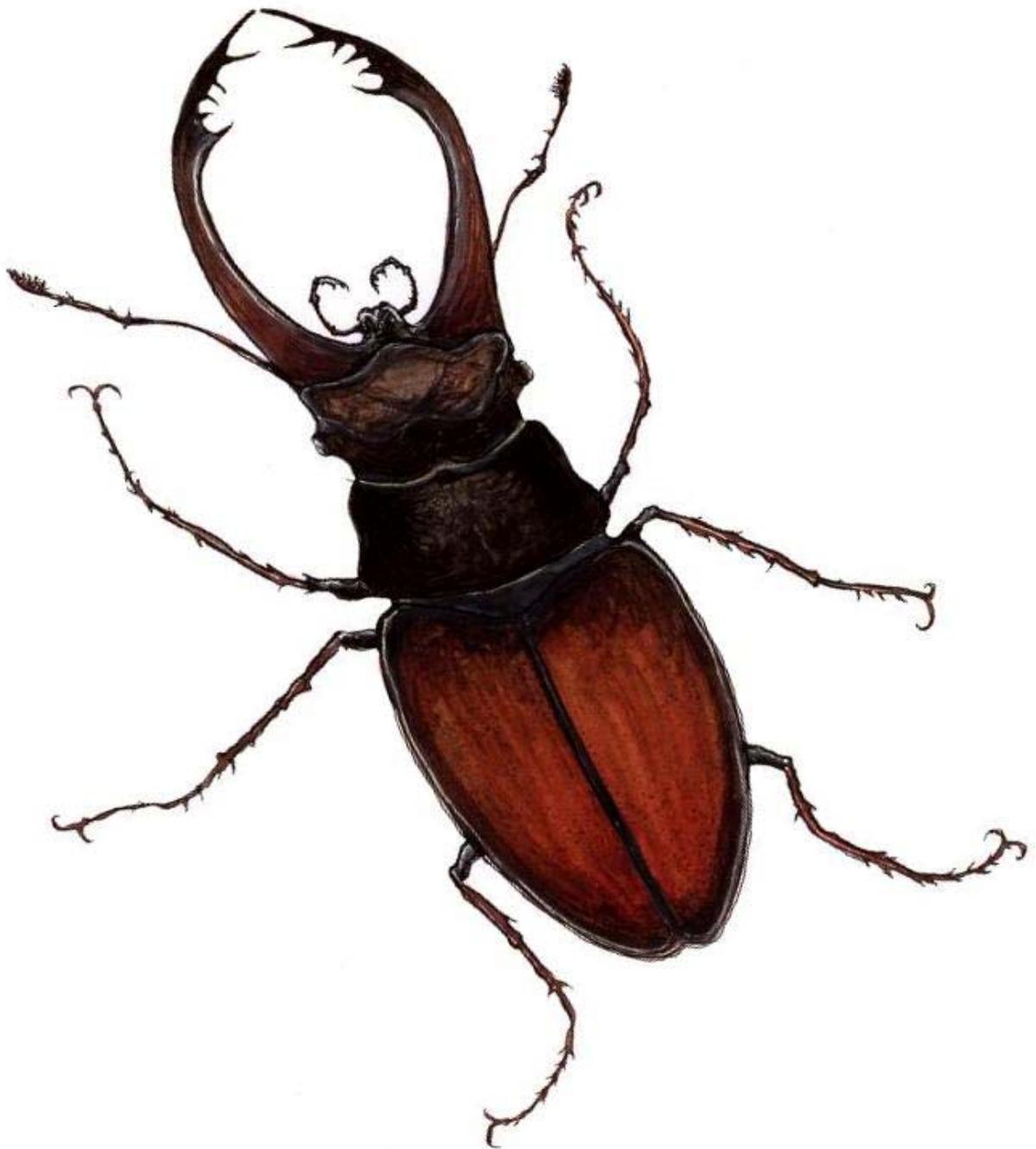


# Stag Beetles Activity Pack



Parks & Countryside Service  
[www.bracknell-forest.gov.uk/parks](http://www.bracknell-forest.gov.uk/parks)

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# Introduction

## Background

The stag beetle is Britain's largest beetle. Once common throughout central and southern England and south Wales, it has undergone a worrying decline in recent years. This decline is thought to be due to land clearance and removal of the dead wood habitats upon which stag beetles depend and persecution from people – two problems which are relatively easy to solve.

As a result, The Bracknell Forest Biodiversity Action Plan or BAP, has chosen the stag beetle as a key species, and is committed to improving local awareness and understanding of this rare and beautiful beetle.

