School Grounds Expedition Plan

LIVE 'n' DEADLY

TEACHER'S PACK

Habitats • Explorers • Map skills • Adaptations • Teamwork

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WELCOME!

At Live ‘n’ Deadly we want to inspire young people to get active and discover local wildlife. To that end, we’ve put together six expedition-themed lessons, which blend indoor and outdoor cross-curricular learning opportunities. Pupils will learn about animals and their adaptations and develop adventure and teamwork skills, all the while being encouraged to be:

- Reflective learners
- Independent enquirers
- Creative thinkers
- Team workers
- Self managers
- Effective participators

The lessons are for teachers of 7- to 11-year-olds in England, Northern Ireland, Scotland and Wales. This content is targeted at 9-year-olds and is flexible, allowing for differentiation.

You don’t need to have extensive school grounds or exciting wildlife in your playground to take part – the lessons have been planned with a large, urban year group in mind. However, if you do have access to natural spaces, so much the better.

Each lesson (1–2 hours) addresses at least one knowledge and one skill area. You may choose to run the lessons on consecutive days, or spread them across a half term. You might also choose to use the unit as a focus for activities on a school residential trip or for an after-school club.

This pack provides:

- Six lesson plans, with links to the curriculum and homework suggestions.
- Photocopiable resources and assessment tools.
- Information from supporting organisations: the Natural History Museum (NHM), the Royal Society for the Protection of Birds (RSPB) and The Zoological Society of London (ZSL).
- A DVD of clips from Live ’n’ Deadly.

CONTENTS

OVERVIEW

MAIN ACTIVITY	OUTCOMES	CLIPS
1. Explorers and Expeditions Teams search for information about explorers and their expeditions in the school grounds.	**Pupils will:** - Know about key figures and events now and in the past. - Develop map-reading skills.	- Intro – Steve Backshall - Children fossilteering in Lyme Regis - Children kayaking to find seals
2. Habitat Investigation Teams explore and observe the habitats in their local grounds, and create a habitat map for the class to use.	**Pupils will:** - Record features of local habitats from first-hand observation. - Make links between local species and their environment. - Develop map skills by creating symbols and using compass directions.	- Intro – Steve Backshall - Woodland sound clip challenge with Mackenzie Crook - Pond dipping - Wildlife of Norfolk
3. New Animal Discovery Teams imagine new species that have adaptations to suit particular habitats.	**Pupils will:** - Understand that animals are adapted to suit their habitat and diet. - Select resources to inform a creative planning process. - Work collaboratively to make a final piece.	- Intro – Steve Backshall - Animal adaptations to find food: • Fish: eel has lateral line to sense prey/predators • Reptile: python uses infra-red vision • Bird: raven uses tools • Mammal: squirrel uses agility • Invertebrate: dragonfly adaptations
4. Planning your Expedition Pupils each take on a role within their expedition team, and plan an expedition.	**Pupils will:** - Develop team-work skills, recognising strengths and areas for improvement for themselves and others. - Identify and plan to use suitable resources safely to meet future goals.	- Intro – Steve Backshall - Explorer/ exploration examples: • Ed Stafford • Polly Murray • Steve Backshall
5. Expedition Day The class goes on an 'expedition' to find new species.	**Pupils will:** - Overcome physical and problem-solving challenges with a small group. - Develop confidence and self-esteem through carrying out a role effectively within a team.	- Intro – Steve Backshall
6. Mission Accomplished! The class communicates to an audience about the expedition day.	**Pupils will:** - Create and communicate information in the form of text, images, sound and 3D models using a range of ICT hardware and software where appropriate. - Recognise that people may manage natural environments sustainably to suit a purpose. - Identify opportunities for improving the school grounds.	- Intro – Steve Backshall - Build a bug hotel - Looking out for hedgehogs - Conserving red kites - Naomi's News Story - Steve introduces otters

DVD CONTENTS

DVD clips from the Live 'n' Deadly series

Lesson 1 – Explorers and Expeditions

1. **Intro from Steve:** Steve sets a challenge to find out more about explorers and exploring.
2. **Fossilteering:** Children's mission combining orienteering, fossil finding and treasure hunts.
3. **Kayaking to see seals:** Children's mission kayaking in the Walton backwaters, hunting for seals.

Lesson 2 – Habitat Investigation

1. **Intro from Steve:** Steve sets a challenge to find out more about the habitats near you.
2. **Woodland sound challenge with Mackenzie Crook:** Naomi challenges Mackenzie and Steve to identify woodland creatures by their sounds.
3. **Pond dipping:** Naomi and Steve do some pond dipping with the Live 'n' Deadly audience and discover some exciting animals.
4. **Wildlife of Norfolk:** Steve chats to children in Norfolk about what they like to do outdoors, showing film of animals you can find there.

Lesson 3 – New Animal Discovery

1. **Intro from Steve:** Steve sets a challenge to imagine a brand-new species living near your school.
2. **Raven:** Discover what makes the raven the brightest bird on the planet.
3. **Dragonfly:** Watch the metamorphosis and behaviour of the emperor dragonfly.
4. **Squirrel:** The grey squirrel demonstrates the acrobatic skills necessary to traverse a complex assault course to get to some nuts.
5. **Eel:** Find out about the European eel, which has sensory tentacles that are covered with taste-buds for sensing food in dark waters.
6. **Python:** Steve meets a Burmese python and shows the audience how it senses heat in the moving muscles of warm-blooded prey.

Lesson 4 – Planning your Expedition

1. **Intro from Steve:** Steve sets a challenge to plan the expedition.
2. **Ed Stafford travels the Amazon:** Explorer Ed Stafford reports on his trek along the entire length of the Amazon River.
3. **Polly Murray, adventurer:** Adventurer and mountaineer Polly Murray encourages children to get out there and be adventurous.
4. **Steve Backshall climbs in the Avon Gorge to find a peregrine falcon's nest:** Steve shows how peregrine falcons are one of the most exciting predators on the planet.

Lesson 5 – Expedition Day

1. **Intro from Steve:** Steve sets a challenge to enjoy the big day and find your mystery species.

Lesson 6 – Mission Accomplished!

1. **Intro from Steve:** Steve sets a final challenge to share with people what you've done and report back on the journey.
2. **Build a bug home:** A film about the minibeasts living in our gardens inspires Naomi and the team to build a bug hotel.
3. **Looking after hedgehogs:** Naomi and Steve meet a really prickly little character on set and show how to make a hedgehog home.
4. **Conserving red kites:** Children's mission to navigate demanding terrain on mountain bikes while searching for red kites, one of the most exquisite birds of prey in Britain.
5. **Naomi's News:** Naomi's wildlife news report includes a new species of spider that has just been discovered in Madagascar.
6. **Steve introduces otters:** Steve introduces us to otters with archive film showing them as fearsome hunters.

