

# Air



## Air Gifts

For the first Air session, bring in or ask students to bring in small, natural gifts from the Air, such as feathers, seedpods, or dandelion puffs. Allow students to share knowledge they have about these objects (e.g., what bird their feather comes from or the purpose of seed pods). Brainstorm with the class and come up with a list of other gifts from the Air.

## Air Feelings

- Free
- Open
- Spacious
- Light as a feather
- Has a spring in her step

- High flyer
- Expansive
- Lighthearted
- Head in the clouds
- Breezy
- Makes my heart soar
- Lifted
- Spread your wings
- Take the dive

## **Air Observations, Activities and Journaling**

### *Outdoor Observation (stillness) – Place Bonding Exercise*

Students will once again return to their chosen “special place”, where they will also practice stillness and observation again. For this activity, instruct students to pay close attention to the element of Air. Ask them to notice how it feels, what it sounds like, how it flows and so on. Students should continue to use all their senses and focus on connecting as they observe the Air and all its qualities.

### *What’s in the Wind Activity*

Students will create a simple hanging object to catch whatever might be in the wind. This can be completed individually or in groups (to use fewer materials!). All they will need is a plastic lid, a hole-puncher, a piece of yarn and some kind of gooey substance, like petroleum jelly. In a sense, they will be creating something similar to flypaper. Students will simply punch a hole in their lid, thread the hole with their piece of yarn, knot the ends together, spread the gooey substance on both sides of the lid, and hang them outside in different areas. Leave them in the wind for at least an hour and when they are taken down, students will be able to inspect what is on their lids and what is in the wind! It is also an option to provide magnifying glasses for closer observation. (I found this activity on [www.weatherwizkids.com](http://www.weatherwizkids.com), and summarized it here – do we need to cite it?)

### *Trivia Game – Jeopardy style*

In teams, students will play a modified version of the game Jeopardy with specific facts about the elements, as individual elements or all together as four different categories. Depending on the age group, you can keep it very simple with questions worth 100, 200, and 300 points, or for older students you can offer more groups of questions, perhaps up to 500 points. You can organize the game similarly to Jeopardy, or you can create your own structure; you can decide as a group whether to keep track of points, and if so, what the “prizes” might be for each team.

### *Journal*

With the aforementioned activities, you can instruct students to take their journals with them to their “special place” and write down their observations or have them take some time to journal directly after the experience. They can record how the wind sounded, how it felt, their feelings or thoughts about the experience, or some ways they can help keep the Air clean. Following the “What’s in the Wind” activity, students can again have some time to write in their journals about what they found in the local winds. Additionally, after inspecting their specimens closely, they may want to draw and label what they see on their lids.

### Additional Air Activities:

- Collect seeds that are carried by the wind
- Make seed packets (children can decorate small envelopes for the seeds)
- Sky Windows – have students look to the trees for sky windows and draw them – these are the places where you can see sky through the trees
- Wind chimes – create wind chimes with found materials
- Bubbles – collect a variety of bubble toys and explore the wind by watching the bubbles float – write bubble poems
- Observe nests – bring in found nests from the previous year
- Create and fill bird feeders
- Release ladybugs – these are available at plant nurseries
- Make sky paintings with watercolors – add sky poems

### **Air Questions**

Where does oxygen come from?

How do animals live in the air?

What things does air move?

Where do people live that has different air from us?

What kinds of seeds travel through the air?

### **Air Poses**

#### *Belly Breathing*

Focus on the breath moving in and out of your body. As you breathe, we are going to learn a few things about the breath. Breathing is an amazing skill that our body does all the time to keep us alive. We breathe approximately 20,000 times a day. When we breathe in, we take in oxygen. This oxygen goes into our lungs and then goes into our

blood. The blood carries oxygen to all of the tissues in our body through our veins. Oxygen is food to the tissues in the body. It keeps them alive. As the blood travels back to the heart, it fills with another substance called carbon dioxide. The blood carries the carbon dioxide back to the heart that pumps it into the lungs. Then the lungs breathe out carbon dioxide. So, every time you breathe in, you are taking in oxygen, and as you breathe out, you are releasing carbon dioxide. After this exercise ask the children to look at their hands and arms to see the veins that carry blood and oxygen to their tissues.

### *Respiratory System*

Breathe in and out. Today we are going to learn how the respiratory system filters out foreign objects and pollutants from the air that we breathe. The body works hard to purify the air that we use in our body. As we breathe in through our nose, the air is heated, filtered and moistened. There are small hairs in the nose called cilia that filter out any dust and dirt particles.

