

Interplay on the Web!

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interplay

Interplay UK Limited

Meter House, Fieldhouse Lane, Marlow, Buckinghamshire. SL7 1LW

Designed by Interplay UK Limited

Made in China

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Manual written by Nick Baker

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Designed for
children by
Nature Experts



Explore the wonderful
world of Spiders with
naturalist **Nick Baker!**



Nick Baker's

SPIIDER



WORLD

- **Set up a spider friendly home and see right inside their fascinating world!**



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WARNING!



For children over 5 years of age only.



For use under adult supervision. Read the instructions before use. Follow them and keep them for reference.



Not suitable for children under 36 months as this product encourages children to collect small items that may represent choking hazards.

Do not use the magnifying lens to look directly at the sun or other sources of bright light as this could damage your eyes.

Caution! None of the accessories in this kit should be allowed to come into direct contact with foodstuffs. Keep bugs and dirty hands away from the mouth!

Wash hands after using this kit or doing the activities described in this booklet.



Please Note:

Young children will need the help and assistance of an adult.

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Explore the wonderful
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Nick Baker's

SPIIDER

WORLD



The Spider Tank!

*"I call it a 'Tegenarium'
after the Latin name of the
House Spiders that seem to
do so well in them."*



Contents

- Spider Tank (Tegenarium)
- Cotton Wool Ball
- Pipette
- Specimen Tube
- Tweezers
- Paintbrush
- Field Lens
- 24 Page Instruction Manual

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About this Kit!

This kit is a hands-on guide for budding naturalists and contains the equipment you need to observe and study the life-style of spiders. The kit is designed to be fun and informative for kids of all ages. However, young children will need the assistance of an adult.



Garden Spider

To start with, I recommend collecting one spider to look after and observe. They should come to no harm if kept as pets



House Spider

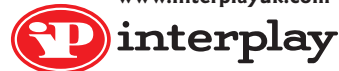


for a few days then released back into the wild where they came from. Once you have gained some experience, you can progress to keeping them for longer if you wish.

Spiders are active all year round, although they (and also their food) can be hard to find in winter. Therefore, the best times of year to use this kit are the Spring, Summer or Autumn months when they are easy to find.

Finally, I hope you have fun with this kit and discover some fascinating insights into the life of these amazing creatures.

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Introduction

The sight of a hirsute eight-legged arachnid sitting in the sink is guaranteed to send at least one member of your family into a bit of a flap, which I think is a terrible shame really.

For some inexplicable reason spiders are a much misunderstood group of creatures and part of the problem is that people don't seem to give them a chance and get to know them properly.

Too quickly we utter the sound 'uurrgh', put a foot down or subject them to the sucking end of a vacuum cleaner and in doing so remain ignorant to their wonderful lives.

This kit is the first step in getting to know your spiders much better, helping you to



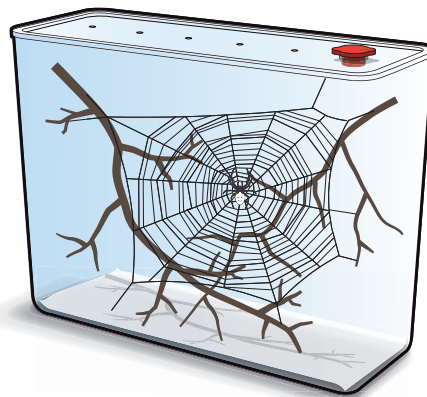
Window Spider

Designed for children by Nature Experts



see the 'personality' that lives behind the sofa and even if you don't end up loving them as much as your dog or cat you will at least recognise what it is they are, what they get up to and just how important they really are to all of us.

Nick Baker





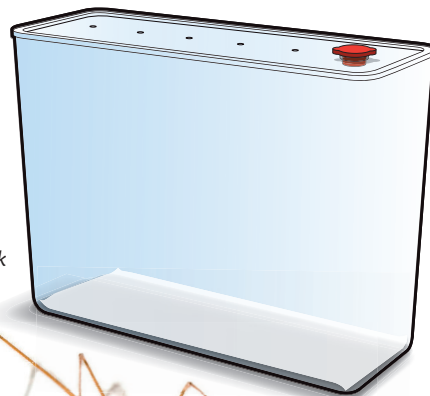
House Spider (Having Lunch)

1. Getting Started

Many British spiders can be kept in your Spider World and by just changing the set up and providing different furniture you can create habitats for a huge variety of different kinds. However, to start off I cannot recommend enough the two very common species found around most people's houses. These are the Cellar Spider or Daddy Long-Legs Spider (not to be confused with the Fly and the Harvestman of the same name!) and the House Spider (there are several very similar species and all of them are excellent beginners spiders). These are so brilliant to keep as they are already living in your house and can cope with slightly warmer and drier conditions.

