

Wildlife Activities to do at Home

COLCHESTER ZOO



How to Use this Pack

This pack has been created to give you some ideas and resources to learn more about the natural world, all of which can be done at home. Each activity has minimal set up and you can use everyday household items and craft items.

You can use the activities as they are or adapt them to better suit you. You can do the activities in any order, though some activities have supporting information or additional workshops on other pages.

The activities can be done with adults and children taking part and learning together.

Within this pack there is a useful vocabulary page and a number of activity ideas as well as worksheets for specific activities.

The pack covers different topics ranging from animal adaptations, habitats and endangered species and some are aimed at young children and others for older children, however this is just a guide.

Some activities will need adult support and/or supervision, but all the activities work great when adults play along too!

We also have free to use information packs as well that are on the Education page of the Colchester Zoo website. This can be used for extra information to expand some of the activities if you wish.

www.colchester-zoo.com/education/information-pack

We hope you find this pack useful and have fun doing the activities. Please head to the Colchester Zoo's Education pages for other activity packs found on the Learning Resources page.

www.colchester-zoo.com/education/learning-resources

The logo for Colchester Zoo, featuring the words "COLCHESTER ZOO" in a stylized, green, hand-drawn font. The letters are thick and slightly irregular, giving it a friendly, approachable feel. The "O"s are particularly large and rounded.

Home Activity Ideas:

These are ideas to get to help introduce the concept of animal adaptations. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Learn vocabulary words with (see next page for list).
2. Discuss the term 'adaptation', come up with own definition.
3. "Pack a bag" to go somewhere far away (e.g. Antarctica, Africa, etc.). What would the weather be like? What would they need to pack? How does different clothing help us adapt?
4. Play a guessing game about zoo animals. Count and graph how many clues it takes for each animal. Which animals are easiest to guess?
5. Cut pictures from magazines or find pictures online and make a collage of animals from the Zoo. The collage could focus on animals with similar adaptations, animals that live in the same habitat, etc.
6. Imagine life without an important human adaptation (e.g. opposable thumbs). Try and do a household task without using this important adaptation.
7. Collect pictures of animals and divide them into groups: predator/prey; carnivore/omnivore/herbivore; hot/cold; etc. based on their appearance.
8. Read stories about hibernation and migration. Discuss the differences between them and what animals who stay active all winter do to stay warm and find food.
9. Build habitat dioramas representing hot habitats (e.g. desert, rainforest, savannah) and cold habitats (e.g. polar, sea, mountains). Place plastic animals, plush animals, or pictures of animals in the correct habitat based on their adaptations.
10. Compare similar animals that live in different habitats (e.g. polar bears and sun bears; Amur tiger and Bengal tiger). Create a Venn Diagrams showing the similarities and differences between them.

At Home Ideas:

Vocabulary Words:

Adaptation:	A feature of an animal (or plant) that helps it survive in a specific habitat or lifestyle (predator, scavenger, etc.)
Behavioural Adaptation:	A behaviour that helps and animal survive (e.g. penguins huddling together for warmth)
Camouflage:	Colours and patterns that help an animal blend into its surroundings
Carnivore:	An animal that mainly eats meat
Community:	All of the plants and animals that live in a specific area
Consumer:	Any animal (because they must all eat food to get energy)
Ecosystem:	The complex community of interacting plants and animals in a specific habitat
Habitat:	The type of place an animal lives (e.g. savannah, rainforest, etc.)
Herbivore:	An animal that mainly eats plants
Niche:	The specific role ("job") of an organism within a community
Omnivore:	An animal that eats plants and meat
Physiological Adaptation:	An internal change that helps an animal survive (e.g. giraffe's specialised veins and arteries to get blood to their heads)
Predator:	An animal that hunts and eats other animals
Prey:	An animal that is eaten by other animals
Producer:	Most of the green plants (because they can produce their own food)
Scavenger:	An animal that feeds on dead animals
Species:	A group of animals that have similar characteristics and can produce offspring.
Structural Adaptation:	A physical external change that helps an animal survive (e.g. spines on a hedgehog)

At Home Activities:

Birds and Bugs

A quick game to reinforce the concept of camouflage.

Number of People Needed: 2+

Subjects: Physical Education, Science

Materials Required: Tiny pieces of pipe cleaner in a variety of colours

Review the concept of camouflage with prior to the game. This game works best in a garden. Alternative, it can be played on a carpet.

Start the game by scattering the pipe cleaners over the playing area. Explain that the pipe cleaners represent bugs (insects, worms, etc.). Explain that the you are all birds. Have all the “birds” stand behind a starting line. Explain that they’ll fly out over the area, find ONE piece of food and return back to the starting line with it.

