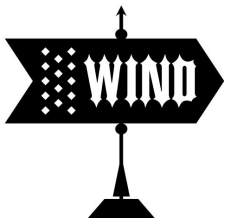
Wind - Teacher's Notes

Wind – Classroom Discussion



We need to know about changes in the weather because a change in the weather affects what we choose to do:

- The clothes we wear
- The place where we eat lunch
- The sports/games we play
- Whether we switch on an air conditioner or heat an area
- How fast washing will dry
- What is planted in the garden

It is important to notice where the wind is coming from and how strong it is because a change in the wind often brings a change in weather.
Some suggestions:

- A hot wind can change to a cool wind, such as the "Fremantle Doctor" in Perth, cooling down the land in the afternoon in summer.
- A wind from the inland grassland in spring can bring asthma causing grass pollen to students on the coast. Students will need to bring their medicine at these times
- The wind sometimes becomes much stronger before rain. It also raises dust clouds.
- In hot weather, 'willy willies' can start over dry open land.
- Cyclones in the Tropics cause swirling winds, which cause terrible destruction.

In Science we use our senses to test for change.

Wind and Senses – Student Activity (with worksheet)

Can you see wind?	You can't see wind, but you can see the effect it has on things around it. (See activity below)
Can you hear the wind?	Yes. A breeze rustles leaves and a cyclone howls.

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Can you feel the wind? Yes. A cold wind gives you goose bumps.

Can you smell the wind? Not always. You can smell the scent of the sea or dust carried in the wind.

Can you taste the wind? We don't test by tasting in Science, however wind from the sea can taste salty because of tiny drops of water carried by it.

LOOK	HEAR	FEEL	TASTE	SMELL
				
YES	YES	YES		?

If there is a wind blowing outside, you can ask students to wet one hand only in the sink and then hold both hands out into the wind. Ask them if they can see the wind passing over their hands? (No) Then ask them how they know the wind is blowing? (wet hand gets cold)

Change this to only wetting one side of their finger and feeling to find which direction the wind is coming from.

How do you know where the wind is coming from? The wet side of the finger feels colder.

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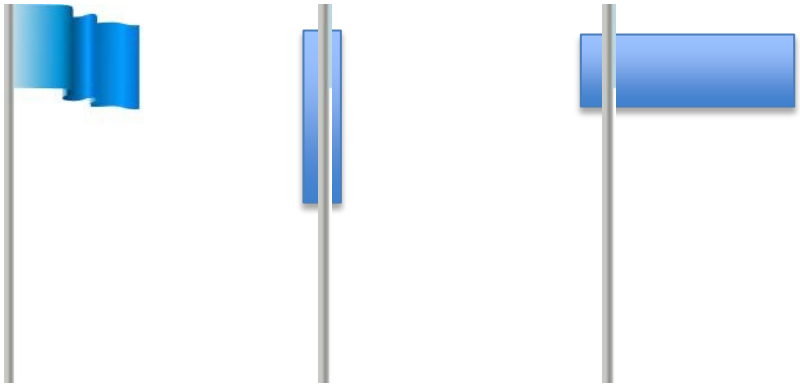

Flag No wind Strong wind

Draw what happens to the flag if the wind stops blowing and what happens if the wind blows very hard (a strong wind).

Wind words Blow, Gust, Breeze

There are several suggestions for wind measurers (anemometers). Please ask students to save good ones for use in the "Weather Report over two days" activity. The first two activities "Flying Feather" & "Pointing Pencil" can be done inside the classroom. The second activities "Tea Bag Testing or Leaf Looking" which measure wind strength need to be done outside or a fan or hairdryer is necessary to simulate different strengths of wind. We can easily record which direction the wind is coming from, but it requires more effort to record how strong the wind is.

Flying Feather - Student Activity

Dinosaurs prefer walking into the wind. Can the feather or streamers help them tell them the direction the wind is blowing and how strong it is?