CURRICULUM LINKS

COUNTRY	LEVEL 1	LEVEL 2
ENGLAND	Science	- Life processes - Variation and classification - Living things in their environment
	Personal, Social and Health Education	- Preparing to play an active role as citizens - Developing good relationships
	PE	- Fitness and health - Selecting and applying skills and tactics
	Art and Design	- Exploring and developing ideas - Investigating and making
	Geography	- Geographical enquiry and skills - Knowledge and understanding of places - Environmental change and sustainable development - Chronological understanding
	History	- Knowledge and understanding of events, people and changes in the past - Victorian Britain
	Mathematics	- Space, shape and measures
	Literacy and English	- Speaking and listening - Writing
	Using ICT	- Exchanging and sharing information
NORTHERN IRELAND	World Around Us	- Interdependence - Place
	Personal Development & Mutual Understanding	- Personal understanding and health
	PE	- Games
	The Arts	- Art and design
	Mathematics and Numeracy	- Measures, shape and handling data
	Language and Literacy	- Talking and listening (cross-curricular skill: communication) - Writing
	Cross-curricular skill	- ICT
SCOTLAND	Science: Planet Earth	- Biodiversity and interdependence
	Health and Well-being	- Social well-being - Physical well-being - Co-operation and competition
	Expressive Arts	- Art and design
	Social Studies	- People, place and environment - People, past events and societies
	Mathematics	- Measure
	Literacy and English	- Listening and talking - Writing
	Technologies	- ICT to enhance learning
WALES	Science	- Interdependence of organisms - Communication
	Personal and Social Education	- Health and emotional well-being
	PE	- Health, fitness and well-being activities - Adventurous activities
	Art and Design	- Investigating - Making
	Geography	- Locating places, environments and pattern - Communicating
	History	- Chronological awareness - Historical understanding
	Mathematics	- Measures and money
	English	- Oracy
	ICT	- Create and communicate information

ASSESSMENT CHART

 Draw how you think you did	How I think I did	How my friend thinks I did	How my teacher thinks I did
LESSON 1			
I worked as part of a team.			
I can explain to someone else what an explorer does.			
I know what an expedition is.			
I used a map.			
My area for improvement is…			
LESSON 2			
I explored near the school.			
I drew and described a habitat.			
I added symbols to a map.			
My area for improvement is…			
LESSON 3			
I can explain how an animal is suited to where it lives and what it eats.			
I drew ideas for a newly discovered species.			
I worked with my team to make or draw a 'new species'.			
My area for improvement is…			
LESSON 4			
I made notes about explorer skills.			
I planned for the expedition day.			
My area for improvement is…			
LESSON 5			
I brought the equipment I needed.			
I completed the expedition tasks.			
I helped find a new species.			
My area for improvement is…			
LESSON 6			
I planned how to explain the expedition day.			
I thought of ways that we could improve our school grounds.			
I accomplished our mission!			
I have improved by… (How have you worked at the areas for improvement you wrote about?)			

LESSON 1: EXPLORERS AND EXPEDITIONS

AIMS

To know why explorers and scientists go on expeditions. To work as a team.

CURRICULUM LINKS

Pupils will:

- Know about key figures and events now and in the past.
- Develop map reading skills.

KEY VOCABULARY

Ecologist, expedition, explorer, species, zoologist.

PREPARATION

- Split your class into mixed-ability named teams of approx. six children. They will be working together for all six lessons.
- Prepare a simple map of your school grounds. You will be using this in all the lessons. You could create it by tracing over a satellite image downloaded from the internet. Make sure you remember to include a North arrow and a key.
- For today's lesson, indicate on a copy of your map the areas that your class are allowed to visit. Photocopy it for each team.
- Prepare a risk assessment for working outside in the school grounds. You may need to update this for future lessons in this unit.
- Photocopy one set of six Explorer Cards per team (pages 18-19). There are two sets of cards, so the children don't all learn the same stories. Prepare and label two envelopes per team, one containing the halves with the explorers' names, and one containing the expedition halves of the cards. Hide the envelopes in the school grounds.
- You will need a globe or world map for the pupils' feedback session.

INTRODUCTION

1. **Lesson 1, Clip 1:** Steve sets a challenge to find out more about explorers and exploring.
2. Ask the class: What do explorers do? Which explorers have you heard of? Explorers go on expeditions. Some have found new species or new places and some have met new people.
3. Ask the class: What is an expedition? Discuss as a class or in pairs. The definition is 'a journey with a purpose'.
4. **Lesson 1, Clip 2:** Fossilteering (you might link this later to the story of Mary Anning) or **Clip 3:** Kayaking to find seals.

MAIN

1. Ask the class to imagine that the school grounds are an island, reserve, sanctuary or wilderness and invite them to come up with a new name, for example "St Joseph's Island".
2. Explain that everyone in the class is going to become an explorer. They are going to journey onto their "Island" and search for information about explorers and their expeditions, within the areas marked on their map. Outline the ground rules for working outside, and introduce them to a 'return to base' sound signal.
3. Explain the activity:
   - Each team needs to find two labelled envelopes. One contains the name of the explorer, the date of the expedition and an image relating to their discoveries, and the other contains stories about their expeditions.
   - When they have both envelopes, the team needs to return to base and work together to read the cards and match explorers to their stories.
4. Carry out the activity, allow 15-20 mins.
5. Feed back as a class. Invite the teams to read out one explorer story each, and ask volunteers to pinpoint the location of each expedition on the globe.
6. Discuss: How did you match the cards up? Which words are new? Explain any new vocabulary.

PLENARY/ASSESSMENT

1. Recap definitions of explorer and expedition.
2. Discuss as a class: Why might explorers or scientists go on expeditions? How well did the pupils work in their teams?
3. Invite the teams to come up with a team name.

HOMEWORK

Research an explorer – you might choose to find out more about one of the explorers on the cards, or you might make your own card for a different explorer.

LESSON 2: HABITAT INVESTIGATION

AIM

To explore and observe local habitats in the role of scientists.

To create a habitat map for the class to use.

CURRICULUM LINKS

Pupils will:

- Record features of local habitats from first-hand observation.
- Make links between local species and their environment.
- Develop map skills by creating symbols and using compass directions.

KEY VOCABULARY

Built, compass, distance, flowerbed, grassland, habitat, hedge, key, landmark, map symbol, navigate, north arrow, ordnance survey, pond, urban, woodland, zone.

PREPARATION

- Photocopy one Habitat Investigation Passport per pupil (page 21).
- Photocopy one A4 map of the grounds per team.
- Photocopy one A3 map of the grounds for yourself – once annotated, this will become the 'master' map for future lessons. It needs to have an arrow showing North.

INTRODUCTION

1. **Lesson 2, Clip 1**: Steve sets a challenge to find out more about the habitats near you.
2. Ask the class: What do you know about habitats? What is a habitat? Can you name different types of habitat? They might name some global habitats, for example desert, polar, rainforest. Encourage them to think of local habitats, which might include woodland, built, hedge, grassland, ponds etc.
3. **Lesson 2, Clips 2, 3 or 4,** introducing woodland and pond wildlife, and the wildlife of Norfolk.
4. Explain that scientists who study biology, such as zoologists and ecologists, record what habitats are like. Give pupils each a Habitat Investigation Passport and ask them to fold it in half so that there is a blank page on the inside. Then ask them to draw themselves as explorers. Explain that they will be exploring local habitats, like zoologists and ecologists.

