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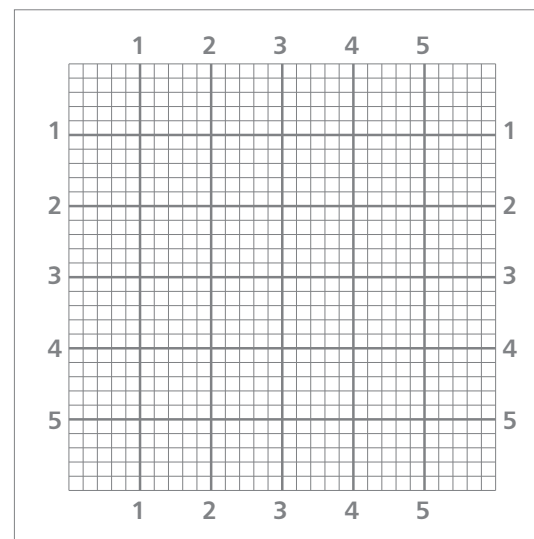
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PlayMonster UK Ltd.
Artisan, Hillbottom Road
High Wycombe. HP12 4HJ
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GRATICULE



INSTRUCTIONS AND 11 PAGE FACT
FILLED BUG GUIDE



Nick Baker's

BUG SAFARI



Explore nature on your doorstep
see how many bugs you can find!

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 due to small parts that could represent a choking hazard. Do not use the magnifying lens to look directly at the sun or other sources of bright light as this could damage your eyes.

If you do put your field lens onto a cord, please take care as this can represent an entanglement / strangulation hazard.

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 the activities contained in this booklet.

CONTENTS:

- Field Lens
- Tweezers
- Brush
- Bug Collecting Tongs
- Magnifying Pot
- Graticule



Designed for
children by
Nature Experts



WELCOME TO BUG SAFARI!

Safari is a Swahili (African) word for travel and the dictionary describes Safari as 'a hunting or scientific expedition'.

Most people believe that to go on a safari you actually need to go to Africa and track big game like lions and rhinos. The thing is, you don't really need to travel that far. In fact, you can go on safari in your back garden.

You probably won't come across too many giraffe or zebra, but there are millions of fantastic creatures waiting to be discovered right outside your back door! This kit is all about having fun finding and identifying them and discovering what makes them tick.

To help you, we provide proper naturalist's tools; we tell you how to use them to observe creatures safely - for them and for you. We also show you some of the most common types of bugs that are found in gardens, parks and the countryside.

The rest is up to you - go and explore and discover the wonderful creatures lurking in the undergrowth!

We really hope you have great fun with this kit, and that it gives you a greater understanding of some of the fascinating creatures that share our world, but please remember to follow the safety instructions carefully.



TOOLS USED BY PROFESSIONAL NATURALISTS

The equipment in this kit was designed by wildlife expert Nick Baker and they are the type of tools used by professional naturalists.

FIELD LENS

A field lens (also known as a loupe) is a good quality magnifier and is probably a naturalist's most indispensable tool.

It allows you to observe bugs close up and see details you could easily miss.

It has its own protective casing to protect it from scratches and an 'eye' so that you can thread it with string and wear it around your neck - that way you always know where to find it.

Top Tip: Keep your Field Lens close to hand. You never know when you'll find something worth investigating.

EQUIPMENT





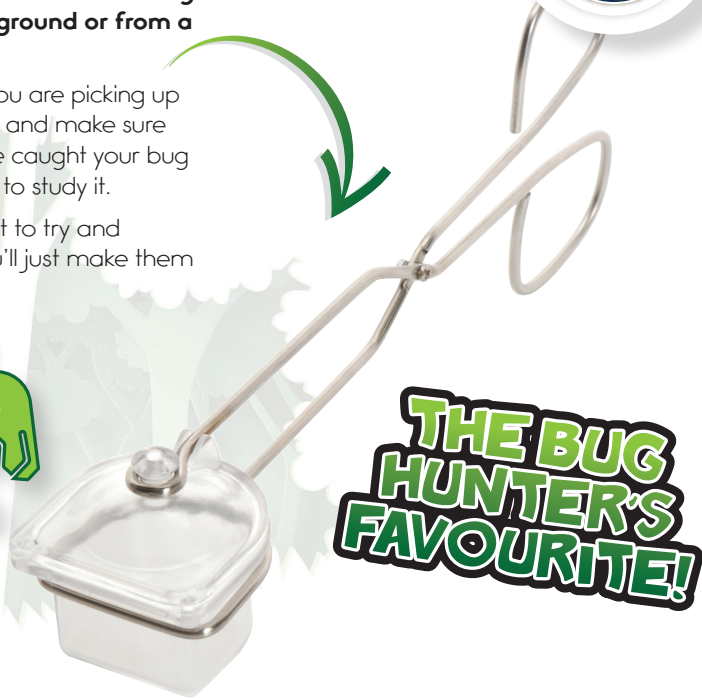
BUG TONGS

Bug tongs are great for catching bugs, especially if you don't want to get too close. Also, some bugs run, hop or fly away if you get too near so the bug tongs are ideal for creeping up and catching them. You can use the bug tongs to gently sweep a bug up off the ground or from a leaf or twig.

