



Mountain equipment and clothing guide for schools

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version 3

Introduction

This equipment guide has been produced to provide guidance to those who are unfamiliar with the clothing and equipment that is needed for a visit to the mountains. The alpine environment is notoriously changeable with temperatures and visibility rapidly changing during certain states of weather. It is not unheard of for a sunny or bright day to suddenly become blizzardous with foggy, low light conditions. At high altitudes, any significant change in weather can instantly translate to a severe change in air temperature and, for those that are not appropriately dressed or equipped appropriately, an increased risk of hypothermia. Additionally, on nice days the high altitude, clear skies and thin air can enhance the effects of the sun, increasing the risk of sun burn and eye damage. It is for these reasons that anyone travelling to the alpine environment requires carefully chosen, functional equipment.

What will I need?

The following is a list of both essential and optional equipment that anyone should have with them if they are travelling to a mountain environment:

Essentials	Optional
Jacket	Safety Helmet (legal requirement in some countries)
Salopettes or Trousers	Snow boots
Sturdy walking shoes	Neck warmer / Neck Cowl
Gloves or Mittens	Thermal underwear
Socks	Ski tie
Base Layers	Rucksack
Hat	Water Bottle
Goggles	Hand warmers
Sunglasses	
Sunscreen	
Lip balm	

Essentials

Jacket

Skiing is an energetic sport which is practised in a range of weather conditions. As a result, the ideal ski clothing should be adaptable, breathable, waterproof, windproof, functional and durable.

As the mountain weather is so changeable, adaptable clothing allows the weight of the clothing to be adjusted to suit the conditions. An example of this type of clothing is a jacket with zipped vents and removable fleece linings enabling the jacket to be used as a shell in warm conditions or as a lined jacket when temperatures are not so favourable.

During energetic sports, the body releases large amounts of fluid which in non-breathable garments collects as moisture within the garment. When the ambient temperature drops, the moisture cools the garment and whoever is wearing it making it cold and uncomfortable. Breathable fabrics allow the moisture pass through the outer shell into the atmosphere and as a result the person wearing the garment remains dry and warm.

An integral hood is extremely useful as an extra layer of protection for your head or face when conditions are inclement. Hoods trimmed with fur should be avoided as fur can be uncomfortable once it has become wet and frozen, which can occur in either poor conditions or as a result of a fall. Jackets with a high collar provide additional protection for the mouth, ears and cheeks and adjustable wrist cuffs are also useful to tailor the fit of your jacket over your gloves or onto your wrists.

Jackets come in varying lengths and although a short jacket can provide less warmth, it would be suitable if worn in conjunction with a salopette which normally has a high back. Longer jackets are probably a better choice if it is to be worn in conjunction with ski trousers.

Salopettes or Trousers

As with the jacket, trousers or salopettes should be both waterproof and breathable. Salopettes generally differ from trousers in that they have a high back and braces. A high backed salopette provides superior warmth over trousers and is the natural choice for beginners who are likely to spend more time in the snow. Salopettes are also more suited for small children.

Socks

Ski socks are required to keep the feet warm and comfortable in ski or boarding boots. Thicker socks are suitable for beginners where a close fit between the foot and the boot is not necessary. Where possible though, choose a thin, comfort fit or technical sock which offers superior feel over budget tubular socks. Thick, tubular socks however offer superior warmth for children.

Ensure socks are not ribbed (such as football socks) as this can cause chaffing or blistering of the shins when worn in a ski boot.

For comfort and to ensure that blistering of the shins does not occur, socks should only be worn as a single pair and not over undergarments such as thick tights or thermal long johns.

Base Layers

As conditions in the mountains can be variable, it is always a good idea to dress with a number of thin base layers rather than single thick layers as this will enable a comfortable core temperature to be achieved by varying the number of layers you are wearing.

Base layers consist of thermal vests, cotton polo-necks and microfleece layers, all of which should be breathable or have good moisture wicking properties.

Hats

Hats are essential as a high percentage of the body's heat is lost through the head. Hats come in a number of suitable materials but avoid those in fur or long pile materials or with a fur trim as these can become frozen in poor weather conditions and as a result become uncomfortable.

Close fitting Thinsulate and thermal fleece hats offer superior warmth over loose knit woollen hats due to their density and the closeness of the fabric knit. For superior warmth and comfort, choose a hat that features an internal lining.

Goggles

Goggles are required primarily for poor weather conditions when it may be snowing, raining, foggy or overcast. Goggle lenses vary in colour and each colour is suited to different light conditions.

When light conditions are poor or "flat", a goggle with an orange coloured lens will provide superior visibility enabling you to pick out the contours of the snow. This is probably the best suited, all round lens tint.

Some more expensive goggles come with an anti fog lens and some also feature a double anti-fog lens. Opt for goggles with good ventilation as this is key to goggles not fogging or not misting up.

For those that wear glasses, an oversized frame called an OTG (Over the Glasses) is available. The goggle frames provide enough internal volume to accommodate most styles of glasses allowing the goggle to be worn over the top of them.

Sunglasses

Sunglasses are one of the most essential pieces of ski equipment as the eyes can easily be damaged in extreme situations by the sun's UV radiation. In alpine conditions, UV radiation is also reflected by the white surface of the snow making UV exposure more severe.

Sunglasses should have a close fitting frame to reduce UV rays reaching the eye and the lens should have a 100% UVA / UVB protection rating. Flexible frames are also useful as at some point, glasses are likely to be dropped or be impacted as a result of a fall.

