



# Stodmarsh National Nature Reserve

Environmental Education Pack worksheets

[www.naturalengland.org.uk](http://www.naturalengland.org.uk)



# Introduction

This booklet of worksheets forms part of a National Curriculum linked education pack aimed at key stage 2 pupils. Some of the activities are adaptable for younger or older age groups, if required.

The worksheets support a combination of activities that are either suitable for Stodmarsh National Nature Reserve or the school classroom .

Please note it is not necessary to print one copy of this booklet per child, as a number of the worksheets are designed for shared usage. Worksheets can be printed as individual pages by selecting the page number under the software printing options.

It is expected that teachers/group leaders will make full use of the booklet, printing as many copies as are required to complete the activities described. However, copyright of the text and images within the booklet and education pack remain the property of Natural England, and should not be uploaded to the internet or reproduced for purposes other than those for which it is intended, without prior permission.



# Landscape and 'senses'

Mapping the landscape and senses

Draw your map here

**Make sure you include the following on your map:**

- title
- key
- scale
- north line
- direction to your house (blue arrow)
- direction to your school (red arrow)
- natural features
- man-made features
- sounds and their volumes (using a scale whereby 0 is the quietest and 5 the loudest)
- textures
- smells

# Habitat and adaptation: 2a

## Habitat exploration

### List of natural landscape features from Activity 1

- Reedbed
- River or flowing water
- Open water/ lake
- Grazing marsh
- wet woodland
- Scrub or hedgerows or individual trees

### Stage 1

Type of habitat (e.g. reedbed)

.....

Circle the words which best describe the habitat

- a) dark          shaded          light
- b) wet          damp          dry
- c) open          semi-sheltered          fully sheltered

### Stage 2

Within a square, two by two metres, make a visual assessment of the approximate percentage of each main component (do not step into the reedbed).

20% bare ground	30% litter	50% shrubs
<b>Suggested components</b>		
Bare ground	Marshy ground	
Leaf litter	Dead wood	
Short grass	Tall grass	Flowering plants
Reed	Shrubs	
Young trees	Large trees	
Open water	Flowing water	

Write the percentage for the components found in your square in the spaces in the chart above. There are also empty boxes in the chart for you to add any extra components you might find.

### Stage 3

Throw the quadrant down inside the square. Then count the number of different plants found within the quadrant and the frequency of them.

Plant name or description	Frequency
1	
2	
3	
4	

### Stage 4

Describe the features of the most common species:

Height.....Colour.....

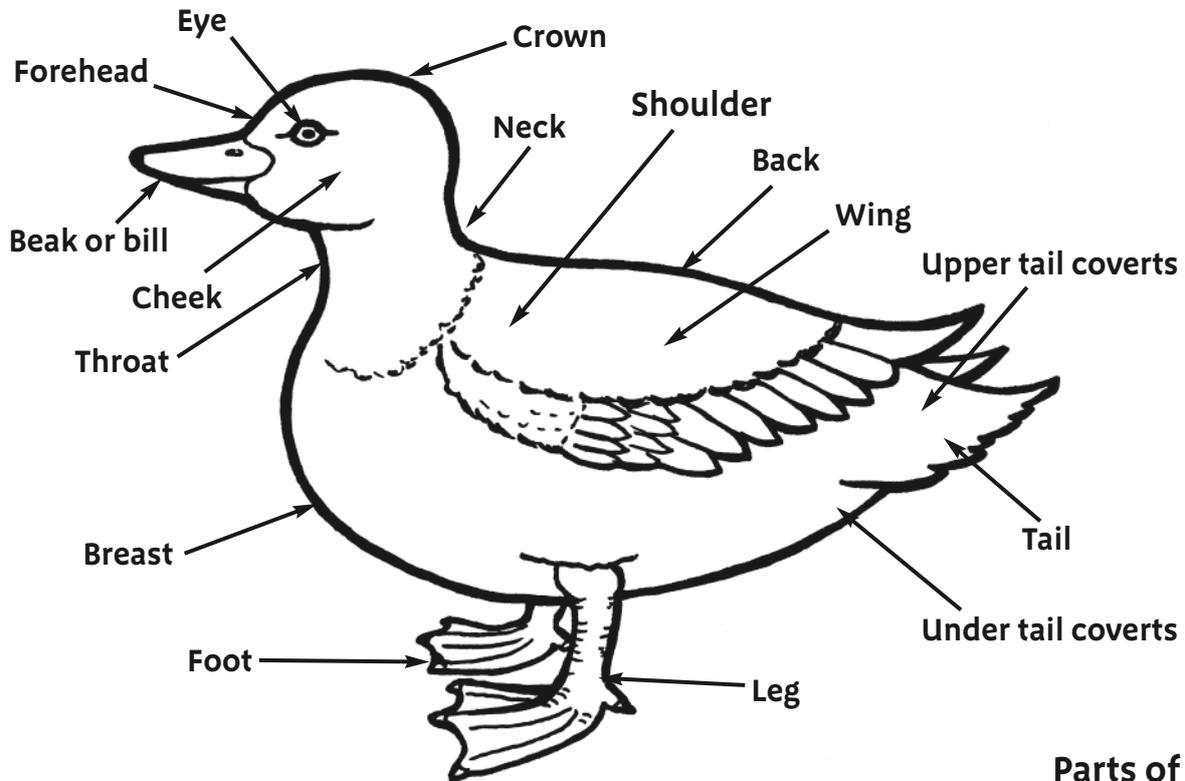
Leaf shape.....

Draw some conclusions from your findings by selecting the correct option in the following statements:

- Reeds like to grow in wet / dry conditions.
- The grazing marsh grassland at Stodmarsh NNR is exposed to wind and the cattle that graze it, therefore the type of grass plants that grow in the habitat need to be hardy (tough)/delicate.
- In the wet woodland at Stodmarsh NNR, trees grow tall because they compete for sunlight / shade. The leaves on the trees are green, as this is a colour that absorbs maximum sunlight/shade.

# Habitat and adaptation: 2b

## Parts of a bird



## Adaptation features

### Wildfowl - swans, ducks and geese

- Short, thick legs with webbed feet for swimming and walking on mud.
- Males often have colourful feathers. When they are unable to fly during the moulting season, the new feathers have brownish tips to make them less visible to predators.
- Large bodies with a layer of fat for protection against heat loss on cold water.
- Feathers that are made waterproof by an oil released from the bird's gland.
- The beak or bill of wildfowl differs depending upon what they eat.
  - Swan bills allow them to sieve and bite water plants and animals.
  - Shoveler have wide, flat bills for sieving animals and algae out of the water.
  - Grazers, such as geese, have short and strong bills for biting off grass.

### Waders - feed on insects and other invertebrates in the mud.

- Camouflage colouring to protect against predators.
- Long thin legs to wade in the water's edge.
- Beaks are different shapes and lengths so they are not all competing for the same food.
  - Some have long sensitive beaks to search for food in the mud.
  - Some have shorter bills, but good eyesight to see food clues.

