

BIODIVERSITY HOSPITAL – Teachers’ Notes

- Who is it for?** 11- 14 year olds
- How long will it take?** Either 1 double lesson; or 2 single, one-hour lessons (with homework activity).
- Learning outcomes:** Students will learn the importance of biodiversity and species conservation, the fine balance of the ecosystem and how to measure competing priorities.

What do you need?

Teacher resources:	Student resources:	Other resources:
Teachers’ notes Staff training quiz questions Exploring www.arkive.org ppt. file The Patient Board ppt. file	Patient charts (1 per group of 5) Medical teams worksheet (1 per group of 5) Staff training worksheets & flashcards (1 per 5 specialisms) Diagnosis sheets (1 full set per group of 5) Treatment plan sheets (1 per group of 5)	Internet access (unless setting the research as a homework activity) Sticky labels to create name badges Pens and paper to take notes Sticky tack

Preparation guidelines:

1. Arrange internet access (unless you intend to set research as a homework activity). If you cannot arrange internet access for the students, go to the ARKive website in advance of the lesson and print off species factsheets for each of the ‘patients’ you intend to use.
2. Print out and put together the ‘medical team packs’ (enough for groups of 5). Each pack should include:
 - a) 1 x medical team worksheet
 - b) 1 x patient chart (choose a different one for each team)
 - c) 1 x full set of 5 diagnosis sheets (one for each specialist area)
 - d) 1 x treatment plan sheet
3. Print out and put together the ‘staff training packs’ for each of the 5 specialist areas (Conservation Measures; Habitat Loss; Food Supply; Predator Prey and Foul Play). These should each include:
 - a) 1 x staff training instructions sheet
 - b) 6 x numbered flashcards (cut each of these cards out in advance)
4. Print out your question and answers for each of the specialist areas, so that you can test and ‘qualify’

the students.

5. Designate areas of the classroom where staff training for each of the five specialisms will take place.
6. Provide pens and sticky labels so that each doctor can write themselves a name badge.
7. Provide pens and paper for the students to take notes.
8. Prepare the 'Patient Board' either by projecting it onto the whiteboard (using the ppt. file provided) or printing it large scale/creating a large scale poster, or drawing it directly onto the whiteboard.

How to run the session:

Decide whether you intend to run the session as a double lesson, or if you would prefer to run it as two single lessons. If you run it as two single lessons, you might choose to get the students to do their internet research and fill in their diagnosis sheets for homework (in advance of the second lesson).

The intended outcome of the activity is to get students to work in medical teams to produce a treatment plan for their patient (an endangered species).

There are five stages to this activity:

STAGE 1: Forming medical teams (10 mins)

1. Split the class into groups of 5. Tell them that this group is their 'medical team'.
2. Provide each group with a 'medical team pack', consisting of a patient chart, a medical team worksheet, 5 specialist diagnosis sheets and a treatment plan sheet.
3. Introduce the class to the different worksheets they will be using throughout the course of the activity, the purpose of the session and explain the breakdown of stages (how the activity will work).
4. Tell each group to read through the medical team worksheet to find out what to expect.
5. Instruct the students to each pick a role to play, using the guide to choose a specialism on their medical team worksheet. (Each member of the team will have a different specialism: Dr Conservation Measures, Dr Habitat Loss, Dr Food Supply, Dr Predator Prey and Officer Foul Play).
6. Tell them to use the sticky labels provided to create a name badge e.g. Dr Habitat Loss.

STAGE 2 – Staff training and qualifying (15 mins)

7. Designate five 'training centres' around the room (one for each of the five specialist areas). Put the relevant 'training packs' in each of these areas, (featuring instruction sheets and information flashcards cards numbered 1-6)
8. Instruct the students to leave their 'medical teams' and go to staff training e.g. instruct all Dr Predator Preys to go to the Predator Prey Training Centre.

9. Students read the instructions provided and each take a numbered card. They should read the information from each card to the rest of their team, in order.
10. After around 10 minutes, quiz the students about what they have learned (using the quiz questions provided and any others you would like to add). Once each group is able to correctly answer two questions in a row, they 'qualify' as specialists.