You should be careful with the creatures you are picking up (look out for delicate limbs and antennae) and make sure you do not damage them. Once you have caught your bug you can transfer it into the magnifying pot to study it.

One word of advice; it's probably best not to try and collect anything that can sting or bite, you'll just make them angry and it will end in tears!

Top Tip: Creep up as carefully as you can and close the tongs gently so you don't hurt your bugs.



**THE BUG
HUNTER'S
FAVOURITE!**

MAGNIFYING POT

Magnifying pots are the best way to observe newly caught creatures.

When you have caught one, place it in the pot making sure all the legs and wings are in before putting the lid on. Once inside you can study your bug through the built-in magnifier.

You will see that the pot is not perfectly round at the bottom - this is no accident; it is because bugs will keep on walking until they find a corner or crevice in which to rest. The two 'corners' in the pot will be where the bugs will stay still so you can study them.

Don't ever leave animals in the pot for longer than you need to, and never leave them in direct sunlight. The magnifying pot is not designed as a home for bugs but for observation only.



TWEEZERS

Tweezers are also a very useful tool, but be very careful with them, as they can damage small creatures. It's best to use them on larger bugs. Don't ever pick bugs up by their antennae, wings, or legs. Find a part of the body that is hard, like a beetle's shell, or the lower body (thorax) of other insects.



Top Tip: It's best to study your bugs for a few minutes and then return them from where you found them. If they were found on a plant then try and return them to the same plant. This way they should come to no harm for the few minutes you observe them.

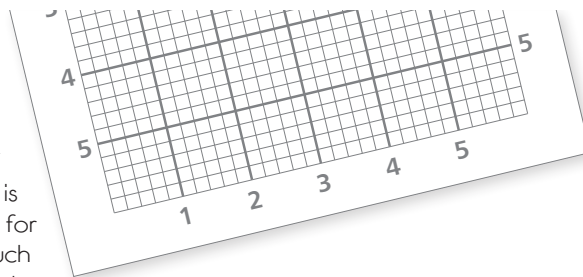


PAINT BRUSH

It might seem a strange piece of equipment to put in this kit, but it is a very useful piece of equipment for a naturalist. It's never good to touch a bug because human hands and fingers can harm them. By using a soft paint brush you can gently sweep your bug into the magnifying pot without damaging it.



Top Tip: Sweep small bugs into your magnifying pot with the paint brush.



GRATICULE

The graticule is the printed grid found on the rear cover of this booklet. It has small squares that have measurements on them and is included to allow you to measure the creatures that you are studying. It also helps to get the correct proportions if you are drawing your bug. To use the graticule, simply place it underneath the magnifying pot containing the bug and start measuring!

TIME TO EXPLORE!

Now that you have some idea of how to use the components in your kit it is time to go on safari in a garden, park, field or woodland.

There are always interesting bugs to find no matter what time of year you look. Even inside your house you can find all manner of beasties worth investigating including spiders, ants and beetles!

Designed for
children by
Nature Experts



TICK THE BOX NEXT TO EACH
BUG YOU FIND!



BEETLES

Where do I look?

Beetles can be found in rotten wood piles and under leaf litter.

When are they active?

All year round mainly in the warmer months.

What do they eat?

Depends on the type of beetle; some are carnivores and eat other bugs, some are vegetarians and eat roots and rotten wood etc.

Stag Beetle (RARE)

FOUND IT!



**DID YOU
KNOW?**

- Beetles are Britain's most common insect with over 3,700 different species (types).
- The Stag Beetle is Britain's largest insect.
- The world's largest beetles live in South America and can be over 17cm long!



EARWIG

Where do I look?

In dark damp crevices, under bark, stones etc.

When are they active?

All year round, most active in summer months at night.

What do they eat?

Decaying vegetable matter and smaller bugs.



**DID YOU
KNOW?**

- The earwigs pincers can give a small nip but are generally harmless.
- The earwig gets its name because it was once believed that they crawled into people's ears at night when they slept.

This is not true!



LADYBIRDS

Where do I look?

Look on nettles, thistles or any plant where aphids (greenfly/blackfly) congregate.

When are they active?

Commonly seen in summer months but can be found in winter sheltering in dry crevices.

What do they eat?