After the everyone has ‘flown’ once and brought back one piece of food, examine the food they found. Were there any trends or patterns about the colours they chose? For example, if playing on green grass did all the everyone find red pipe cleaners and no one bring back green ones? Repeat the game seeing how the colours they find change each time. Finish by seeing how long it takes to find the very camouflaged colours.

As an extension, repeat this activity on a different colour surface.

Discuss the relationship between coloration and the usual habitats of real bugs.

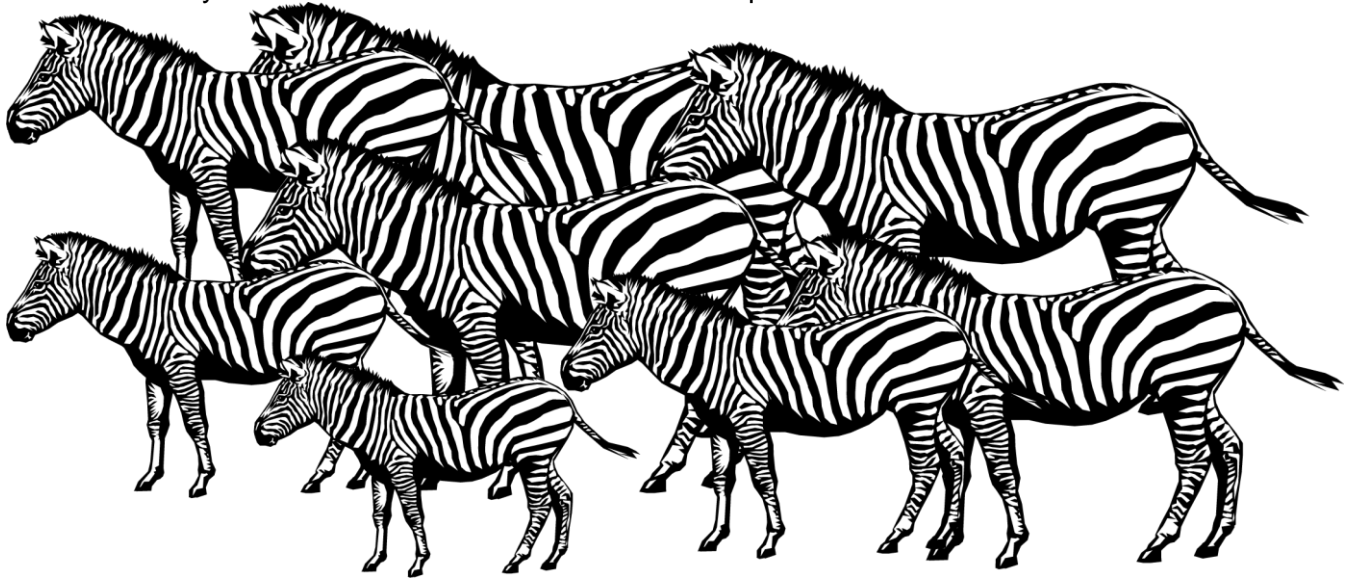
Zebra Stripes

Number of people needed: 1
Subjects: Science

Zebras are black and white.

Their stripes help them camouflage and confuse predators. They aren't hiding against the green grass, they are trying to hide next to each other.

Try and count the zebras below. Do their stripes make them difficult to count?



How many zebra are there? _____

Zebra stripes are all unique. Every single zebra has a different pattern.

Can you colour these two zebras with different patterns?



At Home Activities:

Food Chain Go Fish

This card game is a fun way to learn about food chains and the concept of predator and prey animals.

Number of People Needed: 1+ to make 2+ to play

Subjects: Science, art

Materials Required: A4 paper, scissors

Design your own card game, a little bit like go fish. Brainstorm five different food chains of three plants/animals. Potential food chain examples are:

Seaweed—sea turtle—shark

Grass—mouse—snake

Pond algae—fish—alligator

Acacia tree—giraffe—lion

Rotten log—termite—sun bear

Using 2 pieces of A4 paper, cut the pieces of paper into 8 (so at the end they have 16 smaller pieces of paper). Now label all of the cut out pieces of paper with each of the animals/plants on the food chain lists. The extra piece of paper can be used to create a label or instruction card for their game. Why not add colour and decorate each card, and draw the animal or plant.

After the cards are done, you can play Go-Fish. Each person starts off with four cards, and a draw pile. They then ask their opponent for an item that would complete one of the food chains (e.g. do you have the shark?). If they do, the opponent hands it over, if not they say “go fish” and they pick up a card from the draw pile. The first person to complete two accurate food chains wins the game.

For a more complicated, or longer game, you can make 10 different food chains (with 4 pieces of paper, and 32 cards).

At Home Activities:

The Many Ways to Classify

This quick game can help with the understanding that there are many different ways to organise things and give them an introduction into classification.

Number of People Needed: 1+

Subjects: Science

Materials Required: classification sheet (on next page), timer.

Discuss what is meant by the term classification.