MAIN

1. Discuss the map of the grounds that you've prepared.

Explain how it works: point out the key, the North arrow and any symbols that you've used. You might also show the class other maps. You could discuss the difference between satellite and map views from online map providers, for example, or you could look at an Ordnance Survey or weather map in order to discuss symbols.

2. Explain that the children are going to create a map of the habitats in their grounds.

   Questions to ask the class:

   – What types of habitat can you find in the grounds?

   – What symbols might you use to indicate your local habitats on a map? Start to create a key made up of the children's symbols.

   – Are there areas of the school grounds that would be interesting to explore? You might call these 'zones'. Some of the zones might contain a mixture of habitats, for example the service yard might include concrete, trees and walls covered in ivy.

3. Explain that teams are going to explore different zones, to observe the habitats there. Work with the children to identify one zone per group to explore.

4. Ask the teams to go outside and visit their allocated zone. Ask them to use their Habitat Investigation Passports to record information about the zone, and use the inside page to draw their area in some detail, labelling the different habitats within their zone. Ask the children to add a North arrow to their map, and to mark any immovable objects, for example climbing frames.

5. As an extension, children can create a detailed drawing of something that's living in their zone, whether a plant or animal.

PLENARY

1. Invite teams to add symbols for the habitats to the A3 map, creating an overall picture of the habitats in the school grounds.

2. Invite teams to name their zones, and add the names to the large map. You should now use copies of this version of the map for future lessons.

3. What animals could live in your school grounds? Discuss the animals that the children KNOW live in or use the grounds, for example minibeasts, foxes or robins. Also discuss what SORT of animals could live in the grounds, for example, 'animals that live in trees', 'animals that don't mind lots of noise'. For older pupils use vocabulary such as 'mammals' and 'amphibians'.

HOMEWORK

Draw a map of your route to or from school. Add habitat symbols to your route, and mark on it any animals that you notice on the way, not forgetting that humans are also animals!

LESSON 3:
NEW ANIMAL DISCOVERY

AIM

To imagine a new species that has adaptations to suit a particular habitat.

CURRICULUM LINKS

Pupils will:

- Understand that animals are adapted to suit their habitat and diet.
- Select resources to inform a creative planning process.
- Work collaboratively to make a final piece.

KEY VOCABULARY

Adaptation, amphibian, bird, defence, fish, hearing, infra red, invertebrate, mammal, predator, prey, reptile, senses, ultraviolet, vision.

PREPARATION

- Photocopy one class map of your grounds per group.
- Photocopy a set of Adaptation Cards per group (pages 22-24).
- Sheets of A3 paper for each team.
- Pupils need a sketchbook, notebook or paper for individual drawings.
- Optional – materials for making a small 3D model or collage.

INTRODUCTION

1. **Lesson 3, Clip 1**: Steve sets a challenge to imagine a brand-new species living near your school.
2. Ask the class to imagine: If a creature fell from outer space, what would it need in order to survive? What are the obstacles and dangers that it might face? Discuss as a class. Explain that animals have physical characteristics that make them suited to their environment.

MAIN

1. **Lesson 3, Clips 2-6**: Animal adaptations.

   Discuss how animals are adapted to where they live and what they eat.
2. Explain that teams are going to each imagine a new species which is adapted to live in your school grounds. They need to keep it secret, as the other teams are going to search for it in an expedition in a later lesson. The new species will live in the zones that the teams explored in lesson 2.
3. Teams discuss: What will your creature eat? What will eat it? Teams decide based on what can be found in their habitat.

4. Explain that the teams are now going to decide how their species is adapted to their habitat. For example, they might be camouflaged so that they are hard for predators to see in the grass.

   Hand out the Adaptation Cards. The cards contain example adaptations from real animals, and are intended to stimulate the children's own ideas. If you want to, you can look at all the cards relating to one animal at a time, or you can mix up the cards to provide more random stimulus.

   Ask the teams to look at the Adaptation Cards for ideas, and discuss potential adaptations for their creature. Remember, they should only give their creature an adaptation that helps them to live in their habitat.

5. Ask each child to copy the style of the Adaptation Cards to write about one adaptation. Draft on spare paper and then write on card or sticky notes. Each creature should have at least one adaptation under each heading;

   – amazing sense
   – marvellous movement
   – perfect home
   – deadly defence
   – incredible eating.

FACT FILE EXAMPLE

   Ask the pupils to read out what they have written to their team, then ask them to sketch what the animal might look like, based on what they have heard about its adaptations. Ask the teams to discuss which parts they like from each drawing.

6. Give each team a sheet of A3 paper. Ask one person to draw an outline that brings in ideas from different pupils. Ask the rest of the team to discuss one 'Deadly' feature; does the creature have any super senses? Can it do anything that humans are not able to, for example detect ultraviolet, move super fast, jump extraordinarily high, see in infra-red?

7. Attach all the new adaptation cards to the A3 page to create a large Fact File for each animal. Photocopy these Fact Files (one of each per team e.g. Group A x 5… up to Group E x 5) onto A4 and laminate them. You'll need them on expedition day.

8. Optional: Ask each pupil to make a model or collage of their team's animal. Keep these safe – you'll need them on expedition day.

PLENARY

Ask the teams to reflect on how well they worked together. Was it difficult to decide which ideas to include?

Show the class an image of an animal and ask the children to identify its adaptations and explain what they think they are for.

NB: The pupils will be searching for each others' new species in lesson 5, so the class should keep the details of their creatures secret.

HOMEWORK

Make your own Fact File card – about your pet or another animal of your choice.

LESSON 4:
PLANNING YOUR EXPEDITION

AIM

For each pupil to each take on a different role within their expedition team, and to plan an expedition.

CURRICULUM LINKS

Pupils will:

- Develop team-work skills, recognising strengths and areas for improvement for themselves and others.
- Identify and plan to use suitable resources safely to meet future goals.

KEY VOCABULARY

Adventure leader, adventurous, brave, curious, determined, energetic, film crew, navigator, obstacle, persistent, reporter, shelter, scientist, team leader, team worker.

PREPARATION

- Copy one set of Role Badges per team (page 25). These can be attached to lanyards if you wish. Bring one lanyard per child, if possible.
- Prepare six tables with the following resources:
  - Scientists – natural or recycled materials (e.g. cardboard boxes) for creating models.
  - Navigators – class maps of the school grounds.
  - Film Crew – digital or movie cameras and A4 paper.
  - Reporters – A4 paper.
  - Team Leaders – computers with access to weather reports.
  - Adventure Leaders – images or list of sports equipment that will be available on the expedition day. A4 paper.
- Copy the Role Instructions six times and put them on the correct tables (pages 26-29).