# Habitat and adaptation: 2b

Table for identifying birds

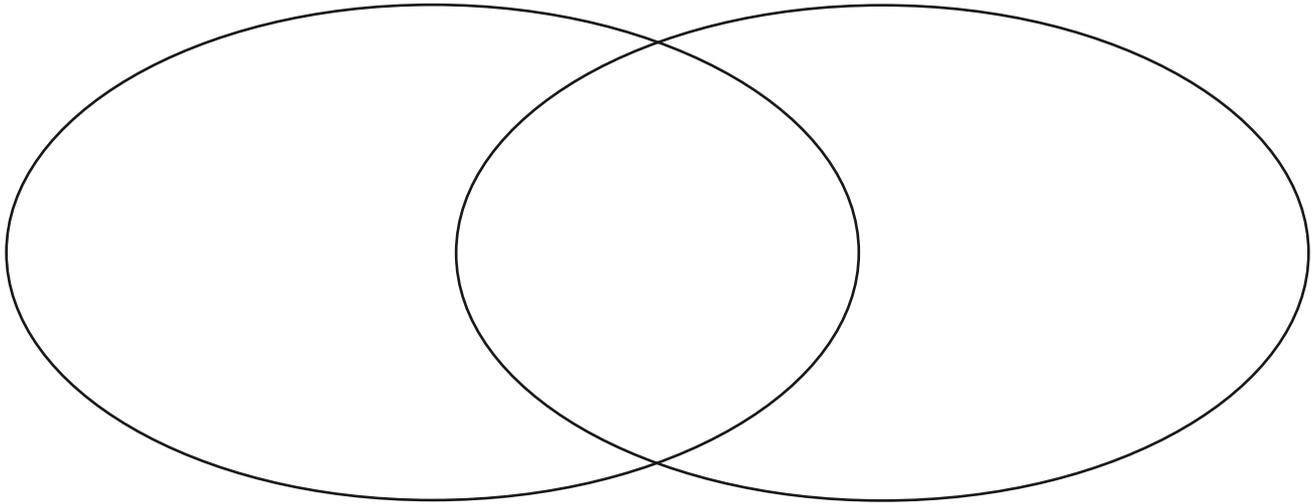
FEATURE	DETAILS
Date and time	
Place	
Size (ie. small, medium or large)	
Body shape (ie. round, long)	
Shape of tail (ie. rounded, tufted, forked, square, long, pointed, wide)	
Shape of wings (ie. rounded, tufted, forked, square, long, pointed, wide)	
Length, shape and colour of bill/beak (ie. long, thin, curved)	
Patterns and colours (ie. individual markings such as eye and throat markings)	
Behaviour (ie. feeds on the ground or by diving or by dabbling. The way it flies or walks. Flight pattern is slowing and bobbing up and down)	
If audible, describe song.	

# Habitat and adaptation: 2b

Venn diagrams

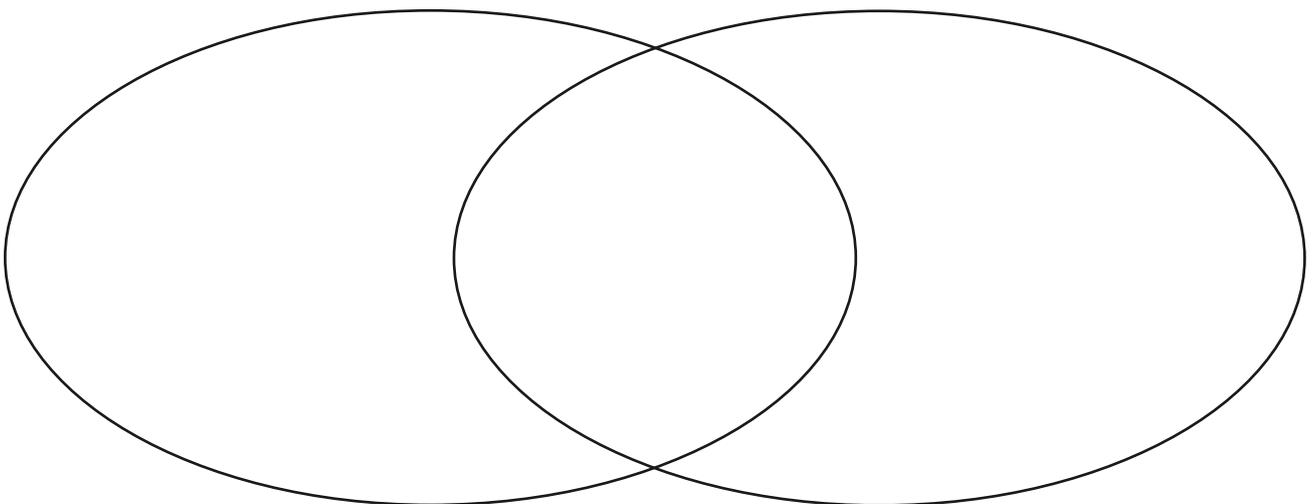
Birds found on Stodmarsh NNR

Animals that live or move in the reeds/  
reedbeds



Mammals found on Stodmarsh NNR

Animals that feed or like to rest in  
deep open water



(Information for completing the diagrams is on worksheet 6).

# Habitat and adaptation: 2b

Information for Venn diagrams and Ideal Habitat Homes article

Table showing animals found on Stodmarsh NNR

ANIMAL	FAMILY GROUP	HOME
Hen harrier	Bird	Hunt over open areas with low vegetation; roost in reedbeds. Very rare and protected bird.
Bittern	Bird	Feel safe camouflaged amongst the reedbeds and feeding along narrow ditches. Very rare and protected bird.
Cetti's warbler	Bird	Rarely seen, they nest and feed in bramble and bushes along reedbed edge.
Redshank	Bird	Like to breed on the fields and feed in muddy pools.
Mallard	Bird	Feel at home on open areas of water and the edges of reedbeds.
Reed warbler	Bird	Like to nest in the reedbed where they find their food.
Ramshorn snail	Molluscs	Live in the water edges and eat algae.
Reed dagger moth larva	Insect	Live and feed on reeds.
Daubenton's bat (known as the water bat)	Mammal	Like to sleep in holes in trees close to open water where it can hunt for food.
Water vole	Mammal	Like river banks with waterside plants for food and steep earth banks for making burrows.
Grass snake	Reptile	Prefer damp habitats such as river banks and ditches but also like hedgerows, woodland and meadows. Carry out most hunting for food, such as fish, underwater.
Common frog	Amphibian	Like to hide in long grass and woodland close to shallow water sources and eat insects, slugs and worms.

## Ideal Habitat Homes article

A magazine called Ideal Habitat Homes is keen to include an article on the homes of Stodmarsh NNR animals. Imagine you are one of the animals found on Stodmarsh NNR and answer the questions below.

- How did you make your home and did you use local materials? If so what materials did you use?
- Is your home nice and warm, or cool?
- Did you think much about shelter when building your home?
- Do you have enough water?
- Do you feel safe in your home? If so, why?
- What food does the habitat where your home is located offer you?
- Humans and natural forces (such as strong winds or storms) can put habitats at risk. What do you think the threats are to your home?
- What do you like best about your home?