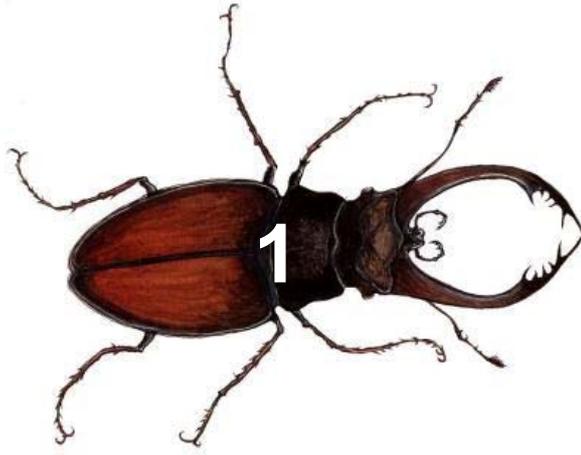
Stag beetles are a reddish-brown in colour this helps them to stay camouflaged. Males have large jaws which look like a stag's antlers, this is where they get their name from. Just like stags, stag beetles also use their "antlers" to fight other males to compete for a mate. Females have smaller jaws.

Insects like stag beetles can be found in lots of different places, and people have different names for them – for example, in different areas of England, a stag beetle might be called a billywitch, cherry-eater, hornbug, thunder-beetle...the list goes on. To help avoid confusion, scientists use the scientific name for all stag beetles *Lucanus cervus*.

## The Stag Beetle Schools Pack

This pack, aimed at Key Stage 2 pupils, is curriculum linked and demonstrates how stag beetles can be used as a useful example when teaching pupils about the environment. The pack includes a series of activities and that can be used as a template – you can make as many copies as you need for your class.

If you have any queries or comments on this information pack please contact the Biodiversity Officer on 01344 354125.



## What do Stag Beetles look like?

Stag beetles are part of a group of animals called insects. All insects have:

- 3 body parts - head, thorax, abdomen
- 6 pairs of legs
- Compound eyes – an eye with lots of lenses
- 2 antennae

Stag beetles spend most of their time crawling on the ground but they do have wings and can fly but they are a bit clumsy!

Stag beetles are the largest beetles in Britain. Males are larger than females, and can grow up to 7cm long.

Adult male stag beetles have large jaws which look like a stag's antlers. Males use their antlers to fight other males – just like deer stags! Although they look a bit fierce with their big antler-like jaws, male stag beetles actually can't bite very hard.

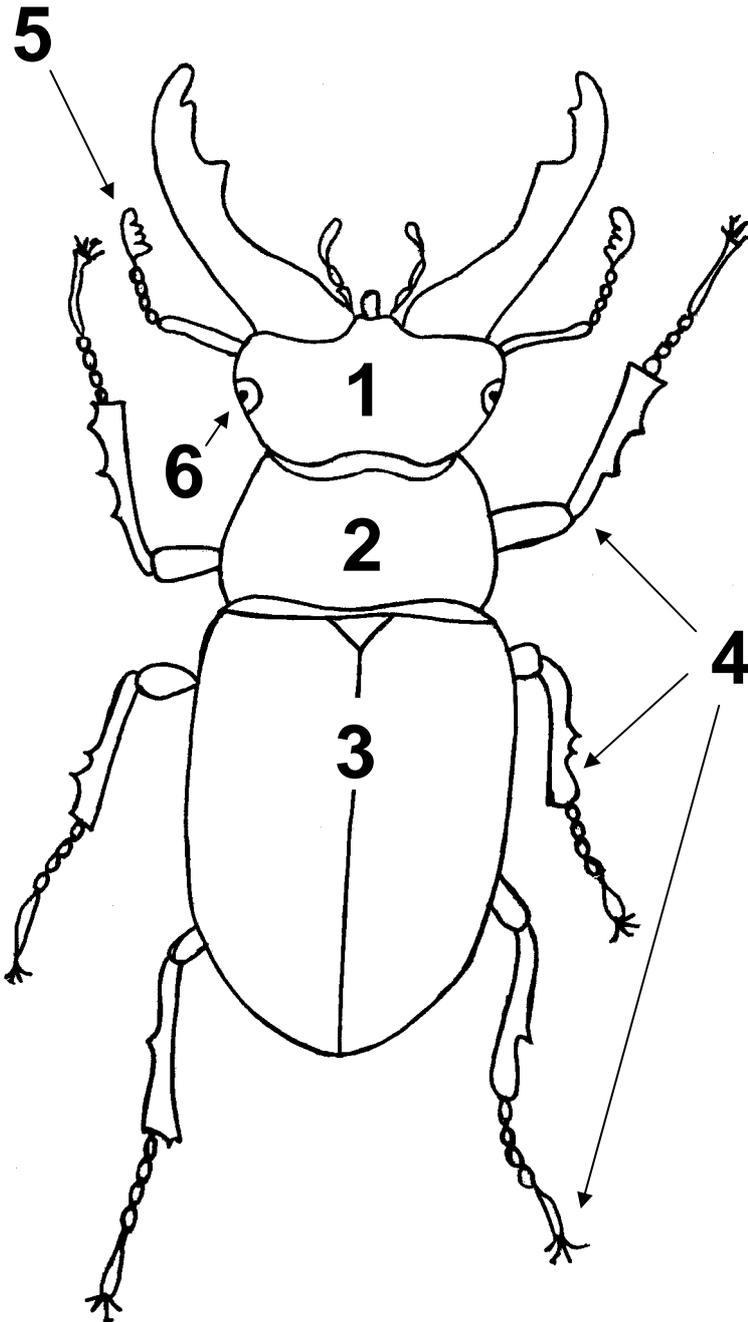
Female stag beetles have much smaller jaws, and can nip quite hard if they are frightened.