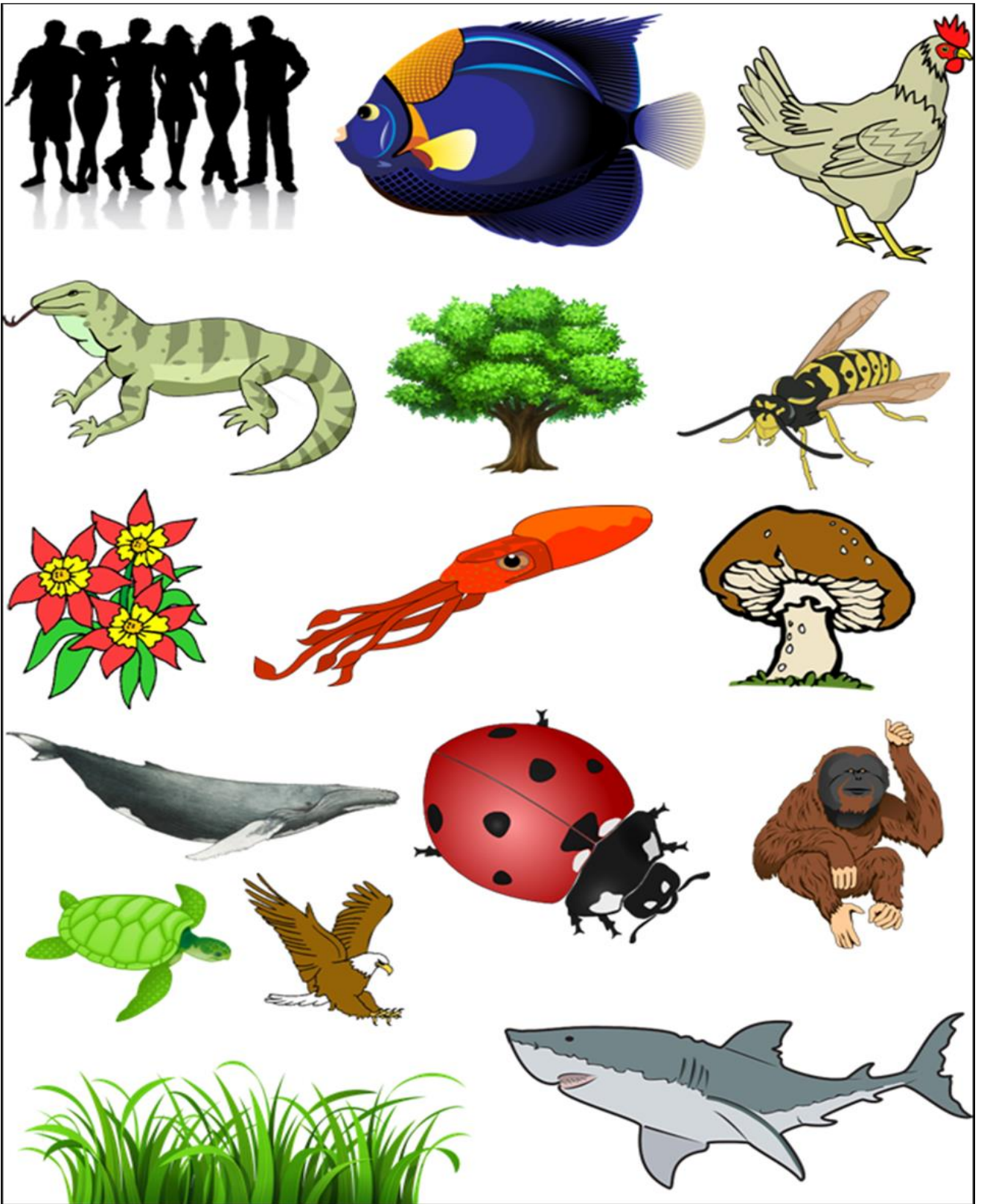
Use the sheets overleaf, or feel free to create your own. You will have a set time (30 seconds, 1 minute or 5 minutes depending on how long you want this activity to be) to come up with as many different ways to group the things on the sheet as possible.

Some examples could include:

- Animals, Birds, Plants
- Things that are Green and things that are not.
- Land, Water, Air.

If playing with more than one person, the person who comes up with the most categories is the winner. You can then compare what ideas you and the others have had, and see if they can combine some of their ideas to make the most logical system they can.

To extend this activity, you can go on to research how scientists classify the subjects, and cut out the images on the worksheet and arrange them onto a classification key.



At Home Activities:

Classification Keys

We are constantly finding new ways in which to classify the natural world. This activity will show how varied classification has been over time, and how important it is for modern science to have a set format.