Aphids (commonly known as greenfly and blackfly).



DID YOU KNOW?

- Ladybirds are a type of beetle.
- There are about 40 different species in the British Isles. The most common types found have either 2 spots or 7 spots.
- Ladybirds taste nasty, this protects them from being eaten by birds.
- Ladybirds are a gardener's friend because they eat bugs that damage plants.

7-Spot Ladybird



FOUND IT!



2-Spot Ladybird



FOUND IT!



Soldier Beetle



FOUND IT!



Earwig



FOUND IT!



ANTS

● Where do I look?

Under stones and slabs.
Some species are found
in woodland.

● When are they active?

Most of the year except when very cold.

● What do they eat?

This depends on the species; most ants eat
small bugs, seeds and anything sweet.
Some ants feed on a sugary substance
given off by aphids.

WARNING!

Some ants can
sting or bite...
It is best to avoid
touching them.



DID YOU KNOW?

- Ants live in colonies and are known as communal insects.
- The total weight of all the ants in the world adds up to more than all the humans in the world.
- Ants have the largest brains of all insects.

CRICKETS AND GRASSHOPPERS

● Where do I look?

Grasshoppers are found in grassland and meadows. Crickets prefer thicker vegetation such as shrubs and bushes.

● When are they active?

During the summer months.

● What do they eat?

Grasshoppers feed on grass.
Crickets eat grass and are also carnivorous - they will eat smaller bugs.



DID YOU KNOW?

- Grasshoppers can jump over 40 times their own body length. That's equivalent to a human jumping 80 metres.
- Grasshoppers and crickets 'chirp' by rubbing their back legs or wings together.
- To tell the difference between a grasshopper and a cricket, look at the antennae; a grasshopper has short antennae and a cricket has long antennae.



BUMBLE BEE

- **Where do I look?**
In gardens and fields collecting nectar and pollen from flowers.
- **When are they active?**
From early spring until autumn.
- **What do they eat?**
Nectar from flowers.



DID YOU KNOW?

- There are about 18 species of Bumble Bee in the British Isles.
- Bumble Bees live in small colonies of about 150 members.
- A Bumble Bee does not die if it stings you, unlike a honey bee.

WARNING!

Bumble Bees can sting. Do not touch or try to collect.

Grasshopper



FOUND IT!



Cricket



FOUND IT!



Black Garden Ant



FOUND IT!



Buff-tailed Bumble Bee



FOUND IT!



WASPS

● Where do I look?

Can be seen searching for food to feed the young in its colony. Look where sweet or sugary food is found.

● When are they active?

During the summer months, very active in late summer/early autumn.

● What do they eat?

Wasps are predators and eat smaller insects. They also like sweet food like fruit.

WARNING!

Wasps have a nasty sting. Do not touch or try to collect. Under no circumstances disturb a nest if you come across one.



DID YOU KNOW?

- Wasps are communal insects and their nests have been known to contain up to 10,000 members.
- Male wasps cannot sting. Unfortunately, virtually all the wasps you see are female.

BUTTERFLY

● Where do I look?

In gardens and fields collecting nectar and pollen from flowers.

● When are they active?

From early spring until autumn.

● What do they eat?

Nectar from flowers.



DID YOU KNOW?

- There are 55 native species of Butterfly in the British Isles.
- It is said that for every butterfly you see today you would have seen 100,000 a century ago.
- Butterflies fly in daytime, moths mainly at night.



MOTHS

Where do I look?

Anywhere outside late evening or at night in the summer. They are attracted to electric lights.

When are they active?

Most active in the warmer months.

What do they eat?

Nectar from flowers.



DID YOU KNOW?

- There are about 2500 species of moth in Britain.
- Moths hold their wings flat across their back, Butterflies hold their wings straight up.
- Moths and butterflies cannot bite as they have no mouth-parts.

Wasps



FOUND IT!



Peacock Butterfly



FOUND IT!



Cabbage White Butterfly



FOUND IT!



Moth



FOUND IT!



HOVERFLY

- **Where do I look?**
Anywhere where there are flowers.
- **When are they active?**
All year but are dormant in colder months.
- **What do they eat?**
Adults eat pollen and nectar from flowers,
larvae eat aphids.



DID YOU KNOW?

- Hoverflies are a gardener's friend; their young eat insects that damage plants.
- They look like wasps to protect them from predators but they can not sting.

CRANE-FLY

- **Where do I look?**
Grassy areas, gardens, parks and fields.
- **When are they active?**
June to October.
- **What do they eat?**
Larvae eat roots and rotting plant material, Adult crane-fly do not eat.



DID YOU KNOW?

- Crane-fly are also known as 'Daddy Long Legs'.
- Adults only live for 2 weeks.
- The young are called 'leatherjackets' and live underground.