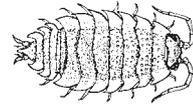
# Minibeasting

## Minibeast ID chart 1: land animals

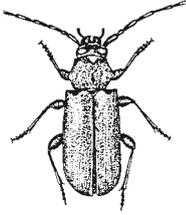
Found mostly in damp places such as under logs and stones and in leaf litter



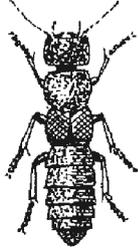
Springtails



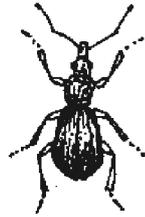
Woodlouse



Ground beetle



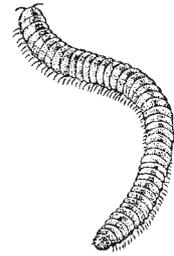
Rove beetles



Weevil

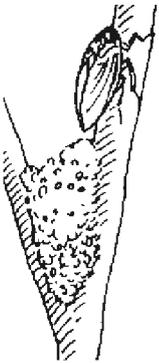


Earwig

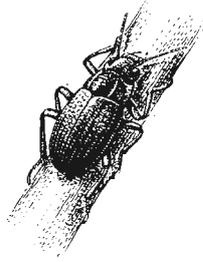


Millipede

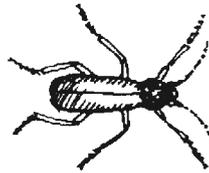
Found mostly on plants and amongst grasses



Plant hopper



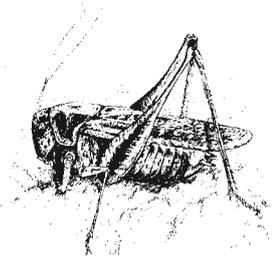
Plant beetle



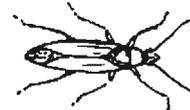
Soldier beetle



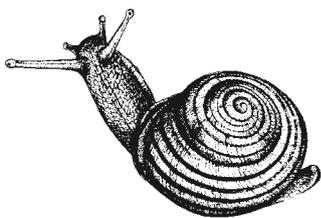
Ladybird beetle



Cricket



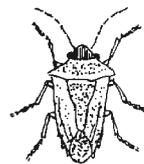
Plant bug



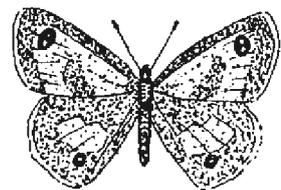
Snail



Yellow meadow ant



Shield bug

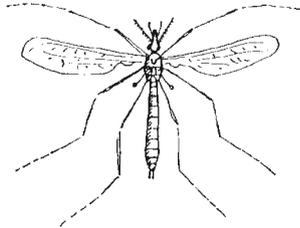


Butterfly

# Minibeasting

## Minibeast ID chart 2: land animals

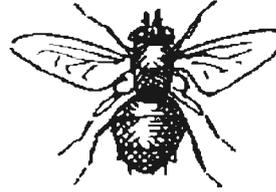
### Other mini-beasts



Crane fly



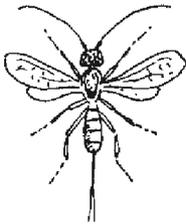
House fly



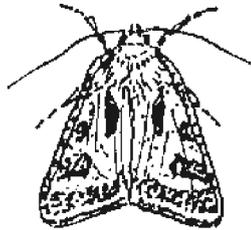
Blue bottle fly



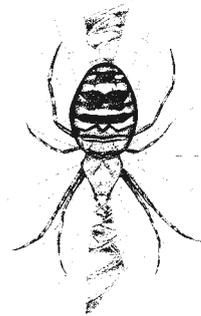
Hover fly



Parasitic wasp



Moth



Spider

### Young mini-beasts



Moth pupa



Fly pupa



Ladybird larva



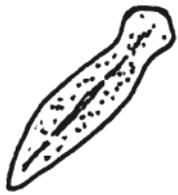
Caterpillar

### Various beetle larvae



# Minibeasting

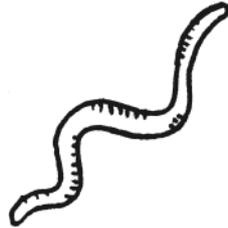
Minibeast ID chart 3: water animals



Flat worm



Hairworm



Freshwater worm



Leech



Tadpole



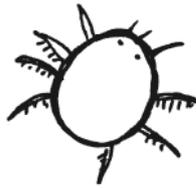
Newt



Snail



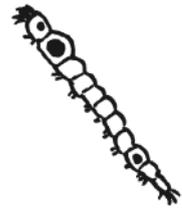
Pea mussel



Water mite



Water flea



Phantom midge



Crane fly larva



Black fly larva



Alder fly larva



Caddisfly larva



Beetle larva



Mosquito larva



Midge larva



Damselfly nymph



Dragonfly nymph



Mayfly nymph



Springtail



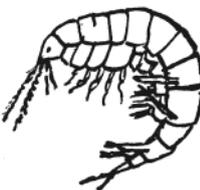
Stonefly nymph



Water stick insect



Pond skater



Freshwater shrimp



Water scorpion



Water spider



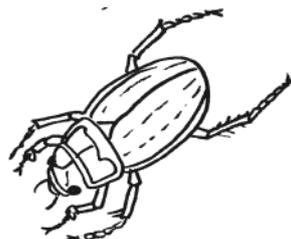
Freshwater hoglouse



Lesser water boatman



Greater water boatman



Greater diving beetle



Water beetle



Whirligig beetle

# Minibeasting

Minibeast record sheet

## Land hunt results

Name or description of minibeast	Tally

## Water hunt results

Depth / location of dip	Name or description of minibeast	Tally

## Minibeast passport

In preparation for also making a minibeast passport back at school, record the following information:

Name / description of minibeast or what family does the minibeast belong to?

.....  
What habitat was it found in?

.....

What colour is it?.....

How many legs does it have? .....

How does it move?.....

Does it have wings?.....

What is its body shape?.....

How many sections does its body have?.....

What is its coat like? E.g. smooth.....

How does it defend itself?.....

What does it eat?.....

Does it appear singly or in a group?.....

Why does it live in this habitat?.....

.....

.....

# Minibeasting

Minibeast passport identity card

PASSPORT

MINIBEAST NAME:

STODMARSH NATIONAL  
NATURE RESERVE

Picture of Minibeast's habitat

FOLD

FOLD

Detailed picture of head

Name: .....

Family: .....

Habitat: .....

Why this habitat is chosen:  
.....

Colour: .....

Coat: .....

Number of Legs: .....

Moves by: .....

Body shape: .....

Number of body sections: .....

Wings: Yes / No

This minibeast eats: .....