### **REMEMBER**

**Stag beetles don't attack people.** They will never hurt you unless you pick them up and frighten them!

# Activity 1: Body Parts Game

Throw the dice to collect the parts of the stag beetle's body:



Take turns rolling the dice.

When you roll the numbers below, colour in the matching body part.

The first person to collect all the body parts and colour them in wins the game.

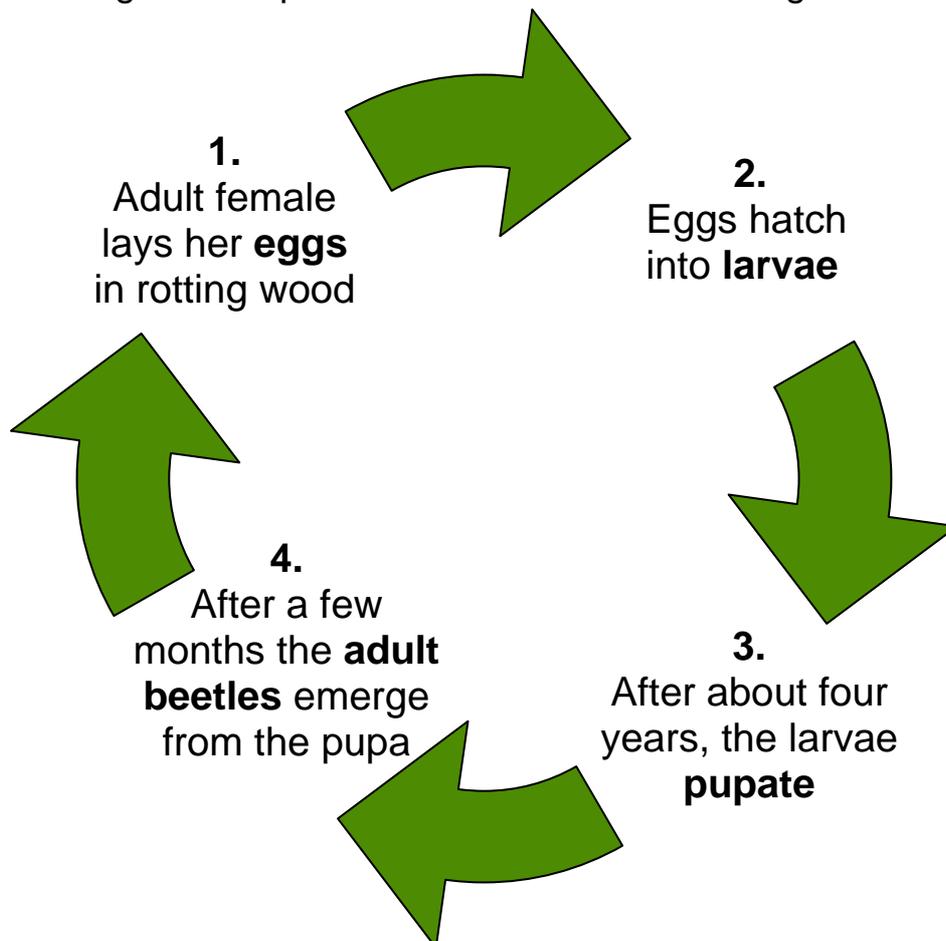
1. Head & antlers
2. Thorax
3. Abdomen
4. 1 pair of legs  
You need 3 pairs
5. 1 Antenna  
You need 2
6. 1 Eye  
You need 2



## The Stag Beetle Life-Cycle

Some animals like humans, dogs and cats do not change much as they grow, but others like stag beetles change a lot as they go through different stages of their life.

Lifecycle diagrams help us to understand these changes.



1. Female stag beetles lay their **eggs** in rotting wood.
2. Eggs hatch into **larvae**, large white grubs with stubby legs and a brown head. The larvae spend about three years eating and growing. It is important for grubs to grow big and fat, because the energy reserves they build up at this stage must last them for the rest of their lives. Once they pupate they do not eat again.
3. After about four years, the larvae **pupate**. During pupation, the larvae build a hard shell around themselves for protection. Inside this pupa, a strange thing happens, the stag beetle changes its body shape completely! This change takes a few months.
4. After a few months in May-June, the **adult beetle** breaks out of the hard pupa. The adults breed, and the females lay their eggs, go back to stage 1.

One of the best ways to help stag beetles is to make a deadwood habitat for them.

## Activity 2: Stag Beetle Game of Life

This activity illustrates the life cycle of the stag beetle and can be played indoors as a board game or outdoors as a trail.

For the outdoor trail, make one copy of each of the cards, locate them in numerical order in a woodland area or similar. You will also need to make cut-outs of the larvae, pupae and adult beetles to put inside pots 2, 6 and 8.

