

Dunorlan Park Pond Dipping

Education Pack



Contents

Health and Safety	3
Risk Assessments	4
Site Briefing	4
Information about Dunorlan Park and Pond	4
How to Pond dip.....	5
Activities.....	6
Activity 1 - Species recording sheet	6
Activity 2 – Water quality	7
Activity 3 – Animal Class	8
Activity 4- Looking closely.....	9
Games.....	10
Art and crafts	10
Appendix.....	11
Equipment list	12
Risk assessment	13
Tetanus and Leptospirosis Notes	16
Food webs.....	18
Species recording sheet.....	20
Newt instructions	22
Template sheet.....	24
Dragonfly instructions.....	25
Wing template sheet.....	27
Dragonfly Plane.....	28

Health and Safety

Risk Assessments

A risk assessment is an important tool as it helps to focus on those risks that have the potential to cause harm at any event or activity.

The purpose of the risk assessment is to take the organiser through a process of considering potential hazards, what effect they may have on participants in an activity (the risk), the likelihood or severity of them occurring and any steps that can be taken to minimise them.

A risk assessment for pond dipping at Dunorlan Park has been included in this pack. It includes general risks for pond dipping at this site and it is important to remember a site visit should be carried out shortly before the day of the activity to take into account any risks not previously considered and to update the risk assessment accordingly.

This will reduce the number of 'surprises' that may be encountered on the day of the event, although there is a need to remain vigilant throughout the day's activity.

In addition to the risk assessment, reference sheets for diseases carried by animals and details on Tetanus and Leptospirosis have been included in the appendix.

Site Briefing

Before the activity starts, the teacher should emphasise the relevant risks as set out in the prepared risk assessment and advise the children against:

- Wandering off away from the main group on their own
- Walking off with strangers
- Eating berries, mushrooms, nuts etc which they may find in the vicinity
- Eating snacks and lunch without first washing hands
- Entering the water
- Standing unsupervised next to the pond edge
- Dropping litter

N.B. Washing hands and covering open wounds is very important because of the possibility of infection from water borne diseases.

The Pond dipping platforms have been installed to allow for the safest method of pond dipping and reduced disturbance. Please only pond dip off the two platforms.

About the Park

Dunorlan Park, situated on the eastern edge of Tunbridge Wells, Kent, is a park with both formally managed areas and sections that are managed with the interests of wildlife in mind.

Dunorlan Park has a stream running through it in a roughly west to east direction with a series of online pools at various points along its length as well as a large lake.

About the pond

The pond you are dipping in is the smaller of the two found in the park. It is fed by the chalybeate spring, which runs across the park. The 2 dipping platforms have been specially constructed so please stick to the platforms for access to the pond.



How to pond dip!

Equipment per group

- 1 x Net
- 1 x large white tray and 1x small tray
- 2 x sampling pots
- 1 x Spoon
- 1 x Freshwater name trail leaflet

Method

1. Ask an adult to fill both trays with water. You will only need about 3-4cm in each. You want the water as clear as possible with no weeds or plants in them. – In warmer weather the trays will need to be regularly changed as the water heats up to stop any creatures from cooking.

Be careful not to over-reach as the tray can be heavy

2. Only one person per group to pond dip at a time. This will help keep the dipping platform clear and only have 3 people on the platform at any time.
3. Get into a comfortable position on the dipping platform this can be, sitting crossed legged, in the standing position slightly away from the edge or lying flat on your belly.
4. Sweep your net slowly through the pond, the invertebrates live at different depths so make sure you sweep the net at the surface of the water, middle and low to the bottom. (Mind not to sweep up any of the mud!)
5. Take the net to the large white tray and turn the net out as close as possible to the water. Let the water settle and look for any movement. Repeat as many times as you wish. **Nothing should be dropped or thrown into the containers.**
6. The spoon can be used to move anything interesting in to the smaller white tray to allow for better identification. The small magnifying pots can also be used but are often not necessary.
7. DO NOT handle the creatures from the pond. If any adult or immature newts are found, please DO NOT Touch them as they are easily stressed, just record them and return them to the pond away from the pond dipping activity.
8. When finished all creatures need to be returned to the pond. The tray can be put just under the surface of the water and SLOWLY removed making sure all the creatures have been returned.














**Remember to stay SAFE near water
Stay Away From the Edge!**



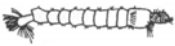








Activity 1.Species recording sheet

What's in the pond?