Number of People Needed: 1+

Subjects: Science

Materials Required: List of animals (on next page), scissors, paper

Discuss what we mean by the term Classification. Explore a variety of different ways in which historical figures have classified the natural world. Some key classification techniques to explore include the following:

- Aristotle- often called the father of classification, who compiled the Historia Animalium. He classified animals by their blood colour and body types.
- Celestial Emporium of Benevolent Knowledge. This is from a Chinese encyclopaedia. This is a very creative way of classifying animals.
- Carl Linnaeus – The System of Nature. This is essentially the model of classification that scientists use today. This is best discussed following the activity to show how modern scientists are classifying nature.

Use the list of creatures overleaf, or create your own. Research these animals and create your own unique, imaginative classification keys by cutting out and rearranging the list. If there are more than one person, compare everyone's classification key.

Giraffe	Toad
Penguin	Crocodile
Stick Insect	Jellyfish
Panda	Anaconda
Slug	Orca
Kangaroo	Human

At Home Activities:

What am I?

This fun game gets you using your reasoning skills to discover which animal everyone has have been given.

Number of People Needed: 2+

Subjects: Science

Materials Required: Animal pictures or small pieces of paper/post-it notes and a pen

If using pictures shuffle them and ask each player to pick a card and hold it with out looking at it. If using paper, each person writes an animal name, making sure the others can not see it. Once this is done hand it to someone making sue they do see what is written.

When every player has their animal, taking turns, they put the card or paper up to their forehead, so they cant see it but everyone else can.

The one playing first then asks questions to work out the name of their animal, however the others who can see the animal can only answer YES or NO.

If there is an even number of people playing, have two of each animal, then move around the room, trying to work out which animal you are to find your match! The first pair to match are the winners.

At Home Ideas:

These are ideas to help to discover more about endangered animals. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Learn vocabulary words (see next page for list)
2. Discuss the term 'endangered'. For older children investigate different levels of conservation status: extinct, endangered, threatened, least concern, etc.
3. Play a guessing game about zoo animals. Count and graph how many clues it takes for each animal. Which animals are easiest to guess?
4. For older children create food chains showing connections between endangered animals and other animals in the same ecosystem. You will need to research animal diets and ecosystems.
5. Research an endangered animal. Using this information, you can then campaign for their species: design posters or write a letter to government officials and local newspapers.
6. After learning about extinction, you can express your own feelings about endangered species (potential activities include: poetry, short stories, play, sculpture or painting).

At Home Ideas:

Vocabulary Words:

Captivity:	Kept in confinement or otherwise controlled environment
Camouflage:	Colours and patterns that help animals blend into its surroundings
Carnivore:	An animal that mainly eats meat
Deforestation:	Removal of forest trees to use the land for something else (e.g. farms)
Ecosystem:	The complex community of interacting plants and animals in a specific habitat
Endangered:	Very few left, it faces major threats, and it might go extinct (see previous page for full category descriptions)
Extinct:	All of that species is now dead; it is no longer found anywhere
Extirpated:	A species which is extinct in one specific area, but still found elsewhere in the world (e.g. wolves are extirpated from the UK)
Habitat:	The type of place an animal lives (e.g. savannah, rainforest, etc.)
Herbivore:	An animal that mainly eats plants
Invasive Species	An animal removed from its native environment (on purpose or accidentally) and place in a new environment where it takes over (e.g. rats, rabbits, etc.)
Omnivore:	An animal that eats plants and meat
Pesticides:	Chemicals used to kill various pests (typically insect and rodent agricultural pests)
Poaching:	Illegal hunting of animals
Pollution:	Anything which doesn't belong in nature and is put there, including: light, chemicals, sound, litter, etc.
Predator:	An animal that hunts and eats other animals
Prey:	An animal that is eaten by other animals
Scavenger:	An animal that feeds on dead animals
Species:	A group of animals that have similar characteristics and can produce offspring.

At Home Activities:

Why are Animals Endangered?

This is an interactive way to get younger children thinking about threats animals face. Rather than just reading/hearing about problems, they will experience the effects of problems to an animal's environment and brainstorm solutions.

Number of People Needed: 2+

Subjects: Science, Citizenship

Materials Required: toy/plastic animal and craft items

Use a toy/plush animal (plastic duck, stuffed bear, etc.) and pretend it is a living animal. Brainstorm what the animal needs to survive (food, water, shelter). For younger children keep this very basic, for older children this could be specific types of food, specific habitat they prefer, etc.

Set up a small area in your home with everything the animal needs to survive. What is set up will depend on what the toy animal is. Potential things to include might be: branches from a tree, a shallow dish for a pond, a pile of rocks as a cave, dried leaves, cling-wrap as a pretend river, etc.

Once set up, have the child/children leave the room, then the adult can do one of the below problems. When the children return ask them to work out what has happen and what can be done to help their toys wild counter part.

Potential problems and solution:

Habitat destruction (remove branches, take away pond, etc.); **Solution:** building bird boxes, plant wildlife gardens, buy rainforest friendly products, etc.