Starting at the first card with all their eggs in the “alive” pot, the children must make their way around the trail following the instructions. Every time they throw the coin, heads means move one and tails means move two (i.e. skip a card). Each time they lose an egg it has to be moved into the dead pot. At stage 2, 6 and 8, you need to provide a bag of larvae, pupae and beetles – either cardboard cut outs of similar objects and a bag for discarding eggs, larvae or pupae.

**Each child will need:**

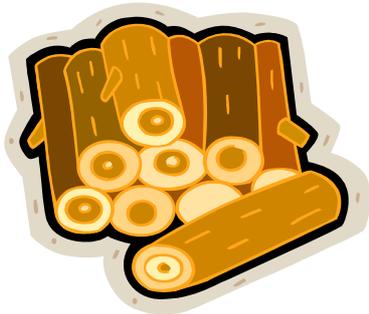
- A set of “eggs” balls of plasticine, marbles or cut-outs
- A 2p coin
- A pot with two chambers e.g. a yoghurt corner pot

For the indoor game, copy and cut out several sets of cards. Lay each set out in a circle on the floor. Pairs or small groups then play the game following the rules as above.

At the end of the game, discuss the hazards that stag beetles face and the impacts that humans have on them.

**Card 1**

In a garden log pile, there are lots of stag beetle eggs, ready to hatch.



**MOVE ON ONE**

**Card 2**

You hatch out of your egg as a larva. You are a white grub with stubby legs and a brown head.

**SWAP YOUR EGGS FOR LARVAE**

**THROW THE COIN**

**Card 4**

You eat lots of dead wood and grow nice and big. You will spend up to 6 years as a larva, munching on rotting dead wood

**THROW THE COIN**

**Card 3**

Some birds eat stag beetle larvae – watch out!



**LOSE A LARVA**  
**MOVE ON ONE**

## Card 6

After about 6 years, you stop eating and build a large cocoon around you. Inside the cocoon you *metamorphosise*, which means you change body shape completely

**SWAP YOUR REMAINING LARVAE FOR PUPAE**

**THROW THE COIN**

## Card 5

The owners of the garden decide to tidy up. They remove most of the dead wood.

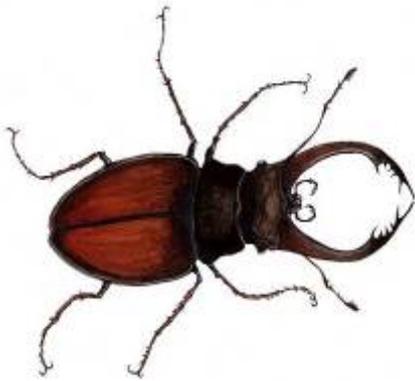


**LOSE THREE LARVAE**

**MOVE ON ONE**

## Card 8

After a few months your pupa starts to break away and out crawls an adult stag beetle!



**SWAP YOUR REMAINING PUPAE FOR ADULT BEETLES**

**THROW THE COIN**

## Card 7

Watch out! Some pupae are dug up and eaten by predators.



**LOSE A PUPA**

**MOVE ON ONE**

## Card 10

A child picks you up and puts you in a jar. Luckily they let you go carefully once they have had a look at you.



**THROW THE COIN**

## Card 9

Watch out! Magpies make a tasty meal out of stag beetles!



**LOSE A BEETLE**

**THROW THE COIN**

## Card 12

You fly through a garden where some people are having a barbeque.

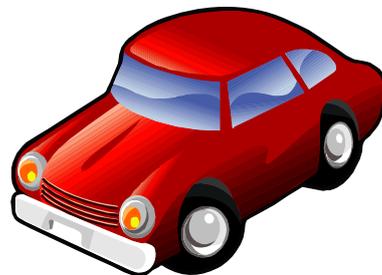


The people are frightened when they see your big antlers, but you don't mean any harm!

**THROW THE COIN**

## Card 11

Tarmac is nice and warm. You fly towards it, but watch out - beetles are crashing into car windscreens and being run over!



**LOSE A BEETLE**

**THROW THE COIN**

## Card 13

Frightened humans stamp on stag beetles and kill them.

**LOSE A BEETLE**

**MOVE ON ONE**

## Card 15

You find a log pile but it is made out of treated wood – no good for stag beetles!

**THROW THE COIN**

## Card 16

At last! You find a nice wood pile made of untreated wood in a quiet corner of a garden – this is a perfect place for you to lay your eggs in.

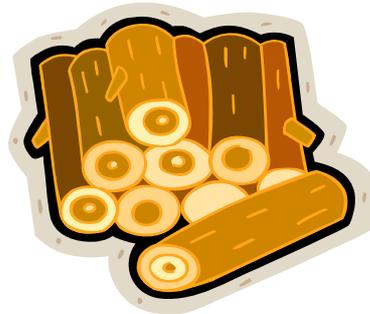
Soon the cycle will begin again!

**HOW MANY BEETLES DO YOU HAVE LEFT?**

**WHAT ARE THE MAIN THREATS TO BEETLES?**

## Card 14

You need to find somewhere to lay your eggs, but it isn't easy - people don't often leave dead wood lying around.