AIM – Learn to use the id sheet correctly

- Objectives – Correctly Identify the catch
- Identify different (id) physical attributes of animals
 - Use of an identification Key
 - Identify the different sections of the pond

Pond Animal	Tally	Where in the pond does it live?
Alderfly nymph 		
Caddis fly larva 		
Damselfly nymph 		
Dragonfly nymph 		
Mayfly nymph 		
Pond Skater 		
Stonefly nymph 		
Water Scorpion 		
Water boatman 		
Water-beetle larva 		
Water beetle adult 		
Flatworms 		
Freshwater shrimp 		

Pond Animal	Tally	Where in the pond does it live?
Pond snail 		
Leeches 		
Mosquito larva 		
Ram's horn snail 		
Roundworms 		
Springtail 		
Tadpole 		
Water fleas 		
Water louse 		
Water mites 		
Water Spiders 		
Other		
Other		

There are 8 laminated copies of this chart in the box which can be written on using the chinagraph pencils.

Activity 2. Water quality

The information gathered on this sheet can be used with the laminated guide found in this folder (Guide to the main groups of pond invertebrates) to decide how healthy the pond is by finding out which of the key indicator species are present in the pond.

Activity 3. Animal Class

Meet the Neighbours

AIM – Understand the physical diversity of pond animals

- Objectives – Illustrate the animals found
- Identify different physical attributes of animals
 - Use of an identification Key

The animals you have caught come in all - shapes and sizes!

Work in Groups of 3 or 4

- Sort your 'catch' into different groups (no more than six groups). **There is no need to physically sort the creatures in the trays**, the tally chart and id sheets will be adequate to help this activity.
- Discuss how to divide the animals up. E.g. Animals with shells one group, animals with 6 legs another group and so on.
- Draw one animal from each group in the boxes below.

WHAT SHALL WE CALL THIS GROUP _____	WHAT SHALL WE CALL THIS GROUP _____	WHAT SHALL WE CALL THIS GROUP _____
WHAT SHALL WE CALL THIS GROUP _____	WHAT SHALL WE CALL THIS GROUP _____	WHAT SHALL WE CALL THIS GROUP _____

See how others in your group have sorted their animals. Have you put the animals into similar groups?

Activity 4. Looking closely

Investigate an animal!

AIM – Identify different attributes of a chosen animal from the pond

- Objectives
- Illustrate the animal found
 - Use of an identification Key
 - An understanding of a chosen creature from the pond

Ask children to gather as much information as they can on one animal
Using a magnifying glass to help find out....

What is it called?

Does it have Legs?

no

2

4

6

More than 6 legs?!

A drawing of my animal.....

Does it have any interesting features?

Why might it have them?

What does it eat? What eats it?
Can you make a basic food chain
focused on your animal?

Where did you find the
animal?
In open water
Amongst some plants
In the bottom of the pond
On the water surface

Describe how it moves...

Does it have a shell?

Games

Pond dipping Frog, Frog, TADPOLE!

For this game you will need the children to sit in a circle with one child standing on the outer side. The standing child then needs to walk clockwise around the circle tapping each child on the shoulder saying frog. At a random choice the child will tap one of the others and say TADPOLE! When this happens the tapped child will need to jump up and race anti clockwise around the circle back to their spot before the child on the outside (who runs around clockwise) makes it back first. Keep going for as long as you wish.

Pond dipping Charades!

This game can be played together. One child is chosen to be the actor. They have to silently act out their chosen animal from the pond the rest of the children have to take it in turns to work out what creature they are. If you are with a younger group this game can be used to ask the children to voice ideas about the animal being acted out i.e. why it might move the way it does.

This game can be adapted to be a word game in which children have to describe the animal in only 5 words.

Arts and crafts

Creature crafts

Divide the children up into small groups,

See which group is able to make the best pond resident sculpture out of natural materials found near by.
Points could be awarded for most original, most detailed, most accurate etc.