MILLIPEDE

Where do I look?

Under stones, logs and flower pots and other damp shady places.

When are they active?

Throughout the year.

What do they eat?

Unlike centipedes, millipedes are vegetarian and eat dead plants, rooting wood etc.



DID YOU KNOW?

- Millipedes have up to 750 legs depending on the species.
- They are harmless and cannot bite.
- They are much slower moving than centipedes.
- They are protected from predators because they give off a nasty tasting chemical.

Millipede



FOUND IT!



Hoverfly



FOUND IT!



Crane-fly



FOUND IT!



CENTIPEDE

Where do I look?

Under stones, logs and flower pots and other damp shady places.

When are they active?

All year although they are easier to find in the summer months.

What do they eat?

Centipedes are fierce predators and feed on bugs like slugs and woodlice.

DID YOU KNOW?

- Centipedes do not have 100 legs as their name suggests. Depending on the species they generally have between 30 and 70 legs.
- They are very fast runners.
- They have sharp poisonous fangs. Watch out! Large centipedes can give you a painful bite. Use the tweezers if you are going to pick these beasts up.



SPIDERS

Where do I look?

Spiders are seen in almost every type of habitat.

When are they active?

They can be active all year round.

What do they eat?

Insects and small bugs.



DID YOU KNOW?

- Fear of spiders is called arachnophobia and is one of the most common fears among humans.
- There is no British species of spider that can cause any harm to humans.
- Weight for weight spider's silk is twice as strong as steel.
- Spiders have 48 'knees' (each leg has 6 joints).
- In the wild it is estimated that there are 5 million spiders per hectare. That is 500 spiders per square metre!



SLUGS AND SNAILS

Where do I look?

In dark moist places under logs, stones and flower pots.

When are they active?

All year except when freezing.

What do they eat?

They feed on leaves and young plants and are seen as a pest by gardeners.



DID YOU KNOW?

- There are about 20 species of slug in the British Isles and about 80 species of snail.
- Slugs and snails are very similar except snails have shells.
- Slugs and snails can eat about twice their body weight in a day.
- They can live up to 6 years.

Snail



FOUND IT!



Slug



FOUND IT!



Centipede



FOUND IT!



House Spider



FOUND IT!



WORMS

Where do I look?

In soil, under the ground and in compost heaps.

When are they active?

All year round.

What do they eat?

Decaying plants found in soil.



DID YOU KNOW?

- Worms are extremely important for the world's ecosystem - their constant burrowing allows air and water to penetrate the soil. They break down decaying vegetation providing an important source of food for plants. Worms are also a vital source of food for many creatures including moles, birds, hedgehogs and badgers.

- Under the ground it is estimated that there are approximately 750 worms per square metre!

- In Australia there is a giant species of worm that can grow to over 3 metres in length!

WOODLICE

Where do I look?

In dark damp places, in rotting wood under stones etc.

When are they active?

All year round.

What do they eat?

Decaying plant matter.



Worm



FOUND IT!



Woodlouse



FOUND IT!



DID YOU KNOW?

- There are 46 species found in the British Isles.

- Sea creatures like crabs and lobsters are distant relatives of woodlice.

USEFUL BOOKS AND WEBSITES

The Readers Digest Field Guide to The Butterflies and Moths and Other Insects of Britain - *Readers Digest*.

Comprehensive, easy to read book with beautiful illustrations... highly recommended.

Nick Baker's Bug Book - *by Nick Baker (Collins)*. An excellent book crammed full with fascinating bug facts and activities... highly recommended for naturalists of all ages.

Collins Complete British Insects - *by Michael Chinery (Collins)*. A comprehensive guide to British insects.

British Wildlife - *(Collins)*. Easy-to-use photo-guide to discover the natural world.

Illustrated Keys - *(Field Studies Council - www.field-studies-council.org)*. These easy-to-use illustrated keys are fantastic and lightweight, contain lots of information. There is a huge range of subjects covered.

Bug Life - The Invertebrate Conservation Trust:

A trust committed to the conservation of all invertebrates. They have a really interesting and informative website and lots of conservation projects on the go. www.buglife.org.uk

The Amateur Entomologist's Society

A trust committed to the conservation of all invertebrates.

They have a really interesting and informative website and lots of conservation projects on the go. www.amentsoc.org

British Naturalists' Association

A national association which promotes the study of all branches of natural history. The Association organises study days, field weeks and weekends, lectures and exhibitions. Also has a kids club. www.bna-naturalists.org

The Wildlife Trust

There will be a regional group near you, organising lots of activities for all ages. The Wildlife Trust also produces regular magazines for both grown-ups and younger members, and they have a junior wing called Wildlife Watch. www.wildlifetrusts.org

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