Wind - Teacher's Notes

Materials per student or group

- A small lump of play dough or plasticine for the base
- A short length of a straw (about 3.5cm)
- A feather with a quill or a feather shape cut from cardboard
- Optional: dinosaur figurines to engage students' interest

Method

1. Press the plasticine onto a flat surface to form an anchoring base
2. Stick the piece of straw into the plasticine to form a socket for the feather
3. Place the feather quill into the socket
4. Test equipment by blowing at it from different directions.

Pointing Pencil - Student Activity

Materials per student or group

- Plasticine base as above
- Pencil
- Sticky tape
- Streamers, ribbon, paper tape or strips of paper

Wind - Teacher's Notes

Method

1. Stick streamers to point of pencil
2. Fix pencil end upright into plasticine or playdough
3. Test by blowing from different directions
4. Look for a change

Questions for discussion

1. In both these experiments, what changed? The direction of the feather and streamers were changed by the wind.
2. Do these experiments tell the dinosaurs which way the wind is blowing? YES!

Option
The school plan, a compass or a mobile App can tell you the direction the wind is coming from. The points of the compass could be chalked in the yard for future reference.

In olden times, people depended on wind power to trade and travel with sailing ships, grind grain and pump water. Many old buildings still have a weathervane. In port cities such as Fremantle, weathervanes were found near the docks so that merchants could decide on good days to leave port and how long voyages might take.
The direction and strength of wind is also critical for aircraft to know for takeoff and landing.

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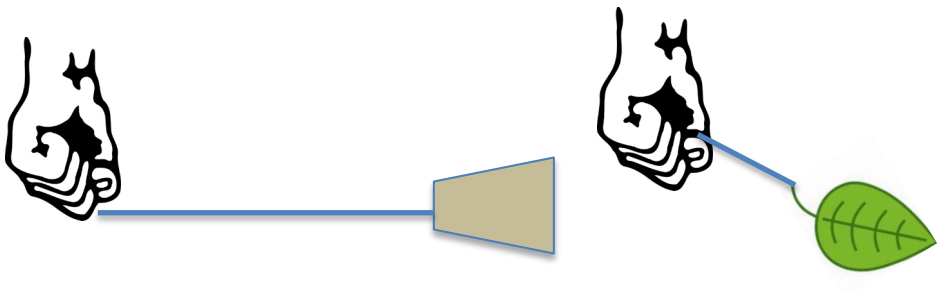
Clever bush architects used to build houses with a central corridor aligned to the wind direction in summer to help cool rooms. Wind was also used to winnow chaff from grain and separate gold nuggets from dirt.

Tea Bag Testing or Leaf Looking - Student Activity



Very strong wind **Less strong wind**

Materials per student or group

- Large leaf or a tea bag which has been emptied of tea leaves tied to a length of string or thread

Method

Hold the string with the leaf or tea bag and move around the yard to see if you can find the spot with the strongest wind OR if you remain inside, test the leaf or tea bag by setting the hairdryer or fan to different strengths and observe the changes.

Question for discussion

In both these experiments, what changed? The angle of the tea bag or leaf from vertical (straight up and down). The stronger the wind, the more the object moved from vertical to horizontal.

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For Teachers

This chart will let you convert the angle of the string to estimate the strength of the wind

Angle	90°	80°	70°	60°	50°	40°	30°	20°
km/hour	0	13.2	19.0	24.0	29.0	34.4	41.5	52.3

Option: Students can suggest which area in the yard is the windiest and then test their guess scientifically with this equipment.

Change in Wind - Student Activity (with worksheet)

In a strong wind hair and clothes will be blown by the wind.

These answers need to be modified by where your school is located. Students in temperate locations will have different experiences from those in the Tropics and from those in the inland.

Questions for discussion

How would these students know if it was a windy day?

What would they hear? Breeze, blow, blast, wind whistling, howling cyclone

What would they see? Clouds moving fast, leaves flying, branches bending, dust blowing/dust storm

What would they feel? Wind on skin, perhaps cold skin, hair blown about

What would they smell? Dust, smoke?

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Suggested reading
The Wind Blew by Pat Hutchins

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