In the appendix you will find instructions and templates for making the following pond creatures

A paper newt

A pipe cleaner dragonfly

A paper plane dragonfly

Appendix

Equipment list
Risk assessment
Tetanus and leptospirosis notes

Food webs

Species recording sheet -you may want to photocopy these to take these to site and use rather than the laminated versions which cannot be taken from the box

Newt instructions
Newt templates

Dragonfly instructions
Wing templates

Paper plane dragonfly instructions

Equipment List

Pond dipping nets

Number	Item	
6	Pond dipping nets	
4	Spare net heads	
6	Large white trays	
6	Small white trays	
6	Giant magnifiers	
2	Fsc reptile & amphibians guide	
2	Fsc Dragonfly and damselflies guide	
6	Fsc Freshwater name trail	
1	10 person first aid kit	
1	Throw rope	
2	Alcohol gel	

Kent High Weald Partnership Risk Assessment

Date of activity:	Other information: Pembury Hospital Accident and Emergency 0845 155 1000
Date of R.A./Site visit:	
	First aider:

Generic Risk Assessments

General site safety	X	Weather	X

Hazard	Risk	Who might be harmed	Likelihood of risk taking into account the proposed actions	Proposed action
Uneven Ground	Slips, Trips and Falls	Participants and Staff	Low	Warn participants of danger
Deep water in pond	Drowning	Participants and Staff	Low	Warn participants of danger, throw rope must be available and participants advised on how to use it.
Weils Disease	Illness	Participants and Staff	Low	Advise on hand washing before eating, See safety file notes for details
Working with Young People	Welfare of young people	Young people	Low	Children must be accompanied by an adult. No adult will be left alone with a child, unless they are the guardian.
Litter and rubbish	Trips, cuts,	Participants and staff	Low	Warn participants of risks, ask them to not touch or move any litter unless equipped with gloves and litter picker

Weather	Exposure	Participants and staff	Low	Wear clothing appropriate to the weather condition, and take shelter if necessary.
Brambles and nettles	Cuts, thorns, and allergic reactions	Participants and staff	Low	Identify hazardous plants to participants and warn of potential risks. Warn participants of brambles flicking behind them or catching clothes, look out for each other.
Scissors and selotape	Cuts from blades and sharp edges, possible stabbing	Young people	Low	Scissors to be used under supervision and only within the designated area, children must not walk around with scissors due to uneven ground.
Unacceptable behaviour from young people	Damage to property, harm to self or others	Young people and supervising adults	Low	Agree a set of rules at the beginning of the day Parents are responsible for their own children and those in their care
Getting lost or deliberately separated from the group	Panic, risk of injury to self	Young people	Low	Warn participants to stay within a close proximity of the main area of activity and not to wander off. In the event of an incident at least one supervisor should remain with the group in one place whilst others go to find individual(s). If they have not been located within 30 minutes back up must be called. Refusal to co-operate will result in parent or carer being called.

Unclear edge of Pond	Falling in and drowning	Participants and Staff	Low	Vegetation around the edge of the pond to be cleared to create an obvious boundary.
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Method Statement

- Risk assessments and site visit complete
- A health and safety talk will be given covering the essential components of the risk assessments
- A local review will also be carried out on the day, before the activity commences which will take into account the current conditions.
- First Aid Kits and trained first aiders present
- Throw rope available and all participants trained to use it
- Hand washing facilities
- Mobile phone for emergency use

Tetanus and Leptospirosis

Tetanus ("Lockjaw")

Tetanus is caused by the anaerobic bacterium, *Clostridium tetani*, which is present in the bowels of many vertebrates, including humans. Spores of the bacterium are present in dung or in soil contaminated by droppings. Infection can be through the minute cuts that routinely result from gardening or fieldwork.

All cuts should be cleaned and protected during fieldwork, and particular care is necessary when dealing with manured soils. Disposable gloves must be used when handling dung samples. Anyone involved in fieldwork must have been inoculated against tetanus and should have received a booster injection within the last 10 years.

Leptospirosis (Weil's disease)

Weil's disease is a rare but serious bacterial disease spread in water contaminated by rats' or voles' urine. It is one of the many types of leptospirosis, which also occurs in dogs, cattle and numerous other mammals. The causative organism of Weil's disease is *Leptospira icterohaemorrhagiae*, which many researchers consider to be a serovar (one of more than 200) within a more broadly defined pathogenic species, *L. interrogans*. Weil's disease is the most serious of these infections in humans, causing liver and kidney damage and, in 5-10% of cases, it is fatal. (Fatality rates in Britain a little lower than this.)

Humans become infected when their cuts or mucous membranes are exposed to contaminated water. Most cases seem to be associated with sewage workers, or with people who have fallen into urban water bodies and swallowed appreciable amounts. However, anyone working in such sites, or with water samples or water-weed material, must be aware of the risk. Project supervisors are *required* to draw this to the attention of project students carrying out such work. The disease is associated mainly with urban waterbodies and slow-moving lowland rivers. Higher levels of risk apply after heavy rain, when drains and other areas occupied by rats have been flushed out. The bacteria can survive in water or in wet areas for up to 45 days after leaving their host rat or vole.