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1. First set up your spider tank. Line the bottom with either fine sand or a piece of kitchen towel. This not only makes it look nice (a very important thing for a mini-zoo keeper) but will also absorb any excess moisture. Important if you want to avoid mould and bacteria killing your spiders.



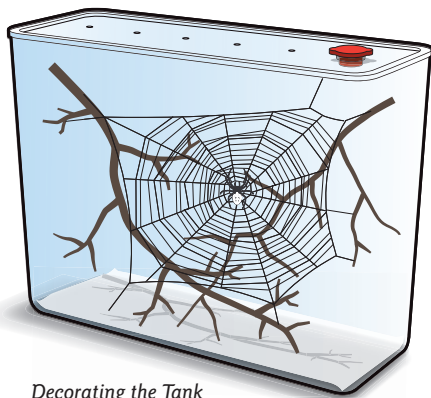
Lining the tank



Cellar Spider

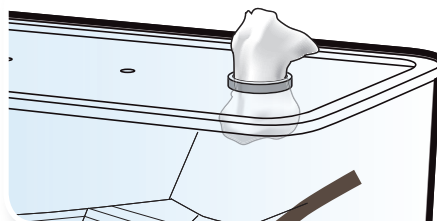


2. If you are starting with either of the House Spiders I recommend some nice furniture - maybe an attractive branched stick or a curled dead leaf which gives the spiders something to build their web on - but again, if I'm honest, it looks nice to you and me - the spiders will get on and build their webs anyway!



Decorating the Tank

3. It's important to provide water in some form. The easiest way is to bung the hole in the lid with the cotton wool provided, then keep it moist by using your pipette to add drops of water on to it every other day or so.



4. Now it's just a case of adding your spider (only one at a time - as spiders like to live on their own unless it's time to mate and even then they are not all that friendly with each other!) and making sure you put the lid in place properly.



Zebra Spider

5. Keep your spiders away from direct sunlight and never leave your tegerarium in a sunny window - the heat will kill your captives.



Many other species of spider can be kept in the 'tegerarium' but you might need to make adjustments to the habitat within to meet their demands. Simply put, you will need to create conditions as close to the wild as possible. The medium to large species are the best as they don't get lost and being bigger you can see what they are doing so much better. Having said that once you are a bit of an expert, you can keep many very special smaller spiders such as Spitting Spiders and Crab Spiders, but you might want to find a smaller container to keep them in.

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2. A Guide to some of the more common spiders you can keep in your Spider World.

House Spiders - There are several very similar species of House Spider and you can find them pretty much at any time of the year. These are my favourite residents to keep in your Spider World. They might not be colourful; all are a dark brown with black patterns, but they are big, spectacular and quick to settle in. Their webs are large matted sheets that fan out from the entrance to the lair which is often a silk lined crevice. When adult, the males can be identified by the very distinctive swollen palps.



House Spider

Cellar Spider



Cellar Spiders - These are the bane of the house proud as they're the creators of cobwebs. These spiders are found in homes and out-houses all around the world. The commonest is the Daddy Long-Legs (*Pholcus phalangioides*) also called the Skull Spider due to the dark brown markings on the abdomen (you have to use your imagination). Unmistakable as the spider has legs that are 4-5 times longer than the body, they can be found in any season. The females often can be seen holding their loose egg sac containing 20-40 large eggs. They will eat pretty much anything that becomes entangled in their scruffy and unsightly webs and are not adverse to eating other spiders. They have an interesting defence mechanism which is

to vibrate their body violently from side to side so fast that the body becomes a blur.

Wolf Spiders - There are lots of different kinds of Wolf Spiders. None of them create silk webs to ensnare their prey, instead they run their prey down. Unlike their name sake they don't work in packs but got their name from the fact that if you go out on a warm sunny day anywhere there is long vegetation you will see large numbers of these spiders (most commonly a species called *Pardosa amentata*) scuttling away. Wolf Spiders are active in daylight. If you are going to keep these spiders, you'll need to put a layer of soil and some vegetation (dead grass and plant stems are best as they don't wilt and go mouldy) in the bottom and keep them relatively warm (room temperature).

