Wild Weather Worksheet

1. Explain how you can predict changes in the weather by looking at the movement of the clouds. Make sure you have it right for the Southern Hemisphere!

2. Explain how fire whirls form and relate this to spinning winds.

3. What is the Dominator 3? Describe it.

A longer set of possible questions, in order of how the answers appear in the program

1. Where in the world does the worst weather occur?
2. What is the fastest wind speed recorded here?
3. Why does this place get such strong winds?
4. Explain how you can predict changes in the weather by looking at the movement of the clouds. Make sure you have it right for the Southern Hemisphere!
5. Why do icicles grow into the wind?
6. Fire whirls
   a) What flammable liquid do they use to make the fire when they studied the fire whirl?
   b) What shape did the make the fire?
   c) What did they use to observe the fire whirl and why were they worried about it?
   d) Explain how fire whirls form and relate this to spinning winds.
7. Tornados
   a) What is the most destructive force in the tornado?
   b) Where are the strongest winds found in a tornado?
   c) Why is it so difficult to measure these winds?
   d) What is the Dominator 3? Describe it.

Answers

1. Mt Washington, New Hampshire

2. 231 miles per hour

3. Mt Washington higher than everything else in the surrounding area so nothing to block or break up the wind. Also because it is high the wind gets forced between a narrower gap between top of mountain and top of troposphere (in comparison to surrounding land) so it speeds up.
Like putting your finger over the end of a hose and allowing the water to squeeze through a small gap.

4. Stand with your back to the wind. Look up at clouds. If clouds are moving in a straight line with you (forward or back) or staying still, then weather stays the same. If clouds are moving Left to Right then weather will improve. If clouds are moving Right to Left weather will get worse.

5. Ice crystals are carried through the air in the wind. When they hit something solid, they freeze tight. The next ice crystal coming in freezes to the first . Gradually the icicle builds outwards in the direction they blew in from.

6a. heptane

6b. in a L shape

6c. They used a drone but they were worried about it being damaged by the intense heat above the fire.

6d. Hot air above the fire rises and cold air is attracted to the base of the fire. It comes around the end of the L shape and gets sucked into it. It is now attracted to the 2 fires simultaneously, so it is sucked in 2 directions at once. This leads to swirling winds and the fire whirl.

Spinning winds form in the same way. Two or more winds meeting at different angles and speeds. The warm air rises and cold air rushes in to fill the space leading to spinning winds -tornados

7.a. Its rate of spin and the debris it is carrying (not how quickly it moves across the ground)

7b. Close to the ground (under 10 m)

7c. The movement of the tornado across the ground is unpredictable so it is difficult to get a probe into the tornado. When they do get probes into the tornado, they get destroyed by the tornado!

7d. Dominator 3 is a “tornado-proof” vehicle.

It is tortoise shaped and hugs the ground. Has spikes that go into the ground to hold it in place.

