Introduction

Climb: Lynne Hempton in the Val Duron, Italy. **Photographer:** James Bushforth.

What is Sport Climbing?

Sport climbing is physical.

It's a relatively safe form of rock climbing in which you push the boundaries of your physical capabilities, often achieving goals that you previously thought were impossible.

The sport climbing routine is basically the same as leading at an indoor gym; clip the rope into quickdraws as you climb, reach the anchor and lower down. However, there are many more skills to learn before you make the transition from plastic to rock.

It's important to take the time to become competent at these basic skills before you commit your life to them at the crag.

It won't take long, and with a solid understanding of these techniques, you'll find it easy to progress at the sport.

Who is This Guide For?

Sport Climbing Basics is intended to help recreational climbers build upon their sport climbing skills.

The techniques described throughout this book focus on safe, efficient climbing that give you the best chances of avoiding an accident.

Beginners will build up an understanding of sport climbing; intermediate climbers will expand upon their existing knowledge; and experienced sport climbers will reinforce their knowledge and hopefully alter some bad habits.

This guide is intended for those who already have a solid understanding of the following basic climbing skills:
- Tying in to the rope
- Wearing a harness
- Lead and top-rope belaying
- Communicating using the correct climbing calls

If you are unfamiliar with these techniques, or need a refresher, consider reading our beginner's guide: *Rock Climbing Basics*.

The Grading System

French	USA	Australian	UIAA	What This Actually Means
1	5.1	4	I	Low-angled rock with big, positive holds
2	5.2	6	II	
2+	5.3	8	III	
3-	5.4	10	III+	
3	5.5	12	IV-	
3+	5.6	14	IV	
4a	5.7	15	IV+	Sport routes typically start around this grade
4b	5.8	16	V-	
4c	5.9	17	V	
5a	5.10a	18	V+	
5b	5.10b	19	VI-	
5c	5.10c	20	VI	
6a	5.10d	21	VI+	Usually close to vertical with good holds
6a+	5.11a	22	VII-	
6b	5.11b	23	VII	
6b+	5.11c	24	VII+	
6c	5.11d	25	VIII-	
6c+	5.12a	26	VIII	
7a	5.12b	27	VIII+	Requires a high level of physical endurance and good technique
7a+	5.12c	28	IX-	
7b	5.12d	29	IX	
7b+	5.13a	30	IX+	
7c	5.13b	31	X-	
7c+	5.13c	32	X	
8a	5.13d	33	X+	You'll probably need to train for 10+ years to climb this
8a+	5.14a	34	XI-	
8b	5.14b	35	XI	
8b+	5.14c	36	XI+	Don't even bother
8c	5.14d	37	XII-	
8c+	5.15a			
9a	5.15b			
9a+				
9b				

What Gear do I Need to Sport Climb?

Rope

You'll need a 'single-rated' rope for sport climbing. These are marked with a ① symbol on their ends. A 70m length with a diameter of between 9.5 — 10.2mm will suit most beginners and last well into your climbing career.

Things to Consider when Buying a Climbing Rope

Diameter

Climbing ropes come in many different diameters. Basically, thinner ropes are lighter, whereas thicker ropes are more durable. Be aware that the diameter of your rope may affect which belay devices you can use with it. Some devices are not compatible with very thin or very thick ropes.

Single rated ropes can be as thin as 8.5mm, making them great for alpine routes. Skinny ropes are safe — they pass the UIAA lab tests. But at the crag, they are more susceptible to abrasion on rough rock or being cut over a sharp edge. For high-use situations (e.g: working a sport route or top-roping) a thicker, more durable rope is much better.

Your rope is your most critical piece of gear — it's better to carry a bit more weight than to skimp on safety.

Maximum Impact Force

Ropes stretch to absorb energy. The more energy a rope can absorb, the lower the force on your protection.

This isn't much of a concern for sport climbing, where protection is always bomber bolts.