Found in a group: Yes / No

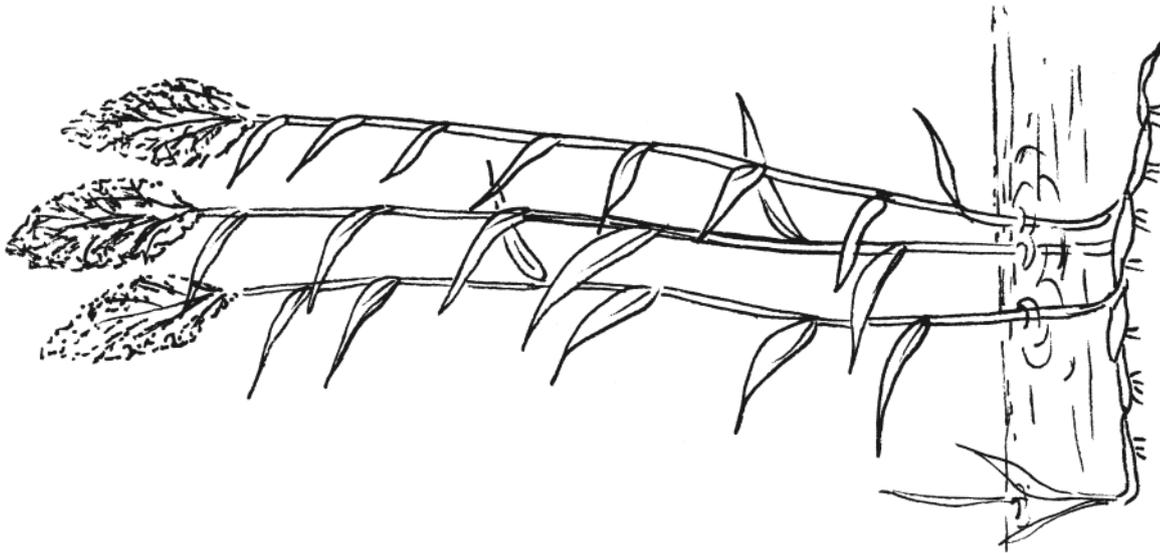
Defends itself by: .....

FOLD

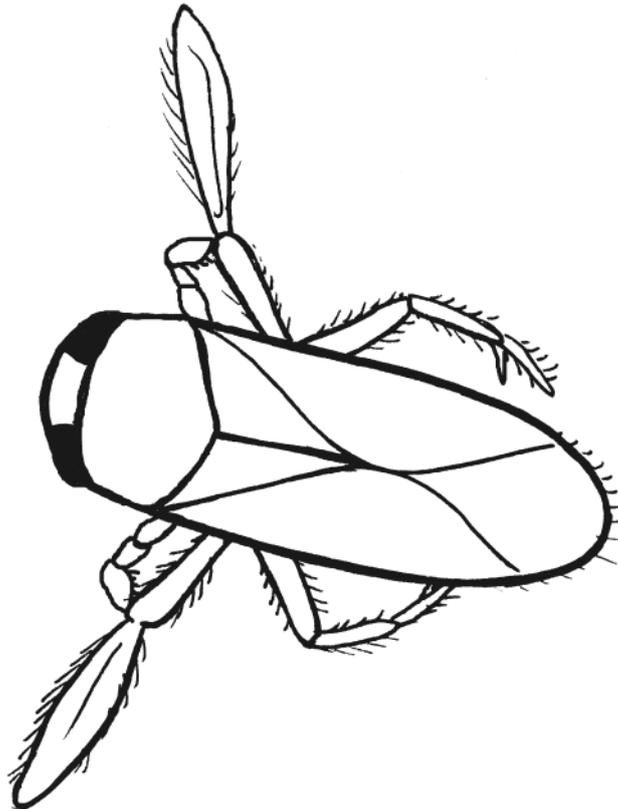


# Feeding relationships

Food chain identity tags (sheet 1)