**THROW THE COIN**

## Card 17

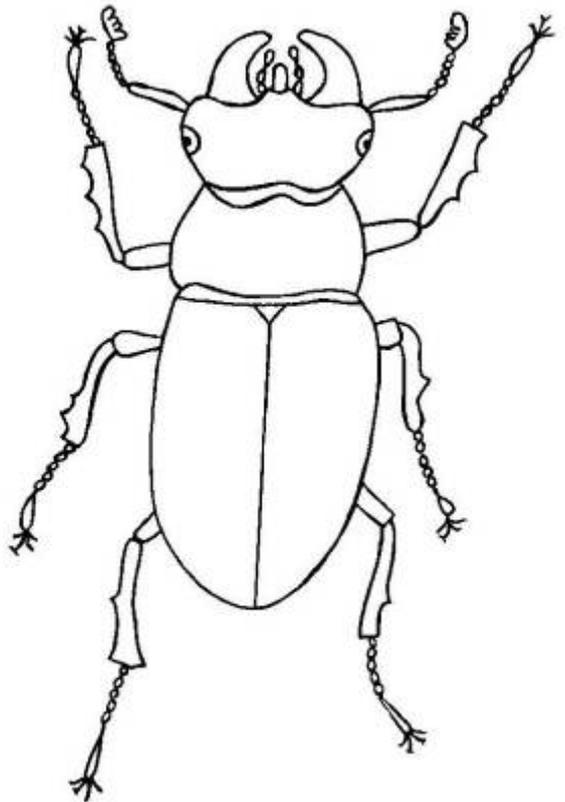
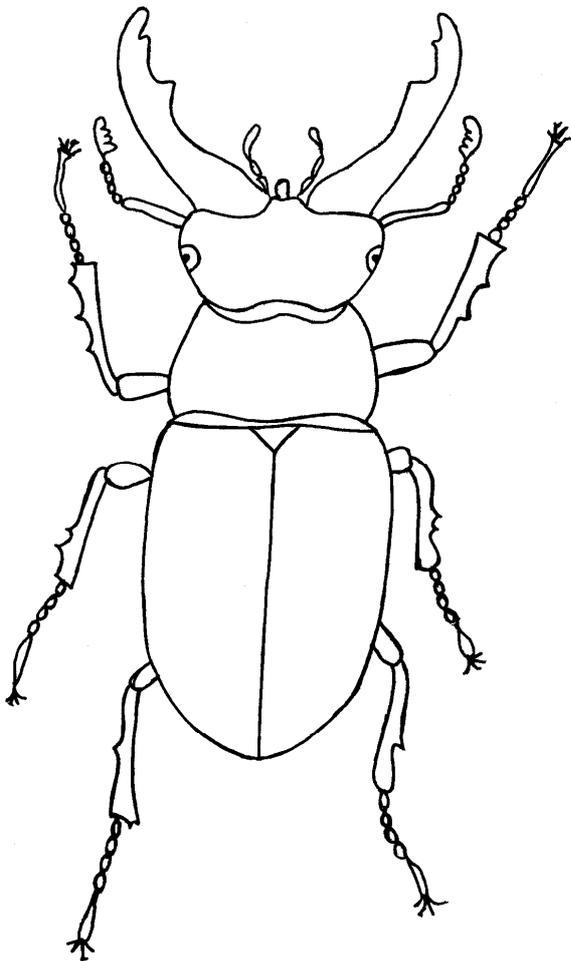
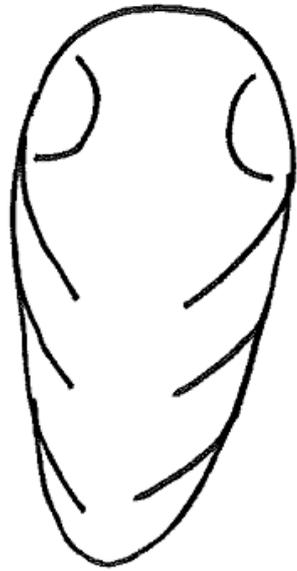
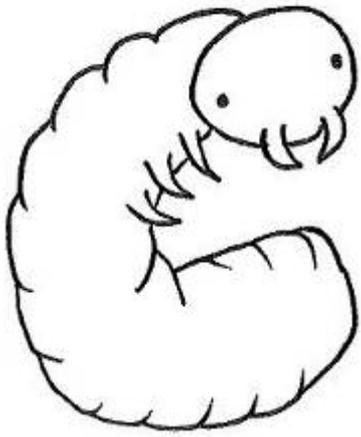
At last! Someone has buried a bucket full of woodchips in their garden – this is a perfect place to lay your eggs.

Soon the cycle will begin again!

**HOW MANY BEETLES DO YOU HAVE LEFT?**

**WHAT ARE THE MAIN THREATS TO BEETLES?**

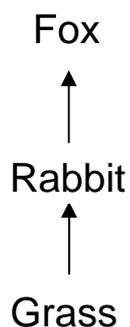
# Cut-outs





## Food Chains

All living things on Earth need food to give them the energy they need to stay alive. A **food chain** is a diagram which shows how each species gets its food.