INTRODUCTION

1. **Lesson 4, Clip 1**: Steve sets a challenge to plan the expedition.
2. **Lesson 4, Clip 2** or **3**: Ed Stafford travels the Amazon or Polly Murray, adventurer.
3. Discussion: What skills and qualities do explorers need? Take notes on the clip.

MAIN

1. Explain that the class is going to be planning an expedition. Each team will be hiding their new species' Fact File drawings or models for the other teams to find. At the end of the expedition, each team will have found several new species.

   Explain that teams will need to record the expedition so they can share their experience with other people, whether their parents, other classes or school assembly.

2. Hand out the Role Badges to each team and explain what each of the roles will be doing.

   Either allocate roles within each team, or ask the teams to decide which role each individual will take on. They will carry out this role for the next three sessions. Ask the children to cut out and complete their role badges, and attach them to lanyards if possible.

3. Ask the children to sit at their role-specific tables and invite them to carry out the role-specific tasks detailed on their instruction cards.

   – **Scientists** are in charge of creating a shelter for the new species.

   – **Adventure leaders** are in charge of planning the adventurous challenges that the teams will undertake on expedition day.

   – **Navigators** are in charge of plotting the route each team will take to discover your species.

   – **Film crew** are in charge of recording the expedition on camera.

   – **Team leaders** are in charge of making sure your team has everything they need to stay safe and enjoy the expedition day.

   – **Reporters** are in charge of deciding what the audience needs to know to understand what has happened on your expedition.

PLENARY

1. Ask pupils to return to their original teams and brief the other team members on what they've done.

   Ensure that the Team Leaders share the checklist of resources that they will need (clothing suited to weather and season, food, water) with their teams.

2. Discuss as a class: What might be hard to achieve on the day, and what will be easy? Are there any other resources that you will need to bring?

3. **Lesson 4, Clip 4:** Steve Backshall climbs in the Avon Gorge to find a peregrine falcon's nest.

HOMEWORK

Team leaders need to check the weather two days before the expedition day.

You might ask the class to pack their bags together the day before the expedition. A letter home would help the children to remember everything they need.

LESSON 5: EXPEDITION DAY

AIM

To go on an 'expedition' to find new species.

CURRICULUM LINKS

Pupils will:

- Overcome physical and problem-solving challenges with a partner or small group.
- Develop confidence and self-esteem through carrying out a role effectively within a team.

KEY VOCABULARY

Co-operation, exploring, first aid kit, fun, insect repellent, rations, rucksack, safety, teamwork, weather conditions (dry/hot/humid/damp/cold).

PREPARATION

- This lesson will work best if you can give half a day to the activity.
- Make sure you have Teacher's Assistant support or invite parents to help, depending on your school policy.
- Update your risk assessment.
- Set up sports cones to mark points where Adventure Leaders will be laying out sports equipment for the expedition obstacles.
- Ensure you/the class have:
  - Laminated 'new species' Fact File drawing.
  - The 'new species' models or collages made in lesson 3.
  - The maps created by the Navigators in lesson 4.
  - The animal shelters made by the Scientists in lesson 4.
  - The Reporters' scripts written in lesson 4.
  - The Film Crew's lists of 8 shots written in lesson 4.

For the teams on the day:

- Photocopy five or six New Animal Discovery forms per team (page 30).
- Photocopy one postcard per child (page 31).
- Cameras for the Film Crew.
- Sports equipment for the obstacles.
- One ruler per team, a clipboard for the team leader and pencils to record the new animal species.
- Equipment for children to make their own team flags.
- Optional – team 'rations' – energy bars, Kendal mint cake or hot chocolate, for example.
- Optional – dressing-up items for explorers – goggles, scarves, rucksacks etc.

INTRODUCTION

1. **Lesson 5, Clip 1**: Steve sets a challenge to enjoy the big day and find your mystery species.

2. Ask the Scientists, Navigators and Adventure Leaders to go outside.
   - The Scientists and Navigators need to hide the 'new species' and the Fact Files in the shelter. Ensure they are put in the location indicated on the map made in lesson 4. They need to hide enough Fact Files and models for each group to find and take one.
   - The Adventure Leaders need to build the obstacle they planned in lesson 4, using sports equipment.
3. The Film Crew, Reporters and Team Leaders stay in a 'base camp' area (to prevent all pupils from seeing where models are hidden). Ask them to check their equipment and make a team flag.

MAIN ACTIVITY

1. Check the site is ready and safe before pupils start. Ask the Adventure Leaders to test the planned obstacle activities and check that they work. Collect in the maps from the Navigators.
2. Adventure Leaders demonstrate their obstacles to the class. Circulate to see each planned activity.
3. Explain that the children are going on an expedition to look for new species. Invite them to join you at 'base camp', and set the scene. You might give out some expedition rations, hand out some extra hats and scarves and take a team photo.
4. Explain that scientists normally record animals in their natural habitat, leaving them there. Give each team some New Animal Discovery forms to complete when they find new animals. Explain that on this occasion, because the new species are fact files or models, teams are also going to bring them back to base.
5. Remind the teams that the Film Crew and Reporters will be recording what happens on the expedition, and ensure that they have their paperwork and kit.
6. Hand out one map to each group, and ask them to follow the route, passing over the obstacles and visiting checkpoints to find a 'new species'. You might want to ask them to repeat the obstacles five times each, or over a period of time, so that the children get good exercise.
7. Teams locate a species using the map. They complete a New Animal Discovery form, pack one model into the rucksack, then return to the base. Then, they swap maps with another team, and set off to find another species. Repeat.
8. On the sound of the 'return to base' signal, teams return.

PLENARY

1. Discuss as a class:
   - What did you find? Describe the fact files or models and discuss how they are adapted.
   - What names did each team give to the new discoveries? What are the similarities or differences in the names? If you have a multi-lingual class you might want to discuss what this creature might be called in another language.
   - What went well, what did not go so well, and what went badly? Were there any surprises?
2. Teams help tidy adventure equipment and collect any remaining models.

HOMEWORK

Each person writes a postcard reflecting on their day, thinking about what they discovered and how they worked as a team.

LESSON 6: MISSION ACCOMPLISHED!

AIM

To communicate to an audience about the expedition day.

CURRICULUM LINKS

Pupils will:

- Create and communicate information in the form of text, images, sound and 3D models using a range of ICT hardware and software where appropriate.
- Recognise that people may manage natural environments sustainably to suit a purpose, and identify opportunities for improvement in the school grounds.

KEY VOCABULARY

Audience/target audience, body language, close up, communicate, edit, environment, expression, lighting, long shot, mid shot, mood, pan, piece to camera, presentation, sound effects, tone, viewpoint, volume.

