

## Pollination

### Worksheet 1 - teacher's notes

1. Everyone knows that bees make honey. What is honey, how do they make it and why is it good for us? Go to

<http://www.buzzaboutbees.net/how-do-bees-make-honey.html>

<http://www.beesathome.com/health-benefits-of-honey>

to find out.

*Honey is a sweet product made from flower nectar, combined with an enzyme secreted by honey bees, then concentrated by reducing moisture in the honeycomb cells.*

*A basic scientific formula is as follows:*

*Sucrose (nectar) + invertase (bee enzyme) = fructose + glucose (honey).*

*It starts with foraging worker bees – and flowers, of course. As the weather begins to warm up, the bees will begin collecting nectar from flowers within a radius of around 4 miles. Note, the male honey bees, the drones, do not forage for the hive, and nor does the queen honey bee.*

*The bees have glands which secrete an enzyme. When the bees collect the nectar, it is then mixed with the enzyme in the bee's mouth.*

*The nectar is then taken back to the bee hive or nest, where it is dropped into the honeycomb. These are hexagonal shaped cells, which in the wild, the bees make themselves out of wax.*

*Honey health benefits:*

- *completely natural antibiotic properties.*
- *acts as an anti-microbial agent.*
- *an anti-bacterial substance.*
- *is an anti-fungal substance.*
- *is excellent for optimizing our health.*

2. Go to <http://www.youtube.com/watch?v=xHkq1edcbk4> and watch a short film about the pollination, what other animals can you see there apart from the bees?

*hummingbirds, spiders, butterflies...*

3. Honey is not the only benefit we get from bees. They produce many of our favourite foods. Go to <http://www.nrdc.org/wildlife/animals/files/bees.pdf> and read about pollination .

Which animals are also pollinators?

*Bees are one of a myriad of other animals, including birds, bats, beetles, and butterflies, called pollinators.*

What food do we have thanks to pollinators?

*apples, oranges, lemons, limes, broccoli, onions, blueberries, cherries, and cranberries, cucumbers (and the pickles made from cucumbers), cantaloupes, carrots, avocados, almonds*

4. As you found out bees are extremely important. Unfortunately bees are dying out, the process is called Colony Collapse Disorder. Find out why we have to save our bees and how we can do that here:

<http://www.helpsavebees.co.uk/index.html>

<http://www.saveourbees.org.uk/>

## Pollination

Reasons for CCD	How to help save the bees
<p><b>Global warming</b>, which has caused flowers to bloom earlier or later than usual. When pollinators come out of hibernation, the flowers that provide the food they need to start the season have already bloomed.</p> <p><b>Pesticide use</b> on farms. Some toxic pesticides meant to kill pests can harm the honey bees needed for pollination. Many pesticides banned by other countries because they harm bees are still available in the United States.</p> <p><b>Habitat loss</b> brought about by development, abandoned farms, growing crops without leaving habitat for wild-life, and growing gardens with flowers that are not friendly to pollinators.</p> <p><b>Parasites</b> such as harmful mites.</p>	<ol style="list-style-type: none"><li>1. Stop using insecticides</li><li>2. Plant Bee-friendly plants</li><li>3. Create natural habitat gardens</li><li>4. Find out more about bees</li><li>5. Support your local beekeepers</li><li>6. Make you own 'Wild bee' house</li><li>7. Become a beekeeper</li><li>8. Lobby your local MP or MEP</li><li>9. Sign petitions banning pesticides</li><li>10. Encourage your local authority to do more to help bees</li></ol>