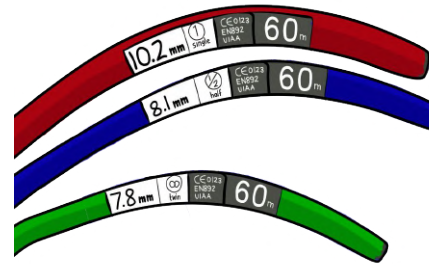
However, for trad climbing, a rope with a low impact force will generate less force on your gear, making it more likely to hold the fall. Lower impact forces are better. Consider this if you plan to use your rope for trad climbing too.

After a big fall, let your rope 'rest' for five minutes to recover its elasticity. If you get straight back on the rock and then fall immediately, the impact forces will be much higher.

Rope Type

Single-rated ropes are the only suitable type for sport climbing.

Be aware of half ropes and twin ropes (marked with ½ and ∞ symbols). These are designed to be used as a pair.



Dry Treatment

Some climbing ropes are made with a special treatment which helps to prevent water being absorbed into them. Untreated ropes can soak up more than their own weight in water during a storm, which dramatically increases the impact force in a fall.

The treatment also helps to stop dirt and sand getting into the rope's fibres, which means the rope will run across the rock and through carabiners with less friction than if it was untreated.

It's worth the extra cost for a dry treated rope if you plan on climbing in wet/snowy environments.

Middle Markers

Most ropes have some kind of mark on their sheath to identify the middle. This is useful in many situations such as gauging how much rope a leader has left, or when setting up an abseil where you need the rope to be perfectly centred at the anchor. Some ropes even have a different colour or pattern on each half to identify the middle.

Remember that if you shorten your rope (such as to remove a frayed end), the middle marker will no longer be correct.

Number of Falls

Every climbing rope is rated for a certain number of falls. This is the number of falls using a specific UIAA test which indicates how many falls a rope can take before it breaks.

Every UIAA certified rope is tested far more severely than you are likely to experience when climbing, so you don't need to retire your rope just because it's rated to six falls and you've taken seven.

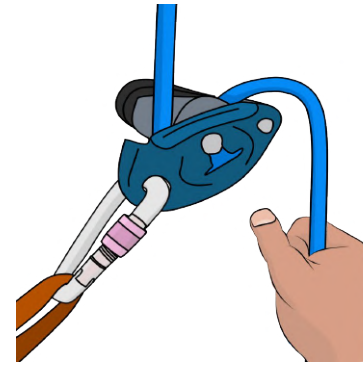
In real climbing situations, a rope will withstand hundreds of falls. They don't fail unless they run over a sharp edge of rock, which cuts it, or if they have been stored with sharp objects or acidic chemicals such as bleach or leaking batteries. They do, however, wear out over time, especially if you take a lot of falls, so make sure to inspect your rope regularly (see page 16).

Belay Device

Sport climbers usually belay with an assisted-braking belay device such as the Petzl GriGri.

If the rope moves quickly through the device (e.g: if a climber falls) a cam inside it rotates and pinches the rope. This makes it easier to hold the fall.

You can also belay with a standard ATC.



Harness

Sport climbing harnesses are built to be light. To save weight, they have minimal gear loops and padding.

If you plan to use your harness for trad climbing too, you should consider getting an all-round harness which has more gear loops and a padded waist belt.

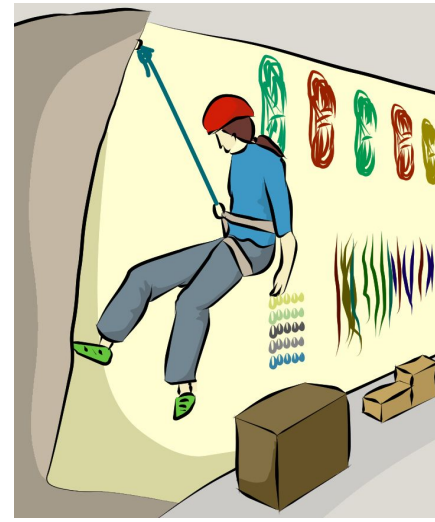
Choosing a Harness

Trying a Harness On

Climbing harnesses are made in different sizes and shapes with different amounts of padding. It's worth going to your local shop and trying some on rather than ordering online.