STAGE 3 – Diagnosing your patient (30 mins)

11. Instruct students to re-join their 'medical teams' and feedback the two most important things they learned from staff training.
12. Using the PowerPoint file provided, (or by accessing the site directly) guide the students on how to use the ARKive website (www.arkive.org). (See the provided PowerPoint file: 'exploring www.arkive.org')
13. Arrange internet access for the students and instruct them to carry out research about their 'patient' using their specialist diagnosis sheets. (If necessary this can be allocated as a homework activity).

STAGE 4 – Putting together treatment plans (30 mins)

14. Instruct students to feedback their research findings to their teams and discuss the biggest threats to their species and impacts to the rest of the ecosystem.
15. Students should then discuss potential 'treatments' led by the Dr Conservation Measures in that team. Instruct them to put together a 'treatment plan', using the 'treatment plan sheets' provided.

STAGE 5 – Presentation to the class (15 mins)

16. Instruct each medical team to present their treatment plans to the rest of the class (allocate around 2-3 minutes per team).

STAGE 6 – Allocating beds (15 mins)

17. Once the students have presented their treatment plan, display the 'Patient Board' on the wall and lead the class in a discussion about the fine balance of an ecosystem and how they might prioritise conservation. Allocate each patient to a hospital department i.e. use blu-tack to stick the relevant patient chart on the board. (See below for more information about running this part of the session).

The Patient Board:

Even though each of the patients is endangered, we only have the time and resources to do so much, so how do we prioritise their conservation? Lead the class in a discussion about the balance of the ecosystem and competing pressures for conservation. The class needs to allocate each of their patients to a department:

- Intensive care for those most critical
- Operating theatre for the next most critical
- Ward for those who do not need such urgent attention

- Outpatients clinic for the least urgent cases

There are only spaces/beds for up to three patients in each department so the students must find a way to prioritise, even if they are all critical.

BIODIVERSITY HOSPITAL – PATIENT BOARD			
INTENSIVE CARE			
OPERATING THEATRE			
WARD			
OUTPATIENTS CLINIC			

Areas to explore during discussions:

1. IMPORTANCE

- Is the species worth conserving?
- Does it have an important function, e.g. does it help to maintain the habitat?
- Does the biodiversity of the region rely heavily on this species?
- Do humans rely on this species, i.e. for food?
- What are the cultural implications, e.g. is it important to society? Does the species have economic benefits? Is it the national emblem? Does it draw in tourists? Could human perception play a role? (i.e.

sharks = scary, pandas = cuddly)

2. URGENCY

- How widespread is the species? E.g. what is the species range and how much habitat does it need to survive?
- Is it critically endangered or is it more abundant?
 - Are there any factors that could immediately wipe it out, e.g. loss of one habitat?
- If there are any threats which impact lots of different species – should these be dealt with first?

3. CHANCES OF SUCCESS

- Will the treatment for one species assist with the treatment of another?
- How easy will it be to achieve success? Is the treatment a quick fix or a lengthy and difficult process?
- Will the treatment be sustainable?
- Is the treatment worth the effort/cost?
- What other ways can we help to maximise the conservation of the species?

4. IMPACTS

- What are the impacts of a species extinction/decline on the rest of the ecosystem?
- How many species rely on the patient, i.e. for food, to assist with pest control etc.?

Tips for success:

1. There are a number of different worksheets to use. These are intended to help the students rather than confuse them. Make sure you introduce them to everything they need at the beginning to help them understand the different stages.
2. Let students choose their own role – this will help them to take more ownership of their research.
3. During staff training, tell each member of the group to read out an information flashcard – this way they each participate in the training, without leaving one person to do all the reading.
4. Break up each of the stages by referring to them by name, e.g. staff training; diagnose your patient, etc. (The names are self-explanatory and will help students understand the task at hand).
5. Maintain the hospital terminology throughout the activity, i.e. refer to the students as ‘doctor’ and ‘officer’; refer to their species as ‘patients’ and refer to their proposed conservation methods as ‘treatment plans’.