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Wolf Spider

Window Spiders - While it's worth trying any spider in your Spider World, few of the orb web spinning spiders (makers of that classic circular spider web) rarely get the chance to show off their abilities within the close confines of the Spider World, but one that does pretty well is the diminutive Window Spider (*zygiella x-notata*). So called because it often spins its distinctive orb web (with a large section missing) in the corners of windows and around the outside of out-houses.

*Window Spider -
zygiella x-notata*



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Lace Web Spider

Lace-Web Spider - This is a common spider that lives in crevices in the corners of windows, walls and bark. It gives away its presence by the loose lacey net-like web that surrounds the entrance to its silk-lined lair. The silk itself in torch light has a slight blue-ish colour. The best time to see these spiders and also catch them is at night when they move out into the open, waiting to pounce on any unsuspecting passing insect. It's quite a velvety dark grey / brown spider with lighter brown markings on the abdomen.

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3. Catching Your Spider

How you go about this depends on your quarry - the easiest to catch have to be the Cellar Spiders as they tend to be easy to spot. Just look for the tangle of webs in the corners of rooms, under the stairs or in dark corners, and simply place the pot underneath it while bringing the lid down gently from the top. If they sense you coming they drop and the pot underneath will be perfectly placed to catch them - be quick to shut the lid though as they can move quite fast once disturbed.

House Spiders are my favourite to keep. They lurk in their silk lairs in quiet dark places; garages are a favorite place as are broom cupboards and loft spaces (you should ask permission from an adult first or better still get them to help you!) If you

explore at night with a torch you are most likely to see them sitting in the entrance to their lairs. The trickiest thing is catching them as the slightest disturbance, just an excited breath or a jog of one of the silk strands and they will be gone in a flash! If you bungle your capture, you should give it 10 minutes and your spider should be back in position.

Often using your paintbrush to block their retreat is the answer and then you can quickly flick them into your specimen pot and close the lid. They may make it easy for you and just turn up in your bath or sink - these will tend to be males looking for mates (see the section on telling Mr from Mrs Spider) and may not settle down as they will be looking for a mate which is why they got stuck in the sink in the first place.

Catching your spider snacks

Spiders are all carnivorous (there are no vegetarian options) and so part of your job will be to supply live food for your inmate while it is in your care. You can catch flies on windows during the summer months using your specimen pot to trap them against the window and using a piece of paper to slide underneath. You can of course use your fingers if you're not too squeamish (then you simply pop the fly through the larger feeding/watering hole in the 'tegenarium' lid). To get the fly out of the pot is trickier. You can place the pot in a bag and then stick it in the freezer for a few minutes to cool it down (but not kill it).

Other good sources of flies are fields where cows are grazed - the orange and fluffy looking dung flies are numerous in these



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places and can be caught relatively easily, especially if you've got a net. You can get maggots from fishing shops and raise them to flies or with some species (especially house spiders) you can feed them maggots as well.

Pet shops often supply crickets and mealworms for exotic pets, such as lizards and exotic Tarantulas amongst others. These are also perfectly acceptable for use in your Spider World.



Top Tip:

To help manipulate the flies a top tip is that they always move towards the light, so if you want to get a fly out of a tube or pot, simply cover it up with your hand and it will move towards the source of the brightest light.



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4. Maintenance

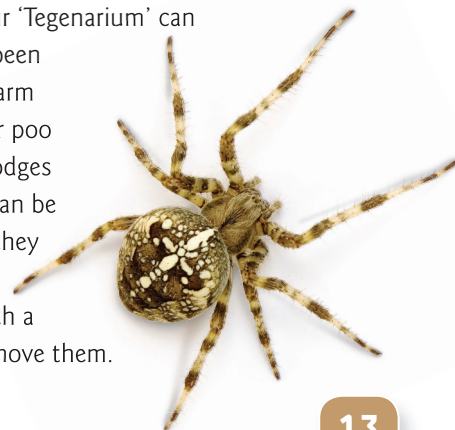
1. Keep your spider supplied with water by keeping the cotton wool bung loaded with fresh water. As with all insects and invertebrates the biggest enemy is dehydration which is why they are most active when the sun isn't shining, where there is moisture in the air or in dark and damp corners of the house.



2. Keep them clean - it's not that spiders are mucky creatures at all and they certainly don't need mucking out like a larger pet. But their food remains do tend to build up after a while. Although they often just become crunchy and crispy it is good practice to remove any food that is finished with using the tweezers provided.

3. Feed them as often as they seem hungry. You can't over feed a spider and what normally happens is that excess food is wrapped up in silk and stored for later. Spiders can go for weeks without eating anything. I like to feed mine 2-3 insects such as flies every week.