Pollution (green slime in water, litter on ground, black paint 'oil' on sand or plants); **Solution:** always put litter in the bin, don't pour chemicals down the drain, recycle, etc.

Invasive Animal (bring in another toy animal and have it 'eat' all the plants, or have the animal 'run away' to escape the potential predator); **Solution:** it's hard to deal with the problem after it's here, but one thing we can all do is promise to never move animals around, never release pet animals into the wild, never catch fish or frogs and move them to new ponds, etc.

Poaching (animal is missing and a net/trap is in the habitat); **Solution:** don't buy animal products, educate people about medicine made from wild animals, etc.

At Home Activities:

Extinction Timeline Project

To learn how and why different animals have gone extinct through time. This activity is good as a long term project whilst at home.

Number of People Needed: 1

Subjects: Science, Citizenship

Materials Required: Images of different extinct species.

Before this activity, discuss what Extinction means. Explain that animals, as well as plants, have been going extinct for millions of years. Look at how humans have impacted on the world and have caused many things to go extinct in a very short space of time.

Either the children or the adults can find image of extinct animals (e.g. a Velociraptor, a mammoth, a Quagga, a dodo etc.) and research their chosen animals, focusing on the following:

Where— Where did these animals used to live?

When— In what time period did these animals go extinct?

What— What things were happening on the planet this time? (e.g. dramatic changes in climate, human evolution, western exploration)

How and Why— Was their extinction a natural process, or was it the fault of humans?

Once all the extinct animals have been researched their chosen animals, arrange them along a time line look for different patterns and trends along the timeline. Why did so many things go extinct millions of years ago? What effect has climate change had on the planet? What has happened since modern humans have inhabited the planet?

At Home Activities:

The Aliens have Arrived

Great for older children to learn about the threat of invasive animals with reference to animals not native to Britain and their impact on local species.

Number of People Needed: 1+

Subjects: Science, Citizenship

Materials Required: An invasive species data sheet (found on the next page), several natural history guides on plants and animals

Animals and plants introduced into Britain by humans often cause problems. These invaders can often take over food, shelter and space of native species. The Eastern Gray Squirrel has taken over habitat from native squirrels, and even worse, it carries squirrel pox, deadly to native species. Canada Geese pollutes waterways with its waste, creating nitrogen blooms which kill off many freshwater species. Rhododendron out competes native plants while providing little habitat value for native animals, even worse, it produce a toxin which stunts the growth of nearby native species. Other potential invasive species to research include: American mink, black rat, European rabbit, black bullhead, common carp, rainbow trout, and various deer species.

Either independently or in small groups, research an invasive species. If possible, observe through pictures and videos on-line the invasive species. Complete data sheets on the next page, and gather any other additional material.

You can then present your findings. This is a great way to introduce basic scientific paper writing, or having them design and create scientific research posters.

At Home Activities: The Aliens have Arrived

Invasive Species Notes

Study Subject: _____

Scientific Name: _____

Specimen Location (where did I find or observe my specimen)?

Specimen Description:

Draw a detailed specimen sketch on the back of the page.

Origin of my specimen (where did it come from)? _____

Migration story (how did it get here)?

Current status (what is its effect on the community? Has it taken over? Is it a serious pest, why? Does it provide any positive benefits?)

Reasons for success (why does it do so well)?

How to stop it (are there any current programmes or anything you would recommend?)



At Home Activities:

Hide and Seek

This activity works best in a garden with plants and can help show how animals' colours and patterns can be used for camouflage or mimicking plants.

Number of People Needed 1+

Subjects: Science, Art

Materials Required: Arts and craft materials, pictures of animals, plants and habitats

Look at how animals use the colour and cover of plants to stay out of sight of predators and how predators use it to hide from prey. Also look at how animals mimic plants or parts of the plant to stay hidden.

Potential animals to look at are:

- Sloth (they allow plants to grow in the fur)
- African lions
- Jaguar
- Preying mantis
- Dead leaf butterfly
- Frogmouth (a type of bird)
- Dead leaf frog

After this, look at different plants and habitats along with pictures of animals that use camouflage or mimicry. Choose which plant or habitat would be best for the animal to stay hidden.

As an addition to this, create pieces of wall art, which is made up of plants and hide pictures of animals. Adults could also hide animals in the picture, adding a new animal each week for the children to find.

At Home Activities:

Wildlife Poetry

A great way to introduce children to different forms of poetry, for example, haiku, cinquapins, and acrostic.

Number of People Needed: 1+

Subjects: Literacy

Materials Required: None

Create a poem about a habitat, such as rainforest, a specific plant such as an oak tree, an animal or group of animals.

