

Technology

Grade 9

Mini Pat – Term two

Name: _____ Grade: _____

Content: Integrated systems (mechanical and mechanical advantage)

Context: Integrated system used to rescue wild animals

Introduction

Mechanical, gears, hydraulic and pneumatic systems can be combined to create integrated systems. These make work easier and quicker. Integrated systems are often housed in a structure.

Scenario

Rescuing animals using integrated systems

South Africa has a variety of wild animals. Sometimes these animals have to be relocated. The black rhino is on the critically endangered list of the IUCN (International Union for Conservation of Nature). This is because the animals have become regular victims of poaching. Nineteen rhinos were moved to a new area in the hope of protecting them from poachers. The two-tonne rhinos were sedated, blindfolded, and hoisted up by their ankles and moved by helicopters to their new game park.



Sometimes wild animals or expensive livestock are rescued because of rising flood waters or because they have fallen into or become stuck in mud holes.



Marine animals such as sharks are captured, tagged and fitted with sensor so that scientists can learn more about their feeding habits and swimming patterns.



You and your team are required to design and make an integrated system that can be used to lift or pull a large animal such as an elephant, horse small whale, shark or a rhino. The system must include a control device. The type of integrated system that your group designs will depend on the particular situation your group decides to work within.