The following precautions are required:

- Cover all cuts and abrasions with waterproof plaster.
- Wear waterproof footwear.
- Prevent water coming into contact with mucous membranes (eyes, mouth, nose, etc.).
- Wash hands before eating or handling food.

- Wash all body areas that come into contact with the water or samples.
- Wear disposable gloves when handling samples from high risk sites such as urban canals.
- Work upstream of any obvious sites of rat or vole activity.
- Be extra vigilant to avoid capsizing if boating on urban waterbodies.
- Do not encourage rats by leaving waste food at fieldwork sites.

Symptoms of Leptospirosis

If you suffer from any/all of the following symptoms after possible exposure, see your doctor immediately.

- Raised temperature and/or chill feeling.
- Pains in joints and muscles, often more pronounced in the calf muscles.
- General feeling of an influenza-like illness.

Tell your doctor that you have been in contact with possibly contaminated water and specifically mention Weil's disease. The disease is readily confirmed by an ELISA blood test and is easily treatable with antibiotics in its early stages.

Creating Pond Food Webs

Create a Pond Food Web using the information given below.
Draw pictures to make your food web more interesting.

Pond Weed is eaten by:

Lesser Water Boatman, Ramshorn snail, Caddis fly larva, Mayfly nymph, Rudd

Detritus is eaten by:

Water flea, Lesser Water Boatman, Ramshorn snail, Mayfly nymph, Caddis fly larva

Algae is eaten by:

Ramshorn snail, Water flea, Caddis fly larva, Newt tadpole, Rudd

Water Flea is eaten by:

Great Diving Beetle, Greater Water Boatman, Damselfly nymph, Leech, Newt tadpole, Newt

Ramshorn Snail is eaten by:

Great Diving Beetle, Leech, Newt

Lesser Water Boatman is eaten by:

Newt tadpole, Damselfly nymph, Great Diving Beetle, Water mite

Leech is eaten by:

Water mite

Mayfly Nymph is eaten by:

Greater Water Boatman, Damselfly nymph, Dragonfly nymph, Great Diving Beetle, Water mite, Newt

Caddis Fly Larva is eaten by:

Great Diving Beetle, Leech, Great Water Boatman, Newt

Newt Tadpole is eaten by:

Greater Water Boatman, Great Diving Beetle, Leech

Greater Water Boatman is eaten by:

Great Diving Beetle, Damselfly nymph, Leech, Water mite

Damselfly Nymph is eaten by:

Great Diving Beetle, Water mite, Newt

Great Diving Beetle is eaten by:

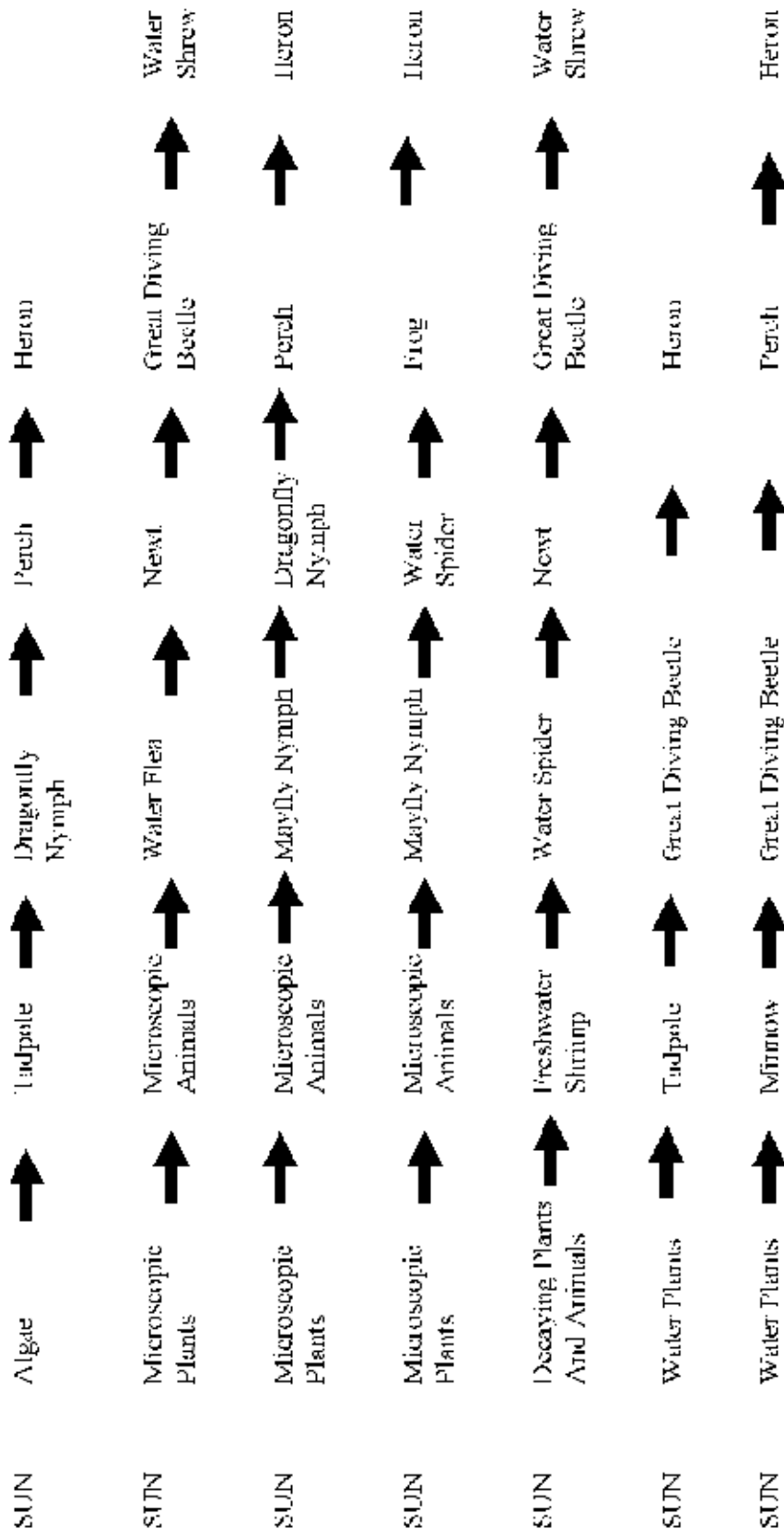
Water mite














Dragonfly Nymph is eaten by:



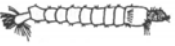








Great Diving Beetle, Leech, Water mite

Pond Food Chains

Look carefully at the food chains below which show the feeding habits and relationships of animals which live in fresh water. Create a food web that uses some or all of these food chains.



Pond Animal	Tally	Where in the pond does it live?
Alderfly nymph 		
Caddis fly larva 		
Damselfly nymph 		
Dragonfly nymph 		
Mayfly nymph 		
Pond Skater 		
Stonefly nymph 		
Water Scorpion 		
Water boatman 		
Water-beetle larva 		
Water beetle adult 		
Flatworms 		
Freshwater shrimp 		

Pond Animal	Tally	Where in the pond does it live?
Pond snail 		
Leeches 		
Mosquito larva 		
Ram's horn snail 		
Roundworms 		
Springtail 		
Tadpole 		
Water fleas 		
Water louse 		
Water mites 		
Water Spiders 		
Other		
Other		

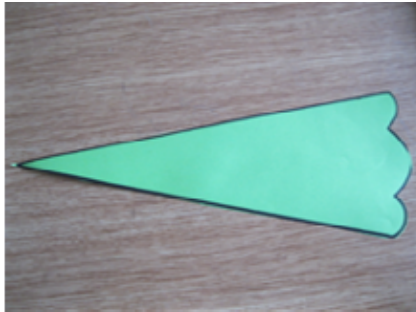
How to make a.....

Paper Newt

You will need

- The newt cut outs (3 on a page)
- Glue
- Googly eyes
- Scissors
- Pens to decorate

1. Cut Take your triangle, fold it in half



2. Open it back out then fold the outer sides into the centre fold,



3. Once both sides have been folded to the centre glue along one edge (make sure you use plenty of glue) stick to underside of the outer side



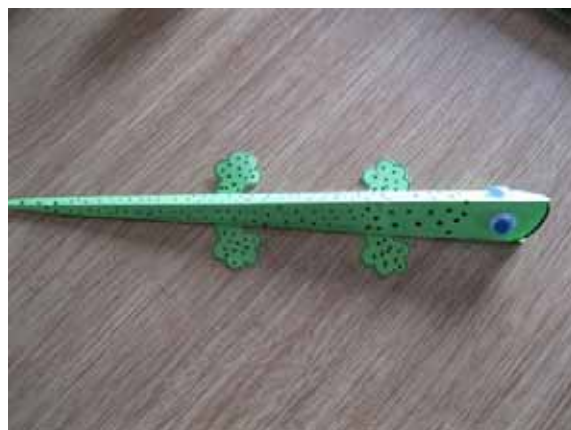
4. Put a large dab of glue in the middle of the newt feet and glue in place on the underside of the body (make sure they are facing forward, or your newt will go everywhere backwards!!!)

