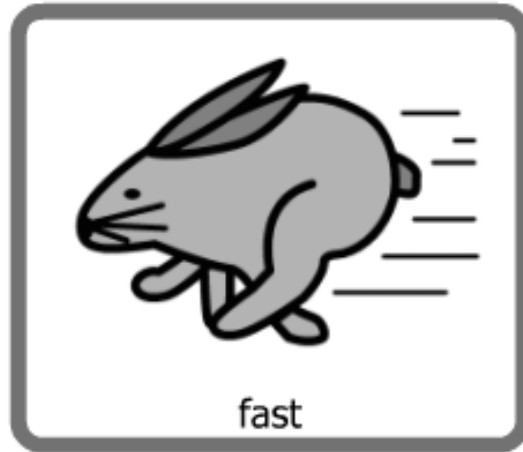
Now, let's get our materials ready. Take turns coming up to get a straw, cotton ball and marshmallows.



We will measure the time it takes to blow a cotton ball or marshmallow with a straw across our desk.



Try different strategies of blowing fast and slow. Are there different items that you see around the room that might move faster or slower that you can try? Compare your speed times with a friend.



were “fast” and which ones were “slow” with core cards.

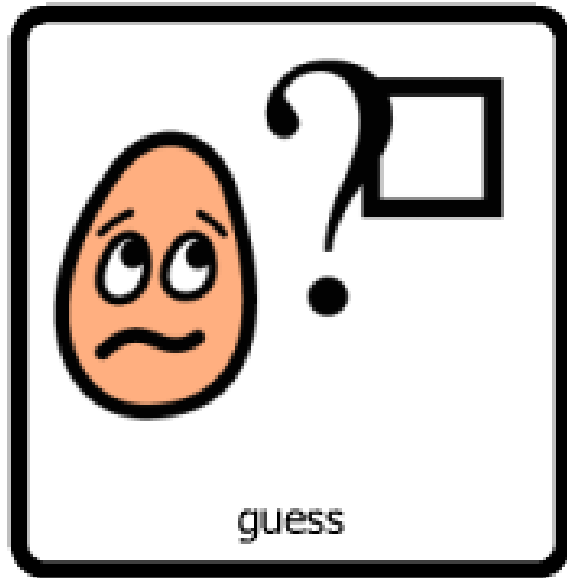


# Activity (Multi-Needs): Lets make our own wind energy



Have student take turns turning the fan on and feeling the wind created by the fan

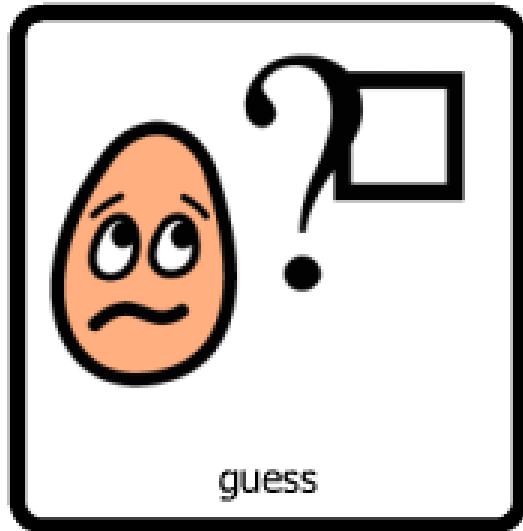
We will guess if our fan has enough wind energy to blow different items off of our tray or desk



Step 1: Place a cotton ball on your tray or desk



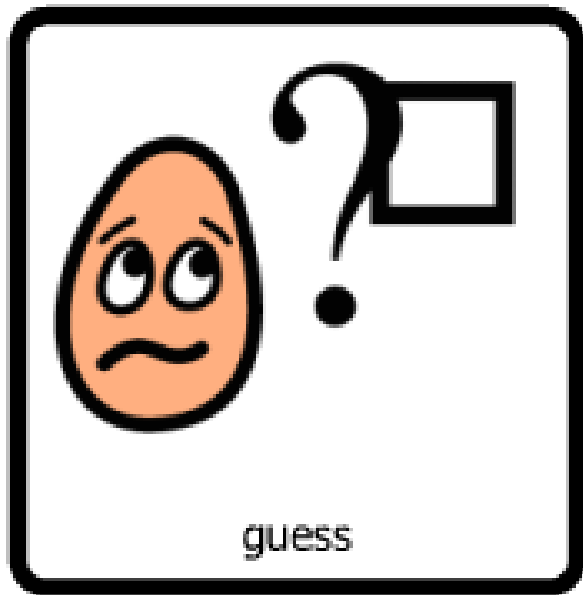
Step 2: Make a guess. Does the fan have enough wind energy to blow the cotton ball off?



Step 3: Turn your fan on and point it at the cotton ball. See if you can blow the cotton ball all the way off of your tray or desk.



