

# CLIMBING

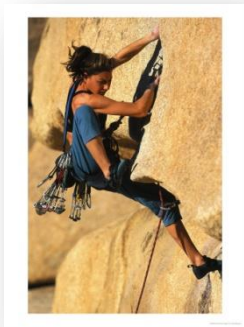
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4º ESO

PHYSICAL EDUCACION

# 1. CLIMBING

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## 1.1. INTRODUCTION

**Climbing** is the activity of using one's hands and feet (or indeed any other part of the body) to ascend a steep object. It is done both for recreation (to reach an inaccessible place, or for its own enjoyment) and professionally, as part of activities such as maintenance of a structure, or military operations.

# 2. ROCK-CLIMBING EQUIPMENT

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## 2.1. ROPE



Ropes used for climbing can be divided into two classes: dynamic ropes and low elongation ropes (static ropes). Dynamic ropes are designed to absorb the energy of a falling climber, and are usually used as belaying ropes. When a climber falls, the rope stretches, reducing the maximum force experienced by the climber and the equipment. Low elongation or static ropes stretch much less, and are usually used in anchoring systems. They are also used for abseiling (rappeling) and as fixed ropes climbed with ascenders.

## 2.2. CARABINERS

Carabiners are metal loops with spring-loaded gates (openings), used as connectors. Once made primarily from steel, almost all carabiners for recreational climbing are made from a lightweight aluminum alloy. Steel carabiners are harder wearing, but much heavier and often used by instructors when working with groups.



## 2.3. QUICKDRAWS



Quickdraws (often referred to as "draws") are used by climbers to connect ropes to bolt anchors, or to other traditional protection, allowing the rope move through the anchoring system with minimal friction. A quickdraw consists of two non-locking carabiners connected together by a short, pre-sewn loop of webbing.

## 2.4. HARNESSSES

A harness is a system used for connecting the rope to the climber. Most harnesses used in climbing are preconstructed and are worn around the pelvis and hips, although other types are used occasionally.



## 2.5. BELAY AND RAPPEL DEVICES

Belay devices are mechanical friction brake devices used when belaying. They allow control of the belay rope while their main purpose is to allow locking off of the rope with minimal effort. Multiple kinds of belay devices exist, and some of which may additionally be used as descenders, for controlled descent on a rope, that is, abseiling or rappelling.

Gri Gri (n°7) locks automatically even without your hands on the rope. It has a cam like a seat belt on a car, which pinches the rope when loaded, stopping it immediately. The benefits are three-fold:

- It takes no strength to hold a fall;
- It stops falls automatically;
- It does not twist the ropes



## 2.6. RAPPEL DEVICES (descenders)

These devices are friction brakes which are designed for descending ropes. Many belay devices can be used as descenders, but there are descenders that are not practical for belaying, since it is too difficult to feed rope through them, or because they do not provide sufficient friction to hold a hard fall.



## 2.7. FIGURE EIGHT

Sometimes just called "eight", this device is most commonly used as a descender, but may also be used as a belay device in the absence of more appropriate equipment, although it does not provide enough holding power for this to be recommended.



It is an aluminum (or occasionally steel) "8" shaped device, but comes in several varieties. Figure eights allow fast but controlled descent on a rope. They are easy to set up and are effective in dissipating the heat caused by friction but have a tendency to put a twist in the rope.

## 2.8. CHALK BAG

These are hand-sized fabric bags for holding climbers' chalk. Chalk bags are usually attached to the back of a waist belt for easy access by either hand during a climb.



## 2.9. HELMET

The climbing helmet is piece of safety equipment that primarily protects the skull against impact forces and/or falling debris. The primary concern for a helmet is, "whipping." If a lead climber allows the rope to wrap behind his/her ankle, a fall will flip the climber over and consequently, impact the back of the head. Furthermore, any effects of pendulum from a fall that has not been taken account by the belayer may also result in head injury. Helmets have saved many climbers from serious injury or death.



## 2.10. CLIMBING SHOES



Specifically designed foot wear is usually worn for climbing. To increase the grip of the foot on a climbing wall or rock face due to friction, the shoe is covered with a vulcanized rubber layer. Usually, shoes are only a few millimeters thick and fit very snugly around the foot.

# 3. TYPES OF CLIMBING

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**Rock climbing** is a sport in which participants climb up or across natural rock formations or artificial rock walls. The goal is to reach the summit of a formation or the endpoint of a pre-defined route without falling. Rock climbing competitions have objectives of completing the route in the quickest possible time or the farthest along an ever increasingly harder route.

## 3.1. STYLES OF CLIMBING

Climbing is typically divided into several styles that differ from one another depending on the place where it is done, the equipment used and the configurations of their belay, rope and anchor systems.



Aid Climbing - Aid climbing is a technical style of climbing in which devices are used to make upward progress and enhance safety. This type of climbing is generally employed on big walls (see El Capitan) where free climbing is extremely difficult or impossible.

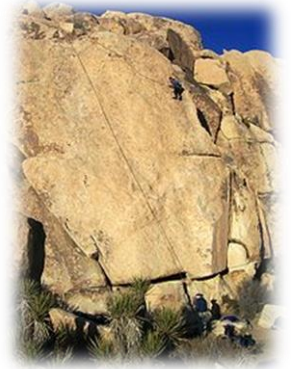
Free climbing - The most commonly used method to ascend climbs refers to climbs where the climber's own physical strength and skill is relied on to accomplish the climb.

Traditional climbing - Traditional or Trad Climbing involves rock climbing routes in which protection against falls is placed by the climber while ascending. Gear is used to protect against falls but not to aid the ascent directly.

**Sport Climbing** - Unlike Traditional Rock Climbing, Sport Climbing involves the use of protection (bolts) or permanent anchors which are attached to the rock walls.

**Bouldering** - Climbing on short, low routes without the use of the safety rope that is typical of most other styles.

**Free soloing** (not to be confused with free climbing) is single-person climbing without the use of any rope or protection system whatsoever. If a fall occurs and the climber is not over water (as in the case of deep water soloing), the climber is likely to be killed or seriously injured.



**Indoor climbing** - With indoor rock climbing you can train year round and improve your climbing skills and techniques.

**Alpine climbing:** is an extremely challenging type of climbing, requiring the climber to be adept at climbing across ice and rocky surfaces as well as having sound knowledge of survival skills and meteorology, as weather conditions can change very quickly in alpine environments.

**Ice climbing:** More extreme than climbing on rocky surfaces, ice climbers use crampons and ice picks to ascend glaciers and ice formations. Ice structures can be very unpredictable and consequently this is the riskiest of all types of climbing.