Haiku

Originating in Japan, the haiku is three lines of poetry, following the pattern of five syllables, seven syllables and ending with five syllables. The lines do not need to rhyme. For example:

Fast, stripy zebra	(five syllables)
Running over savannah,	(seven syllables)
Cheetah is faster.	(five syllables)

Cinquain

Cinquain poems have five lines and have specific pattern. Word cinquains are based on the number of words in a line. For example:

Penguin	(one word—an animal)
Bold and playful	(two words that describe it)
Dives deep down	(three words expressing action)
Swims with joyful freedom	(four words explain how you feel about it)
Amazing	(sum up with one word)

Acrostic

These are poems where the first letter (or syllable or word, etc.) spell out a word or message. The easiest is spelling out the name of a plant (for older children try hiding messages).

For example:

F
L
O
W
E
R
S

F
I
E
L
D
S

F
I
E
L
D
S

F
I
E
L
D
S

F
I
E
L
D
S

F
I
E
L
D
S

At Home Activities:

Rainforests of the World

Learn about where rainforests are located around the world.

Number of People Needed: 1+

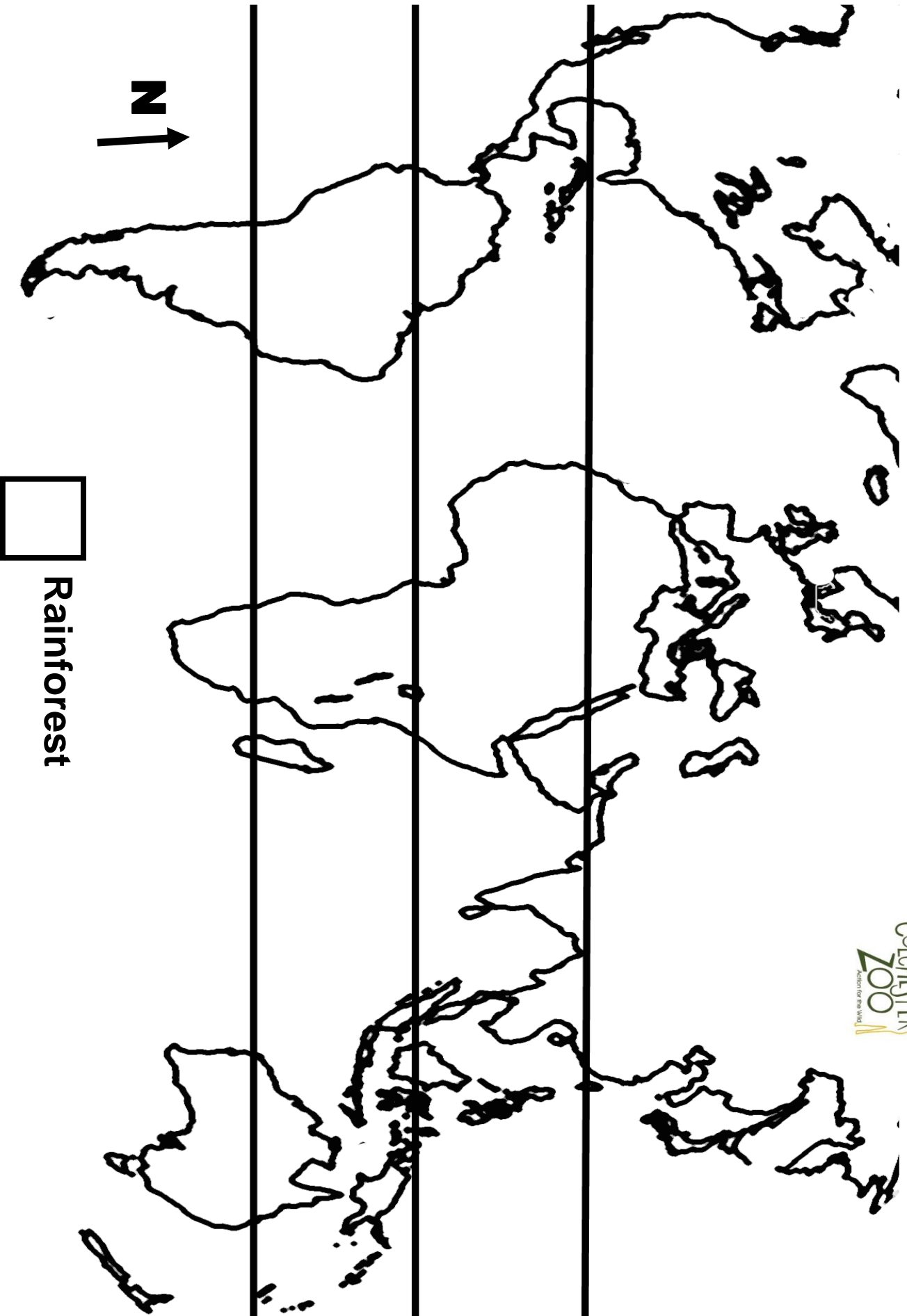
Subjects: Science, geography

Materials Required: Rainforests of the World map (on the next page) colouring pencils