PREPARATION

You will need:

- Digital cameras with photos/ footage from expedition day.
- Computers to process images/ footage.
- Completed Reporters' Scripts.
- Optional: News props e.g. a microphone and a Naomi's News sign.
- An A3 copy of your school playground map.
- Plain white stickers.
- Photocopy Certificates for each pupil (page 31).

INTRODUCTION

1. **Lesson 6, Clip 1:** Steve sets a final challenge to share with people what you've done and report back on the journey.
2. Explain that the children will be sharing their expedition with an audience (e.g. a younger year group at an assembly, parents at a parents' evening, visitors who will see a display).
3. **Lesson 6, Clip 5:** Naomi's News story. You can use this to look for tips on presentation skills.
   - Where does Naomi look when presenting?
   - Does she move around?
   - How does she keep the audience interested?
   - What sections is the news broken into?

MAIN

1. Ask the class: How will you explain what you found on the expedition?
2. Ask pupils to select the images/ footage and interview questions and answers that they would like to include in their presentation or display.
3. Pupils could create a visual display, showing where the new species were found on the map, using string to connect the Fact File cards to the new species' territories.
4. Ask the pupils to script, rehearse and refine their presentations.

PLENARY

1. Watch all of the presentations.
2. Hand out Mission Accomplished certificates. Have an award ceremony for pupils, either at this stage or after the audience presentation.
3. Remind the class that expeditions have a purpose, often relating to improving the environment or conserving wildlife.
4. **Lesson 6, Clips 2, 3, 4** and **6:** Show the class one of the clips of children building a bug hotel, how they can look out for hedgehogs, or the benefits of conserving the red kite or otters.
5. Discuss as a class: What next? What have we found out about our environment and the habitats that exist? How could we improve our environment to encourage more wildlife to live nearby?
6. If you would like to do more for wildlife in your school, there are lots of resources that can help you. See the inside back cover for details.

HOMEWORK

Write a letter to the School Council to give them ideas for improving the school grounds for wildlife.

EXPLORER CARDS

Sir Harry Johnston

1901

Over 100 years ago people didn't believe okapis existed. They thought they were fakes made up of giraffes and zebras! But this man saw it was real.

Congo

Charles Darwin

1831-1836

This Englishman joined a survey ship and explored for five years, stopping at many places. He looked at animals and wrote about how they are adapted to where they live and how that helps them survive. From his observations he proposed his Theory of Evolution.

Galapagos

Steve Backshall

2010

This explorer and TV presenter joined a team of big cat experts and filmmakers in the jungles and mountains of Bhutan. They searched for tigers to find evidence that could help bring wild tigers back from the brink of extinction. The documentary series, Lost Land of the Tiger, followed their journey.

Bhutan

Kate Jones

2008

This lady is from an organisation who studied bumblebee bats. They are the world's smallest mammals. They are the only type of bat like this left, having separated from all other bats over 40 million years ago.

Thailand

Conservationists from the EDGE programme

2009

This team of scientists found a species called the horton plains slender loris. They used to think it was extinct! All loris species are well adapted for night vision, with their huge eyes!

Sri Lanka

Mary Anning

1814

This lady explored her local area from age 11! She found fossils of creatures that had never been seen before. One was called an ichthyosaur, like an ancient dolphin.

Dorset, UK

Mary Kingsley

1895

This lady was a nurse, author and naturalist. She explored on a canoe more than a hundred years ago. She found out about medicine and also types of electric fish! This is one species of fish collected by the explorer and was named after her, Brycinus Kingsleyae.

Angola

WWF/Vietnamese Ministry of Forestry

1992

Saolas were unknown to western science until they were discovered just 15 years ago by these organisations who formed a team to find them in the Vu Quang Nature Reserve. Scientists are still trying to figure out whether it is a goat, antelope or cow species.The saola are endagered due to hunting and habitat loss.

Vietnam

Ed Stafford

2010

This man trekked along the entire length of the largest river in the world from the source to the sea; the journey took 860 days. The aim was to create a big adventure which people could follow online. He wanted to get people to care about deforestation in the jungle.

Amazon River

Robert Falcon Scott

1910-1913

This man and his team went to investigate the land, species and weather in the South Pole. They found fossil plants, which showed that it was warm enough for large plants in Antartica millions of years ago! This photo was taken during the expedition known as Terra Nova.

Antarctic

Alfred Russell Wallace

1854-1862

This man investigated species on different islands between Indonesia and Australia about 150 years ago. He saw that animals with the same ancestors (like great-great-grandparents!) had similar features, but were still adapted differently to suit where they live.