Reed

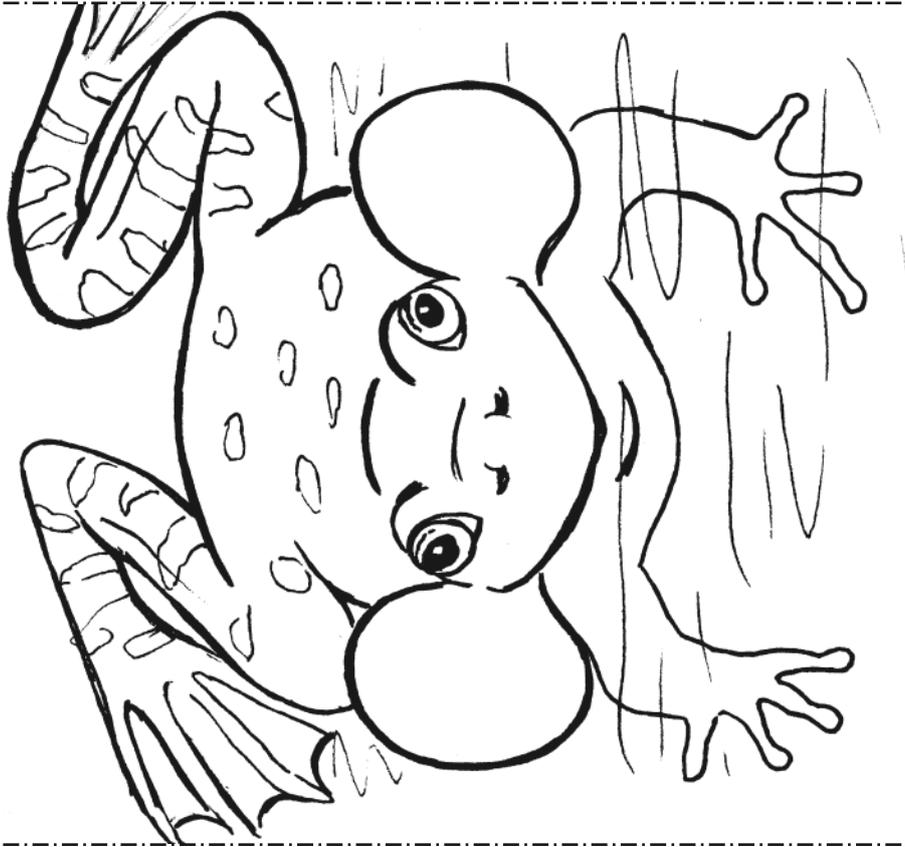


Water boatman

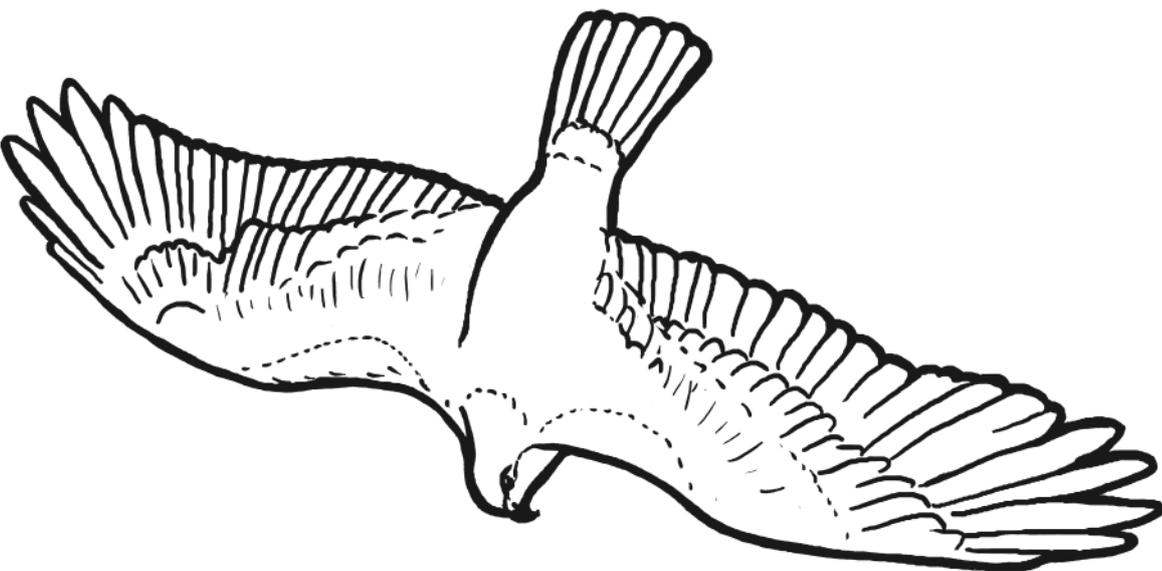


# Feeding relationships

Food chain identity tags (sheet 2)



Marsh frog

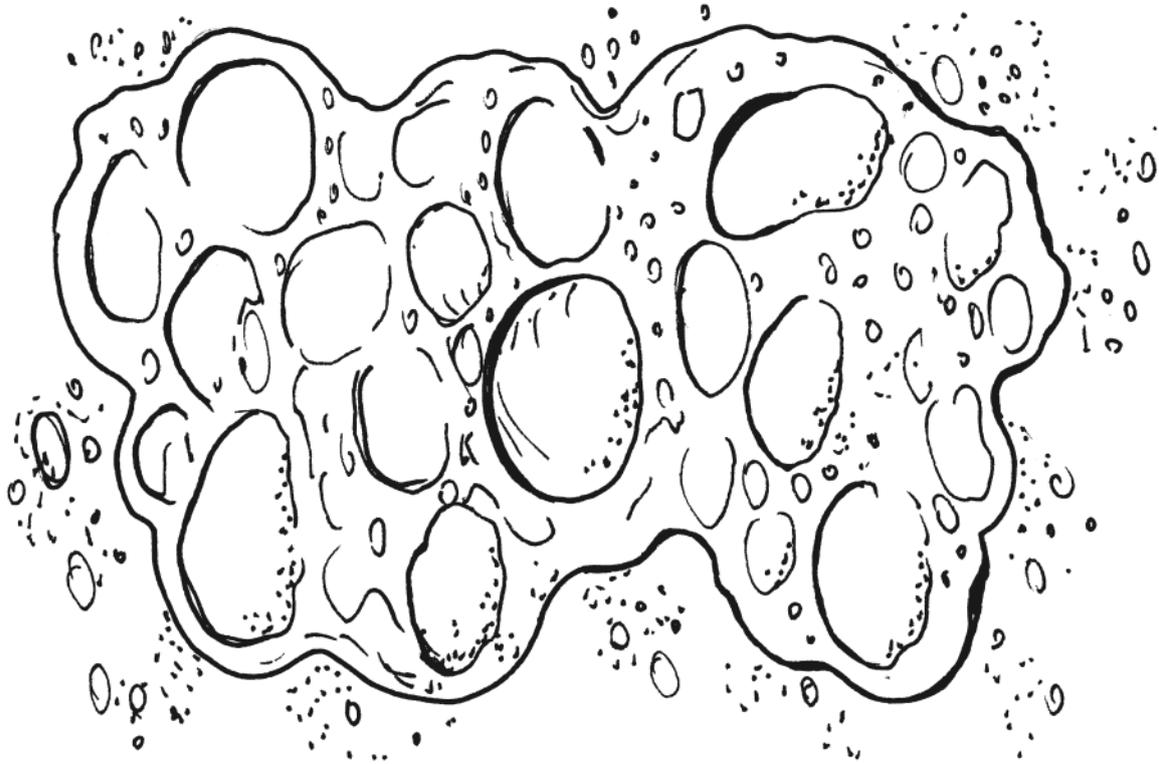


Marsh harrier

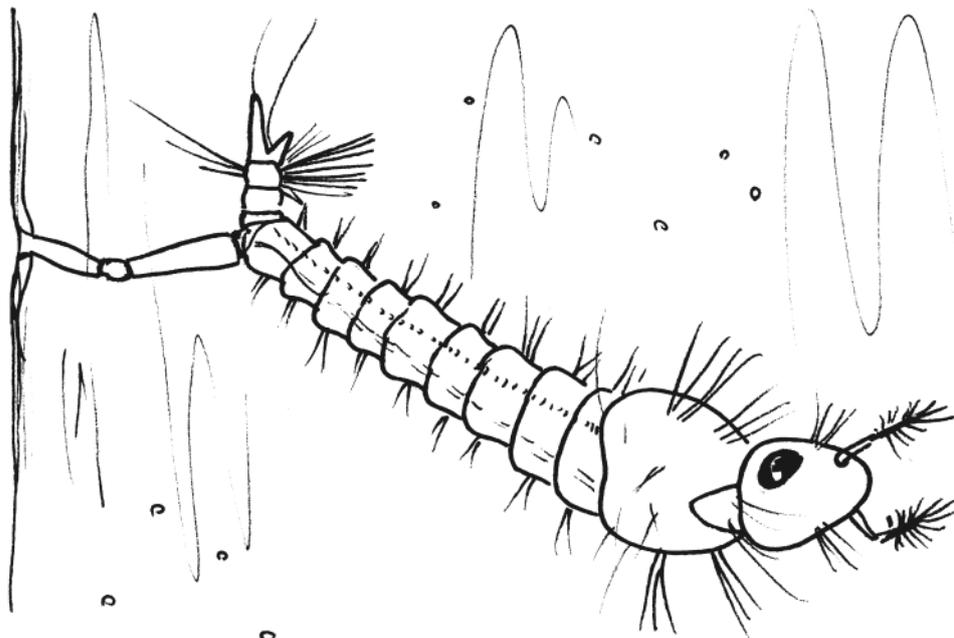


# Feeding relationships

Food chain identity tags (sheet 3)



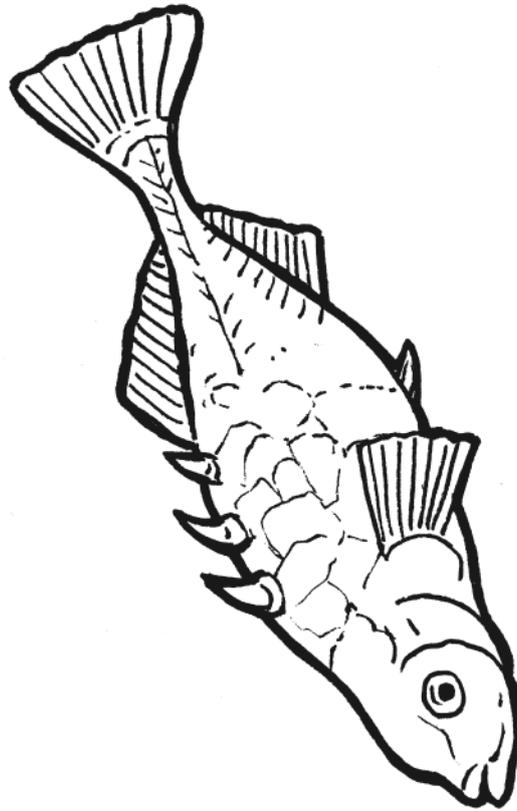
**Algae**



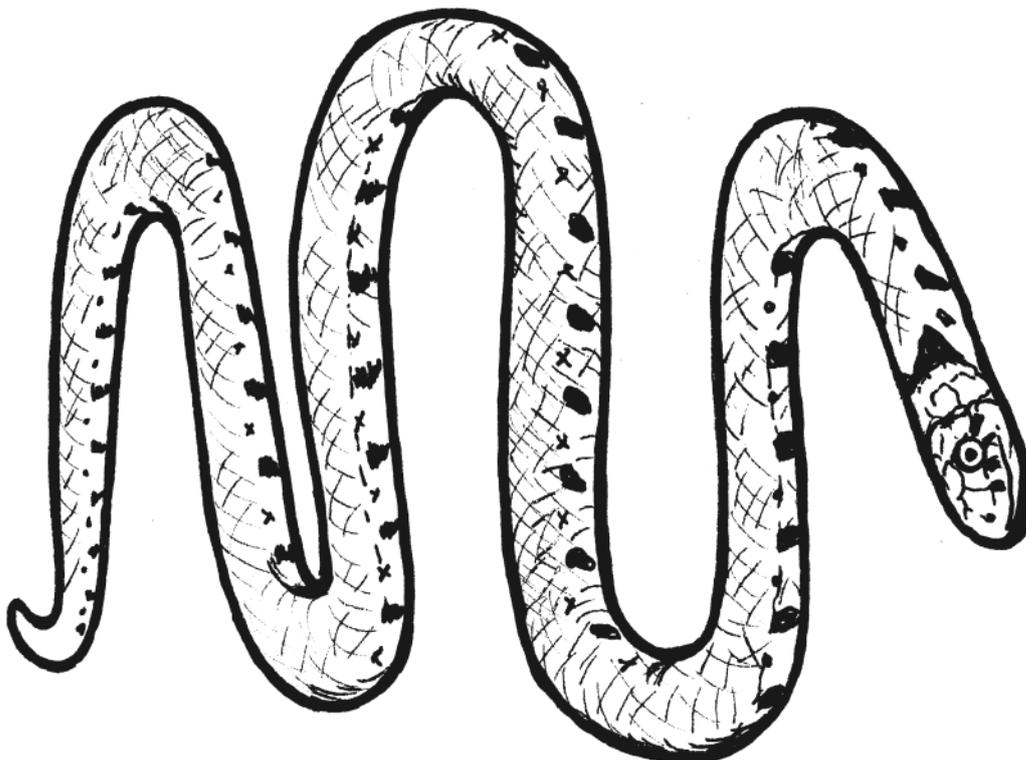
**Mosquito larva**

# Feeding relationships

Food chain identity tags (sheet 4)



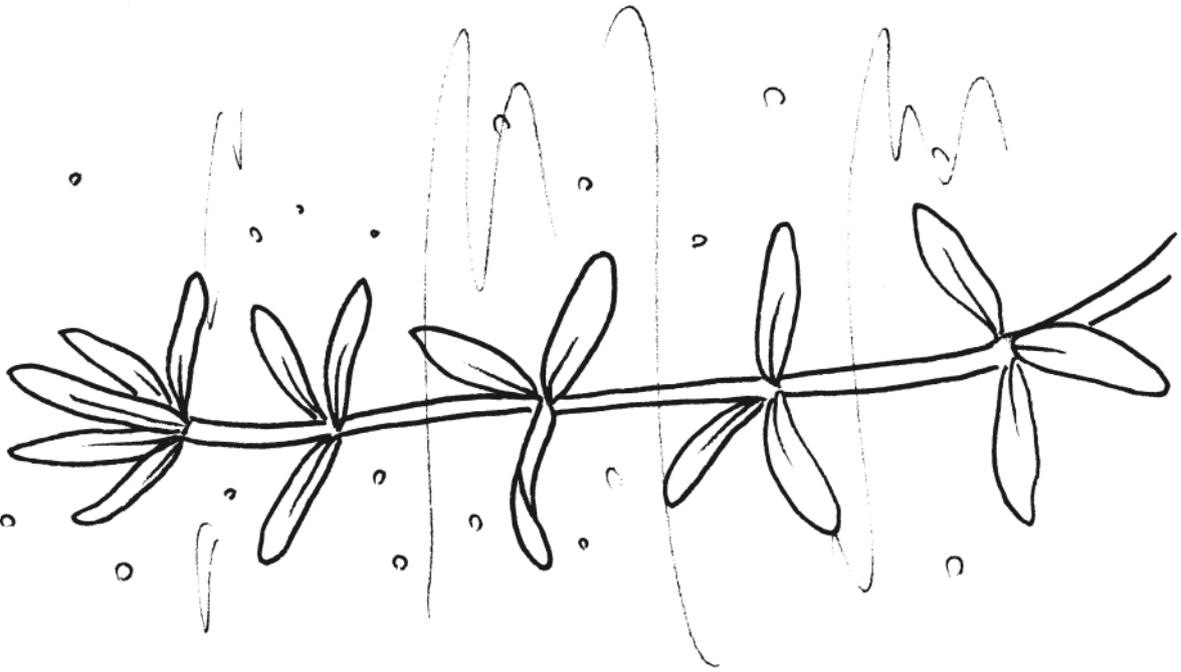
Fish



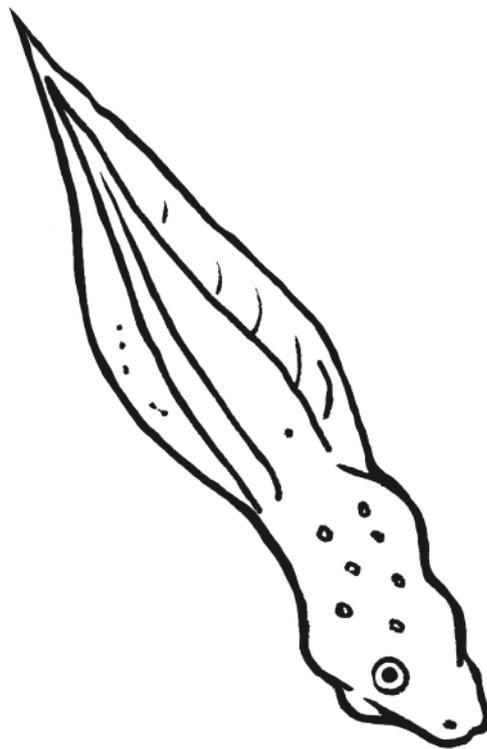
Grass snake

# Feeding relationships

Food chain identity tags (sheet 5)



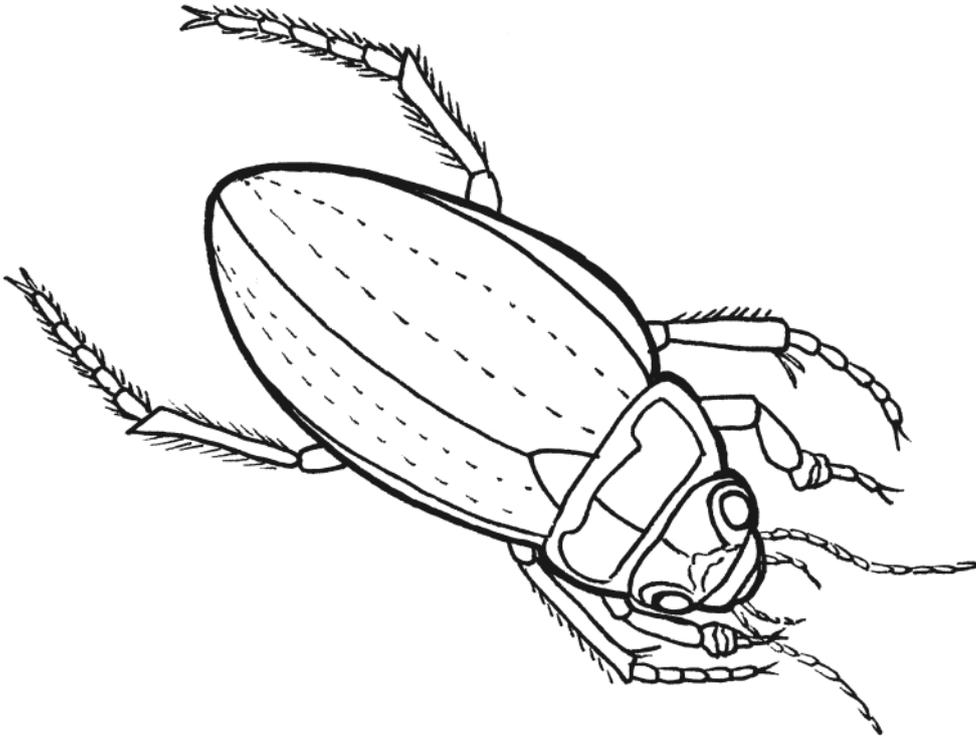
**Water plant**



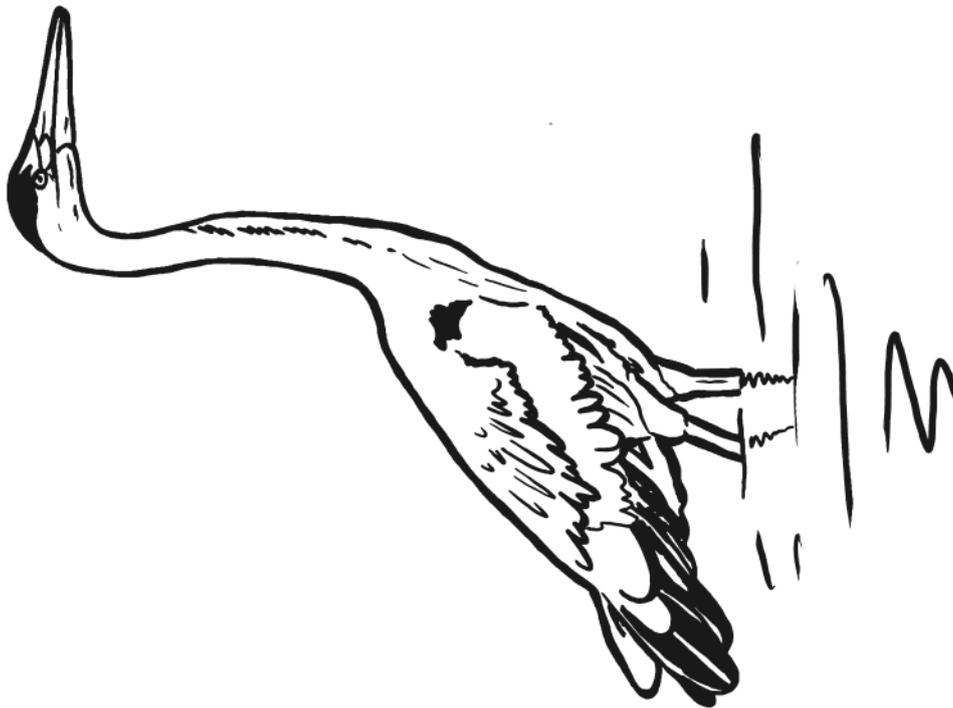
**Tadpole**

# Feeding relationships

Food chain identity tags (sheet 6)