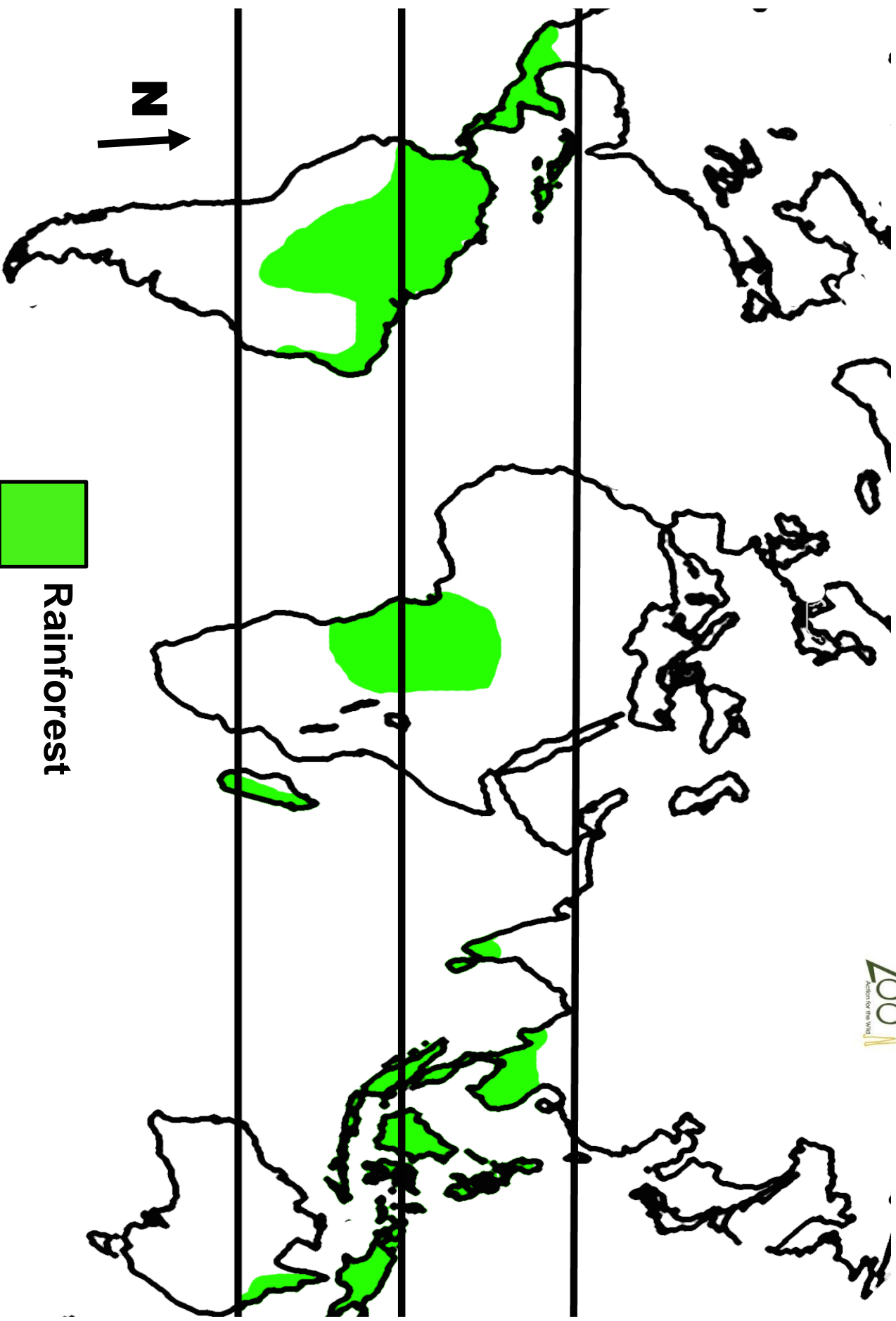
Use the map and label the three lines on their map and colour where they think the rainforests are. Children make educated guesses about where the rainforests are based on information points, which are below. After colouring, compare the guesses of where rainforests are to the actual map of rainforest habitats.

- .The equator crosses the middle of the world.
- .The tropic of Cancer is in the north and the tropic of Capricorn is in the south.
- .Rainforests are located close to the equator, in-between the tropics of Cancer and Capricorn.
- .Except in the very north, Central America is all rainforest.
- .Northern South America is covered in rainforest.
- .Below the equator, South America has rainforests across the centre, and on the east coast. These do not reach all the way to the tropic of Capricorn.
- .In Africa, the Congo Basin rainforest is located just around the equator on the west coast. It reaches approximately halfway from the equator to the tropics and half-way across the continent.
- .The east coast of Madagascar is rainforest
- .The far south of India is rainforest
- .The south tip of Asia that sticks into the ocean is rainforest, from the ocean until halfway to the tropic of Cancer.
- .All the little islands of Asia have rainforest
- .The north east coast of Australia has a very little bit of rainforest

Tropical Rainforests of the World



Tropical Rainforests of the World



At Home Ideas:

These are ideas to introduce the subject of animals that live in and around water. Use these ideas as a starting point with or without the pre-made activities and worksheets on the next pages.