Then the air moves into the windpipe which is at the back of the throat. The food pipe is in the front of the throat and when we eat there's a little flap – called the epiglottis – that flops down to cover the windpipe so that food doesn't go down our windpipe. Try placing your hands on your throat and swallow. Can you feel the action of the windpipe being covered as you swallow?

The air still has to journey to get to the lungs. It flows down through the wind pipe pass the voice box. Can you find your voice box? Put your hands on your throat and hum – where does the sound vibrate?

Now the air travels to your lower ribs in the center of your chest. Can you find the lowest ribs? Here the windpipe divides into two tubes which lead to the two lungs. If there are pollutants in the air that you breathe – the lungs get rid of them by coughing. Your lungs are protected by the rib cage? Why do you think we have a cage in our body to protect our lungs?

Now the body performs a bit of magic. The oxygen in your lungs goes into tiny bubbles or sacs called alveoli. These sacs take the oxygen from the air you breathe and send it into your bloodstream. There are cells in the blood stream that act as the good army in your body. They work to destroy any pollutants that the lungs didn't cough out. Then they carry the oxygen to the tissues in your body through your veins. The oxygen is food to your body's tissues. Now look at your arms and hands and see if you can find veins that help carry blood and oxygen to your tissues.

### *Pinwheel Breathing*

Practice pinwheel breath. Practice controlling your breath. Now practice being different kinds of wind. Can you be a gentle breeze? A strong Chinook wind? Can you be a tornado? Can you make it a warm wind, or a cool breeze? What happens to the pinwheel when you are different kinds of wind?

### *Humans and Trees*

Have the students hold up their right hand like they are making a pledge. Have them draw their hand into their chest. Ask them to inhale. As they exhale, have them push their hand forward and as they inhale have them draw their hand back into their chest. Practice this with them until they can do it easily. Drawing the hand in as they inhale and pressing the hand out as they exhale. Now demonstrate with a student. Have the student be the human and you be the tree. The human student stands in mountain pose with their hand drawn in. You stand in tree pose with your hand pressing into their hand. As the tree inhales, the human exhales – and as the human inhales, the tree exhales. Have students pair up and practice being humans and trees. Discuss how trees breathe in carbon dioxide and breathe out oxygen – and how humans breathe in oxygen and breathe out carbon dioxide. You can also practice this in a line or a circle. It takes time for the students to get the rhythm of this practice, but it is worth the time!

## **Air Journeys**

### *The names of the wind*

Sit or lie comfortably and listen to your breath. Feel the air move in and out and allow your body to relax. Now notice that something is whispering in your ear. As you listen, you realize that it is the wind that is whispering. “Come with me,” it says. “I want to show you all my different names.” You find that you are as light as a feather and you can follow the wind. First it takes you around the room, lifting up toward the lights and around the corners. Then you fly out of the room and into the sky. You feel cool and light and you are flying slowly.

“Right now we are a gentle breeze,” the wind tells you. We cool the children on the playground who are feeling hot from running and playing. You follow the wind as it brushes past the red cheeked faces of several children on the monkey bars. They smile and lift their arms up to catch the gentle breeze. “We also carry seeds from trees to a new place to be planted.” The wind explains. You watch as the wind catches a dandelion seed and twirls it in the air then gently releases it into fresh dark earth.

“We are going to travel faster now.” The wind warns. You gain speed and begin moving toward the east. We are now called the Prevailing Westerlies the wind tells you. We are named Westerlies because we started in the west and we are now moving east. We are responsible for many of the weather movements across the United States and Canada. You fly east with the wind – you look down and see trees, houses and hillsides. Up ahead you see some tall mountains. Those are the Rockies, the wind tells you.

“Hang on, it’s going to get cold for a while.” You follow the wind up to the top of the Rockies as you blow snow onto rooftops, roads and trees. You blow around some children who are playing in the snow –they pull their coats and hats around them to protect themselves from the wind. Then you cross over the top of the Rockies and you feel yourself getting warmer.

“Now we are the strong Chinook wind. We are named after a Native American word that means “snow-eater.” We usually blow on the east side of the Rockies and we melt the snow. Now we are going to go on quite a ride, the wind warns. Are you ready?” You nod, feeling a little excited and a little nervous. You turn back into the prevailing westerly as you fly southeast. You start to feel yourself moving very fast. You hear thunder and see lightning – and you are right in the middle of the storm. You feel cold air and warm air combining, then you feel yourself beginning to spin. You spin faster and faster.

“We are becoming a tornado.” The wind cries. You feel yourself moving faster and faster and swirling in a big spiral. You are moving so fast you can’t even see where you are going! You notice that the sky around you has turned a dark green color. You can feel branches and objects being pulled into the tornado. You continue to spin as you travel across the land. You twirl for another few minutes (Pause) – and then it is over.

