Preparing You For Your Education Session:

**KS4 Animal Learning and Behaviour**

Duration: 45 minutes
Where to meet your education officer:
Please see your confirmation letter for details of where to meet your Discovery and Learning Officer for your session.

### Curriculum links (links are for current specifications for each subject/exam board).

- **Edexcel GCSE Biology** - B3 Using Biology - 2.6, 2.7, 2.9, 2.10, 2.12.
- **OCR (Twenty First Century) GCSE Biology** - Module B6 - Brain and Mind - B6.4.2.
- **WJEC GCSE Psychology** - Topic 3 - Developmental Psychology - Learning and Animal Behaviour.
- **AQA GCSE Psychology** - Unit 2 - Understanding other people - Learning (Conditioning and Operant).

### Session content:

In *Animal Behaviour & Learning* students take part in a real behaviour study, where students collect and analyse behavioural data on our chimpanzees. Students discover how complex chimpanzees are as a species from their social structure to how they communicate. Students uncover how data is transformed into practical applications and used in the zoo.

### During the session students will:

- Define the term ‘intelligence’.
- Discuss examples of operant and classical conditioning.
- Discuss how operant conditioning is used to benefit the welfare of the chimpanzees at the zoo.
- Create and use an ethogram to record chimpanzee behaviour.

### Using the Zoo to support this session

The photocopiable worksheet on the reverse of this page can support students understanding of animal behaviour and learning.

While at the zoo visit the following primates, note down all behaviours and compare these to the observations at the chimpanzees.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saki Monkey</td>
<td>Discovery Centre</td>
</tr>
<tr>
<td>Silvery Marmosets</td>
<td>Base Camp</td>
</tr>
<tr>
<td>Ring-tailed lemur</td>
<td>Base Camp - In with the lemurs</td>
</tr>
<tr>
<td>Squirrel Monkey</td>
<td>Base Camp</td>
</tr>
</tbody>
</table>

### Suggested classroom activity (for before or after your visit)

**Before**: Debate how students would measure an animals intelligence and give a few examples. Relate this to human intelligence.

**After**: How do you think animal training is used within the zoo? Have a debate about uses of animal training within animal collections, and how it affects the animals, zoo staff and the visiting public.
Chimpanzees vs. Humans (short-term memory test)

In 2007, a male chimpanzee called Ayumu completed a short-term memory test. The results of this investigation shocked the scientific world.

Ayumu was shown the numbers 1-9 on a computer screen (just like below). His task was to touch the numbers in ascending order. To make it harder, as soon as he touched the number 1 all the other numbers disappeared. Ayumu would then touch the location of each concealed number in the correct order in under a second. He could also beat his keepers!

In pairs, time how long it takes you to complete this memory test. You have ten seconds to memorise the position of the numbers. Now turn over to see if you can put the numbers in ascending order from remembering the position? Ayumu can do this task (memorise the position and put them in ascending order) in under a second!
Discuss in groups why you think it's important for chimpanzees to have good short-term memories? Hint: chimpanzees live in complex social groups.