



Parachuting Cats in Borneo

This activity is designed to introduce students to the concept of **ecosystems** and to their sensitivity to the **slightest** change. Students are asked to place a set of events in **chronological** order. These events actually occurred in real life when an ecosystem was disrupted.

Each student should be provided with a copy of the handout. Additionally, we recommend reviewing certain terms (e.g. plague, malaria, etc.) that students may not be familiar with before starting the activity. It's also important to note that the goal of this activity is not for students to get everything right but to realise how interconnected ecosystems are. This realisation may only come about once you review the correct answers as a class.

Answer key

Please note that although events 2, 3, and 4 occur sequentially, they can follow any event apart from the 13th.

- | | |
|---|--|
| 1 The World Health Organization sent chemicals to Borneo in response to an outbreak of malaria. | 8 Local cats caught the lizards that contained the chemicals. |
| 2 Mosquitoes were wiped out, but so were many wasps. | 9 The lizards died out. |
| 3 With fewer predators, caterpillar numbers increased. | 10 The local cats died. |
| 4 Grass roofs were destroyed. | 11 The numbers of rats in the area increased. |
| 5 Cockroaches stored the chemicals in their bodies. | 12 Cases of the plague and typhus (carried by rats) increased. |
| 6 Lizards ate the cockroaches and consumed the chemicals. | 13 Cats were parachuted in to help solve the problem. |
| 7 The lizards became slow in their movements. | |





Teacher's Guide



Explanation

In the 1950s, the people of Borneo experienced a serious outbreak of malaria, a disease caused by a parasite carried by mosquitoes. In response, the World Health Organization (WHO) sprayed DDT — an insecticide that was later found to be environmentally harmful — over the island. The DDT was effective at killing the malaria-carrying mosquitoes, but it also had many unintended consequences on the ecosystem and local population.

The DDT also killed parasitic wasps that preyed on caterpillars. Without the wasps, caterpillar numbers soared and they ended up eating the grass roofs on locals' homes. Furthermore, cockroaches in the area stored the DDT in their bodies. When lizards ate the roaches, the chemicals inside their prey made the lizards lethargic and slow.

This made them easier to catch. The local cats ate up the lizards and the DDT inside the lizards killed the cats. Without any cats around to eat the rats, the rat population increased dramatically. This made diseases like the plague and typhus much more common in Borneo. In response to the outbreak of the plague and typhus, the WHO parachuted 14,000 cats onto the island. The WHO concluded the mission was a success.

We welcome feedback and would be delighted to hear your thoughts on this activity. Feel free to send an email to schools@climatescience.org and we'll be sure to get back to you soon.