← This is a food chain diagram.

At the top is a predator, the fox, underneath is the prey, the rabbit, and at the bottom is the food that the prey eats, the grass.

Food is very important because it gives us the energy we need to live. Most food chains start with a plant, because plants can make their own food using the sun's energy plus water and minerals from the soil – they do this using a chemical reaction called **photosynthesis**.

Most animals can't make their own food, so we have to eat other things:

- **Herbivores** are animals that only eat plants
- **Carnivores** are animals that only eat meat
- **Omnivores** are animals that eat meat and plants

Stag beetles feed on dead wood and are herbivores. There are other animals called predators, which eat stag beetles.

# Activity 3: Make a Food Chain Mobile!

## You will need:

- Scissors
- A hole punch
- Sellotape
- Treasury tags x5
- A piece of string about 30cm long

**Step 1:** Carefully cut out the pictures and labels. Use the hole-punch to make a hole at the top and bottom. The circles show you where the holes should go.

**Step 2:** Match each picture with the right label. Use a treasury tag to join the pairs together. The label should go underneath the picture.

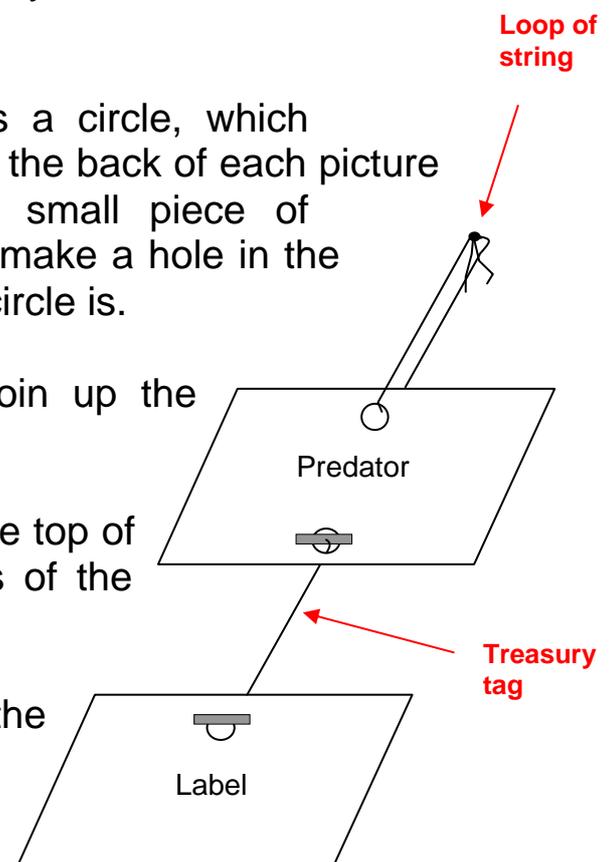
**Step 3:** Lay the pairs out on the table in front of you. The predator should go at the top, the prey underneath and the prey's food should go at the bottom.

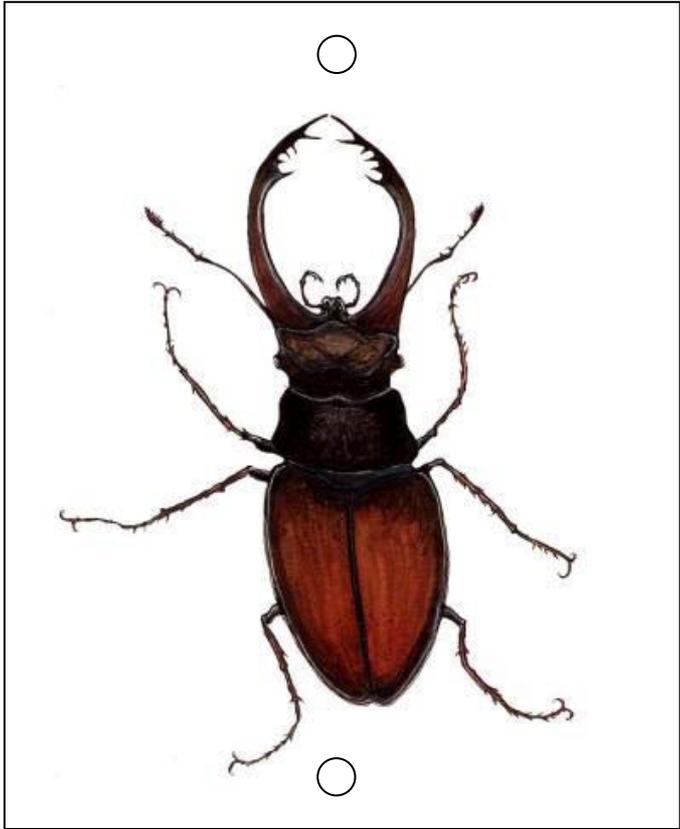
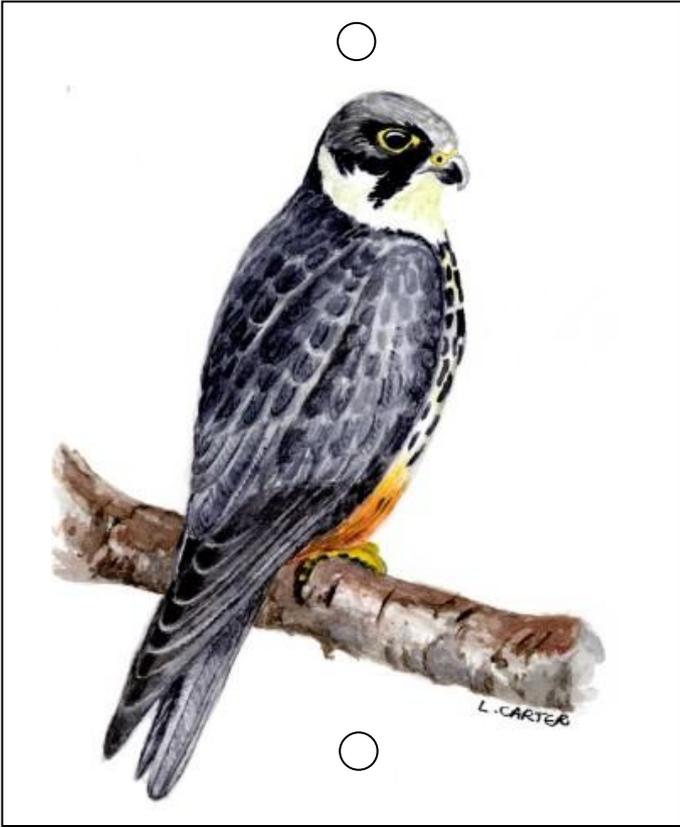
**Step 4:** Each picture and label has a circle, which shows you where the holes will go. On the back of each picture and label behind the circle stick a small piece of sellotape. Now use the hole punch to make a hole in the top and bottom of each one where the circle is.