Sunscreen

Sunscreen is another essential piece of ski equipment and should be used at all times, even when the sun is not visible.

Sun creams are available in a range of Sun Protection Factors (SPF) and an SPF should be chosen which is suitable for your skin type. For skin types which are sensitive to the sun and for children, choose a high SPF. The most commonly used SPF is factor 30. Total block creams are also available for those with extremely sensitive skin.

Combination tubes (Combi's or Duo's) are available and these tubes feature a lip salve within the lid of the tube. These are normally supplied with a lanyard which enable the tube to be worn around the neck. Choosing a combi eliminates the need to carry a separate lip balm but if you choose a combi with a neck cord, ensure it is fitted with a safety breakaway connector.

Most modern sunscreens do not have a shelf life but should be used within the manufacturers recommended period once opened.

Lip balm

Like Sunscreen, Lip balm comes in a variety of SPF's with the most common being between SPF15 and SPF 35. Some balms also contain moisturisers to combat chapping. Choose a high SPF for children and again a Combi or Duo for ease.

Take care to ensure the lip balm does have an SPF rating as some lip balms do not and they will provide no protection and even enhance the effect of the sun.

Gloves

Gloves are essential to not only protect the hands from the extremes of temperature but also from the sharp steel edges of skis and snowboards when carrying them, and also when actively skiing or boarding.

Where possible, choose a breathable, waterproof glove as the extremities of the body are susceptible to cold, particularly if they are damp through perspiration or through being water logged. Also, choose a glove with an adjustable wrist band to close the cuff of the glove for increased warmth. A reinforced palm, thumb and fingers offer superior protection from ski or board edges over others that don't feature this type of reinforcement.

Some snowboard gloves are supplied with integral wrist guards which are a sensible choice for any beginner.

Mittens are a good option for small children and toddlers providing superior warmth over gloves. However mittens are not as functional as gloves in that sometimes they need to be removed for opening and closing pockets and zips etc.

Optional

Safety Helmets

The rules surrounding the wearing of helmets vary across Europe and other ski regions. In some countries the wearing of helmets is mandatory for children. For example, children skiing in Italy have to wear a helmet by law if they are below the age of 14 years. In some resorts, helmets are provided free of charge on the presentation of a lift pass.

If you choose to invest in a helmet, choose a well fitting approved helmet which is CE marked, preferably with venting to ensure the head stays cool during warm conditions. Some modern children's helmets offer adjustment which allows the helmet to be adjusted to fit a child's head as he or she grows.

Always choose a helmet with your goggles to ensure that the goggle frame fits the face aperture of the helmet. A helmet and goggles from the same manufacturer generally helps with this. Aim for a minimal gap between the frame of the goggles and the aperture of the helmet avoid skin being exposed to the elements.

Snow boots

Snow boots are useful for small children as they offer superior warmth over standard shoes and boots when on the snow. Most snow boots are moulded with a deep tread for grip on snow and ice. If possible, avoid boots that are trimmed with fur as fur trims can freeze once they have become wet and as a result become uncomfortable.

Neck warmer / Neck Cowl

Neck warmers can be worn to compliment any jacket or hat and are used to cover the neck and mouth in poor or cold conditions.

Opt for a close knitted or fleece style neck warmer. Draw string neck cowls are useful as they can either be worn as a neck warmer or with the draw string closed, as a hat.

Thermal underwear

The need to wear thermal underwear is an individual choice as the need is based on the natural warmth of the person wearing it, and also the quality of the base layers and outer clothing being worn by that person.

If you choose to buy thermal underwear, choose a quality, thermal base layer with wicking properties. These will provide superior warmth over standard thermals.

Ski ties

Ski Ties are used to strap your skis together and to stop them separating whilst being carried. It is useful for schools and groups to use ski ties especially if they can be personalised so that you can easily recognise your skis during the morning rush to get kitted up and onto the slopes. For the minimal investment, these are useful accessories.

Rucksack

A rucksack is useful to store your goggles, glasses, base layers, lunch and other personal effects when you are on the mountain and they are not in use. We do not recommend however that expensive or personal possessions are left in a rucksack unattended.

More experienced skiers would use a rucksack to carry first aid and off-piste safety equipment which would normally include snow shovel, harness, rope, collapsible avalanche probe and a first aid kit.

Water Bottle

Skiing and boarding are athletic sports and as with any other physical sports, the body requires the regular replacement of fluids. A water bottle is an ideal way of carrying water or a refreshing drink, as are the more expensive bladders that can be integrated into a rucksack.

Flexible, plastic water bottles are preferential to solid metal bottles as they provide less of a hazard to the skier or boarder if they were to fall on them.

Hand warmers

A number of outdoor shops now stock hand warmers which provide warmth to the user once they have been actuated. Some hand warmers can be replenished by boiling in fresh water however this is impractical as the means of boiling the water is normally not readily available in most accommodation and also it presents an unnecessary safety hazard, particularly for children.

Dry chemical hand warmers are available and although they have a finite life of a few hours, they are a more practical and safer alternative to the replenishable, gel filled hand warmers.

Either of these hand warmers can be inserted into inside pockets or into the gloves to keep parts of your body warm.



We hope that you have found this guide useful.

Please bear in mind that the contents of this guide are for guidance only and represents our view on what equipment is appropriate for use in a mountain environment. If you are in doubt as to the suitability of the equipment you chose, please consult either the manufacturer or the retailer.