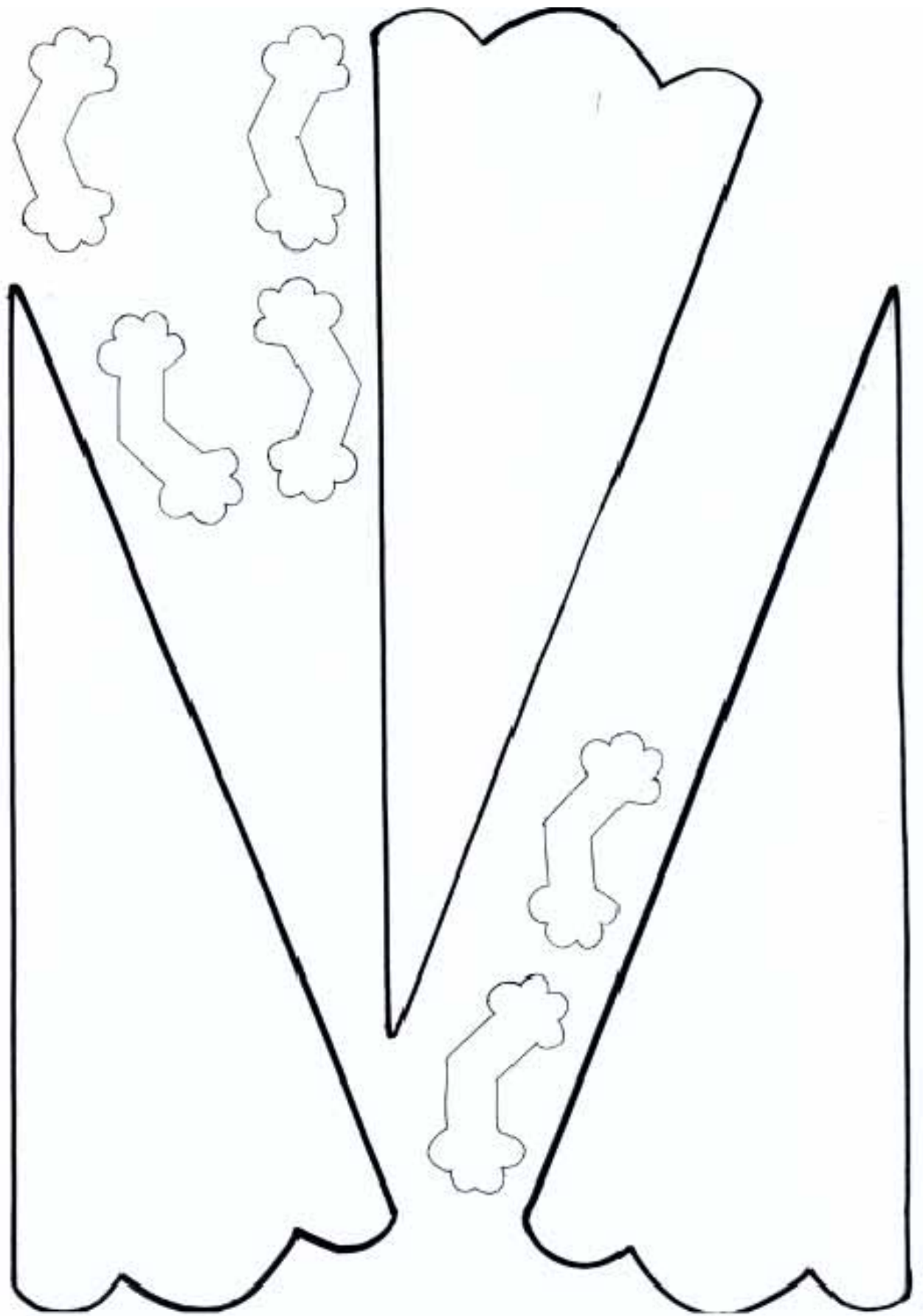


5. Get your googly eyes and stick them near the mouth of your newt



Decorate with spots!





How to make a.....