4. When you've finished watching your spider simply let it go where you found it (if that was behind the sofa or the TV you might want to find somewhere else equally dark and dingy!) Your 'Tegenarium' can be reused after it's been washed out with warm soapy water - spider poo are those white splodges on the sides. They can be a bit stubborn and they might need a soak and a gentle rub with a kitchen towel to remove them.



5. Know your way around a Spider

In this country we have around 640 different kinds of spiders and they come in many shapes and sizes; from the large and leggy House Spider, the meaty Garden Spiders to the dainty little 'Money' Spiders. They can be spindly and gangly like the Cellar Spider or short and compact like the Purse Web Spider. Some build beautiful orb webs that look like lace doilies, some make a messy tangle of strands while others don't even bother with a web at all. Except for a couple of related arachnids, spiders are instantly recognisable in that they have a body comprised of two parts and eight walking legs.

Garden Spider



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Orb Spider



Cellar Spider

Eight legs - Go on count them! Unless your spider has had an unfortunate accident (they can get along perfectly OK with less than the number they hatched with) your spider should have eight legs. Hang on, I hear you cry, mine's got 10 legs! If this is the case you are probably counting the first pair of limbs either side of the head, but these are actually palps.

Palps - These are not used for walking, but instead they are used to feel and taste and in adult male spiders the palps have a complex organ on the end (it looks a bit like a swelling or a boxing glove to us) that is used in mating.

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*Window Spider -
zygiella x-notata*

Cephalothorax - This translates as 'head chest' and is really the head and thorax section of the body squashed together. It is the first of the two main sections of the spider's body and it contains the sensory organs (eyes and palps etc.) as well as the engine room, where all the muscles that operate the legs, jaws and stomach are situated.

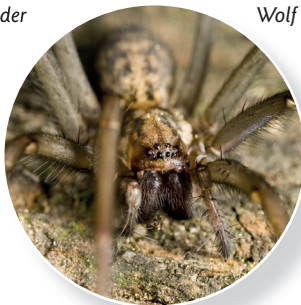
Eyes - Most spiders have eight eyes, but some have six or less but never more.

Despite the number of eyes the eyesight of spiders is pretty terrible. Although, there are a few species such as Jumping Spiders and Wolf Spiders that have reasonable vision and can see about 30cm in front of them.

Abdomen - In most spiders this is a squishy bag full of all the guts, lungs, heart and reproductive organs as well as the silk spinning organs.



Purse Web Spider

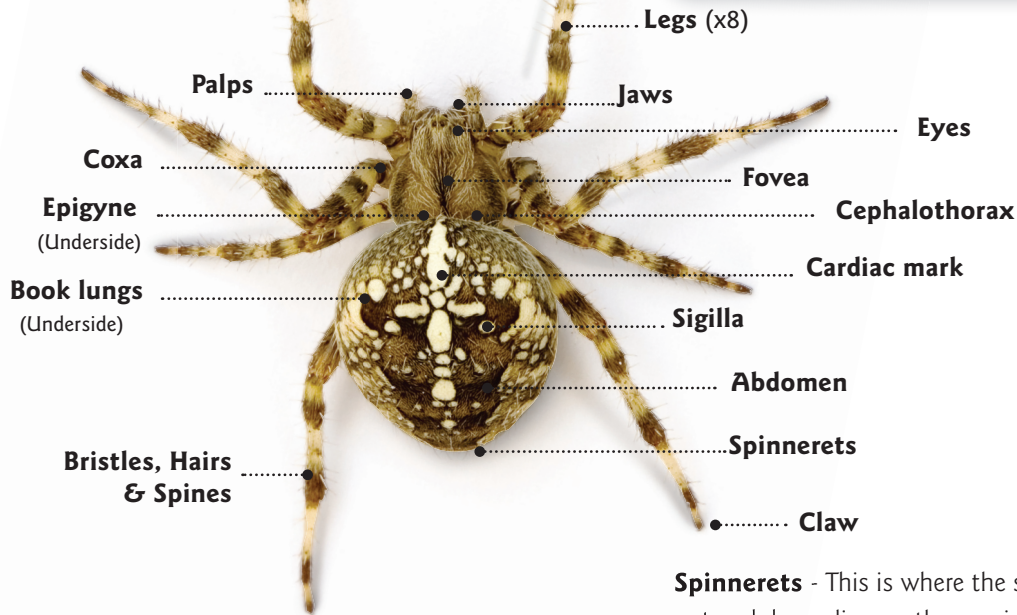


Wolf Spider



Lace Webbed Spider

Know your way around a Spider



Cardiac mark - This can be seen in most species and denotes the position of the heart - look closely and you can see it pumping!