Indonesian & Australian Islands

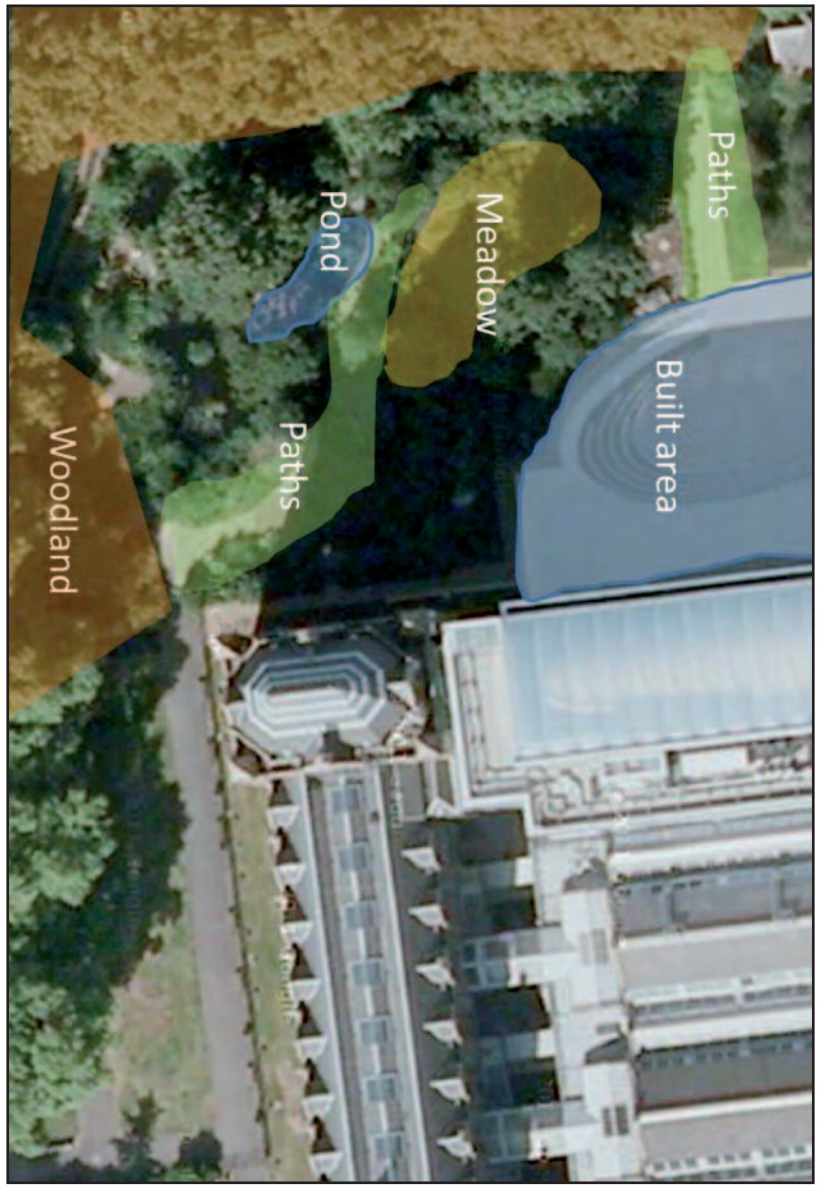
Catlin Arctic Survey

2009-2011

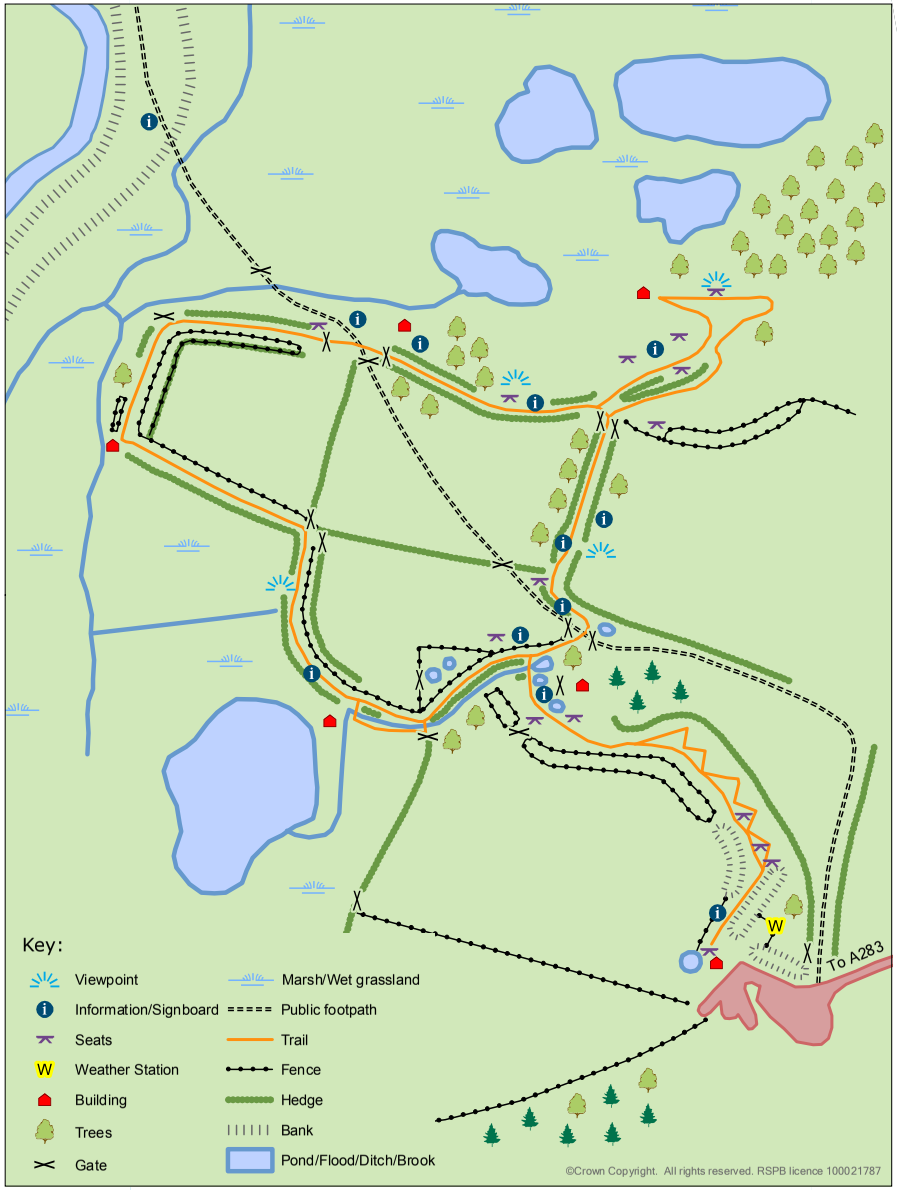
This team finds out about the rate, causes and potential worldwide impacts of the disappearance of the Arctic Ocean's sea ice cover. The Arctic ice cap is accelerating global warming. Snow and ice usually form a protective, cooling layer over the Arctic. When that covering melts, the earth absorbs more sunlight and gets hotter.

Arctic

Natural History Museum Wildlife Garden, London



Pulborough Brooks Nature Reserve



Would a creature find its food and drink here? If so, what is there to eat and drink? If not, would it have to go elsewhere to find food? (Write or sketch.)

Where could a creature make or find a shelter? Think about big and small creatures. (Write or sketch.)

HABITAT INVESTIGATION PASSPORT

LICENCE TO INVESTIGATE

Draw a picture of yourself as an explorer.

Name

Team

Describe the zone you are exploring, using as much detail as you can. There are probably lots of different habitats within the zone. Remember to include what you can hear and feel, as well as what you can see. Use 10 descriptive words.

Here are some examples of descriptive words you could use: damp, dry, bright, grassy, built, sloped, muddy, noisy.

Make a map of your zone on the other side of this page.

ADAPTATION CARDS (PART 1)

AMAZING SENSE

A special, sensitive line along the creature's side detects vibration or movement, so it can tell if a predator is coming even before it sees it.

AMAZING SENSE

Whiskers help this creature to sense which spaces it can fit through in the dark.

AMAZING SENSE

This creature's night vision may be 40 times better than yours.

AMAZING SENSE

This creature flicks its tongue to bring smells in the air in contact with sensors in the roof of its mouth. Each fork of the tongue detects different things, helping it to work out where the smell is coming from.

AMAZING SENSE

Excellent hearing helps this creature to detect prey and hear rivals.

AMAZING SENSE

This creature has compound eyes. They are made up of hundreds of tiny little cells, and are excellent at detecting movement.

MARVELLOUS MOVEMENT

Powerful fins and a slippery, tear-drop shape help this creature to move efficiently.

MARVELLOUS MOVEMENT

This creature has strong toes for gripping branches. When it wants to climb down it can rotate its feet 180 degrees, dig its claws into the trunk and hang from its back legs.

MARVELLOUS MOVEMENT

This species has especially soft wing feathers to deaden the sound as it sneaks through the woods looking for prey. Its wings are rounded to help it twist and turn through the trees in its woodland home.

MARVELLOUS MOVEMENT

This creature is really smooth on the top for gliding through vegetation, but has roughened scales underneath to help to push its way along.

MARVELLOUS MOVEMENT

Powerful back legs with webbed feet are ideal for jumping and swimming.

MARVELLOUS MOVEMENT

Big wings can carry this creature hundreds of miles, but other minibeasts that don't fly so far have much smaller wings.

