

# Hello Trees Resource Sheet



## What to look for outdoors: early spring Birch trees: new catkins in spring

All winter, birch trees have had stiff purple-brown leathery catkins - and a few leftover crispy brown catkins. Now in early spring, the brown leathery catkins are changing shape and colour and there is a new kind of catkin to be seen.



*Stiff purple-brown leathery birch catkins in winter*



Before we go looking for it, let's think what we might see.



Clues:

1. The crispy brown catkins had seeds in them so they must have been female.
2. If the brown leathery catkins are male, they will produce pollen.
3. Pollen is usually yellow.
4. Catkin pollen is usually spread by the wind.
5. The catkins will need to wave about in the wind if their pollen is to be carried away.



*Leftover crispy brown birch catkins*



We predict that the stiff purple-brown leathery catkins will now be dangling down and have begun to turn yellow.



Pollen needs to go somewhere when it is blown away.

The birch tree needs some female catkins.

Will they be on separate birch trees or the same birch tree?



Clue: there were female crispy brown catkins on this same tree last year.



We predict that there will be new female catkins on this same tree.

We know what the female flowers of other trees with catkins looked like: hazels' were tiny red bits sticking out of a bud, alders' were mauve ovals and oaks' were red pinheads.

With so many variations, it is difficult to predict what the birch female flowers will look like.

However, we do know that the female birch catkins are dangling crispy brown sausage-shapes when they are ripe and full of seeds.



Not so sure about this one. 'Dangling' doesn't sound good for catching pollen.

Shall we predict that the new spring female catkins will be brown and sausage shaped but not dangling?



Get your magnifying glass and let's go and look.

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T. Cabe Lloyd/arcadianabe

Female and male birch catkins in early spring.

Here is a perfect photograph of a birch twig taken in early spring.

The green catkins sticking straight up are the new female birch catkins.

They certainly are not brown and dangling, but might you call them sausage-shaped?

A very skinny sausage! I would say 'spike'.

The dangling yellow catkins are the male birch catkins transformed from being stiff, purple-brown and leathery by the pollen developing inside them.

! Sometimes I have said 'female catkin' and sometimes 'female flower'.

? What's the difference?

😊 Clue: Perhaps I should have said 'female flowers': not one flower but many flowers.



You've got it! A catkin is a series of unisex flowers arranged in circles round a stem.

Male catkins are a series of mini stamens: pollen-bearing anthers on filaments, such as we see on garden flowers.

Female catkins are a series of tiny carpels each with a stigma, style and ovules in an ovary. Pollen that falls on a stigma will burrow through the style to fuse with an ovule in the ovary.

Do you think the brown bits on the male catkins are the remnants of leathery scales?



How many pollen grains do you think there are in a catkin?

I bet you will say 'a million' just to prove to me that I can't surprise you.



The answer surprises me all right!

There are 5.5million pollen grains *in each birch catkin*.

Imagine how many there must be in a birch tree.



For more about flower types, catkins and wind pollination, see Hello Trees resource sheets [Trees: male and female flower parts](#), [Tree catkins](#) and [Wind pollination](#).

Do share what you predicted and what you saw.

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