Sigilla - This can be seen in most spiders - these little depressions mark places where muscles attach on the inside of the body wall.

Spinnerets - This is where the silk comes out and depending on the species the number varies between 6 and 8.

Book lungs - Some species have a pair of pale patches on the underside of the abdomen which are air filled pouches called book lungs. This is because the flaps contained within and over which the spider breathes are arranged like the pages of a book.

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Jaws - These are called 'chelicerae' in spiders and you can see them quite easily in most spiders. They are positioned under the eyes, and the hardened 'fang' is often tucked away, folded up underneath the body, generally pointing towards the mouth. These are used for feeding; injecting prey with venom which overpowers the prey and dissolves it. They are also the nearest thing a spider has to hands and they are used to manipulate food, mates, eggs and other objects.

Coxa - These are the first segments of the legs.

Fovea - This is the dimple in the middle of the cephalothorax and is where the powerful sucking muscles for the stomach are attached. When a spider eats its prey it sucks up the juices like you might a thick shake.

Epigyne - This is the female's reproductive organs.



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Claw - At the tip of each leg are claws. There are usually three in those that spin webs, those that hunt on the ground tend to have at least one of these replaced by a pad of special flattened hairs called 'scopulae' that help the spider grip smoother surfaces.

Bristles, Hairs and Spines - Spiders are well known for being hairy and these hairs are put to more use than simply scaring people. They add colour and texture which helps them blend into the background. On legs they can be arranged as a kind of comb called a 'calamistrum', which is used to brush the silk. There are 'trichobothria' which are sensitive to air movement and vibration, while most of the other hairs are all attached to nerve endings making them highly sensitive. Special hairs at the tips are even able to taste! The robust spines and bristles often have a role to play in catching the prey.

6. Spider Silk

Silk is a truly remarkable substance and spiders use its incredible properties for many things. While not all spiders use silk to catch their prey many use it for other things including lining their homes, bundling up their prey, parachuting and protecting their eggs and young.

It is one of the reasons spiders are so very successful. Imagine what it would be like if you could use one single material to build your house, wrap your food, glue things together, help you fly, make your bed sheets and do the shopping! Spider silk really is that amazing.

Your Spider World gives you the perfect way to watch a spider weaving its magic and because every kind of spider is so very different in how it uses silk the fascination is endless!

Watch your spider carefully and after it has settled in you will see it start to lay down a very thin thread of silk that emerges from the spider's body at the



Garden Spider

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Orb Spider



tip of the abdomen, which is where the spinnerets are situated. Sometimes this is nothing more than a drag line, a thread that acts a little like a safety line. The silk can be very difficult to see in certain light conditions but if you put a bit of black card behind the tegeranium and shine a small torch in from the side you should be able to see the structure quite clearly. There are six different kinds of spider silk and while no single spider can produce every kind, most will use several different types.

Here are a few mind-blowing facts about spider silk!

Some of the small spiders will climb to a high spot and allow a thin strand of silk to be drawn from the spinnerets by the breeze. Eventually this creates enough drag to lift the spider off the ground and it will drift with the breeze.

Silk comes from silk glands in the spider's abdomen - it is a special kind of liquid, a protein soup. It is drawn from the spider's body and out via the spigots situated on the spinnerets.

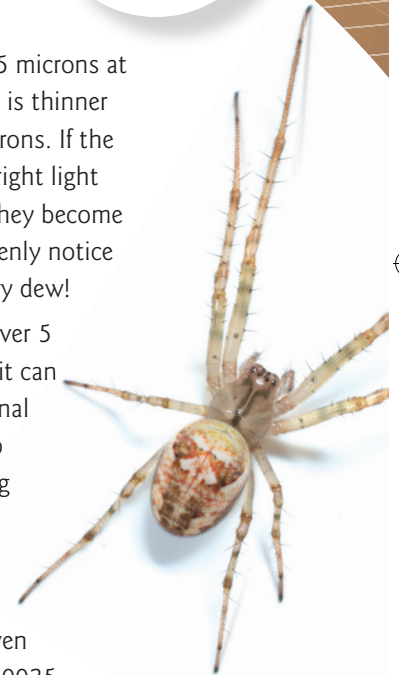
On contact with air and with a little modification by the spider it stretches and hardens to form a thread.