PERFECT HOME

This creature never needs to leave the water, except occasionally to jump out to escape being eaten. It breathes, lives and feeds in water.

PERFECT HOME

This creature makes a stick and leaf nest high in a tree to sleep in.

PERFECT HOME

Many birds make nests to raise their young in, but they don't live there all the time. This species, however, stays in the same territory all its life so it knows its home really well.

PERFECT HOME

This creature chooses damp places because that is where most of its food (such as frogs) lives. It also needs somewhere sunny where it can warm its muscles.

PERFECT HOME

This creature needs still water, such as a pond, in which to lay its eggs, as well as plenty of minibeast-filled vegetation around the edges for it to hunt in.

PERFECT HOME

This creature usually rests on plants at night but finds somewhere dry to sleep all winter.

ADAPTATION CARDS (PART 2)

DEADLY DEFENCE

Safety in numbers is important. Not only are there many more eyes keeping a watch for danger, but if someone does get caught, the chances are it isn't you!

DEADLY DEFENCE

Living in trees helps this creature keep out of the way of most predators, but sharp nut-cracking teeth can also bite.

DEADLY DEFENCE

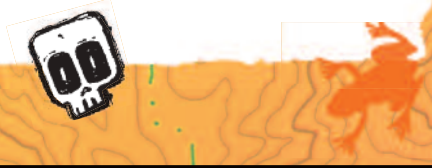
If birds have eyes on the side of their head, they can see 360 degrees to detect predators. Hunting birds like this one have eyes facing forwards to pinpoint their prey.

DEADLY DEFENCE

This creature can squirt a horrid-smelling oil to put predators off.

DEADLY DEFENCE

Powerful back legs with webbed feet are ideal for jumping and swimming.



DEADLY DEFENCE

Big eye-spots (not real eyes) on the wings make this creature look too big to swallow!

INCREDIBLE EATING

This creature's mouth is adapted to its diet – big teeth for the predators, or rasping mouths to scrape algae off stones for some of the smaller species.

INCREDIBLE EATING

Mammals' teeth reflect their diet: wide and flat for grinding seeds or grass, sharp for tearing meats and opening nuts.

INCREDIBLE EATING

Birds' beaks reflect what they eat. Hooked for tearing flesh, or fine, like built-in tweezers for picking insects out of bark.

INCREDIBLE EATING

This creature eats its prey whole. It can swallow huge things. It grips them in its backward-pointing teeth and then "walks" its mouth and body over the prey. There is no escape!

INCREDIBLE EATING

Adults may jump to catch their prey and then swallow it whole.

INCREDIBLE EATING

This insect sucks plant nectar up through its long proboscis tube, but while it was a larva it will have munched leaves all day!

ROLE BADGES

NAME:

TEAM:

SCIENTIST

You are in charge of ensuring your species has a suitable shelter.

NAME:

TEAM:

ADVENTURE LEADER

You are in charge of creating adventure challenges.

NAME:

TEAM:

NAVIGATOR

You are in charge of devising a route to the new species.

NAME:

TEAM:

FILM CREW

You are in charge of recording the expedition on camera.

NAME:

TEAM:

REPORTER

You are in charge of planning & recording interviews to communicate about your expedition.

NAME:

TEAM:

TEAM LEADER

You are in charge of making sure your team has everything it needs.

ROLE INSTRUCTIONS

SCIENTISTS

You are in charge of creating a shelter for the new species.

- Think about your species' adaptations.What kind of shelter will it need? Plan what the shelter looks like and decide what materials it's made of. You can use natural or recycled objects, like twigs, leaves, cardboard.
- Are you going to camouflage the shelter to make it harder to find? It needs to be big enough to contain all of your team's models or drawings of the new species.
- Collect what you need and build the shelter.

ADVENTURE LEADERS

You are in charge of planning the adventurous challenges that the teams will undertake on expedition day.

- Each Adventure Leader will plan a challenge for the other teams to overcome on their expedition. For example, hoops could be stepping stones across a 'river', or you could ask the other teams to 'climb' along the playground as if it were a cliff face.
- What equipment will you use to create your adventure challenge?
- Is it safe? What skills will it test?
- What could your challenge be if it was in the natural world? A log over a chasm? Stepping stones?
- Draw it, and write instructions for it.

NAVIGATORS

You are in charge of plotting the route each team will take to discover your species.

- Where does your new species live? How big would its territory be? Colour in an area on the map that shows the animals' territory, so the other teams know where to start looking.
- Speak to the Adventure Leader from your team and find out the name and location of the obstacle they have created. Your route will need to include this. Mark it on the map.
- Think of somewhere good to hide your Fact File cards, so the teams can find them along the way. Mark it on the map as a 'checkpoint'.
- Starting from Base Camp, design a route for teams to follow to take them to your new species. Remember, you probably shouldn't take the most direct route.
- Write instructions to go with your map. Try to include directional language. For example you might say 'take 5 steps towards the main gate', or 'take 7 steps north, then turn 90°'.

FILM CREW

You are in charge of recording the expedition on camera.

Practise the following shots:

1. LONG SHOT – This allows you to see everything, so is usually the first shot to help you set the scene. You might use it to show the whole habitat.

2. MID SHOT – Shows characters from the waist up. This is useful when filming people talking. You might use this for interviews.

3. CLOSE UP – Use this to show lots of detail. You might use this to show someone's expression or the details of your species.

- What images will you need to record on expedition day? Which shots will be best for each stage of the day?
- You will work with the Reporter on the day, so you will need to talk to them about your plans.
- On A4 paper, plan and draw 8 shots to take on expedition day. Remember to include shots at the beginning and end of your expedition, as well as shots of your team tackling the obstacles.

TEAM LEADERS

You are in charge of making sure your team has everything they need to stay safe and enjoy the expedition day.

- Look at the different types of weather:

What clothes and equipment would you need to take for bright sunny weather, and what problems might you experience when it's hot?

- Now think about the other types of weather: rain, snow, wind, and complete the Weather Assessment chart.
- Take a look at the BBC Weather website and find your local five-day forecast.
- Make a list of gear that your team will need to bring to match the predicted weather conditions. What essentials will you need to bring, like food, water, rucksacks and sturdy shoes?
- You will need to check the actual weather two days before, so you can let your team know what to bring for certain!

WEATHER ASSESSMENT CHART

WEATHER	POSSIBLE PROBLEMS	EQUIPMENT TO TAKE
SUN 	People might overheat, so they should stay in the shade as much as possible. Avoid running around too much. Make sure people don't dehydrate – they need to drink water.	• Hats • Sun cream • Short-sleeved tops • Shorts • Sunglasses • Water
RAIN 		
SNOW 		
WIND 		

REPORTERS

You are in charge of deciding what the audience needs to know to understand what has happened on your expedition.

