



Noise

Assess & measure Turbine and Ambient Sounds & compare with other noise levels

Assess volume and type of noise **with follow up exercises**

Materials: **Recording sheet (p2) & Decibel Meter**

- ❖ *For the first exercises, listen, score and record at both of these positions on the wind farm site.*
 - Just inside the gate
 - Halfway along the track to the turbines
- 1. Listen to general (ambient) sounds (eg birds, traffic, aircraft, wind in your ears and across the crop, from the sound sculpture 'Field Notes'). Score volume from 1 (quiet) to 5 (very loud like a jet engine) on the **recording sheet** for each of the sounds.
 - ❖ *For these exercises, listen, score and record at each of these positions on the wind farm site.*
 - On arrival at gate
 - Halfway along the track to the turbines
 - Close to turbines
 - Upwind
 - Downwind
 - To side where blade comes down
 - To side where blade goes up
- 2. Listen to the sounds from the turbines. Score volume from 1 (quiet) to 5 (very loud like a jet engine) for the sounds at each place on the **recording sheet (p2)**.
- 3. Using the **decibel meter, record (p2)** the noise volume. (Try to ensure that you are recording the turbines and not passing road or air traffic.)
- 4. Describe (and **record p2**) turbine noises using (onomatopoeic) 'words' for example: whooshing, thumping, droning, screaming, zzzzzing, fffffff, ssssss, shshshsh, boomboom

Follow up ideas

1. Create a 'noise rose'
2. Onomatopoeic Poetry
3. Dance to the poetry

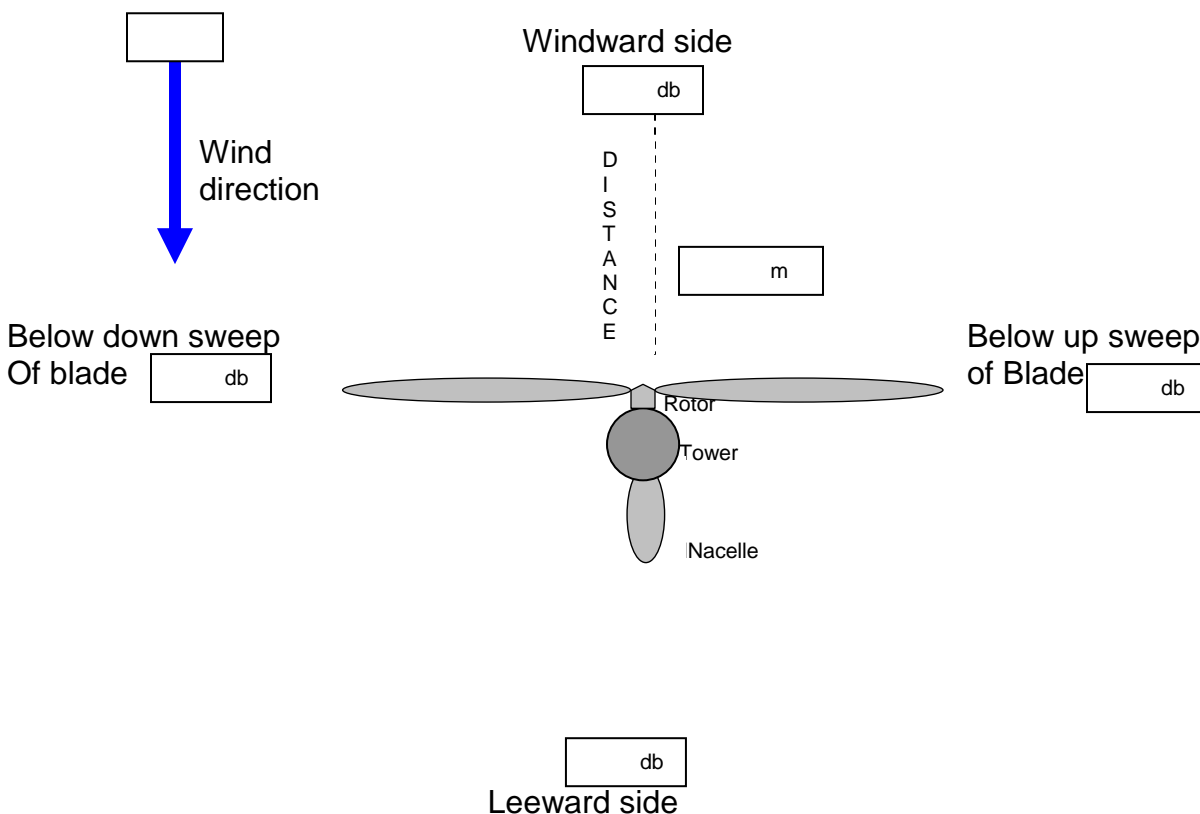
- ❖ Use the table on page 3 to make comparisons with other sounds.
Record the loudest shout your group can make

Noise Record sheet

- Record the noise and levels as you approach the turbines.
Make a note of other sounds which may affect noise levels (road traffic, air traffic, voices.....)

	What noises did you hear?	Score (1 to 5)	Decibel reading Db
Ambient sounds At the gate			
Ambient sounds Halfway to the turbine			
Noise from turbine At the gate			
Noise from turbine Halfway to the turbine			
Noise from turbine By turbine tower			
Write down the sounds you can hear by using letters eg hummmmmm			

- Using this sheet, record the noise levels around the turbine: towards the wind (windward side), under the blades and away from the wind (leeward side).
Make sure each time you take a record you are the same distance away from the pillar.
Use a compass, record where the wind is coming from (N, NE, E, SE, S, SW, W, NW) (wind direction)



Noise Volume – relative levels

Noise - Relative Levels				Your noise level recordings	
Noise Maker	dB decibels	Description of noise level	each dB level up is 10X louder than the previous level	What you heard	dB record on a row with similar noise level
Threshold of good hearing, normal breathing	10	very faint	10		
Whisper, ticking of watch, rustling leaves	20	very faint	100		
Quiet conversation, quiet library, whisper, mosquito buzzing	30	faint	1000		
Refrigerator	40		10000		
Normal office noise, quiet stream	50	moderate	100000		
Conversational speech at 1ft	60	moderate	1000000		
Average radio, normal street noise	70	loud	10000000		
Vacuum cleaner, noisy office, electric shaver, alarm clock	80	loud	100000000		
Your group's shout					
City traffic inside car	85		170000000		
Blender, noisy factory, truck without muffler	90	Decibels regularly at, or above, 90dB cause ear damage	1000000000		
Walkman on 5/10	94				
Passing truck, home lawn mower, car horn at 5 meters, wood saw, boiler factory	100	very loud	10000000000		
Lawn mower at 1metre	107		19000000000		
Rock concerts	110-140		1E+14		
Thunderclap, discotheque/boom box	120		1E+12		
Aircraft at take-off	180	deafening	1E+18		
Saturn rocket	195				