# Bats

## STAGE 2 SUGGESTED CLASSROOM ACTIVITIES

### Science

**ST2-11LW** - Describes ways that science knowledge helps people understand the effect of their actions on the environment and on the survival of living things

**Student Activity:**

Scientists don't know a lot about micro-bats so they have to use radio tracking to find out which habitats they use. Micro-bats like to use mangroves or salt marshes to roost and eat. Today we are going to learn about habitats of animals and write a report on an Australian animal focusing on its habitat.

Students use the internet and books to research an Australian animal's habitat. They should then write a report on the animal’s habitat. If they finish early they can publish their work in a word processing program and add a picture for display.

**Student Activity:**

Domestic animals can threaten wildlife species. Write a report on why cat owners need to be responsible for their pet.

**ST2-10LW** - Describes that living things have life cycles, can be distinguished from non-living things and grouped, based on their observable features

**Student Activity:**

Introduce the notion of food chains to students using the following explanation.

Every living thing on Earth needs energy to survive. Animals get energy from the food they eat. Plants get energy from sunlight, water and nutrients in a process called Photosynthesis. A food chain demonstrates how each living thing gets its energy, as well as how energy is passed on from creature to creature. An example of a simple food chain starts with grass, which is eaten by a rabbit, which is then eaten by a fox. Ask students to think of one of their own.

As a class, make an example of a food chain using pictures and words (you could extend on one of the ones the students offered earlier). This can be a simple food chain only using 2 -3 transfers of energy. Try to include a bat as one of the animals. *For example: Capeweed is eaten by Bogong Moths which is eaten by Gould’s Wattled Bats which is eaten by Owls.*

Students should use their own knowledge and research to make 2 more food chains. They should illustrate the food chains and publish them in their books.

**ST2-4WS** - Investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken.

**Student Activity:**

Walk around your school grounds, observe and document the wildlife, insects and birds. How many species can you find? Research the habitat of one animal, bird or lizard that you have spotted in your school. Return each day for a week, or one day each week for a term, to observe how the habitat and the animal changes over a period of time. Document and keep a record of these changes.

How has the wildlife around your school, adapted to its surroundings?
Science

ST2-15I - Describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies.

How do you study something that flies under cover of darkness? This question persistently troubles scientists investigating the mysterious lives of bats. The 45 bat species that occur in the continental United States play important roles in U.S. ecosystems as major predators of flying insects and pollinators of desert plants. Bats also play an as-yet poorly understood role in disease transmission cycles. For these reasons, it is important to monitor the health of bat populations.

Historically, marking bats involved attaching numbered bands to their wings, but this method can injure and disturb bats, and bands were often lost or rendered indecipherable. Now, bats are marked with Passive Integrated Transponders (PIT tags) to assess their survival and movements.

Student Activity:
What information are you able to find out about ‘PIT tags’?

PDHPE

Dance

DAS2.2 - Explores, selects and combines movement using the elements of dance to communicate ideas, feelings or moods

Student Activity:
Research and gather information about food chains and food webs. What would happen to the ecosystem if bats were to become extinct? In groups, explore, select and combine movement using the elements of dance to communicate ideas and feelings about a bat extinction and its’ impact on the ecosystem.

Creative Arts

Music

MUS2.2 - Improvises musical phrases, organises sounds and explains reasons for choices.

Student Activity:
Students will rely on their hearing to locate other group members. Students will attribute a bat’s open mouth to the use of echolocation. Students will conclude that bats are specialized to rely on echoes for navigation.

Explain that bats use sound waves, echoes and their ears to navigate at night. Form a large circle. Blindfold the bat and lead to the middle of the circle. Appoint others to be moths and step inside the circle. Remaining students will enlarge the circle and be trees. The bat calls for the insect by saying “Moth?” Moths reply “Here!” The bat must listen and tag as many moths as possible using only his or her sense of hearing. Continue for approximately 2 minutes. If a moth is tagged, it becomes a tree. If the bat is too close to the edge, the trees whisper “Tree,” and gently steer the bat towards the middle of the circle. Why does the bat call out? Why must the moths respond each time the bat calls out?
1. From your own research, list the other ways that scientists use radio tracking devices:

2. In your own words, explain what a food chain is.
3. In what ways do domestic animals threaten our wildlife species


4. Research and label the body parts of a BAT.

![Livingstone's Fruit Bat](image)

*Pteropus livingstonii*
BATS
STAGE 2 SUGGESTED CLASSROOM ACTIVITIES

Answer:

Livingstone’s Fruit Bat

*Pteropus livingstonii*

- Shiny black ears
- Red eyes
- Arm bones
- Finger bones
- Thumb
- Brown fur with some golden spots
- Five-toed feet
- Wings are very long fingers covered by thin skin

Mapped to Australian Curriculum and NSW BOSTEC standards as at March 2014
# Bats

## STAGE 3 SUGGESTED CLASSROOM ACTIVITIES

### Science

**ST3-10LW** - Describes how structural features and other adaptations of living things help them to survive in their environment.