- Imagine you are explaining what the expedition is, and practise explaining it to other reporters. Use the script to help you.
- Imagine you are interviewing the expedition team for Live 'n' Deadly. What would you like to ask them? Brainstorm some questions with the other reporters. Try to think of open questions so that you don't just get 'Yes' and 'No' answers.

Here are some examples to get you started. What are you searching for? What is your role and what do you have to do? Where are you searching?

- Pick one question that you would like to ask each member of your team. Write it on your script. You will work with the Film Crew on the day, so you will need to talk to them about your plans.

SCRIPT

Hi, my name is ..... and I'm here at .....

with my team, called ..... They are about to go on an expedition to

.....

where they will be looking for .....

They are likely to come across some difficult obstacles along the way, such as .....

..... and .....

Let's talk to them to find out more.

Question 1 .....

.....

Question 2 .....

.....

Question 3 .....

.....

Question 4 .....

.....

Question 5 .....

.....

That's all from me. Back to the studio!

NEW ANIMAL DISCOVERY FORM

TEAM NAME

NAVIGATOR

Describe the creature's habitat. Use at least three descriptive words.

SCIENTIST

What do you think the species would feel like to touch? Is it spiky, slimy, soft? Is it warm or cold?

FILM CREW

What does the creature look like? Describe it, or sketch it quickly.

Film Crew – sketch the new creature here.

REPORTER

List one interesting fact about the creature – take it from the Fact File.

ADVENTURE LEADER

Is this creature dangerous to your team? List any hazards you can see.

TEAM LEADER

Help the team to come up with a name for the creature. This might be based on its habitat, its appearance, what it eats or one of its adaptations.

We have called this new species:

MISSION ACCOMPLISHED!

LIVE 'n' DEADLY

This is to certify that

.....

has taken part in a Live 'n' Deadly expedition

.....

.....

.....

.....

WELL DONE!

OTHER THINGS TO CONSIDER

LEARNING OUTSIDE THE CLASSROOM

Class code: With the class, add points to your class code for learning outdoors. Think about the differences in the playground when it's used for break time and for learning.

Boundaries: Make it clear to pupils where you are expecting them to explore and which areas are off limits.

Base camp: Agree a place to gather. You could mark out a shape on the ground using sports equipment.

Return to base sound: Practise a sound which will indicate that the pupils should return to base camp.

ENHANCING THE CLASSROOM ENVIRONMENT

Mapping wall display: Make a large map of the playground and a label to show the new name that pupils invent for it in lesson 1. As the lessons progress, annotate the map with pupils' work, using string and drawing pins to make a line between pupils' work and where it took place on the map.

Key vocabulary: Ask pupils to choose one new word. They write it as large as possible in the middle of A4 paper. Research its definition using the dictionary. Illustrate it and write the definition to make a class display.

Library corner: Bring in books and magazines about nature to support pupils' learning e.g. All About Animals, National Geographic Kids, DK Find Out, plus non-fiction animal books. Many reading schemes include explorer themes. If possible borrow illustrated fiction about explorers such as Mary Anning – The Story of a Fossil Girl by Catherine Brighton, or The Beagle with Charles Darwin by Fiona MacDonald and Mark Bergin.

Food chain bunting display: Pupils have to draw on mini white boards what the animals in the Adaptation Cards would eat. Then what eats them! Repeat. Pupils can make drawings for food chain displays that hang together in threes.

Life cycles circular display: Pupils can select an animal from the Adaptation Cards and research then draw the other stages of its life cycle. The four images can be used as a game for their partners to sequence, then stick on to circles in order.

USEFUL DOWNLOADS & RESOURCES

The BBC is not responsible for the content of external websites.

Explorers and Expeditions

EDGE of existence – Zoologist expeditions:
www.edgeofexistence.org

NHM Mission: explore game:
www.nhm.ac.uk/kids-only/fun-games/mission-explore

NHM Scott Exhibition
www.nhm.ac.uk/visit-us/whats-on/scott-expedition-coming/index.html

NHM Expedition Videoconferences
www.nhm.ac.uk/education

British Antarctic Survey resources:
www.antarctica.ac.uk/about_antarctica/teacher_resources/index.php

BBC Primary History – Indus Valley
www.bbc.co.uk/schools/primaryhistory/indus_valley

ZSL New Discoveries:
www.zsl.org/conservation/discoveries

The Fuchs Foundation – Teachers explore polar regions:
www.fuchsfoundation.org/page/19/educational-resources.htm

Maps and Mapping

NHM Tree Survey
www.nhm.ac.uk/education/online-resources/urban-tree-survey/index.html

NHM Postcode Plants
www.nhm.ac.uk/nature-online/life/plants-fungi/postcode-plants

Digimap (free Ordnance Survey map for schools):
http://digimapforschools.edina.ac.uk/login.html

Habitats

BBC Bitesize habitats:
www.bbc.co.uk/schools/ks2bitesize/science/living_things/plant_animal_habitats/read1.shtml

BBC Nature habitats:
www.bbc.co.uk/nature/habitats

BBC Schools habitats game:
www.bbc.co.uk/schools/scienceclips/ages/8_9/habitats.shtml

Local Wildlife

OPAL Wildlife Survey (England):
www.opalexplorenature.org

RSPB Big Schools' Birdwatch:
www.rspb.org.uk/schoolswatch/index.aspx

BBC Breathing Places ladybird hunt:
www.bbc.co.uk/schools/teachers/breathingplaces/class_activities/spot_ladybirds.shtml

NHM Biodiversity:
www.nhm.ac.uk/nature-online/biodiversity

Biodiversity Action Mapping:
http://ukbars.defra.gov.uk/maps/Planning/Index

Biodiversity Action Plan:
Search for your council + Biodiversity Action Plan

Animal Adaptations

RSPB Beak matching game:
www.rspb.org.uk/youth/play/waiter.aspx

RSPB Avian Resurrection build a bird game:
www.rspb.org.uk/youth/play/avianresurrection.aspx

RSPB Adaptation:
www.rspb.org.uk/youth/learn/adaptation/index.aspx

NHM Adaptations:
www.nhm.ac.uk/kids-only/life

Science and new species

NHM My Own Exhibition:
www.nhm.ac.uk/resources-rx/files/my_own_exhibition-14392.pdf

NHM I want to be an 'ologist:
www.nhm.ac.uk/kids-only/ologist/zoologist

NHM picture gallery:
www.nhm.ac.uk/kids-only/picture-gallery

Doing more for nature

BBC Breathing Places class activities:
www.bbc.co.uk/schools/teachers/breathingplaces/class_activities

RSPB Create a wildlife friendly garden:
www.rspb.org.uk/advice/gardening/wildlife-friendly_garden.aspx

RSPB Make a bird cake:
www.rspb.org.uk/youth/makeanddo/activities/birdcake.aspx

RSPB Wildlife Action Awards:
www.rspb.org.uk/youth/makeanddo/do/actionawards

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RSPB a million voices for nature

NATURAL HISTORY MUSEUM

ZSL LIVING CONSERVATION

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