# Step 4: Was your guess correct?

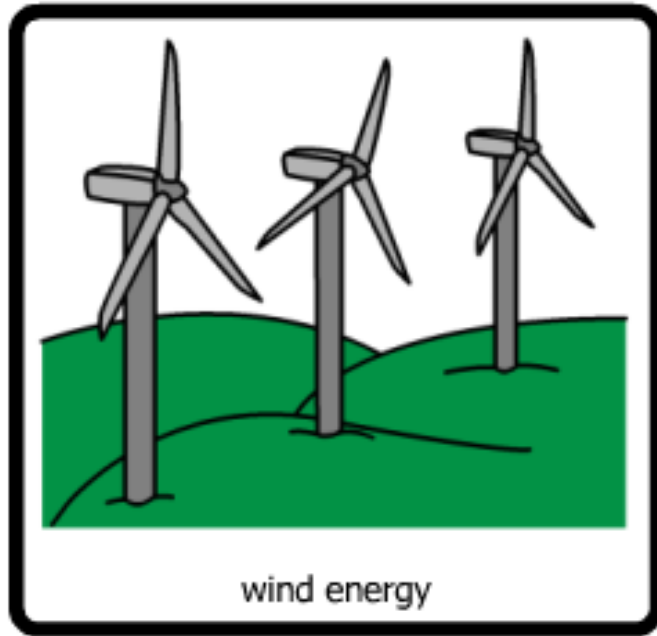


# Step 5: Try again with different items.



- Are there any other items you want to try?

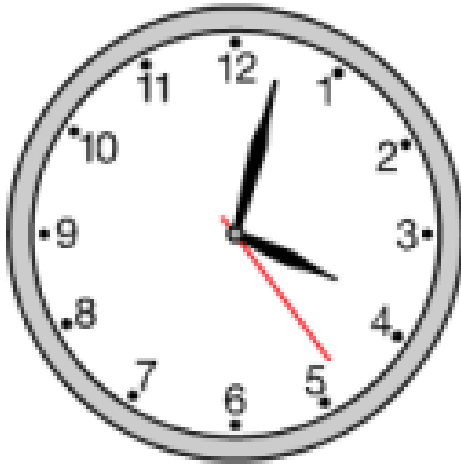
Today we learned about where wind energy comes from and what you can do with it.



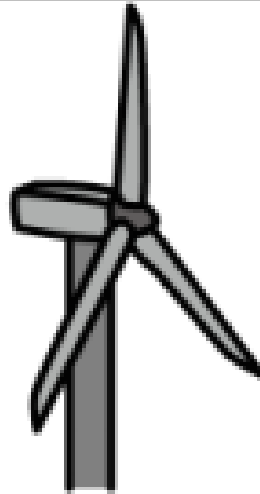


# Quiz Questions from today:

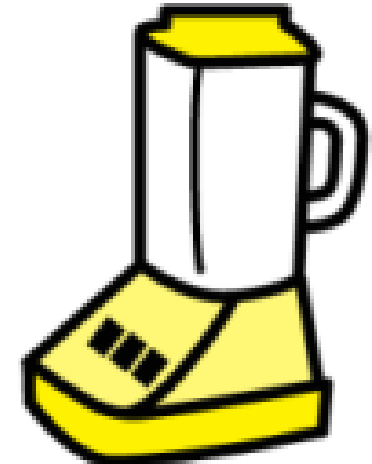
1. What can wind energy turn?



clock



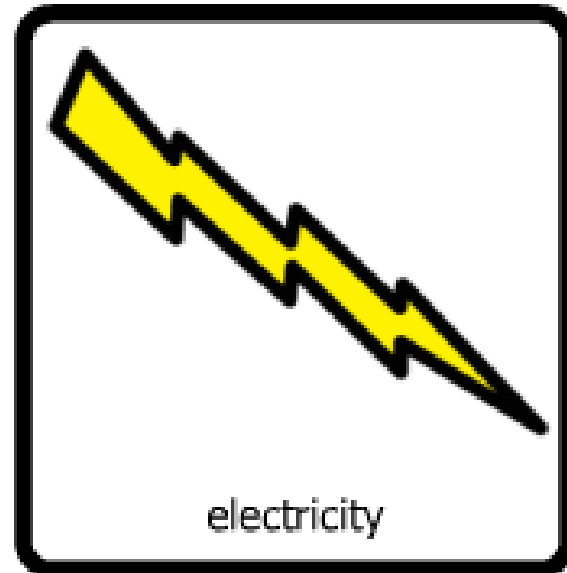
wind turbine



blender

# Quiz Questions from today:

1. What can you turn wind energy into?



# We are ALL DONE!

- Teacher says “\_\_\_\_\_ is All Done! Time for \_\_\_\_\_!”
- Teacher says “Everyone check schedule!”
- Teacher changes the classroom schedule.
- Paras will assist individual students with checking schedules.



Print a few copies to use  
as communication boards  
or for switches

