

Hello Trees Resource Sheet



What to think about in Spring Wind pollination

For a seed to develop, **pollen** needs to fuse with an **ovule**.

For more about tree flower parts see [Trees: male and female flower parts](#).



Relying on the wind to take pollen from one flower to another flower on a separate tree seems inefficient and unreliable.

However, many trees, especially native British trees, are wind pollinated.



To understand what makes wind pollination work best, let's imagine trying to get a letter to land in a friend's garden using the wind:



It would help if you threw your letter from a roof top or the top of a church tower.



More trees than other plants rely on wind pollination. This is because trees are high above the ground.



It would help if there were not crenulations on the church tower (or lots of things on the roof like television masts or satellite dishes) to obstruct your letter.



Trees that are wind pollinated tend to produce flowers and release pollen before their leaves come out; leaves would obstruct the dispersal of pollen.



It would help if your friend's garden was not too far from your roof top or church tower.



Wind pollinated trees tend to have been evolved where there are many trees of the same species within pollen range, typically in temperate forests where there are few dominant species of tree.



It would help if you threw your letters into the air when the wind was blowing strongly



Most wind pollinated trees produce their pollen in catkins. Scales round the anthers hold the pollen in place until the wind blows strongly enough to bend the catkin and push back the scales so that the pollen can blow free.



It would help if you didn't release your letters on a rainy day.



Again, the scales round the anthers in catkins, release the pollen only when the air is dry.

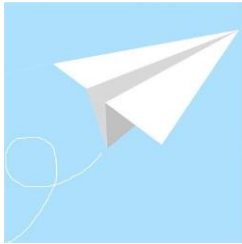
Birch catkin scales hold in the pollen



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It would help if the letter was on light-weight paper and folded into the shape of a paper aeroplane so that it did not immediately plummet to the ground.



Pollen that will be carried by the wind is dry, rounded, smooth, small and light to make it aerodynamic and help it fly through the air and be carried as far away as possible.

Less than half of the pollen will get more than 100 m away but lots will fly for a kilometre or more and some will be carried high into strong wind currents and can travel many thousands of kilometres away.



It would help if you had loads of your letters: the more letters, the greater the chance of one of them landing in the right garden.



Trees produce masses of pollen. Birches, for example, can produce 5.5 million pollen grains *per catkin*, and can have hundreds of catkins on a single tree.



Want to see for yourself what makes stuff travel furthest through the air?

- Compare dropping grass cuttings, dry leaves then bark chippings;
- Compare dropping dry bits, then damp bits;
- Compare dropping a few, then lots;
- Compare opening your hand gently, then flicking your fingers like a swinging catkin;
- Compare dropping them from low down, then high, then standing on something;
- Compare dropping them away from the wind, then out where the wind is strongest;

Would you agree that wind pollination works best when:

1. the trees are tall and the catkins held high;
2. the pollen is shed before leaves come out;
3. the pollen is shed when the wind is blowing strongly;
4. the pollen is shed when it is dry;
5. there are other trees of the same species near by;
6. the pollen is aerodynamic?



Birch catkins held high



Other trees of the same species near by

To see what the male catkins and female flowers of some common British trees look like, see Hello Trees [Tree catkins](#). For more about types of tree flowers, [Trees: male and female flower parts](#).