You are now floating in the sky feeling warm. You look up and there is a rainbow in the sky. You are feeling very tired from all that swirling. “It’s time to go home.” The wind tells you. You travel around the globe, then turn back into a gentle breeze. You and the wind float past the children in the playground and brush a girl’s hair away from her face. She smiles and looks up at you. You float back into the room and settle into your place. The wind whispers in your ear one more time “I have many more names. Look for me in the sky and see if you can learn more of my names. I will come back and play with you another day.” With that you feel the wind circle around your head and slip out through a window that is slightly open. You bring your attention to your breath and think about how you breathe in the air and the wind every day.

## **Air Resources – Organizations that Care for the Air**

### **Oregon Department of Environmental Quality (DEQ) – Air Quality Division – Government Agency, office in Portland, OR**

“The mission of the Department of Environmental Quality’s Air Quality Program is to preserve and enhance Oregon’s air quality to support healthy, clean air for all Oregonians. The Air Quality Program protects Oregon’s air through program planning development and guidance, industrial source control, major new source review, coordination of permit and plan review programs, data analysis and reporting, and regulation.”

(<http://www.oregon.gov/DEQ/AQ/>)

### **The Oregon Environmental Council – Oregon Organization, with an office in Portland**

“The Oregon Environmental Council advances innovative, collaborative solutions to Oregon’s environmental challenges for today and future generations... Oregon Environmental Council staff and volunteers have worked across the state to advocate on behalf of all Oregonians. Our notable results have made Oregon a healthier, cleaner place for all of us, and for the generations to come.”

(<http://www.oeconline.org/>)

### **Airwatch Northwest – Regional Consortium**

Airwatch Northwest is “a portal to air quality management agencies in Washington, Oregon, Idaho and British Columbia. These agencies monitor air quality in their regions and manage programs to protect and improve air quality so Northwesterners can breathe clean, healthy air.”

(<http://www.airwatchnorthwest.org/index.htm>)

### **Audubon Society – National Organization with local chapters**

Audubon’s mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth’s biological diversity.

(<http://www.audubon.org>)

## **American Wind Energy Association – AWEA – National Organization**

“The mission of the American Wind Energy Association is to promote wind power growth through advocacy, communication, and education.

Wind: Powering a cleaner, stronger America.”

(<http://www.awea.org/>)

## **Stewardship Actions: Caring for the Air**

NW Natural and Bonneville Environmental Foundation and Threemile, Boardman, Oregon

“NW Natural has partnered with the Bonneville Environmental Foundation and Threemile Canyon Farms to build a first-of-its-kind biodigester. This initial Smart Energy project is being built and will be operated at Threemile Canyon Farms in Boardman, Oregon. Once the biodigester is complete, waste from 1,200 cows – roughly 144,000 lbs. a day will be used in the biodigester instead of being left on the farm, resulting in a reduction of 1,500 tons of CO<sub>2</sub> annually.”

(<http://www.smartenergynw.com/>)

**Clean School Bus USA** – EPA’s Office of Transportation and Air Quality (OTAQ), all across the country, with projects in Portland, OR

“The goals of Clean School Bus USA are to reduce children’s exposure to diesel exhaust and the amount of air pollution created by diesel school buses.

- 24 million American children ride school buses daily.
- On average, these students spend an hour and a half each day in a school bus.
- School buses drive more than 4 billion miles each year.

School buses are the safest way for children to get to school. However, pollution from older diesel vehicles has health implications for everyone, especially children. By working together, we can reduce pollution from public school buses -- making sure that school buses are also a clean way for children to get to school. Clean School Bus USA brings together partners from business, education, transportation, and public health organizations to work toward these goals:



- Encouraging policies and practices to eliminate unnecessary public school bus idling.
- Upgrading (“retrofitting”) buses that will remain in the fleet with better emission-control technologies and/or fueling them with cleaner fuels.
- Replacing the oldest buses in the fleet with new, less-polluting buses.”

(<http://www.epa.gov/cleanschoolbus/>)

**Wind for Schools** – Wind Powering America, U.S Department of Energy, all across the country, with projects in Salem and Portland, OR

“Wind Powering America sponsors the Wind for Schools project to raise awareness in rural America about the benefits of wind energy while simultaneously developing a wind energy knowledge base in future leaders of our communities, states, and nation. Here you will find information about the Wind for Schools project, where school wind projects are located across the United States, where you can find higher education or continuing education wind programs, teaching materials, and informational resources.”

(<http://www.windpoweringamerica.gov/>)