Pipe cleaner Dragonfly

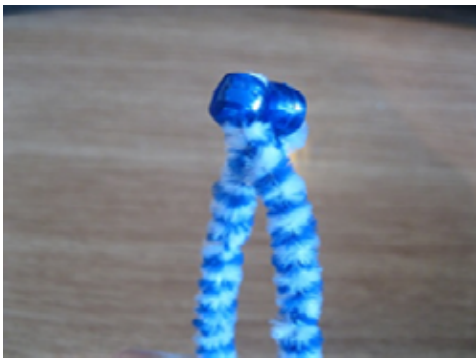
You will need

- The wing template (makes 2 sets of wings)
- Card
- Pens
- 1 Pipe cleaner per dragonfly
- 2 beads per dragonfly

1. Stick the wing template to some card, cut out and decorate.
2. Bend the pipe cleaner in half then slide on the beads. (One each side, pushed right up to the bend)



3. Hold the pipe cleaner near to the beads. Put your thumb and finger on the bead and twist until secure



4. Put both wings, one on top of the other, between the pipe cleaner

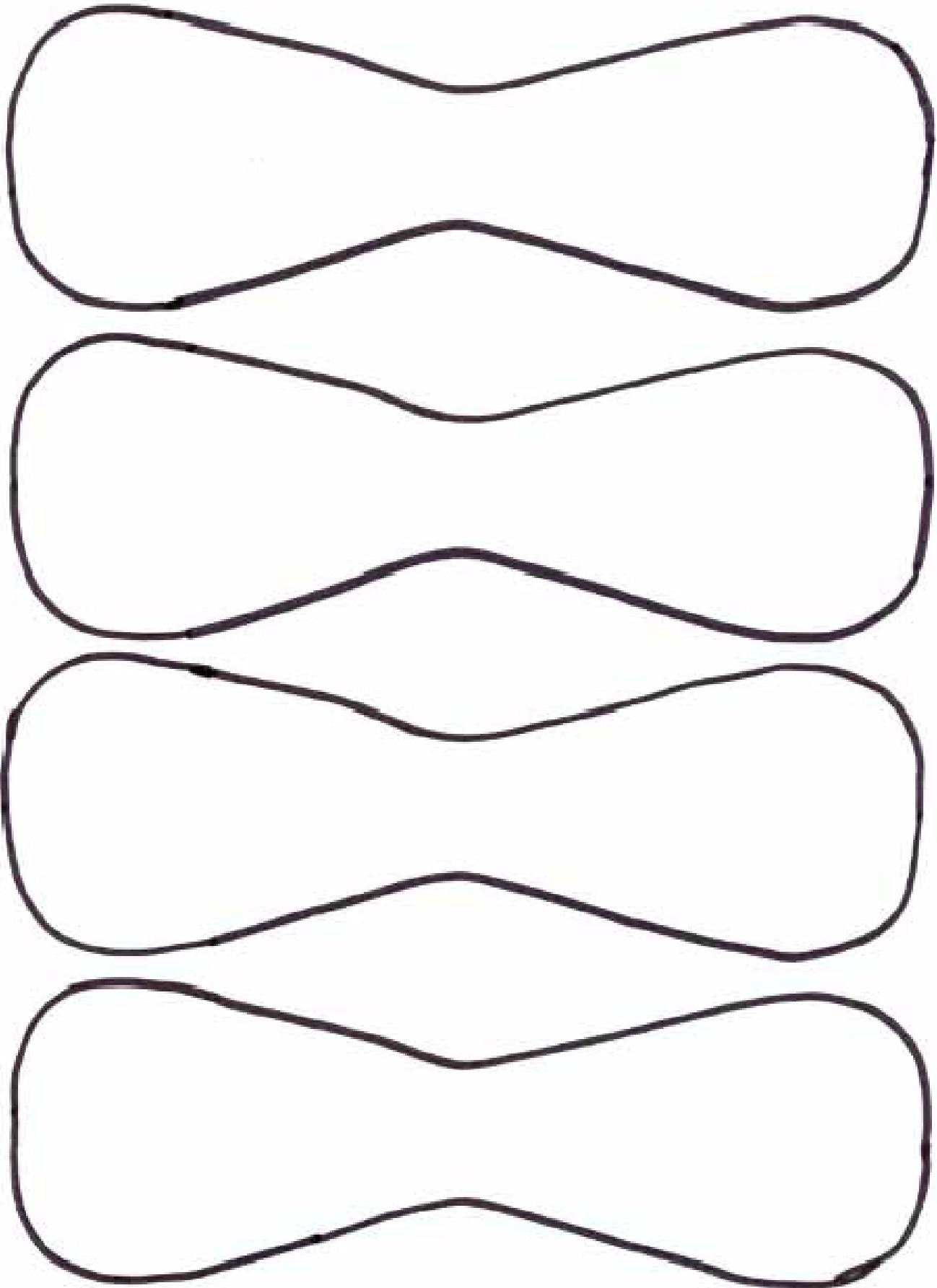


5. Pinch the pipe cleaner at the base of the wings and twist them around each other securing the wings in place (make sure it is tight around the wings so they don't fall out)