1. Learn vocabulary words with (see next page for list)
2. Discuss the difference between freshwater and saltwater, have children come up with their own definition
3. "Pack a bag" to go somewhere far away (e.g. the seas of Antarctica, the lakes of Africa, etc.). What would the weather be like? What would they need to pack? How does different clothing help us?
4. Play a guessing game about aquatic zoo animals. Count and graph how many clues it takes for each animal. Which animals are easiest to guess?
5. Look at the some of the key adaptations some of the animals have to survive in water and around water.
6. What adaptations would humans need to survive under water?
7. Collect pictures of animals and divided them into groups: freshwater/saltwater, tropical water/cold water etc.
8. Build habitat dioramas representing freshwater and saltwater habitats. Place plastic animals, plush animals, or pictures of animals in the correct habitat based on their adaptations.
9. Compare animals that lively entirely in water to animals that live on land as well. What are the key difference and also what do they have in common? A Venn diagrams can be used to show this.

At Home Ideas:

Water Based Vocabulary Words:

Aquatic:	Refers to anything found in, living, or growing in water.
Brackish Water:	Where salt water and freshwater mixes, making the water saltier than freshwater but not as salty as seawater.
By-Catch:	Fish or other aquatic species that is caught unintentionally when fishing.
Desiccation:	The process of something drying out.
Ecosystem:	A community of organisms living in a physical habitat
Estuary:	Where a river meets the sea and that stretch of river is affected by the tide.
Freshwater:	Water that is not salty and found in-land.
Intertidal Zone:	Where the ocean meets the land between high and low tides.
Marine:	Anything found in or related to the sea
Reef:	An area close to the surface of the water, of rocks, coral, or sand ridges.
Salinity:	The dissolved salt in water.
Saltwater:	Water that is salty, e.g., seawater
Semi-Aquatic:	An animal lives partly on land and partly in water e.g., a frog. A plant that grows in very wet ground but not full under the water, e.g., watercress
Shoreline:	The line where the land meets a large body of water.
The Abyssal Zone (Abyssopelagic)	Also called the abyss, this zone is the part of the ocean starting 3,000 meters below the surface to 6,500 meters deep. Sunlight does not reach this zone.
The Hadal Zone (Trenches):	This zone starts at a depth of 6,000 meters to 11,000 meters. There is no sunlight at this depth.
The Midnight Zone (Bathypelagic):	This zone starts at 4,000 meters below the surface and reaches seafloor. Sunlight cannot reach this zone.
The Sunlight Zone (Epipelagic):	The top layer of the ocean to a depth of 200 meters, sunlight reaches this zone, getting less light the deeper down.
The Twilight Zone (Mesopelagic):	This zone starts at 200 meters to 1,000 meters and is just beyond the reach of sunlight.
Water Cycle:	The process of water evaporating into the atmosphere from the land and ocean and then returning to the land and ocean in the form of rain and snow.

At Home Activities:

The Gummy Bear Soak

Why can't freshwater fish survive in saltwater and why can't saltwater fish survive in freshwater?

Number of People Needed: 1+.

Subjects: Science

Materials Required: Gummy bear sweets, 2 clear plastic cups, water, salt, ruler and digital scales.

First measure and weigh the gummy bears and record the data on a table. Fill both the cup with water then add a tablespoon of salt to one of the cups. Mix in the salt and then add a few gummy bears to each cup.

Leave alone for 12 hours then measure and weigh the bears. After 24 hours, measure and weigh the bears. After 48 hours, measure and weigh the bears. You can also take pictures of the bears at each stage for a visual record.

After, create a graph to show the findings. What does the graph show?

As an extension activity, add different gummy bears to distilled water and leave in the cup for 24 hours. You will notice the bears swell. Take the bears out and add them to saltwater and leave for another 24 hours. This shows how salt can draw water out and bring the bears to almost the original size. Image the bears are freshwater fish that have been put into saltwater. Would the freshwater fish survive?

This activity shows how osmosis works and it is this process to maintain the balance of water between the fishes body and the water around them that shows why saltwater fish can not survive in freshwater and why freshwater fish can not survive in saltwater.

This activity can also be used as an introduction into the properties of salt, as well as its importance but also health concerns when there is too much salt. This activity could also be tied into geography study of salt in the natural world i.e. the Dead Sea.

Please note: Do not let children eat the gummy bears that have been in the either of the cups.