**Step 5:** Use the treasury tags to join up the different parts of the food chain.

**Step 6:** Thread some string through the top of predator picture, and tie the two ends of the string together to make a loop:

**Step 7:** Hang your food chain up by the string.







## **I am a Hobby**

I live in heathland, woodland  
and farmland

I eat insects and small birds



## **I am a Stag Beetle**

I live in woodlands, parks and  
gardens

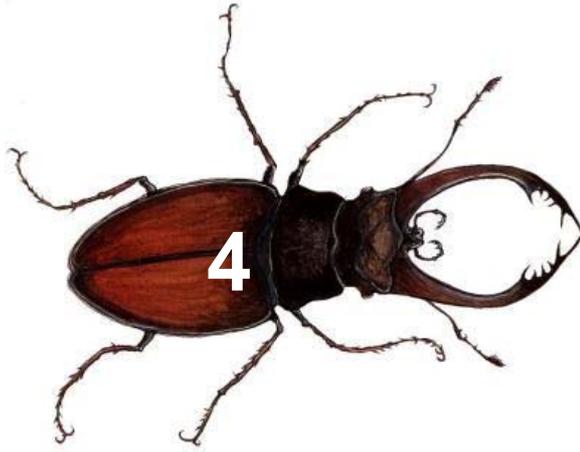
I eat rotting dead wood



## **Log Pile**

Made from old pieces of wood

Makes a good home for lots of  
creatures



## Habitats

A habitat is a place where animals and plants live. Different types of habitat can support different species.

When you think about habitats, you might think of rainforests, deserts and oceans, but did you know that your garden can be an important habitat too?

Stag beetles spend most of their life as a larva underground, feeding on dead, rotting wood. This means that dead wood is a very important habitat for stag beetles, but it isn't quite that simple! Stag beetles need:

- Dead untreated wood with no chemicals in it
- Wood which is touching the ground or partially buried is even better!
- A nice quiet spot which is not too hot or too cold

So, if you have a log pile or rotting tree stump in your garden, it is possible that stag beetle larvae might be able to live there!

## Activity 4: Habitat Puzzle

**Step 1:** Carefully cut out the habitat labels below and stick these in the right part of the garden picture on the next page.

**Hedgerow**

**Bat box**

**Pond**

**Swift Box**

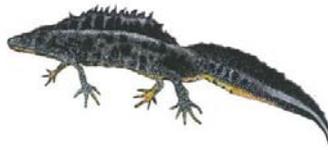
**Log Pile**

**Wildflower Meadow**

**Step 2:** Carefully cut out the species pictures below, and stick them on the right habitat in the picture on the next page. These are all Bracknell Forest Biodiversity Action Plan species.