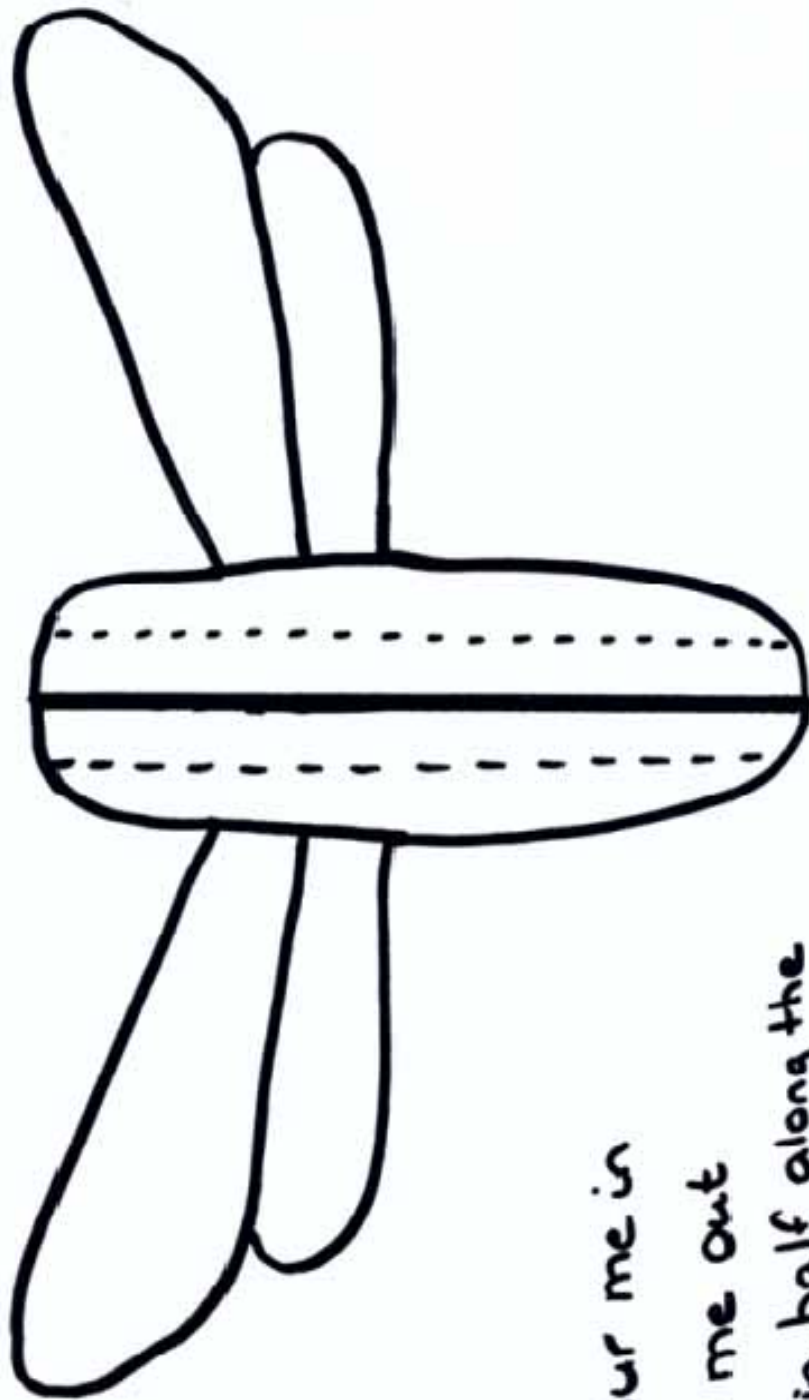


6. Keep winding all the way to the tip of the tail





Dragonfly Plane



Colour me in

Cut me out

Fold in half along the

Solid line

Fold along the dotted lines

Fly!!!