Spider silk is difficult for us to see because our eyes can only perceive things greater than 25 microns at a distance of 10cm. Spider silk is thinner than that - less than 0.15 microns. If the threads are illuminated by a bright light or are covered in something, they become visible, which is why we suddenly notice them after a night with a heavy dew!

Some types of spider silk are over 5 times stronger than steel and it can be stretched 10 times its original length allowing a spider's web to absorb the energy of a flying insect or struggling prey.

A single strand of spider silk is actually made up of several strands all wound together. Even so it is still very, very thin; 0.00025 - 0.001 millimetres in diameter.

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Window Spider

7. Questions & Answers

Q. *What is the best time of year to keep spiders?*

A. Spiders are active all year, however its best to keep them in Spring, Summer or Autumn months when their food is easy to find.

Q. *What are the best species of spider to keep in Spider World?*

A. My favourite spiders to keep are house spiders or cellar spiders as they are very well adapted to the conditions in Spider World

Q. *Can I keep more than one spider in my Spider World?*

A. No, spiders are solitary creatures. It's best to just keep one at a time, otherwise they'll kill each other.

Q. *What do spiders eat?*

All UK spiders eat insects like house flies. However, they don't really eat the insects; they suck out their juices.

Q. *How often should I feed my spider?*

A. As often as you like. Spiders can go for long spells without food, or alternatively, if they have too much they wrap it up to save for later.

Q. *Do I need to give my spider a drink?*

A. Yes, it's best to always have a source of moisture in your spider world.

Q. *Is keeping spiders cruel?*

A. No, not if you take care of them properly as described in this booklet. Keeping spiders is fun and educational but remember they are dependent on you for their wellbeing. Release them back to the wild when you no longer want to study or observe them.



Garden Spider

Q. *What is the biggest spider native to the United Kingdom?*

A. The Fen Raft spider is one of the country's most endangered species of spider. With an adult leg span of 10cm across they are also the largest native spider to the UK.



House Spider

Q. *Are there any species of spider in the UK that can bite or sting me?*

A. All spiders are venomous which means they possess a poison to inject their prey with. However, most UK spiders are too small to pierce skin or cause any harm and it is very rare for anyone to be bitten by a native species. However, there are stories of people have being bitten by foreign spiders that have found their way to the UK on planes and boats etc. I think it's best not to handle spiders as you are far more likely to harm them, than they harm you.

6. Further information

Additional reading, and handy addresses.

Nick's Spiders

www.nickspiders.com

This is nothing to do with me by the way but it is a great site with loads of photographs of British and European spiders.

The British Arachnological Society

www.wiki.britishspiders.org.uk

This is part of the essential knowledge of any spider fiend (it is also the place to go if you are interested in any other arachnid).

Collins Field Guide to Spiders of Britain and Northern Europe

by Michael Roberts - It's a bit of a technical book and quite difficult to work through but it's pretty much the only one out there that can help you identify spiders that you find with any confidence.



Wolf Spider

Guide to Garden Wildlife

by Richard Lewington - This is by no means just about spiders but it has a few pages with excellent illustrations and info on the most common.

Nick Baker's Bug Book - It's not a book only about spiders but I did write a chapter on the garden species. A book for any youngster who likes the creepy crawlies.

Bug Zoo - This is another book I wrote to help those who want to keep creepy crawlies including a section on Spiders.



House Spider



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About the Author

Nick Baker is a professional naturalist whose career has taken him from being a field ecologist working on birds, butterflies and badgers to top TV broadcaster. Best known for his wildlife programs on BBC, Animal Planet, Discovery and National Geographic, he has had many adventures with many species from gorillas to polar bears, but his real love is that of the wildlife in his own garden, the little things that make the world go around - it was the insects and other invertebrates that started him off as a kid and to this day still hold a very special fascination.

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Nick's TV programmes include:

The Really Wild Show
Nick Baker's Weird Creatures
Nick Baker's Beautiful Freaks

Nick has written over 12 nature study books; titles include:

My First Cockroach
Nick Baker's Bug Book
Nick Baker's British Wildlife
The New Amateur Naturalist
Habitat Explorer Guides
Nick Bakers Bug Zoo



Garden Spider

Dedicated to conservation, Nick is involved with many wildlife charities and trusts:

Vice President - Butterfly Conversation Trust
Vice President - (youth) RSPB
Vice President - The Wildlife Trusts
President - Bug Life

To find out more about Nick and his many achievements visit his website: www.nickbaker.tv