## NOTICING CHANGE: WORKSHEET

Signs of climate change are all around us: from needing to trim our lawns at Christmas to birds migrating earlier or later than expected. Look for these early signs of spring in your neighbourhood, note what you see, and tell others all about it. By talking about the things we love, we have the opportunity to protect them.

The species in this checklist were selected based on Nature's Calendar—an exciting project run by the Woodland Trust which helps scientists track the effects of weather and climate change on wildlife.

Record your sightings in the checklist below, then submit them online at **showthelove.org.uk.** Please note that if you're doing this activity as a group, you only need to fill in the online form once with the sightings from your group's survey (rather than recording all 27 sightings of frogspawn!)

DATE:		NEAREST POSTCODE:
SPECIES	TICK IF SEEN	SPECIES NOTES
Wasps	Date:	Why wasps? We expect to first see wasps in April, but as the climate warms we are starting to see them earlier in the year. In 2017 they were spotted over 20 days earlier on average than they were at the start of the century!  Why does this matter? If mild winters encourage the queen wasp to emerge too early, she might not be able to find enough nectar to feed on as most plants won't have flowered yet.  Tips for finding it: Wasps can be found all across the UK. Unlike bees, wasps are long and thin with a smooth body and legs. Remember to keep a keen eye out for the huge queen wasp—she is 2.5 – 3.8cm long, larger than worker wasps.
Frogspawn	Date:	<ul> <li>Why frogspawn? We expect to first see frogspawn in early March, but because of warmer temperatures, in 2017 it was spotted in early February.</li> <li>Why does this matter? If frogspawn appears too early because of unusually warm temperatures in winter, there is a risk that a cold snap could freeze it and kill the developing tadpoles.</li> <li>Tips for finding it: You'll find clumps of frogspawn in ponds across the UK. Just make sure you don't confuse it with toad spawn, which is laid in what looks like long strings.</li> </ul>

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Lawn cutting	Date:	Why lawn cutting? Grass is one of the earliest plants to start growing in spring, and one of the last to stop in the winter. Usually there's no need to cut grass over winter as it doesn't grow when temperatures drop below 5°, but recently in some areas people have needed to cut it all year round.  Why does this matter? Knowing whether grass is still growing or not tells us a lot about the length of the growing season. The MET weather office has estimated that the growing season has increased by at least a month and grass is growing all year round in some areas.  Tips for finding it: Take a look at the patches of grass growing in your garden or around other buildings, rather than in meadows or fields. When did you last see or hear someone cutting the grass? If you don't have a lawn, ask your neighbours, friends and family when they last had to pull their lawnmower out of the shed.
Blackthorn flower	Date:  Date:  Date:  Date:	Why blackthorn flower? Blackthorn, like all other native UK trees and shrubs, is sensitive to spring temperatures and will flower earlier if it's warm and later if cold. Spring was much milder in 2017, so blackthorn flowers were seen a whole 20 days early.  Why does this matter? Early flowers can cause problems along the food chain. Insects are quicker to adapt to these changes, but birds may not be able to keep up. This puts their chicks at risk of going hungry when they nest, because there could be less food to eat.  Tips for finding it: Look out for white flowers on short stalks against dark thorny stems. They grow on bushy, leafless blackthorn shrubs, which usually feature in hedgerows.
Hazel catkins	Date:	Why hazel catkins? The hazel tree is sensitive to temperature. Its catkins will only start to grow in spring when it becomes warm enough. In fact, spring 2017 was so warm that catkins were spotted a staggering 29 days early!  Why does this matter? Insects, especially bees, rely on hazel catkins and flowers. If the catkins emerge early, the insects could miss out on the early food they need to survive.  Tips for finding it: The long yellow catkins appear before the leaves and hang in clusters. You'll find hazel in the understory of woodland, as well as in scrub and hedgerows.

SPECIES	TICK IF SEEN	SPECIES NOTES
Snowdrop flowers	Date:	Why snowdrop flowers? Snowdrops traditionally mark the first sign of spring, flowering well before daffodils and bluebells. But over the last five years they have been popping their heads up on average 9 days earlier than in 2000.  Why does this matter? Snowdrops flower early and are one of the first signs of spring. If they appear particularly early, this could indicate an early spring.  Tips for finding it: Snowdrops can be found in woodland and hedgerows, and are hard to miss! Each flower has six white segments—the inner three segments are smaller and have a notch in the tip, look out for the green upturned 'v' pattern.
Lesser celandine flowers	Date:  Date:  Date:  Date:	Why the lesser celandine flower? These yellow star-like flowers are one of the first woodland flowers of the year, and in 2017 they were seen almost two weeks earlier than in 2001.  Why does this matter? Because they appear so early – often popping up during February – they provide an important nectar source for queen bumblebees and other insects as they wake up from hibernation. If the flowers emerge too early, the whole food chain can get knocked out of balance and insects could go hungry.  Tips for finding it: When you're in the woods, look out for their shiny yellow star-like flowers. Each one has eight to twelve petals. Their leaves are heart-shaped, glossy and dark green, and grow on long stalks.
Peacock butterfly	Date:	Why the peacock butterfly? These beautiful butterflies are usually spotted in mid-April, but over the last five years they've appeared an average of 10 days earlier than in 2001.  Why does this matter? These butterflies spend their winters in the UK as adults, so their early emergence results in early caterpillars. As many birds and animals eat caterpillars, this means they could be left hungry when they wake up from hibernation or migrate later in the year. There's also a risk that if there's a cold snap after the caterpillars turn into butterflies, they won't survive.  Tips for finding it: Found throughout the UK. Keep your eyes peeled for a large, orange-red butterfly with spectacular blue 'eyes' on their wings. The underside is almost black.

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Blue tit nest	Date:	<ul> <li>Why the blue tit nest? Blue tits time their nest building and egg laying so that their chicks hatch when there are plenty of caterpillars for them to eat. These brightly coloured birds usually nest in late March or early April, but they've been seen nesting as early as mid-February.</li> <li>Why does this matter? If blue tits nest early because of warmer temperatures, their eggs and chicks could be harmed by a cold snap.</li> <li>Tips for finding it: Blue tits live all over the UK, except in some parts of Scotland. Watch out for blue tits (blue cap and yellow breast) gathering nesting material in their beaks, and flying to and from a nesting site.</li> </ul>
Blackbird nest	Date:	Why the blackbird nest? Blackbirds begin building their nests in February, but in recent years they've started nesting much earlier than they used to.  Why does this matter? Blackbirds rely on invertebrates being around for them to eat when they are laying eggs and feeding their chicks. If they nest when there aren't many insects to hunt, blackbird chicks could go hungry.  Tips for finding it: You can find blackbirds almost everywhere. The males can be spotted by their black colour, yellow bill, and bright eye ring, while females are brown with a duller yellow or brown beak. Keep an eye out for them gathering their nesting materials!
Draw a picture of other early signs of spring you've seen:	Date:	Notes: