

WELCOME TO THE POND PARTY!

Ponds are full of intrigue and drama. Exploring ponds is a fantastic way to capture children's imaginations and encourage enthusiasm for the weird and wonderful world that is nature. If we give them this chance to learn about what goes on right under their noses in the corners of fields, at the bottom of the garden or in the woodlands where they walk they may just be the guardians of these habitats for the rest of their lives.

A pond project can help you deliver all aspects of the curriculum in addition to science; from history to art, maths to movement.

We have created a range of activities and fact sheets rather than age specific lesson plans because you know your class best. You can use and adapt to suit. So peruse the pond pack; pick 'n' choose and immerse yourself in ponds!

This resource pack has been produced as part of Herefordshire Nature Trust's 'Ponds and Newts Heritage Network Project'.



Herefordshire
Amphibian &
Reptile
Team



www.jopolack.co.uk

Frog = a fact sheet. To inspire & equip you or to copy direct for kids.



Dragonfly = an activity page. Projects, games, things to make and do.



Idea for extending activity =



1



Massive thanks to Martha Watson, Rosa Keene & Maya Jerram for their gorgeous pond creature drawings.

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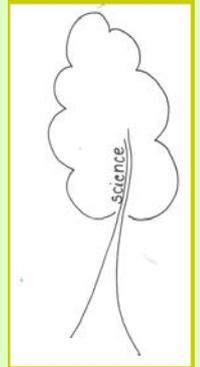


YOUR CURRICULUM IS IN THE POND!

Exploring ponds covers many aspects of KS1 & 2 Science:

Life Processes, Living Things and Scientific Enquiry:

- Animals and humans move, feed, grow, use their senses and reproduce
- To recognise and compare the main external parts of the bodies of animals
- That animals and humans exist in habitats
- That humans and other animals need food and water to stay alive
- How to treat animals with care and sensitivity
- That humans and other animals can produce offspring and that these offspring grow into adults
- About the senses that enable humans and other animals to be aware of the world around them
- To recognise that plants need light and water to grow
- To recognise and name the leaf, flower, stem and root of flowering plants
- Group living things according to observable similarities and differences
- To identify similarities and differences between local environments and ways in which these affect animals and plants that are found there
- To care for the environment



Use your pond project to link other areas of the curriculum:

history



Types of ponds and pond loss pages:

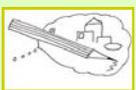
Explore local history, why things were different in the past, order events.

ICT



Research pond creatures & habitats. Presenting data from pond dips.

design technology



Design and build your own pond.

Design pond superheroes.

english/literacy



Writing up pond visits. Creating poems. Telling pondlife stories.

Drama. Engaging in debate about pond loss and conservation.

geography



Hydrology cycles, landscape formation through natural ponds, environmental issues, understanding local area, making/ investigating maps.

maths



Measure creature lengths.

Tally numbers on dip. Create tables and graphs from data. Count ponds in your area. Look at pond shapes.

art



Animal skin patterns, foot prints, colours, leaf shapes. Observing. Art as recording.



WHAT IS A POND?



'A pond can be defined as a body of water (normally fresh water, but occasionally brackish), which can vary in size between 1m² and 2 hectares (about 2.5 football pitches), and which holds water for four months of the year or more.'

Pond Conservation 

But more than a simple definition, ponds are part of our landscape and have been for hundreds of thousands of years. Ponds are entire ecosystems; hotspots for biodiversity and vital habitat for 1000's of species of wildlife.

Think of the excitement of seeing **frogspawn floating in the reeds** or catching a glimpse of the **first tadpole wriggling free**. The magic of that **iridescent dragonfly** flying over our heads never leaves us. Nor does the summer sight of **swallows skimming** the water. There are **curious long legged stick critters** that balance on the surface and the **mysterious murky depths harbour minibeasts and dragons and microscopic** marvels.

Ponds can be natural or manmade and are important in countryside, town or city.

Seasonal ponds may contain water only for short periods filling in the winter months and drying over the summer months.

Many ponds were dug to provide drinking water for cattle and sheep within a field or on a specific road to the livestock market, known as drovers' ponds. Many were built as ornamental features in the grounds of manor houses, maybe a moat, or as an elaborate decorative feature. Ponds can also appear after quarrying a site for stone, clay or minerals.

Historically fish or stew ponds were important in the community, during the medieval period freshwater fish such as carp, pike and bream were reared for eating. Large manor houses may have had duck decoy ponds to attract in waterfowl to capture for eating.

Many ponds have disappeared or declined either being filled in or neglected. Major losses have resulted in wildlife declines particularly with amphibians and invertebrates.

We can help out by building more ponds which increases the wetland network and linkage of water habitats in our landscape.

PONDS AS HABITATS

Ponds are whole worlds to explore!



Not just a pool of murky water!

Ponds are complex habitats in which many animals depend on each other.

Habitat =
place where a living thing lives for some for all or part of its life.

Frogs and newts may spend winter on land but need the pond to mate and lay eggs in the spring.

Plants provide places for breeding, hunting, protection, egg laying, somewhere for nymphs to climb out to shed skin.

Look up! Watch the air above the pond for dragonflies & damselflies.

Some plants put vital oxygen into the water.

The whirligig beetle whirls on the surface of the water. Half of each eye can see above the water, and half below. Literally 'keeping an eye on predators' and its prey.

Pond skaters have hairs on their feet, which trap air and allow them to stand and move on the water's surface. They are so light the surface tension of the water holds them up.

Water flea/daphnia move in jerks through open water like a flea hopping!

The great diving beetle is a voracious predator often found in weedy ponds.

Ramshorn snails have a simple lung and float to the surface to fill this with air. But they eat algae and rotting stuff from the bottom of the pond!

Caddisfly larvae **camouflage** cases from what is in the pond; stones, sticks, leaves.

Mayfly nymph are **adapted** for water. They have gills on the side of their bodies. Water flows over the gills and the oxygen from the water goes into their blood.

Water hoglouse feeds on rotting matter at bottom of the pond. It is adapted to survive on low oxygen levels so can live in partly **polluted water**.

Dragonfly nymphs indicate a clean pond.

Bats fly over a pond at dusk to feed on insects.

SKY HIGH

Herons stop by for a feed and summer swallows swoop over for a tasty bug, skimming the surface for a drink.

SURFACE LEVEL

SWIMMING FREE

Adaptation

Creatures have different features and feeding habits depending on where they spend most of their time in the pond.

MURKY DEPTHS

The number and type of different species in a pond can be dependent on **water quality**. Often the more polluted the pond is the fewer the number of species.

There are more species of water beetle living in British ponds than there are bird species living in the countryside!

Camouflage

Some creatures disguise themselves so they are less likely to be seen and eaten by their 'predators' (Caddisfly).
Some animal's skin colour or texture blends in with their surrounding. (Frog)

PONDLIFE SUPERHEROS!



The makers of many films have got their ideas from weird and wonderful pondlife: Dr Who, Monsters vs. Aliens, Batman. Re-think these mini-beasts and roaming reptiles into superheroes.

POND POWER!

We spend our whole life in a diving bell, an underwater web filled with air.

Water spiders

I look like a scorpion but have no sting in my tail.

Water Scorpion

My jaws shoot out like an alien to catch my prey.

Vikes!

To become adult we burst our skin and leave the case called exuvia.

Our huge 'compound' eyes can see all the way around us and detect movement very far away.

Dragonfly

We are one of the fastest insects in the world, flying up to 40 miles per hour.

Prehistoric dragonflies the size of seagulls flew the earth 300million years ago.

Rat-tailed maggots. Yucky name but cool animals. Our telescopic snorkel tail gets up above for oxygen

We eat through our legs! We sieve the water through the hairs and suck up the tiny algae that get caught. Yum.

Lesser Waterboatmen

POW!

I am the dragon of the pond with my spiky crest.

Great Crested Newts

Our orange tummies have individual patterns of black blotches as unique as your fingerprint.

If you try to swallow me you'll get a nasty surprise from my spines. I change colour to attract a female fish. I teach my young self defence!

Stickleback (male)

We inject our prey with poison then suck it back!

Backswimmers

I can leap 5 times my height to catch my tea.

Frog

I may lay up to 4500 eggs in a spring!

Great Diving Beetle

We are one of the UK's largest beetles. One of the pond's fiercest predators, we often hunt things much bigger than us. Many creatures in the pond fear us and our larvae. As an adult we can produce a poison capable of killing a frog! We spend most of our lives underwater but we can also fly to find new habitats.

I move in loops and somersaults along water lily leaves. Sounds pretty? Watch out my tentacles sting and paralyse prey.

Green Hydra.

Seeing the Invisible

We may only be tiny but we are powerful blood suckers.

Watermites

You might be scared of my bloodsucking ability but I help with modern medicine.

Leech

I am called Cyclops after a one-eyed monster of Greek legend.

Rotifers

We fix ourselves to water plants. Whirring threads draw food to our mouths. Size 2mm

Great Pond snail

I roam the pond on one large foot.

Jet Power! We squirt water from out bottoms to move faster.

Dragonfly Nymph

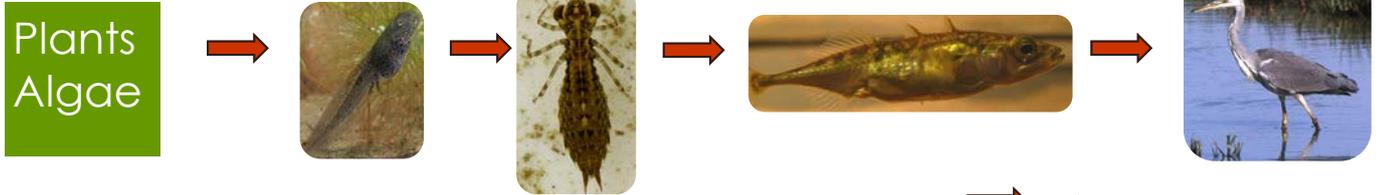


Can you invent your own larger than life live-wire pond superhero? Or a teeny tiny pond bugster based on these **PONDLIFE CREATURE FEATURES?** Give it a name based on its super powers. Make it out of junk.....draw it really big....make a mask and costume to transform into your pond superhero yourself.....

FOOD WEBS



Food chain



All animals and plants need food to grow and move.

Nearly all food chains start with green plants, even in ponds.

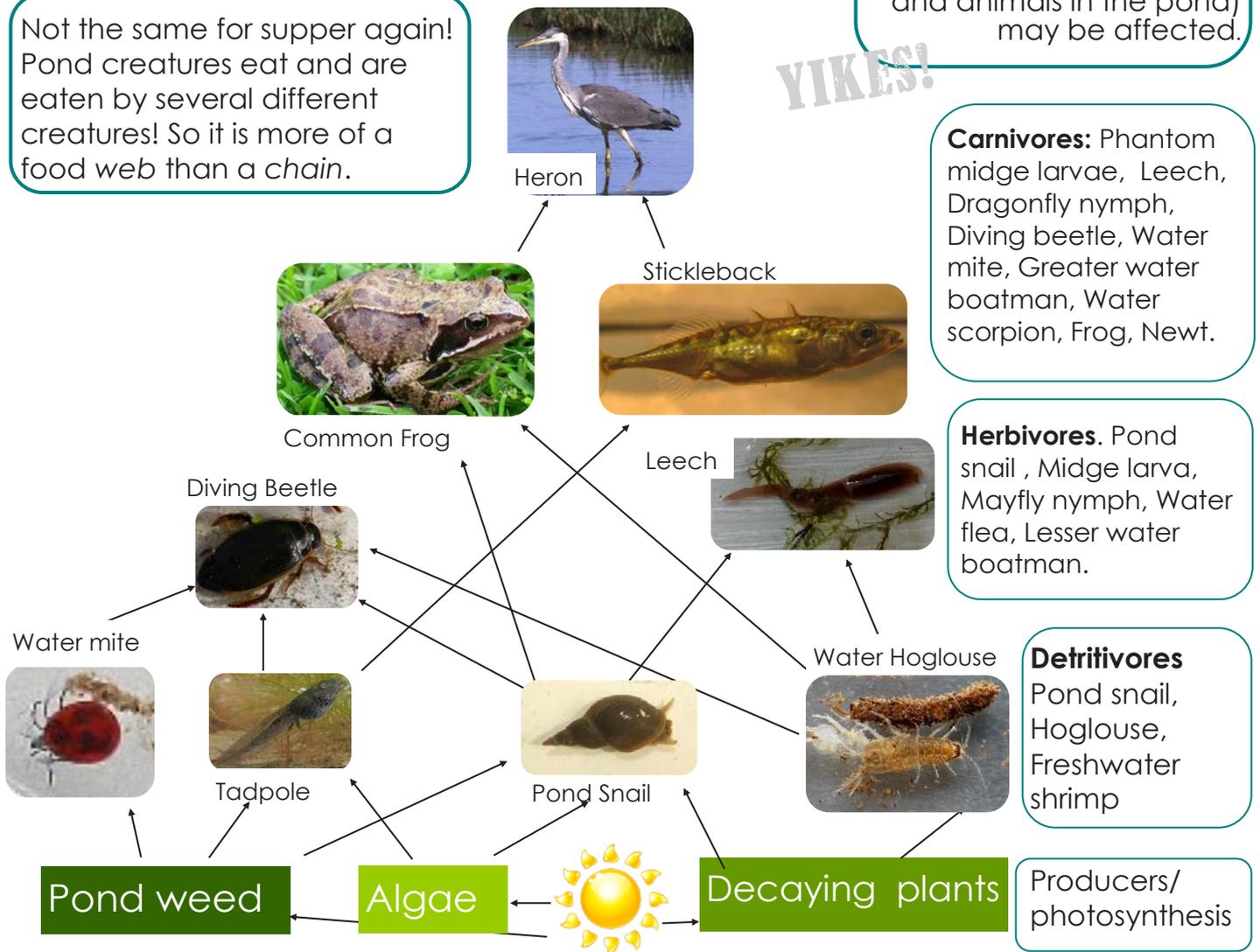
→ = is eaten by

If any level of the food chain is disturbed, for example by disease or too many predators, the whole ecosystem (all the plants and animals in the pond) may be affected.

Food web

Not the same for supper again! Pond creatures eat and are eaten by several different creatures! So it is more of a food web than a chain.

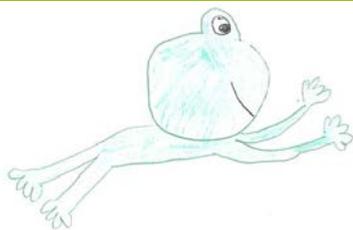
YIKES!



Animals that eat plants are called herbivores.
 Animals that eat plants and animals are omnivores.
 Animals that eat other animals are called carnivores.
 Animals that eat dead plants and animals are detritivores.

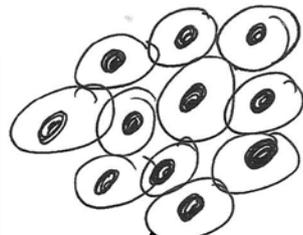
FROM FROG TO FROG!

LIFECYCLES



At the end of winter adult frogs go to a pond to mate and lay eggs; frogspawn.

Tadpoles hatch out after 2 - 4 weeks. They feed on algae and water fleas.



Over the summer they absorb their tails and leave the water as tiny froglets.

After about 16 weeks the tadpoles start to grow back legs, followed by front legs.



DRAGONFLY LIFECYCLES



An adult dragonfly may only live for weeks or months.

Adult dragonfly lays eggs on plant stems.



Eggs hatch and most of dragonfly life is spent as larval nymph in the pond.



Nymphs use internal gills to breath in water. They hunt small worms, larvae, tadpoles and water fleas. Their skin is shed several times under water.

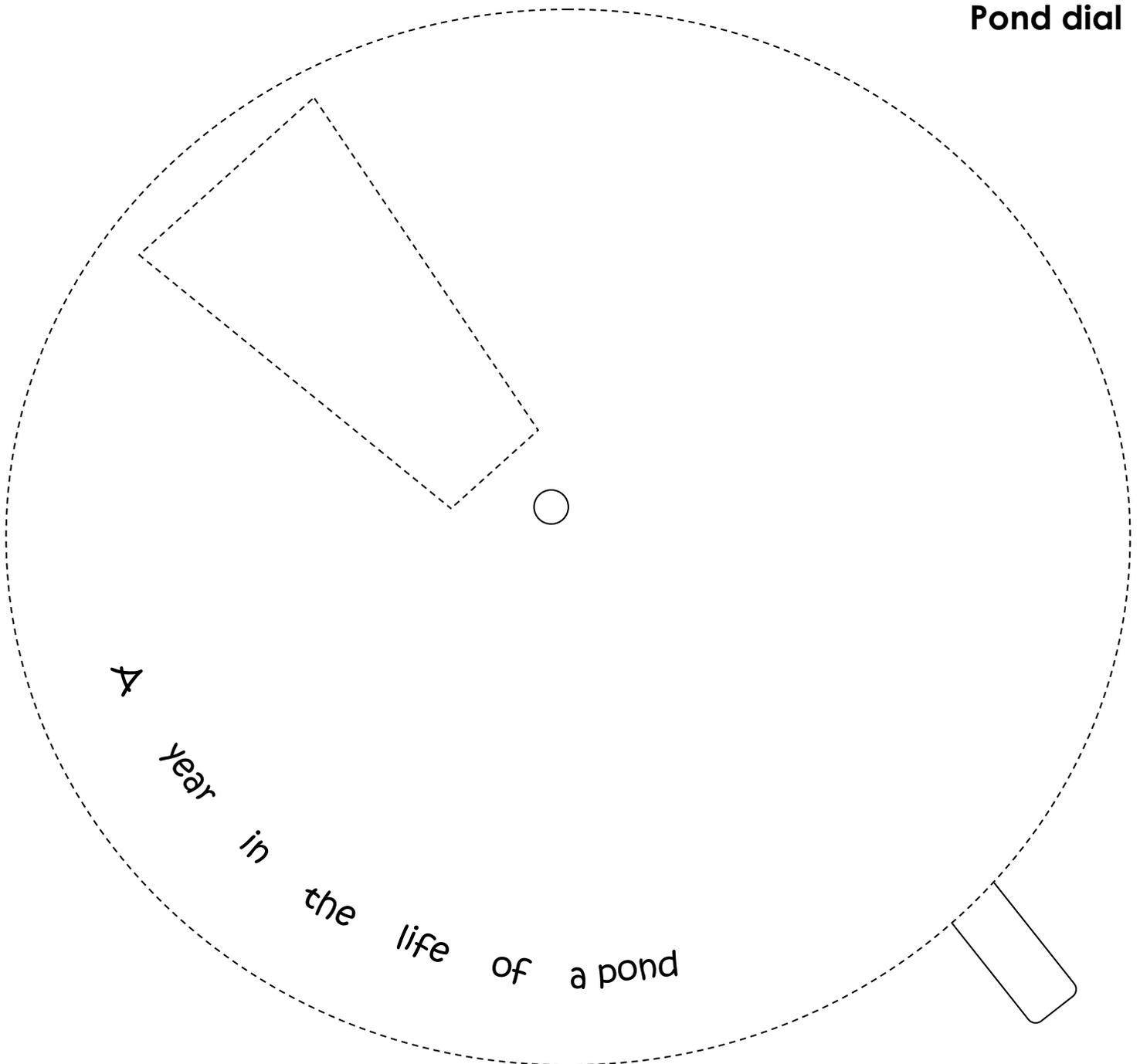
Nymph climbs up plant. It splits it's skin and become an adult dragonfly. It dries its wings in the sun before it flies away. Look out for the final monster-like skin it leaves behind called exuvia.

THE POND YEAR



Instructions: Stick each page to thin card. Cut out both outside circles. Cut out the dash area on the pond dial. Decorate the front of pond dial as a pond. Stick a lolly stick to the back of each dial as a turning handle. Lay pond dial over calendar dial. Match up the two centre holes. Pierce a hole in the centre of both dials. Push paper fastener through both. Twist gently with handles to see what awaits you in the pond each month.

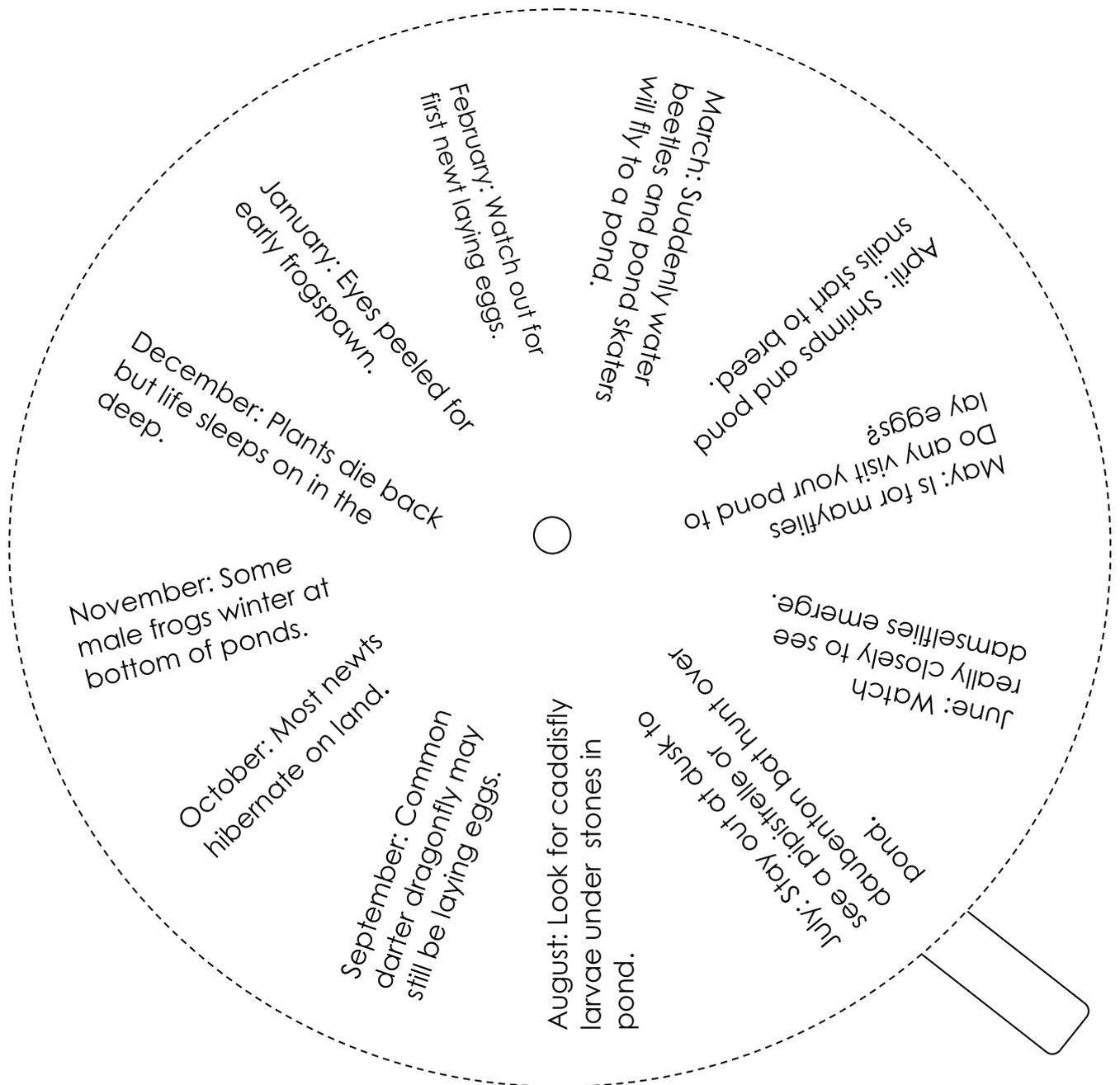
Pond dial



THE POND YEAR



Calendar dial



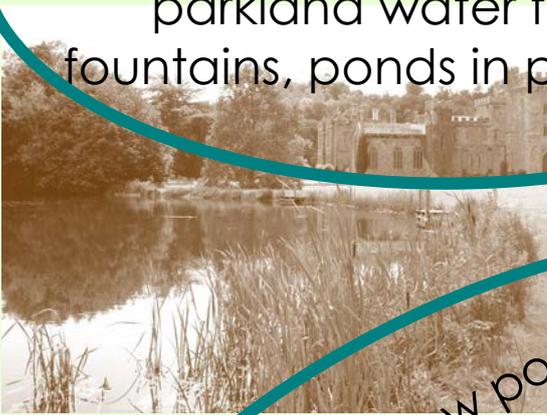
PONDS PAST AND PRESENT



Many ponds were created by humans. What for?

Dewponds: artificial shallow, saucer shaped ponds sited on the top of hills, fed by rain, dew, mist and used to water livestock.

Ornamental ponds were, and are still, created for their beauty; moats, parkland water features, fountains, ponds in public parks.



Small ponds are dug in people's gardens.



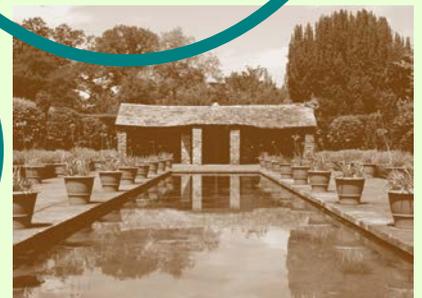
Fish ponds or stew ponds were sited near manor houses or monasteries. Carp or bream were reared for eating in the Middle Ages.

Decoy or Duck ponds were designed with pipes radiating from a central pond and worked with dogs to lure waterfowl for the manor or estate house table.

Many of these ponds were created by people long ago. Not all survive. Why?

(See pond disappearances)

Droving ponds provided water for the livestock on the way to market.



Livestock = animals farmed by humans

PONDS PAST AND PRESENT



Ponds can form in shapes left in the ground from the last ice age. Geological evidence shows that ponds have existed for millions of years.

Many ponds have formed naturally.
How?

A wild animal or farm animal can scrape away at the ground and create a pond.

A slow stream silts up and a pond forms

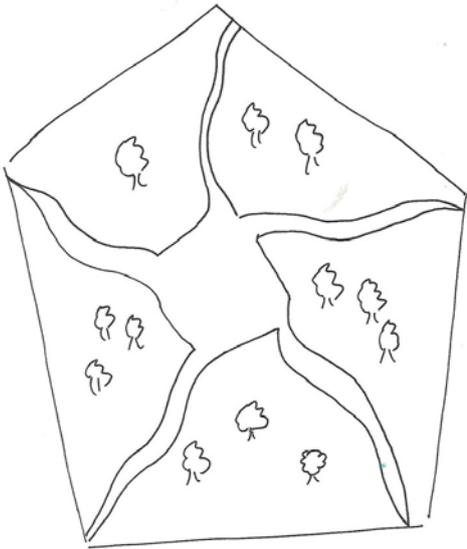
Rivers can meander and move over thousands of years and create little ponds around them on their floodplain.

Rainwater collects in the dips in the corner of fields. Farmers may use it for livestock to drink from and wildlife will move in.

Ponds form on uneven ground in old quarries* where people once took stone out of the ground.

A tree can fall over and a pond can form where its roots were.

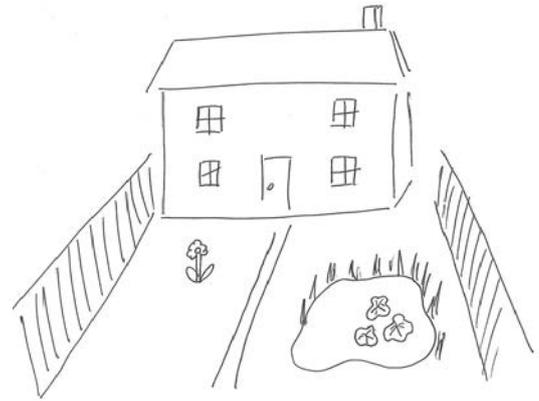
*Quarry ponds, like many ponds, are the work of nature and humans together.



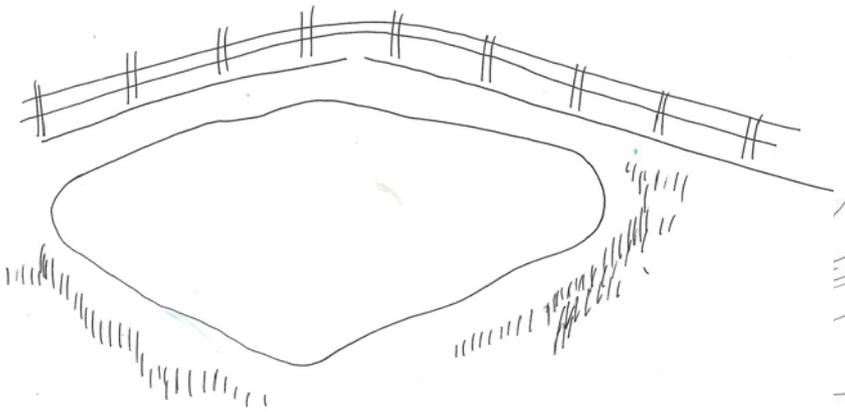
Decoy pond



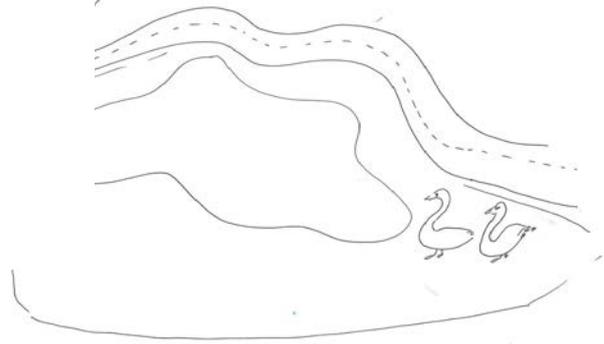
Dew pond



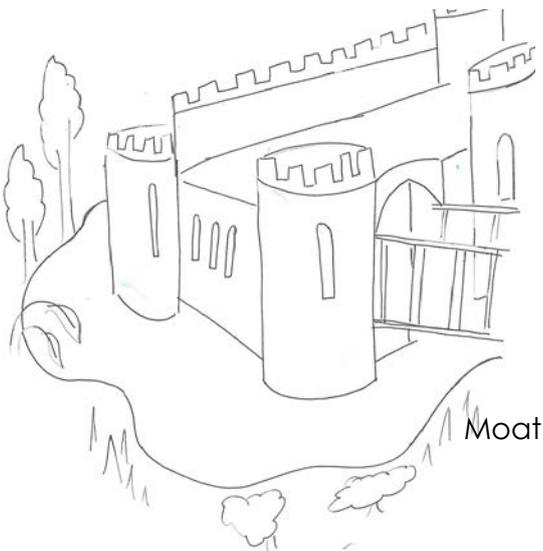
Garden Pond



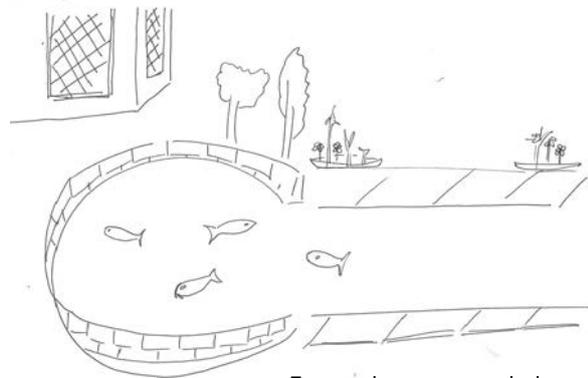
Field pond for livestock to drink



Drovers pond



Moat



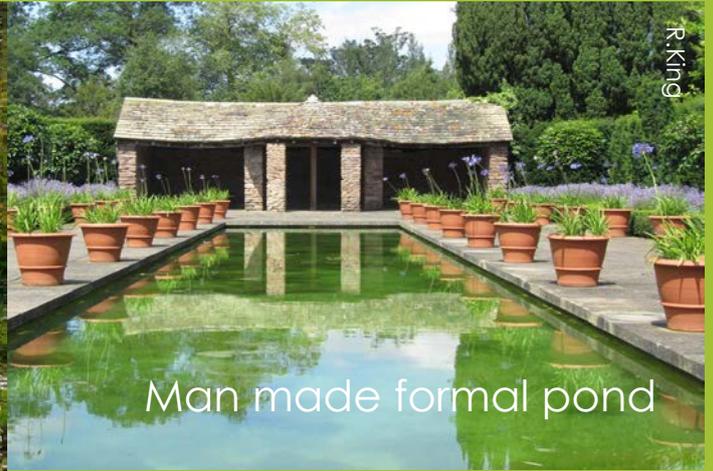
Formal ornamental pond
beside manor house

TYPES OF PONDS AROUND HEREFORDSHIRE

TYPES OF PONDS AROUND HEREFORDSHIRE

Pond dug for amphibians and invertebrates

P. King



R. King

Man made formal pond



Moat

N. Hand



Dew pond

N. Hand



Ornamental pond

N. Hand



Field livestock drinking area

N. Hand



Drovers pond

W. Watson



Ornamental pond on estate.

P. King

PUT PONDS ON THE MAP!



My village needs ponds! What type of pond goes where?

Photocopy and ideally enlarge the 'Brombury Ashvern' village map (next page). Alternatively draw one huge village for the whole class to work with. You could even draw one of the school's village or town.

1. Divide the children into 6 groups, each in charge of drawing and siting one type of pond (chose from field stock pond, drovers pond, ornamental pond, dewpond, duck decoy pond etc.)
2. Read all types of ponds out together from 'Ponds Past and Present' to make sure the differences and likely locations are understood.
3. Each group draws, paints or collages their pond to match the size of the map and cuts it out.
4. Stick each pond to the map discussing why it goes where it does.



Further discussion: You have created an ideal map of ponds giving lots of different wildlife plenty of places to live, drink, feed, breed and move around the countryside.

This is how it used to be in all villages, towns and countryside across Herefordshire but many of these ponds have disappeared.

Why might some of these not be here any more?

What does this mean for wildlife?

Refer to Factsheets: Pond Losses and Why Preserve Ponds



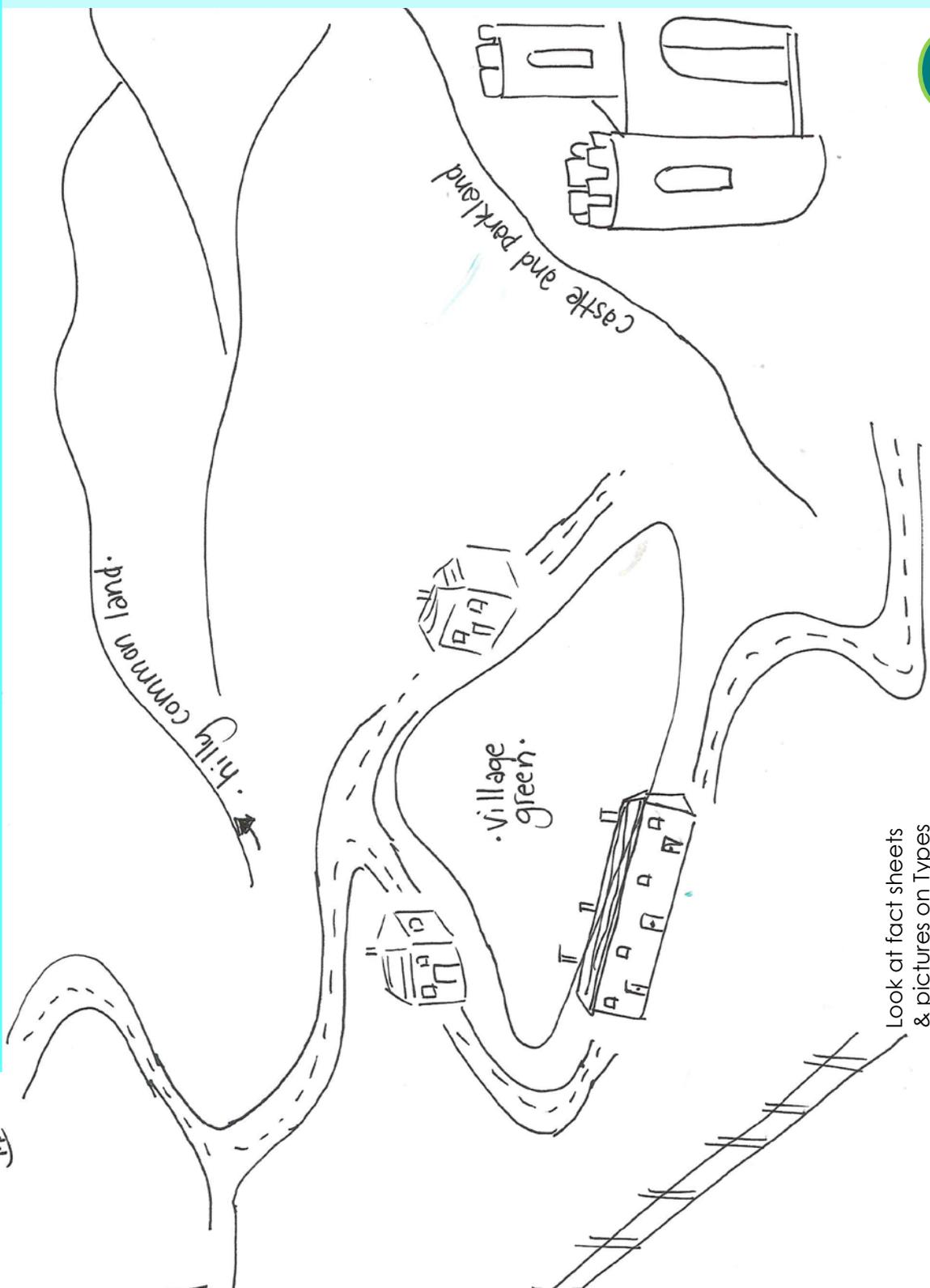
The class could create a special pond that has a specific purpose within the village.



Look at local Ordnance Survey Maps, aerial maps on the computer or Google Earth. Count all the ponds you see, look at locations, see their shapes, try to imagine why they were made. A great KS2 cross curricular project.



Welcome to
Brombury Ashvern



A hundred years ago this village had at least 5 ponds. These have disappeared. You can help wildlife and villagers if you bring the ponds back to life! Can you draw on this village map where you think the ponds would have been? Can you write what type of ponds you think they were?

• Mr Farmer's Field.

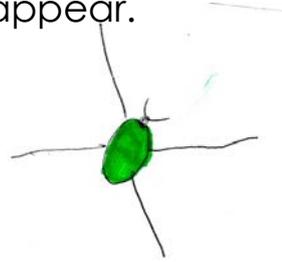
Look at fact sheets & pictures on Types of Ponds for help.

WHERE HAVE THE PONDS GONE?

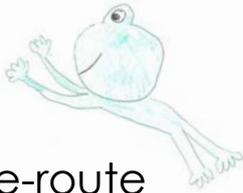


Half of the UK's ponds were lost in the 20th century and of those that remain 80% are in a poor state. *
There are many reasons why ponds might disappear.

In Herefordshire livestock watering ponds were the most common ponds. Unfortunately many were filled in, or have been replaced by piped water and cattle troughs.

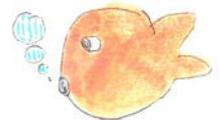


Changes in climate over the centuries can change a pond.



Dams re-route water so that ponds dry up.

Fish ponds or stew ponds were often next to manor houses or monastery sites. Freshwater fish such as carp, pike, and perch were reared for the table in the Middle Ages. Now we don't eat these fish in the UK so many of these ponds have fallen into disrepair.



Some ponds have been polluted by chemicals from industry, farming and our everyday waste. The most common is an increase in nutrients such as nitrogen and phosphorus. This provides too much food for the algae which makes the water murky green and stops light getting to plants lower down. Oxygen levels can then fall and some of the creatures find it hard to survive.

Farmers may drain land to grow crops where once formed seasonal ponds.

Ponds in the corners of fields around villages and towns have been filled in to make way for development such as building houses.

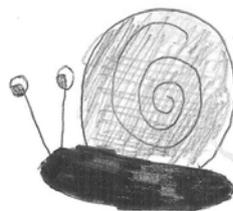


Drovers walked their livestock for miles (even all the way from Wales to London). There would have been regular ponds along the way for the livestock to drink from. Without drovers this water has grown over with weeds or been filled in.



If a pond is left unmanaged plants can choke it. Once silted up land plants, shrubs and trees take over in natural succession so that a pond is barely visible. It may become a good wetland habitat but not a pond.

Historic manors and old family homes may become too expensive to look after. If the houses fall to ruin, so do the ponds.



WHY PRESERVE PONDS?



A lot of our pond wildlife can't feed, live or have its babies anywhere else. That makes ponds vital for these creatures but also for other creatures in the environment that depend on them. In the UK two thirds of our freshwater animals and plants live in ponds.

Wild ponds have been disappearing over the last 100 years. Those that are left must be properly cared for by us. If a pond is neglected for too long it will become overgrown and eventually disappear altogether. This leaves pond wildlife with no habitat. They will find it too difficult to adapt to another home without water.



Look at Habitats and Superheroes fact sheets. Choose three creatures. Could they survive if they had no pond?

Ponds need your help

Lots of ponds across a landscape provide important connectivity of habitats for wildlife particularly amphibians and those that fly. If there is another pond or watery place nearby they can move from one place to another safely and find all the food they need along the way.

Have you ever been for an early spring walk and seen a puddle that has frogspawn in? Creatures will take advantage of the smallest amount of water but it is unreliable for them. If we can help to preserve the ponds and create new ones ourselves then we help to create habitats for wildlife all year round.



If you can't create a pond on your school ground is there a pond nearby you could adopt?

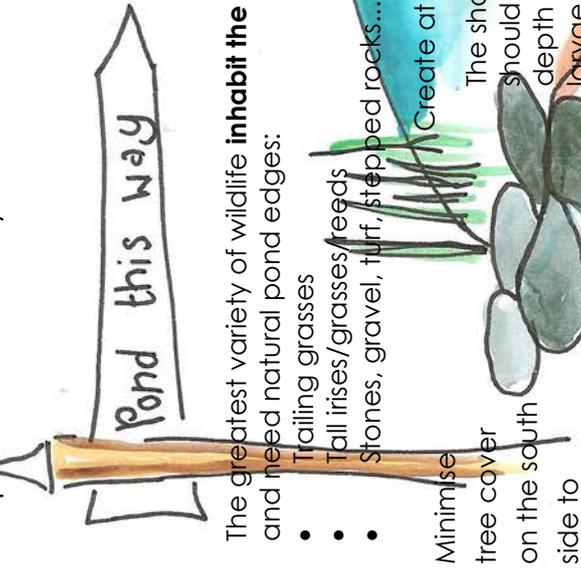
www.avonwildlifetrust.org.uk/documents/Education%20Resources/EduRes_AdoptingPond.pdf

PROJECT POND! CREATE YOUR OWN.



www.pondconservation.org.uk has advice on liners.

Let wildlife come into the pond naturally. Set it all up like this and they won't be able to resist!

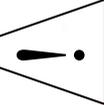


The greatest variety of wildlife and need natural pond edges:

- Trailing grasses
- Tall irises/grasses/reeds
- Stones, gravel, turf, stepped rocks...

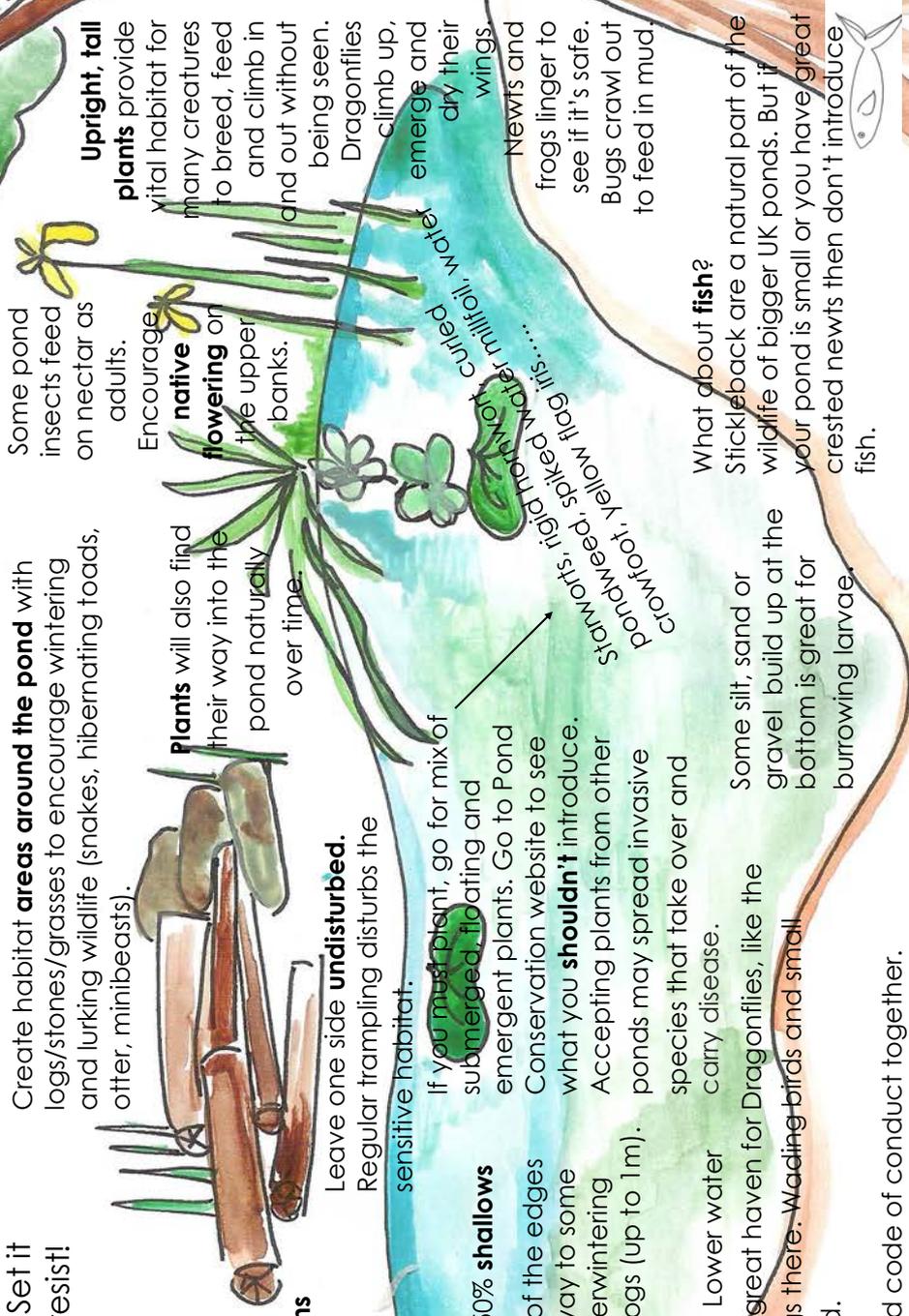
Minimise

tree cover on the south side to avoid heavy shading and prevent build-up of leaf litter.



Safety Work with children to create a pond code of conduct together. A strong metal grid on top of pond allows plants to grow and wildlife to get in and out but not kids! See Risk Assessment example for happy pond dipping.

Fill with **rainwater not tap water**. Collect in buckets prior to digging or wait for the dug pond to fill as it rains. Tap water contains chemicals which creates an imbalance of nutrients in the pond.



Create habitat **areas around the pond** with logs/stones/grasses to encourage wintering and lurking wildlife (snakes, hibernating toads, otter, minibeasts).

Plants will also find their way into the pond naturally over time.

Leave one side **undisturbed**. Regular trampling disturbs the sensitive habitat.

If you must plant, go for mix of submerged, floating and emergent plants. Go to Pond Conservation website to see what you **shouldn't** introduce. Accepting plants from other ponds may spread invasive species that take over and carry disease.

Some silt, sand or gravel build up at the bottom is great for burrowing larvae.

Some pond insects feed on nectar as adults. Encourage **native flowering** on the upper banks.

Upright, tall plants provide vital habitat for many creatures to breed, feed and climb in and out without being seen. Dragonflies climb up, emerge and dry their wings. Newts and frogs linger to see if it's safe. Bugs crawl out to feed in mud.

Staworts, rigid hornwort, pondweed, spiked water milfoil, water crowfoot, yellow flag iris... ..

What about **fish**?

Stickleback are a natural part of the wildlife of bigger UK ponds. But if your pond is small or you have great crested newts then don't introduce fish.

www.pondconservation.org.uk/millionponds/pondcreationtoolkit
www.pondconservation.org.uk/advice/makingpondsforwildlife

POND DIPPING EQUIPMENT



A pond!

Nets (see resources or make your own from a sieve tied tightly onto a light pole or broom handle.)

Viewing trays White flat trays are ideal to see the creatures best. Or use large margarine or ice cream tubs.

Appropriate **outdoor clothing**

Magnifying glass (see resources list)

Teaspoons to carefully pick creatures up once in tray to examine or to help move them if they get stuck on route!

Essential

Identification sheets or keys. (see resources)

Tally sheets or paper and pencil to record finds.

A bucket to make filling the trays easier or to use as overflow!

Several **magnifying pots** (see resources)

Ideal

Tips & Tricks

Fill the trays half full with pond water before the activity starts.

Kneel at the edge to get a good balance or at least stand with feet shoulder width apart!

To catch a good range of creatures and learn about their different habitats sweep the net along in the water in a figure of 8!

Dip at the surface, in mid-water, and among marginal plants at edge. (Be gentle so as not to damage plants or creatures). Return excess weed straight back to the pond.

You won't be able to see creatures amongst it anyway.

Try the bottom if you know it's not too deep. Dip at the bottom last and turn into a separate trays. Once the mud is disturbed the water will become very murky and trickier to see your finds.

After each dip empty the net straight into the tray of water to avoid harm to creatures. Keep your trays near the pond edge but spaced out from each other to avoid tripping.

Ensure all wildlife and water from trays goes back into the pond at end.

POND IDENTIFICATION: MEET AND GREET!



Use these pictures to spot what is in your pond

Identification of pond creatures can seem confusing.

Don't worry too much about knowing names.

Look at the creature features; size, number of legs, body parts.

Watch how and where the animal moves.



Azure damselfly



Common frog



Dragonfly



Pond skater



Great crested newt

Photos: P. King
Drawings: N. Hand

Pictures not to scale!



Three spined stickleback

Whirligig beetle



Damselfly & exuvia

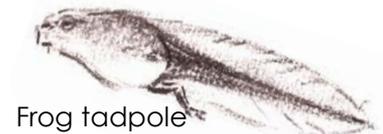


Pond snail



Great diving beetle

Water boatman



Frog tadpole



Water flea



Ramshorn snail



Water scorpion



Dragonfly nymph

Watermite



Mayfly nymph



Water hoglouse



Caddis fly larva in its case



There are lots more Identification charts to help (see resources)

Pond dipping safety

Don't let the thought of excited children and water put you off giving them the real deal pond dipping experience. Follow 'specific measures and precautions' section, combined with your school guidelines. This is just our **example** risk assessment.

In advance:

Visit site to ensure that there is a safe area to dip from. E.g. existing pond dipping platforms or areas where you are sure the water is shallow at edges. At the site go through specific measures and precautions section of risk assessment. Add any additional factors.

Activity: Pond Dipping		
Location: 'Malbury Ashyard'		
Description of Hazard		
<ul style="list-style-type: none"> • Children slipping into pond • Water borne diseases: Weils, tetanus, leptospirosis • Deep or fast flowing water • Exposure to harmful substances • Weather conditions (e.g. sun or damp and cold) 		
Level of Risk from these Hazards (n.b. you can do this against each hazard separately if you wish)		
Low	Medium	High
Persons at Risk: Adults supervising, children.		
When at risk?		
Whilst pond dipping and immediately before and after session. Children could go back to pond alone after session.		
Specific measures and precautions to be taken		
<ul style="list-style-type: none"> • Ensure children have adequate clothing. • Maintain high level of supervision (above normal). • Make sure everyone washes hands after the activity . • Talk about risks involved with the children - get <i>them</i> to think of what might happen and how to avoid it. Create a pond code of conduct together. • Tread carefully on banks, gravel areas or slippery rocks. Test prior to event. • Pond dipping should ideally be carried out by children kneeling on both knees or lying flat on their stomachs. • Do not drink water from pond or wash hands in it. • Cover open cuts and grazes on hands with waterproof plaster or pvc gloves. • Plan rescue and first aid in advance • Do not use any site where sewage or other pollutants are present. 		
Level of risk after precautions taken: Low Medium High		
Is this level of risk acceptable? Yes No		
Signed and Dated:		

We went to the pond and we saw.....



Use this space for a quick sketch of any creatures or creature features you liked!

Creature. If you can't name it, just describe it.	Number spotted

Pond location:
Date:

At www.opaexplorenature.org/TakePartWaterSurvey you can download surveys to see how healthy your pond is whilst you dip.

POND PLAY

FROG LIFE CYCLE GAME



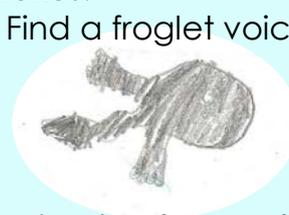
Need

- Rope or chalk to define the pond area
- 100 cards in 2 different colours (will represent food)
- Predator headbands saying 'newt' or 'heron' etc.
- A few towels or sheets (to represent pollution).



How to play

1. Define pond area with rope or chalk.
2. Sit the group around the "pond". Talk about different areas where plants and animals might live. Identify an area outside the pond that is safe haven for adult frogs.
3. Talk through the frog life cycle, describing each stage:
4. - Frogspawn - Tadpole - back legs then front legs develop - tail absorbed - the little frog is ready to hop out of the pond.
5. The group act each stage out with actions and noises. Go mad!
6. Become frogspawn. Get the children to scrunch up into small balls in clumps around the edge of the pond.
7. Eat the jelly. Munching noises!
8. Grow tails. Swim around the pond and explore.
9. Grow back legs. More movement.
10. Grow front legs. Practice all those swimming strokes!
11. Tail absorbed into body. Hop out of the pond. Find a froglet voice!
12. Hop to that safe haven.



Play the game again, this time introducing the complicating factors (below). How many adult frogs make it to the safe area now?

Complicating factors:

1. **Food Shortage.** Use the coloured cards as food tokens. At each stage of development, each frog must collect 2 cards of each colour from someone or somewhere around the room in order to survive and develop to the next stage.
2. **Predation.** Send in some children as newts and herons to "eat" the developing frogs in the manner of a game of tag.
3. **Chemicals** have leaked into the pond (throw coloured sheets into parts of roped area) Can the tadpoles move quick enough to safety? Is there enough room away from the spill for them to grow into froglets?



POND PLAY

WATCH OUT THERE'S A PREDATOR ABOUT!



Games to learn about Predator and Prey relationships. Can be in or outdoor.

Parachute pond! Need a parachute or similar light, large fabric. Parachute held gently by group sitting in a circle around its edge.

3 or 4 children go under the parachute as the prey e.g. tadpoles. One child goes on top of the parachute (shoeless!) as dragonfly larvae or great diving beetle larvae.

The predatory larva on top has to catch the prey moving around underneath. Switch over to give everyone a go.

Use the food chain and habitat pages of this pack to help discuss 'who eats



The male stickleback's belly turns red at breeding time. He does a zig zag courtship dance and creates a nest for the female to lay eggs in.

He then protects the nest and young fish from predators, even teaching them self defence by chasing them!



Set up two nest areas in different parts of the room or playground.

Place tennis or golf balls in nest as eggs.

Have one 'male stickleback' child at each nest with a red t-shirt/sash on to show the red belly of the breeding season!

All other children (water beetle larvae for example) try to sneak up and steal the stickleback eggs.

The winner could be the one who defends the most eggs or alternatively the ones who stole the most eggs. In other words this can lead to discussion about how each creature is dependent on another for food and that the balance of predators and prey in the pond is very important.

POND PLAY

PREDATORS AND PREY



More preparation involved but good for introducing camouflage as part of food webs

Preparation.

1. Create predator cards (1 per child): Chose predator species (examples below). Draw or print these images onto card. Make the cards A6 - A5 size.
2. Write two or three of the prey they might hunt (examples below). You could write these on yourself or do it as a class.
3. Make 'Belly getting fuller' recording sheets (just scrap paper) for each predator . Each child also needs a pencil to note when they find their prey.
4. Chose prey species (from list below). Draw simple versions of them (several of each) and cut them out of paper. Use roughly A5 paper per animal.
5. Distribute them around the room before the children come in. Some should be easier to find than others. Eg. At different heights, semi hidden behind or in things. Cut some from very bright paper but plenty from paper that blends in well with surrounds. If you're a computer whizz, take digital photos of surfaces in the room, print this out to cut from for true camouflage in surroundings!
5. Cut strips of sticky dots to give to each predator to stick on prey when they find it.

Example Predators: Heron, Frog, Dragonfly Larvae, Diving Beetle, Diving Beetle Larvae.

Example Prey: Waterflea, Tadpoles, Frog, Stickleback, Pond Worms, Pond Snails, Tadpoles, Watermite, Water Spider.



The number of types of predator and prey is up to you and your class size. Make sure there are enough prey to go around. There should always be higher prey numbers than predators unless the ecosystem is out of balance.

How to play

- Give each child a predator card.
- Send them to 'eat' as many of their prey (i.e. the animals listed on their predator card) as they can find around the room in the time you allocate.
- When they see their prey they can creep up and put a sticky dot on it and take a few seconds to digest it by writing it on their 'belly getting fuller' record sheet. But they leave the animal where it is.
- You can make it harder and say no-one can kill prey that is already dead i.e. has got a sticky spot on it, but you must make sure there is enough prey to go around.
- After 5 mins stop everyone. 'Predator successes' can then be compared. You can discuss implications of camouflage, food availability, water and food quality and adaptations necessary for surviving predators* in the real pond.



*Note that in ponds (as in most ecosystems), with the exception of the top predator, most predators are also prey for another animal.

POND POWER! CARDS

HOW TO PLAY



This card game is based on top trumps. It can be played in groups. Each creature has scores out of 10 in each of the categories.

Before you play:

- Photocopy the three pages of cards as many times as you like. More for a bigger group.
- Cut them out.
- You could stick pages to card for strength before cutting (or kids can!)

Before you play briefly discuss what the categories mean; the words themselves (e.g. 'agility') and what they mean for survival in the pond. Refer to fact sheets on habitats and superheroes.

Any number of people can play.

- Shuffle and deal all the cards face down.
- Each player holds their cards with only the top card facing up.
- The first player turns their top card and chooses a category. They say the category and the score out loud. E.g. if their creature has an agility of 9 they should say "Agility 9".
- The other players read out what their animal scores in that category.
- The player with the highest value wins all the cards from that 'round' and places them at the bottom of their pile.
- It is then their turn again to chose a score from the next card.
- In case of a draw where 2 or more cards have the same chosen score, place all the cards in the middle. The next time there is a winner of a round they take these middle cards too.
- The winner of the game holds all the cards but you can also put a time on the game and see who has the most when time is up. Or stop play when someone runs out of pond life for their ecosystem!



After pond dipping why not add to these cards by making your own with creatures you've seen.

Pond Power!

three spined stickleback



Size 5
Hunter rating 8
Agility 10
Camouflage 8

Pond Power!

swan mussel



Size 6
Hunter rating 2
Agility 4
Camouflage 10

Pond Power!

water boatman



Size 3
Hunter rating 9
Agility 9
Camouflage 5

Pond Power!

pond skater



Size 3
Hunter rating 6
Agility 8
Camouflage 5

Pond Power!

water mite



Size 1
Hunter rating 6
Agility 4
Camouflage 4

Pond Power!

leech



Size 3
Hunter rating 7
Agility 7
Camouflage 8

Pond Power!

grass snake



Size 10
Hunter rating 9
Agility 8
Camouflage 10

Pond Power!

heron



Size 10
Hunter rating 9
Agility 6
Camouflage 5

Pond Power!

dragonfly



Size 6
 Hunter rating 10
 Agility 10
 Camouflage 4

Pond Power!

frog



Size 7
 Hunter rating 5
 Agility 7
 Camouflage 8

Pond Power!

great crested newt



Size 9
 Hunter rating 5
 Agility 6
 Camouflage 7

Pond Power!

great diving beetle



Size 4
 Hunter rating 10
 Agility 9
 Camouflage 5

Pond Power!

water scorpion



Size 4
 Hunter rating 9
 Agility 7
 Camouflage 9

Pond Power!

water flea



Size 1
 Hunter rating 3
 Agility 3
 Camouflage 10
 (you need a microscope to see me!)

Pond Power!

great pond snail



Size 4
 Hunter rating 2
 Agility 3
 Camouflage 7

Pond Power!

caddisfly larvae



Size 3
 Hunter rating 3
 Agility 4
 Camouflage 10

Pond Power!

water spider



Size 3
Hunter rating 7
Agility 6
Camouflage 7

pond power!

mayfly nymph



Size 3
Hunter rating 5
Agility 6
Camouflage 6

Pond Power!

whirlig beetle



Size 2
Hunter rating 3
Agility 3
Camouflage 3

Pond Power!

dragonfly nymph



Size 4
Hunter rating 8
Agility 6
Camouflage 6

Pond Power!

(frog) tadpole



Size 5
Hunter rating 6
Agility 7
Camouflage 5

Pond Power!

water hoglouse



Size 2
Hunter rating 2
Agility 3
Camouflage 7

Pond Power!

toad



Size 10
Hunter rating 5
Agility 7
Camouflage 8

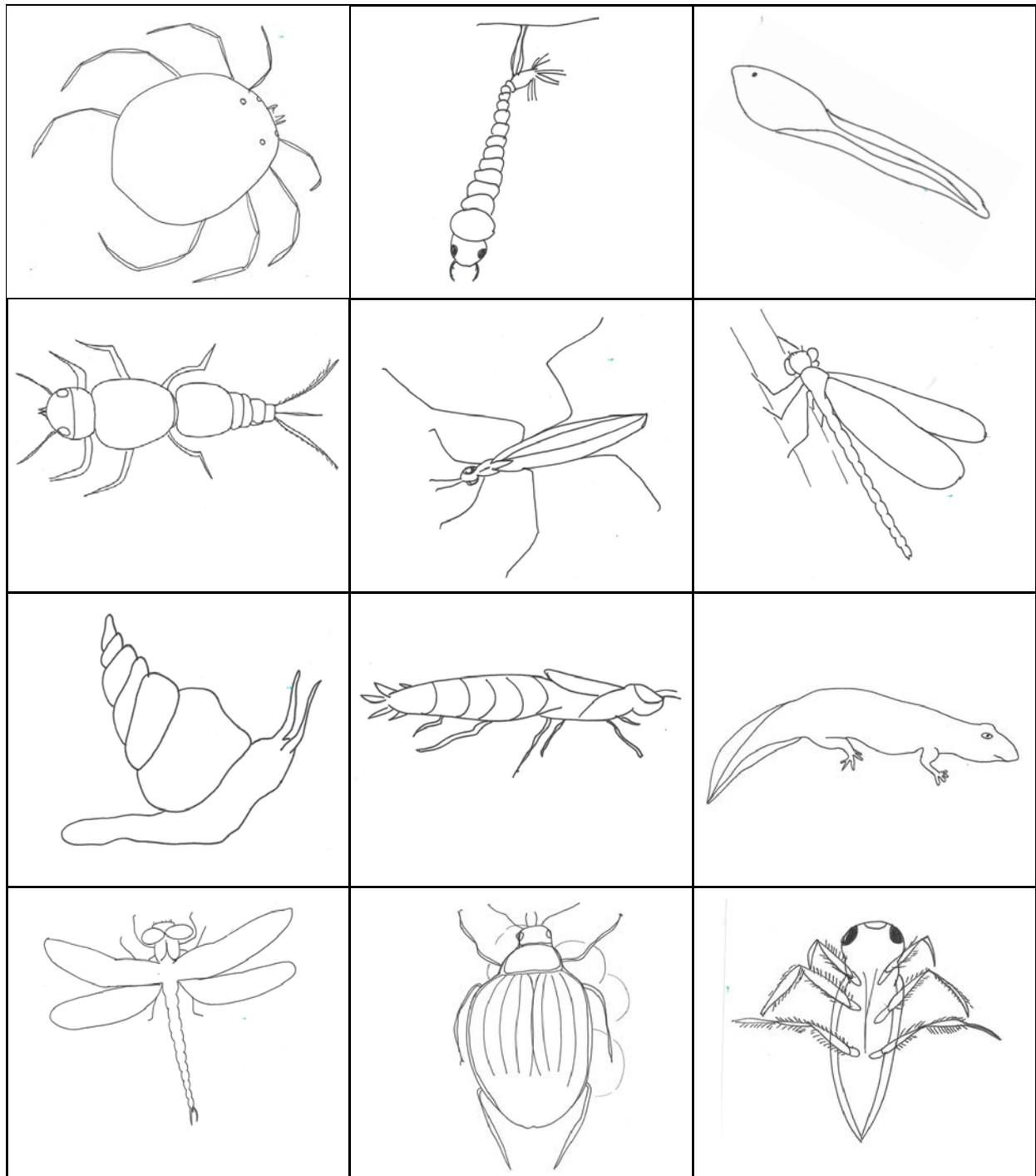
Pond Power!

china mark moth



Size 6
Hunter rating 2
Agility 6
Camouflage 7

POND BINGO!



Can you be the first to get a line full
& call "Full Pond"?

POND BINGO

HOW TO PLAY



Version 1: Keep it simple!

Version 2: Give us a clue! For older children who have already done some work on pond creatures. (E.g. habitat, pond power, id, food web pages from this pack)

The grid of creatures is both the board and the cards to cut up for version 1.

Version 1 (easier)

Prep:

Choose whether children will play in groups or individually. This determines the number of boards you need.

Each group or child needs a board with its creatures laid out in different order.

To do this photocopy the grid x the number of boards you need. Cut each grid up along its squares and scramble up to form a differently ordered board, sticking onto another sheet of paper or card as you go. (Still a 3 x 4 grid with each board displaying all the creatures as the master grid).

n.b the kids could do this for you!

Then photocopy another batch of grids to be cut up for cards to 'put into a hat'.

Play:

Teacher (or a student) pulls cards 'out of hat' one by one and shows it to the class.

The children cross off (or put a counter on) the matching card on their board.

As soon as someone/group has a full line (you could be strict and say only vertical line) they can raise their hands and shout "full pond!"



Why not just use these cards for snap or a memory game?



After playing see if they can name any of the creatures they have matched or tell you how they move, see, breathe or feed.

Version 2. (Some pond know how required!)

Prep:

Follow version 1 instructions to create a different board for each child or group.

But *don't* photocopy and cut up cards to put in hat.

Instead use the Pond bingo clues sheet.

Play:

Teacher (or student) reads out clues one by one. Don't read out the answer written in brackets. The children cross off (or place counter on) the creature they think it is.

As soon as child/group has a full line they can raise their hands and shout "full pond!"



The children could colour in the creatures on their boards.



Compare scientific drawings of the natural world with artist impressions. Compare the simple lines, detail of feature vs. interpretation, colour.....

POND BINGO CLUES



I fly around above the pond and when I rest I fold my wings behind me. (Damselfly)



I eat my way out of the jelly around me and a few weeks later I grow legs. (Tadpole)



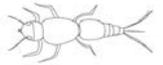
I have a special tube at my tail to breath oxygen like a snorkel. (Mosquito larvae)



I move my way slowly around the pond with a curly whirly shell upon my back eating rotting plants and animals. Yum! (Pond Snail)



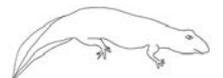
I have 3 long tails at the end of my body. I swim in darting movements and one day will climb out of the water and fly away. (Mayfly nymph)



I lay my eggs in water. They become nymphs then crawl up a plant stem and burst out of their skin, dry their wings and fly away as an adult with huge eyes. (Dragonfly)



I spend autumn and winter on land but come to the pond in spring to lay eggs on the plants in the water. (Newt)



I am so light I can walk on water. (Pond skater)



I have 5 tiny spines at the end of my tail. I live at the bottom of the pond amongst mud and leaves. I keep shedding my skin. One day I will leave the water to burst out of my skin and become something very beautiful. (Dragonfly larvae)



I have a huge appetite and can even eat creatures bigger than me. I am a strong swimmer. I rise to the surface to trap air around my body to breathe. (Great Diving Beetle)



I swim on my back and use my hairy legs like oars. I can also breathe through the hairs on my legs! (Water Boatman/backswimmer)



I am roundish and I may be teeny weeny but I suck the body juices from other pond life for my tea! (Water mite)



THE ART OF PONDS!

CRAFTY CLASSROOM CREATURE CREATIONS



Pond TV Pond Theatre

Cut the front from a cereal box. Paint the inside as the colours of a pond. Add grasses at the top and mud colour or real stones at the bottom. Cut and colour pond creatures from card and hang them from strings along the top of the box. Either so you can move them like puppets or just in place as a still pond life!

Pipe cleaner dragonfly.

Wind coloured pipecleaners round a stick. Twist 3 across to make 6 legs. Thread 2 bright plastic beads onto another pipecleaner leaving a little space in between to twist the pipecleaner into a bump. Attach to front of stick with ends of pipecleaner. Add light material (organza or tulle) for wings which you secure with pipecleaner round middle.



★ 'Catch your ted' Pond scene.

Open up the top of box not side. Instead of fixing the creatures on strings attach metal paper clips to them. Lay them at the 'bottom of the pond'. Make rods (sticks) and lines (string) with little magnets tied or stuck on the end. Dangle line into pond and see who can be the first to catch the most prey! You could cut out pictures of the fierce predators and stick them on your rods. Heron, Diving beetle, Dragonfly Nymph. etc.

★ Explore **different colour dragon & damselflies** with different colour pipecleaners. Add layers of pipecleaners or thicker stick for broader 'Hawkers'. Less for delicate damselflies.

Make **caddisfly larva**. Just don't add wings but insert larvae into a tube of rolled card covered in sticks, sand or gravel or leaves.

Shadow Puppets

Cut creature silhouettes (the basic outline shapes) from black card. Tape a stick to hold onto. Tie up a white sheet in a darkish area. Kneel down behind the sheet and hold up your creatures with a torch or lamplight coming from behind you and your audience in front of the sheet.



To get the **big pond picture** create your own class pond on big paper on the floor with paint & collage. For the key features refer to habitat, 'project pond', 'why preserve', 'pond types' and 'food web' pages of this pack

Have a **giant pond parade!**

Make oversized pond creatures from cardboard, collage & recycled bits. Attach them to tall sticks for kids to hold creating a creature carnival! Make masks and willow dragonflies (next page) for the procession too.

Pond explorers kit

Cut 2 rectangles of cloth: One A4 size, one smaller in height.

Paste glue in thin vertical lines on bigger cloth - see dotted lines. (This will make compartments). Lay smaller piece on top. When glue has dried. Add items like Magnifying glass, plastic teaspoon, pencil and paper for notes.

Roll up the cloth bundle. Tie round with string ready for any pond dip or nature exploration.



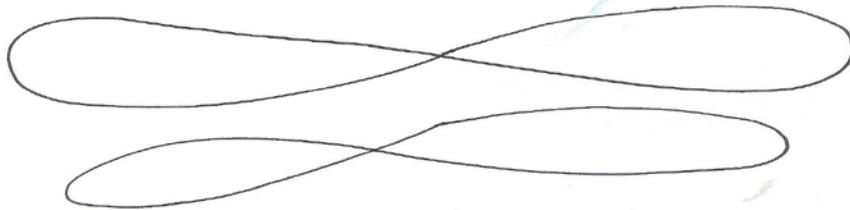
★ Create a pond play using your puppets

THE ART OF PONDS!

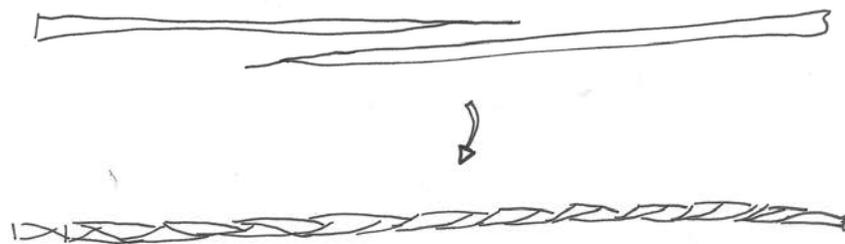
GIANT WILLOW DRAGONFLIES



Willow is a flexible material for creating all sorts of art works. When very bendy you can twist and tuck ends around themselves and it will hold itself in place. Or you can secure with masking tape. Collect and use fresh if you know somewhere you have permission to cut it or see resources page for where to buy.



1. Wings:
Twist two pieces of willow into two figures of eight. Secure with tape where ends meet and where they cross over in middle.

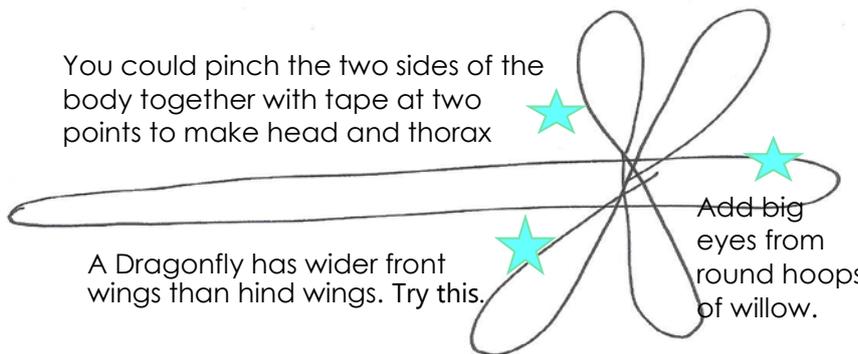


2. Twist two pieces of willow together to make longer stronger pieces. (You can do this for wings too)



3. Loop this round to make a long body. You may need 2 x twisted willows! Secure with tape.

You could pinch the two sides of the body together with tape at two points to make head and thorax



A Dragonfly has wider front wings than hind wings. Try this.

Add big eyes from round hoops of willow.

4. Attach wings onto the body with tape.

A Dragonfly rests with its wings flat open. A Damselfly with them folded behind. Half the class could make one, half the other.



You can add glued tissue paper to willow frames. It dries to create a stained glass window effect. Lay pieces of strong tissue paper on a tarp, sponge each one with glue and water 50/50 mix, lift and lay over framework, tuck over edges. Leave to dry.

If wet tissue is too messy attach light material for wings and shiny colours for an iridescent body.

MASKS

BRING THE POND TO LIFE



Here are four pond mask templates.
Enlarge each one to approx A4, or the right size for the children's faces.
Children stick the paper onto cardboard.
Cut out outer edge of mask. Cut out dotted eye holes.
Punch holes through the black dots for elastic to hold it round head. Or simply attach a stick to back to be held.
Colour or collage.

If it's a dry day, go on a nature walk and collect fallen leaves, grasses, wool, twigs or string and other items to collage.

Don't stop with these four creatures. Chose from the thousands of other pond dwellers and simply give the children a basic round template with eye holes for them to turn into whatever critter has captured their imagination. Create a whole classroom of pond creatures that represents the whole pond ecosystem

In lots of countries masks don't just cover faces they reach way up over people's heads. Hence pond snail and water boatman mask rises up over the child's eyes. Masks may also start from the eyes and go all the way down the body or stick out front for a metre. You could show books of masks from Africa or North America. Use pictures of pond creatures to be life like or go 'dramatic pond' and encourage the children to be as expressive as they like with mask decoration. Exaggerating creature features is a great way to discuss different animal's strengths, weaknesses and adaptations to their environment. (See Superheroes).

These masks inspired many famous artists like Picasso.

Mask making is just the beginning!

It is the start of movement, stories, plays created by the children whilst exploring the way pond creatures rely on each other and the pond itself to survive. You cover curriculum areas such as habitat, ecosystems, life cycles, food webs through mask making, drama, storytelling (also covering English, DT, Art).

Gordon McClellan* an inspiring environmental educator, says

'A mask made that is not then brought to life is no mask at all.

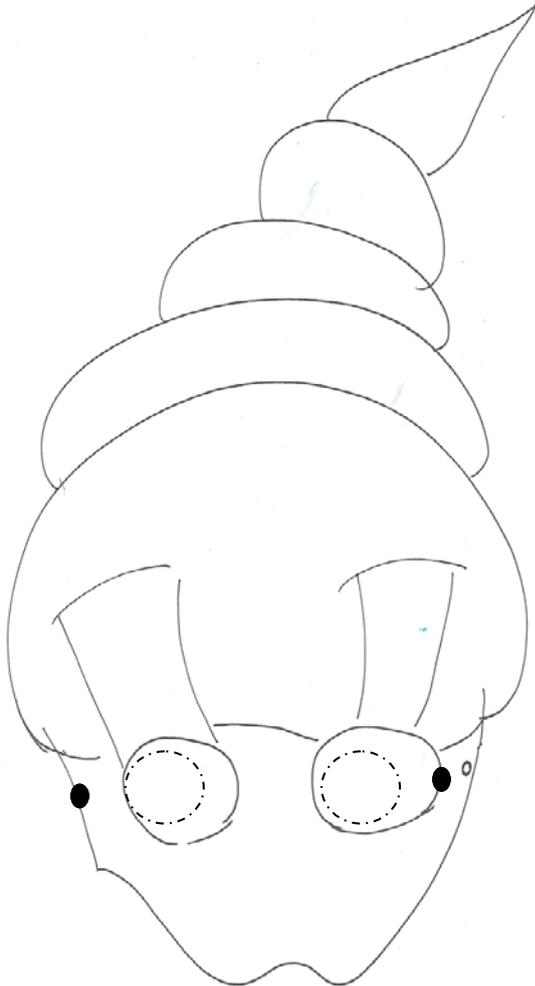
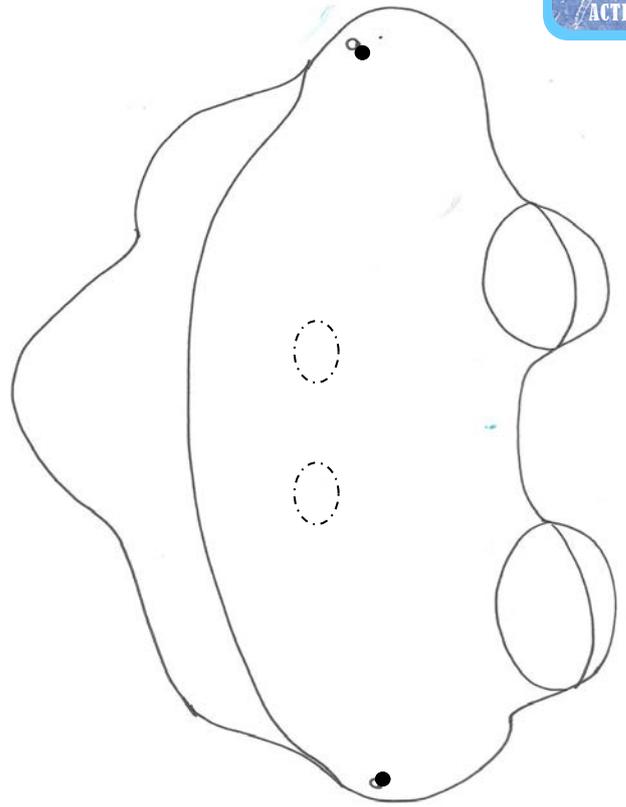
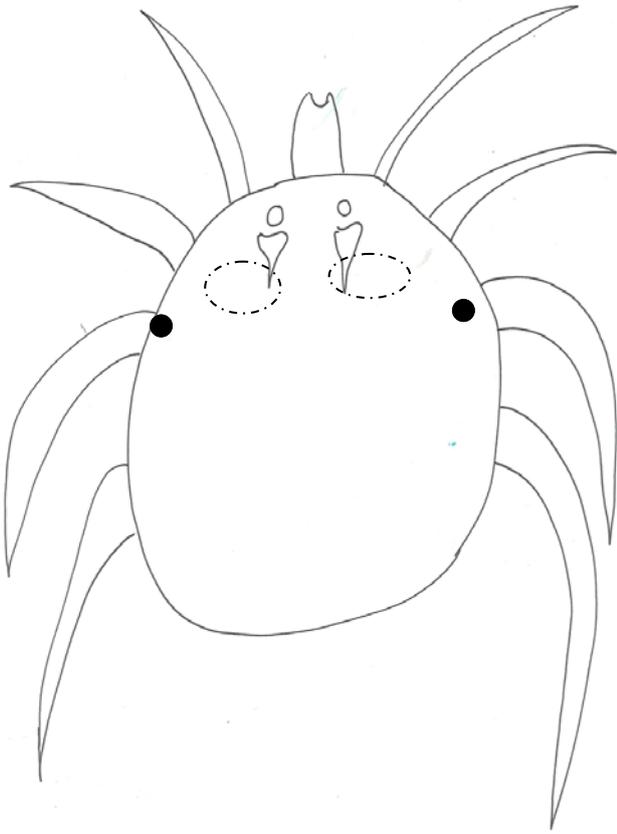
We need to have them cavorting across the classroom, or hiding in long grass'.

Or in this case, diving, hopping, skating, their way through the pond and banks!

Acting out: Ask the children to stand around the room. All take a deep breath then slowly put their masks on. Ask them to think how their creature moves. Where in the pond does it live? Can they act out what it is like to live there? How do they interact with the pond creatures near them? Will they stalk them for their supper? How far have they travelled to get to the pond? Do they live there all year? Sometimes just let them move and interact. At other moments write some of what they say and do on the board. You'll have the makings of a play that *they* have written!

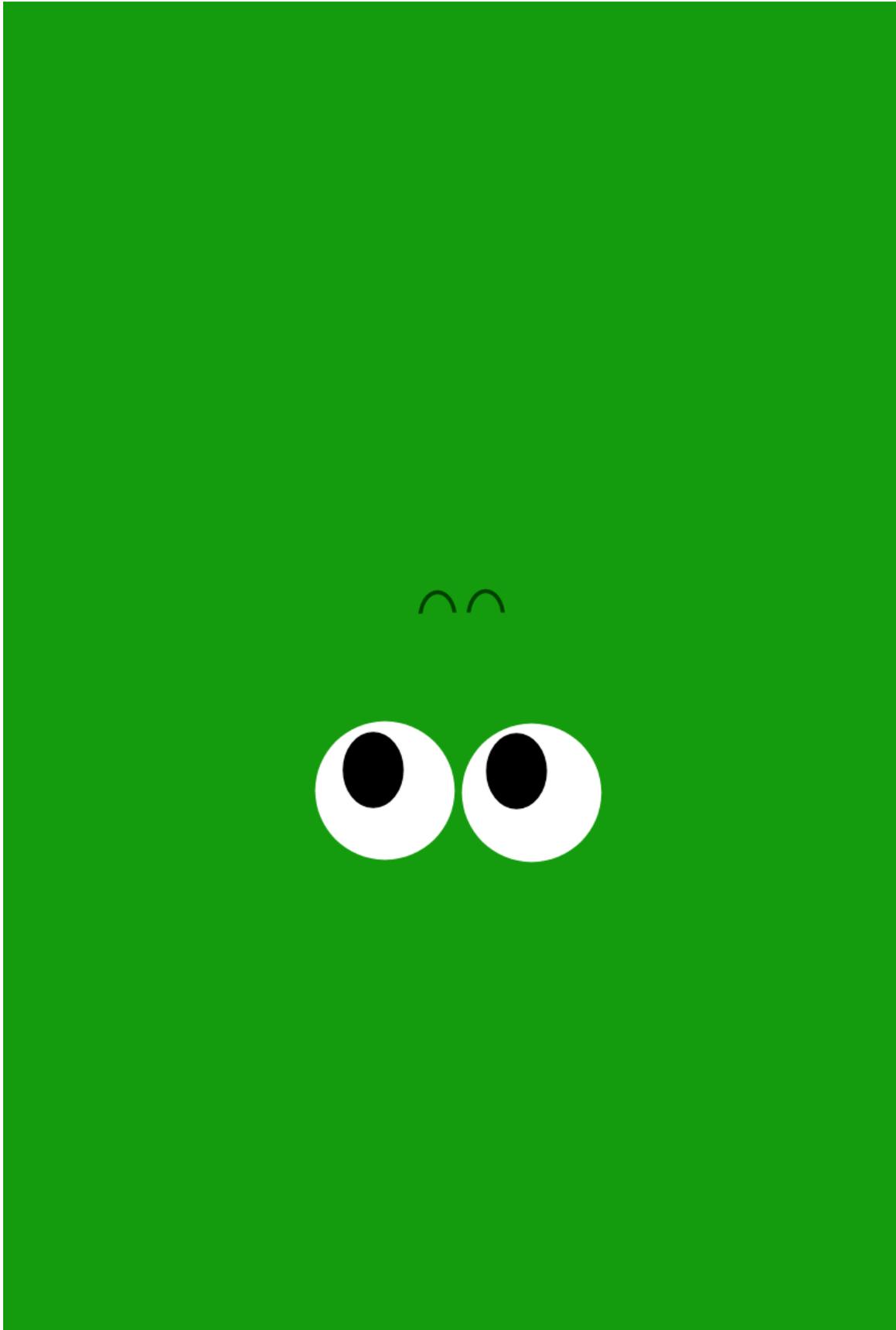
If necessary chose a specific starter or challenge to improvise to help the drama to emerge.

- Ooh its dark in here. There is too much pondweed.
- 'It's spring in the pond....'
- 'There has been pollution spill in the pond.....'
- 'The water scorpion said to the mayfly nymph.....'
- 'Yikes! Someone has released a really large fish in.....'



Hopping frog

Cut out this green rectangle then follow the folding instructions to make a frog that hops.

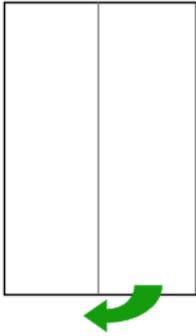


Start your own adventure at naturedetectives.org.uk

Fun stuff for kids, families and schools by the Woodland Trust, a charity registered in England & Wales (294344) and Scotland (SC038885) at Kempton Way, Grantham, NG31 6LL.
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Hopping frog instructions

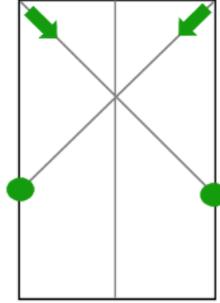
1



Cut out your template and lay it green side down (with the eyes nearer the bottom)

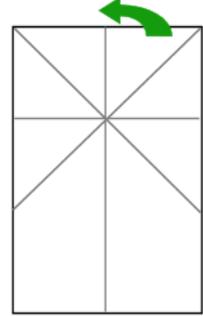
Fold it in half lengthways then open it back up.

2



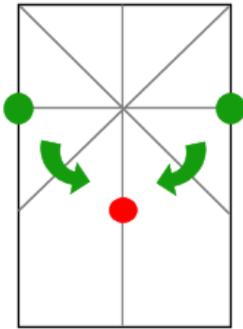
Fold each top corner down towards the opposite green dot then open it back up - your fold lines should look like this

3



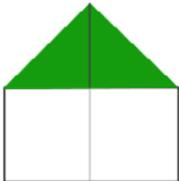
Fold your template backwards, at the point where the fold lines meet then open it back up - the creases should now look a bit like the Union Jack flag :O)

4

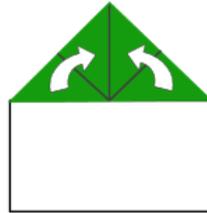


Now hold your template at the green dots and pull the edges in towards the red dot - the folds should help with this

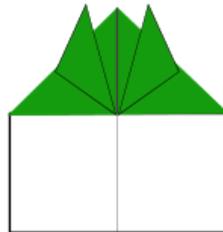
Flatten the top into a triangle like this.



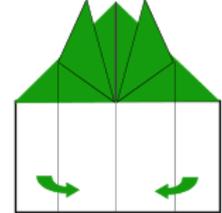
5



To make your frog's front legs, fold each corner of the triangle's top layer upwards so they sit each side of the tip of the triangle.



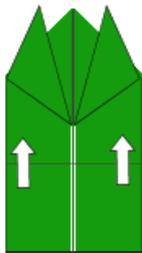
6



Now fold each side in towards the middle.



7



Fold the bottom part upwards like this:



8



Now fold this flap back on itself, so it looks like this:



9

Now flip it over and you have a cool hopping frog!



To make your frog hop, push down on the frog's back and let go :O)



POND POETRY



Use these poems as inspiration
Create more from the suggestion boxes



Mayfly

By M. Polack

*A day in the life of a Mayfly
May fly rather fast
It must live the moment and seize the day
And forget about future and past!*

Give starting lines. See what emerges:
'I walked to the pond today and I saw...'
'Down amongst the murky reeds...'

My Pond

*There are many
creatures round my pond
And all of which I'm very fond*

*I love to observe the watching frog
Who sits as still as any log.
Its eyes above the water stare
And it waits for flies to pass just there.*

*Pond skaters on the water float
And swimmers paddle just like a boat*

*And if on summer days I stay awake
I might just see a grass-green snake
A flash of yellow as its sleek head dips
And from the water gently sips.*

*A winged thing is a butterfly
I love to see it flutter by.
But the most stunning thing is a dragonfly
It couldn't drink a flagon dry
But a flash of colour to the pond it brings
With bead like eyes and translucent wings.*

Write the name of a pond creature down the left hand side of the page. Write a line for each letter about the creature. It's a poem!

The Dragon-fly

By Alfred Lord Tennyson

*Today I saw the dragonfly
Come from the wells where he did lie,
An inner impulse rent the veil
Of his old husk: from head to tail
Came out clear plates of sapphire mail.
He dried his wings: like gauze they grew;
Thro' crofts and pastures wet with dew
A living flash of light he flew.*



Haiku are perfect pond poetry. Something small to capture the magic of the minibeast world.



The Frog

*What a wonderful bird the frog are.
When he sit, he stand almost.
When he hop, he fly almost.
He ain't got no sense hardly,
He ain't got no tail hardly.
When he sit, he sit on what he ain't got—almost.*

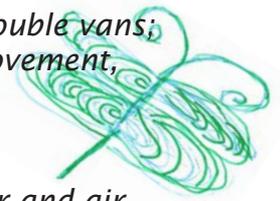


Anon

The dragonfly

By Louise Bogan

*You are made of almost nothing
But of enough
To be great eyes
And diaphanous double vans;
To be ceaseless movement,
Unending hunger
Grappling love.*



*Link between water and air
Earth repels you.
Light touches you only to shift into iridescence
Upon your body and wings*

*Twice born, predator,
You split into the heat.
Swift beyond calculation or capture
You dart into the shadow
Which consumes you*

*You rocket into the day
But at last, when the wind flattens the grasses,
For you, the design and purpose stop.*

*And you fall
With the other husks of summer.*

*I'm a beetle that
Goes round and round
One eye on the upward
One eye on the down*

What am I?

Riddles are guessing game poems.

*Here I go
Rather slow
Eating algae and dead foe
But my house is curly
And a little whirly
And I'm pretty important don't you know.*

What am I?

PONDS: PLACES OF MYTH & LEGEND

Standing water is important to humans and animals all over the world. It may be where life first began. Different cultures, countries and religions create their own stories about these special places and the creatures that dwell there.

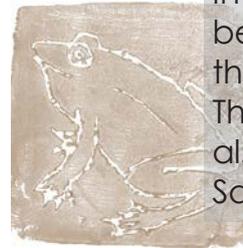


A Zuni (North American) myth tells of two children who were left behind by the villagers when the corn crop failed. The little boy constructed a toy **dragonfly** from corn husks to cheer up his sister. The dragonfly eventually came to life and appeased the corn maidens who created a bountiful harvest of corn to welcome the villagers back.

In China, they see the *toad*, not the man in the moon. They say that eclipses happen when the "toad" tries to swallow the moon.

SOME LEGENDS ARE STORIES OF REAL POND CREATURES.

In India, frogs were believed to personify thunder in the sky. The word for frog also meant cloud in Sanskrit!



Taniwha is a **water spirit** of Maori (Aotearoa/New Zealand) myth. Both a helpful spirit that warned curious children away from danger and a hidden monster of huge proportions lurking in the depths.

SOME ARE A DREAMWORLD. BEASTS THAT BLUR LINES OF FACT AND FICTION, HUMAN AND ANIMAL.

Loch Ness monster? A myth of a huge beast in a big pond!

Tiddalik the Frog from Australia wakes with an unquenchable thirst. He drinks until all the fresh water in the ponds, lakes, rivers and seas are gone. Creatures and plant life everywhere begin to die because they have no water to live in or drink. Many creatures try to persuade Tiddalik to give the water back but nothing works. Eventually a wise old Wombat suggests the eel ties himself in comical shapes to make Tiddalik laugh. As Tiddalik laughs the water rushes out of him to fill the dry land. 😊

An old name for **damsel**flies was 'Devil's Darning Needles'. This stems from an old myth that if you went to sleep by a stream on a summer's day, damselflies would use their long, thin bodies to sew your eyelids shut!



In Japan the **dragonfly** is symbolic of success, victory, happiness, strength and courage. During the 11th century noble Japanese families used the dragonfly as ornamentation on everything from furnishings to textiles. The dragonfly was chosen as a part of the Samurai family crest.

What pond creatures would make our frogs laugh?



RESOURCES, WEBSITES AND CONTACTS



www.herefordshirewt.org Herefordshire Nature Trust. (About us/Ponds and Newts project)
www.herefordhart.org Herefordshire Amphibian and Reptile Team.
www.pondconservation.org.uk Leading pond conservation organisation. Lots of info.
www.arc-trust.org Amphibian and Reptile Conservation.
www.wildlifetrusts.org The Wildlife Trusts.
www.wildlifewatch.org.uk Lots of child friendly materials. Great bite size info for preparing sessions. Plenty of ID on spotters' pages. 'Explore Wildlife' and 'Activities' also good.
www.naturedetectives.org.uk Nature Detectives is a fabulously child friendly website full of visually simple activities and projects.

Pond Animal Identification ('ID')

Usborne Spotters Guide Ponds and Lakes. ISBN 9780746073636

www.avonwildlifetrust.org.uk (Get Involved/Wild Schools/Teachers Corner/Resources/Frogs and Ponds) Avon Wildlife Trust's Wild Schools teacher's resources section has clear ID pdf in Adopting a Pond section as well as other activities).

www.naturedetectives.org.uk/packs/water_pack

Simple 'pond spotting page' for young children. Plus other activities and info.

www.field-studies-council.org/publications/fold-out-charts

Great water resistant charts to take pond dipping with you. Order the [freshwater name trail](#). It is a detailed 'key' but can also be used for simple ID from the pictures.

www.ispot.org.uk Great interactive nature spotting website. Good for nature images and research. Has forums and groups.

www.pondconservation.org.uk/bigponddip/IdentifyingPond+Creatures/Invertebrates+in+your+pond Detailed species descriptions

Other useful websites and pages

www.britishecologicalsociety.org Educational Resources/Teaching and Pond resources.

www.wildlifetrusts.org/wildlife/species-explorer/animal/invertebrates/bugs

www.lifeinfreshwater.org.uk

www.rbkc.gov.uk/pdf/pond_pack_2010.pdf pdf for specific pond dip but useful charts, ID, pond dipping record sheets to adapt for your class.

www.opalexplorenature.org Water/ Survey section has download sheets on id. and survey work sheets for pond dip which assesses health of pond.

www.bbc.co.uk/learningzone/clips/ eg [can-you-spot-the-difference-between-a-frog-and-a-toad/](#)

www.arkive.org For inspiring photos and accompanying info. Great for kids to research creatures (photos are available for internal educational use by educators and students.) They now also do educational resources: www.arkive.org/education/

Resources

www.keycraftuk.com for magnifying bug pots and magnifying glasses. In science section.

www.nhbs.com NHBS sell pond dipping nets and kits amongst 'everything for wildlife science and environment!' Go to home page/equipment (drop down menu).

www.englishwillowbaskets.co.uk Willow or 'withies'. Go to shop online/Basket making willow. A bundle of the medium length (5ft) Buff willow will do. It needs soaking for at least a day in a bath or large bin to regain its flexibility. n.b. Postage is not cheap as parcel is heavy.