**Stag Beetle**



**Great Crested Newt**



**Bullfinch**



**Noctule Bat**



**Swift**



**Cowslip**

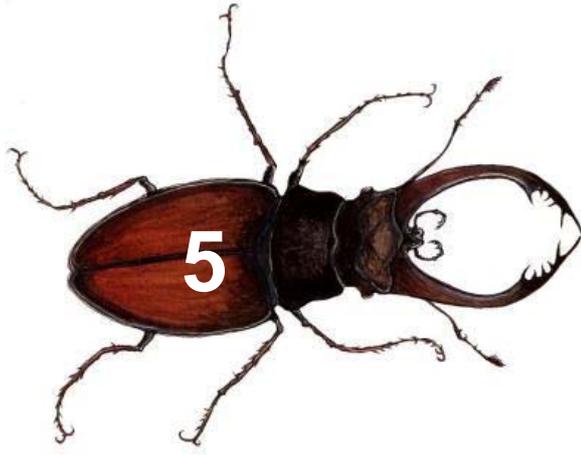


## Activity 5: Build a Loggery / Bury a Bucket

In this activity, your teacher will help you to build a loggery or bury a woodchip bucket. Loggeries can be made by part burying vertical logs of untreated wood. A woodchip bucket is a plastic bucket full of large holes filled with woodchip so that you can pull it out of the ground later to check for beetle larvae.

As you work on your loggery, try to answer these questions:

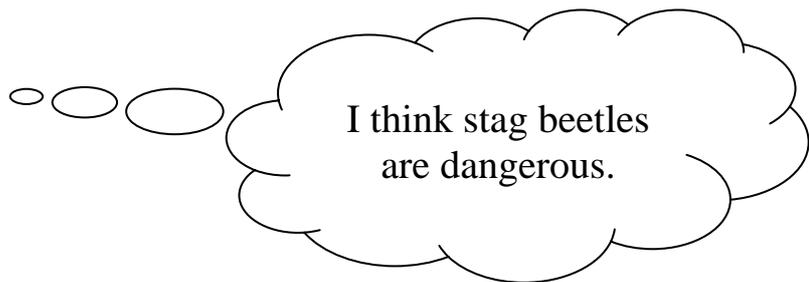
1. Why is deadwood important? What do you think would happen if the female stag beetle couldn't find any deadwood?
2. Do you think deadwood habitats are more or less common than they used to be? Does this matter?
3. What is your garden like at home? Do you or any of your friends have any deadwood habitats for stag beetles?
4. Why can't you use treated wood?
5. Where should you place the bucket / log pile?
6. What other creatures might be attracted to a loggery?



## Stag Beetles under Threat

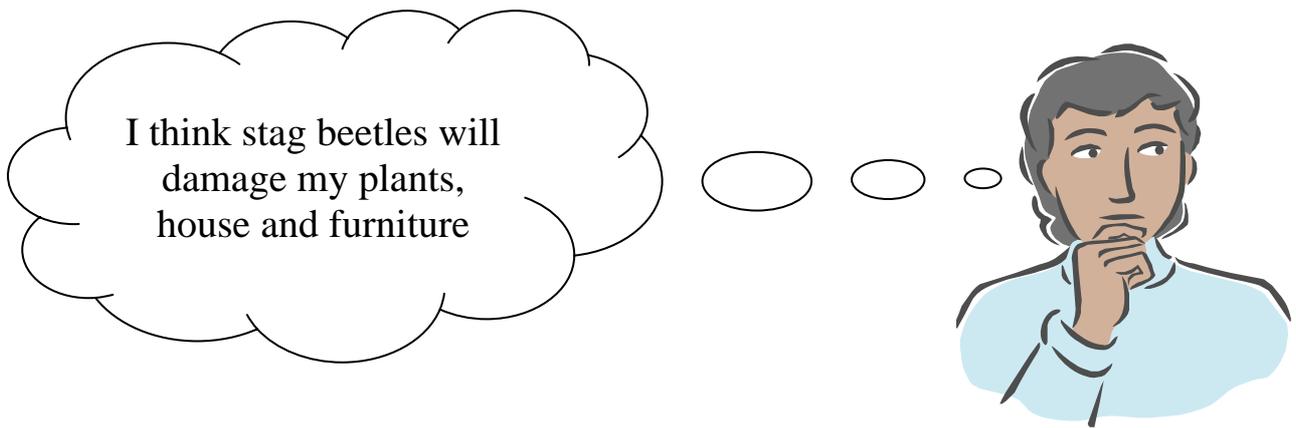
Stag beetles used to be common across southern and central England and South Wales, but they are now becoming rare.

- **Why are they becoming rare?**
  1. People are removing the deadwood habitat and woodlands that stag beetle larvae need to survive.
  2. Some people kill stag beetles deliberately.
- **Why do people deliberately kill stag beetles?**



**Is this true?** No! Stag beetles are harmless although if you pick one up and frighten it, you might get a sharp nip, imagine what you would do if a giant picked you up!

Stag beetles never attack people.



**Is this true?** No! Stag beetles do not attack living wood, or timber used for furniture, buildings or fences.

- **How can you help save stag beetles?**

- Encourage people to leave old tree stumps and dead wood
- Encourage people to build loggeries or bury a bucket of woodchips
- Teach people that stag beetles are harmless
- Teach people that stag beetles do not damage living wood, or timber used in buildings and furniture.

## Activity 6: Design a Poster or Leaflet

Design a poster to teach people about stag beetles.