**Student Activity:**
Research, observe and describe the structural features of two or more types of bats. Choose one feature and explain how the bat uses this feature to assist with its survival. Present your findings in a poster, labelling all the body parts.

**Student Activity:**
Map out the species of bats that are found around NSW. Which state of Australia has the largest amount of bats?

**ST3-4WS** - Investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.

**Student Activity:**
Is a bat a bird? What do you think? Why? Through online research, compile a list of similarities and differences. Research the similarities and differences between bat and bird flight as well. Explain and describe your findings to a partner.

**ST3-11LW** - Describes some physical conditions of the environment and how these affect the growth and survival of living things.

**Student Activity:**
Identify physical conditions of the bat environment. Eg, do they need certain temperatures, light, water? What would happen if each of these conditions were changed? How are bats impacted on by natural circumstances / conditions – flood, drought, fire?

### PDHPE

**Dance**

**DAS3.2** - Explores, selects, organises and refines movement using the elements of dance to communicate intent.

**Student Activity:**
Study the way bats fly. See if you can find examples of them flying (on internet sites.) Using this newly learned knowledge of bat flight, in small groups, develop a sequence of dance ideas that reflect the flight of bats. Perform your dance for other small groups. Whilst other groups perform, take note of how they each depict the flight of bats.

### Creative Arts

**Music**

**MUS3.2** - Improvises, experiments, selects, combines and orders sound using musical concepts.

**Student Activity:**
Students are presented with a viewing of a variety of 'You-tube' clips that share with us the sound that bats make. In pairs, students decide which 'sound' they will recreate. They will choose the most appropriate musical instrument or other tools to make this 'sound'. Once they have finalised their sound recreation, the teacher will point to pairs of students who will then play their 'sound'. Have fun with this! Students may sit in a circle and play their 'sound' in a continuous rhythm as the teacher points to them.

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*Mapped to Australian Curriculum and NSW BOSTEC standards as at March 2014*
Name

1. Do some research on bats and birds and make a list of similarities and differences.

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<thead>
<tr>
<th>Similarities</th>
<th>Differences</th>
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2. Write a brief information report on the ideal environment for a bat:

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3. How many different species of bat kind you find?

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Certificate of Achievement

Congratulations

on completing your studies of BATS

From

“Enquiring Minds”.

You are well on your way to becoming a BAT ECOLOGIST

Signed ___________________________ Dated ___________________________
## Bats

### STAGE 4 & 5 SUGGESTED CLASSROOM ACTIVITIES

#### English

**EN4-2A** - Effectively uses a widening range of processes, skills, strategies and knowledge for responding to and composing texts in different media and technologies.

**EN5-2A** - Effectively uses and critically assesses a wide range of processes, skills, strategies and knowledge for responding to and composing a wide range of texts in different media and technologies.

**Student Activity:**
In the program the scientist mentions that people often think that bats really are like how they are depicted in movies. Pose the idea of stereotypes to students. Would people react differently to bats if they knew more about them? Ask students to compose a narrative about bats that depicts their real habitat and behaviours.

**Resources:**
The NSW DEC has a NAPLAN site which offers advice on how students can structure a narrative


#### Science

**SC4-14LW** - Relates the structure and function of living things to their classification, survival and reproduction.

**Student Activity:**
Students identify what the micro bat eats, where it lives and its reproductive features. Students then produce an information poster on the micro bat which explains habitats, its part in the food web of its environment, how it raises its young and the dangers facing it as a species.

#### Geography

4.7 - Identifies and discusses geographical issues from a range of perspectives.

4.8 - Describes the interrelationships between people and environments.

**Student Research:**
The microbats often live in coastal habitats that are endangered in many areas of Australia. Have students investigate a coastal or wetlands area that is under threat and explain what animals are under threat because of the disappearance of their habitat.

**Resources:**


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