**Diving Beetle**



**Heron**

# Feeding relationships

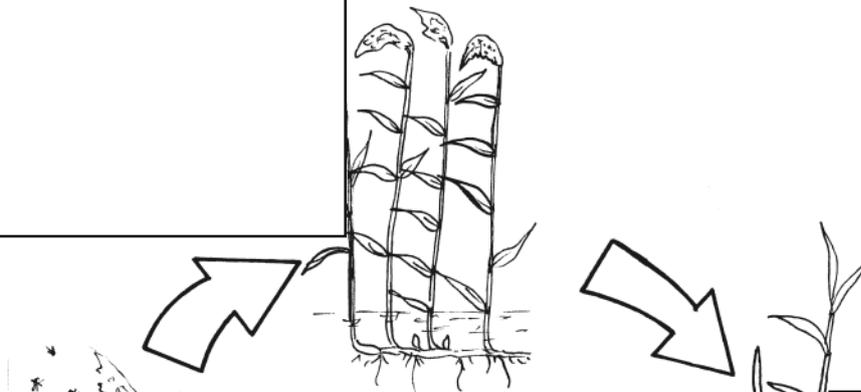
Food chain arrows



# Life cycle of plants and animals

## Reed life cycle

Winter



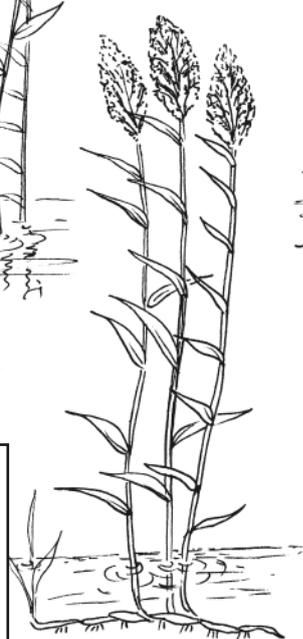
Spring



Late summer to autumn



Summer to early autumn

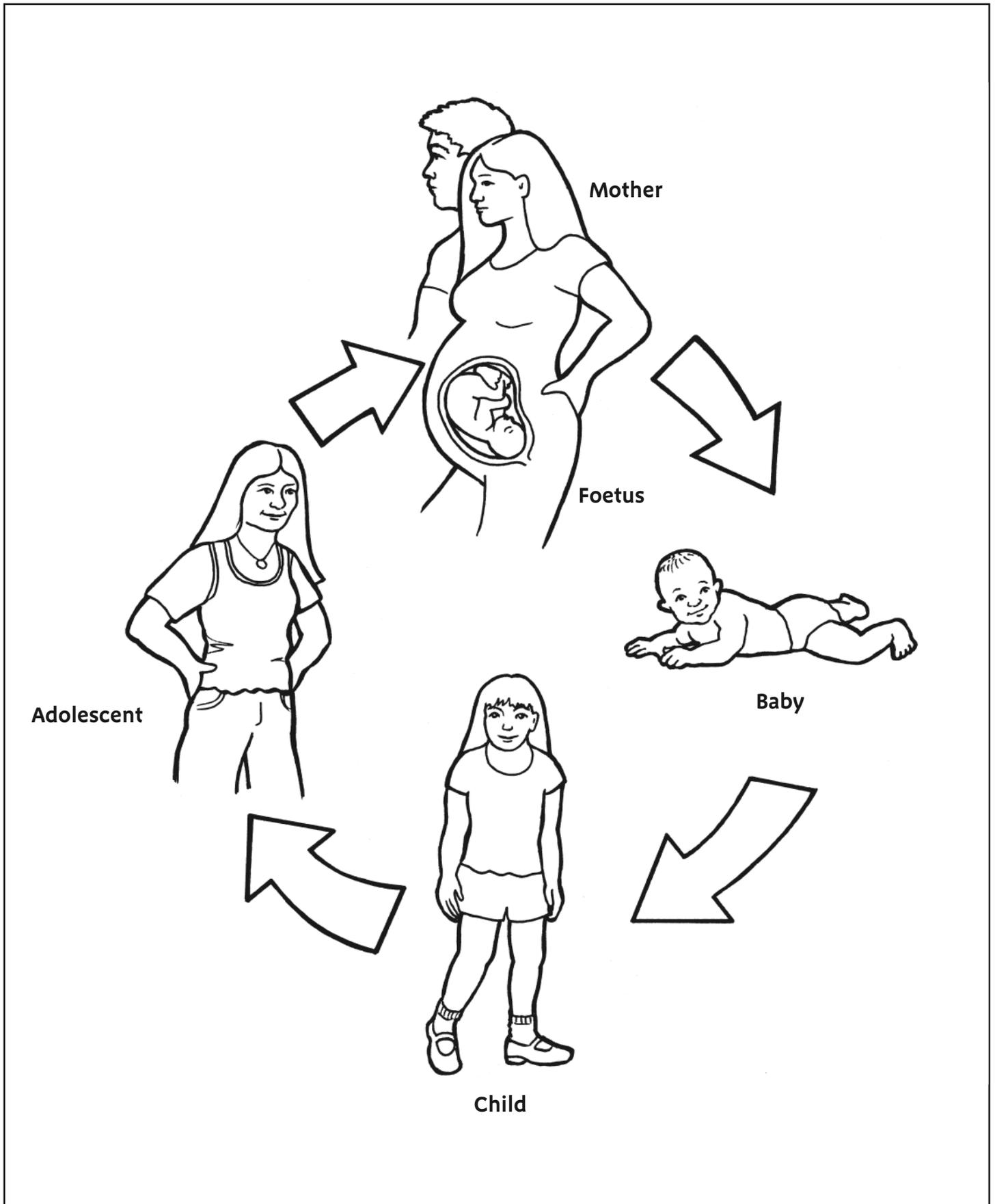


Choose the description that matches each stage in the life cycle of the reed, and copy it into the box next to the correct drawing.

- Seeds develop and flower heads dry out. The seeds are carried by the wind.
- Roots, shoots and leaves emerge
- Reed stems dry out. Seeds continue to be dispersed by the wind, and once deposited remain dormant until conditions are right for germination. Seeds must be kept wet.
- Dark purple flower heads form once reeds reach 3 - 4 years old.

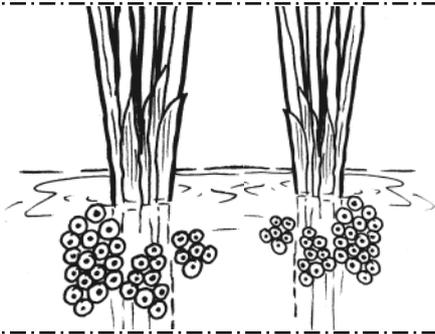
# Life cycle of plants and animals

Human life cycle



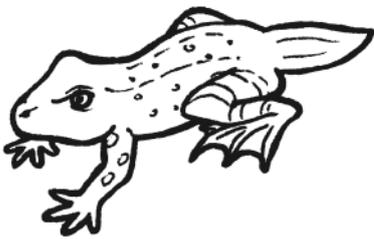
# Life cycle of plants and animals

## Frog life cycle

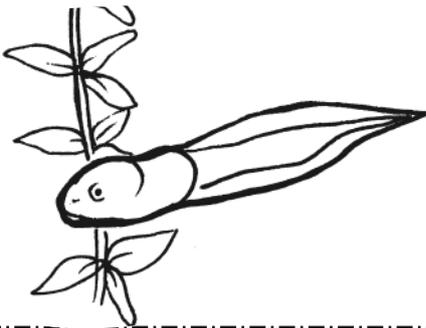


### Adult frog

The tail has totally disappeared. It lives for up to eight years (mostly on land) and hibernates in winter.



**Tadpoles** hatch from eggs. They have gills that allow them to breathe under water.

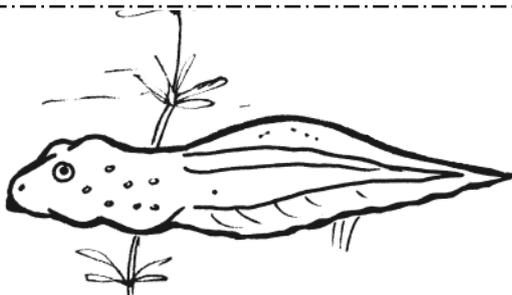


**Tadpoles** lose their gills and develop lungs. Hind legs soon develop.



### Froglet

Front legs develop and tail almost disappears.



The female lays 1000 to 4000 eggs at a time.

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Design, illustration and production by ARC Creative Design Ltd.  
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