Select a few harnesses that fit correctly, then hang in them. Good shops will have a facility for you to do this.

The leg loops should hold most of your weight, with the waist belt supporting your upper body so you don't tip upside-down.



Leg Loops

Harnesses either have fixed size or adjustable leg loops. They should fit closely around your thighs without hindering movement.

Adjustable leg loops are useful if you plan to climb in cold environments where you'll need to wear thicker pants, or if the fixed size options just don't quite fit.

Waist Belt

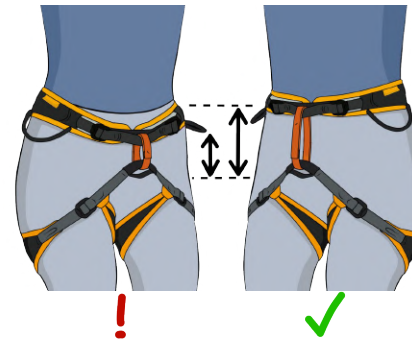
The waist belt should fit around the smallest part of your waist, above your hips.

It needs to adjust small enough to fit tight over a t-shirt, with enough adjustment to get it on easily or wear a jacket underneath too.

The Rise

The 'rise' is the distance between the waist belt and leg loops. Women's harnesses tend to have a bigger rise to fit women's body shapes better.

If the rise is too short, you won't be able to get the waist belt all the way up to the smallest part of your waist.

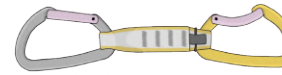


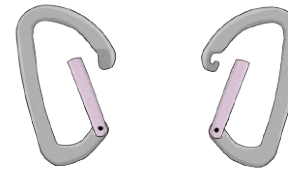
Quickdraws

Any type of quickdraw will work, though sport-specific draws are often lighter. They also usually have a bent-gate carabiner at the rope-end which is held in place by a piece of rubber. This makes the draw more rigid, and quicker to use.

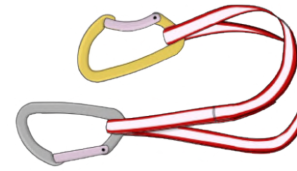
Quickdraws with 'keylock' gates are less likely to get stuck in an incorrect orientation on bolts than the hooked nose style (see page 45).

10-12 quickdraws will be enough for most routes. For longer routes, you may need 15 or more. It's also useful to have a few extendable quickdraws for bolts which are far to one side or underneath a roof.



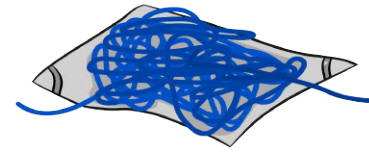


Keylock **Hooked Nose**



Rope Bags and Tarps

Rope bags or tarps provide a clean space for your rope if there is dust or mud at the base of a climb. They are very convenient for single pitch sport climbing if you frequently move between routes.



You never need to coil your rope — simply stack it into the tarp and roll it up. Then unroll it at the base of the next route and you're ready to go. You can buy a specifically designed rope bag, but a heavy-duty IKEA bag works just fine too.

Shoes

For beginners, the right climbing shoe is one that fits your foot and your wallet the best. Look for discounts, and get a general use shoe. A beginner with sloppy foot technique will wear out this first pair of shoes fast. For your second pair of shoes, it largely depends on what type of climbing you will be doing.

For slabs, a shoe with a soft sole and a low-cut upper works well. For steep routes, you'll be better with a tight-fitting shoe that has a pointy toe, good lateral support and a very low-cut upper for ankle flexibility.

Different brands favour a wider or narrower foot, so make sure to try them on before you buy. Only shop online if you're certain which type and size you need. Whichever shoes you get, your foot should not rotate, nor should your toes be painfully crushed up in the toe-box. A good fitting shoe is more important than one designed for the style of climbing you want to do.

Many climbers have their shoes resoled when the rubber has worn down, instead of buying new shoes. If you plan to get a resole, do so before the rand (the band of rubber around the shoe, above the sole) starts to wear. It will become more expensive once this wears through.

Remember to air your shoes out after use and store them in a cool, dry place.

Chalk

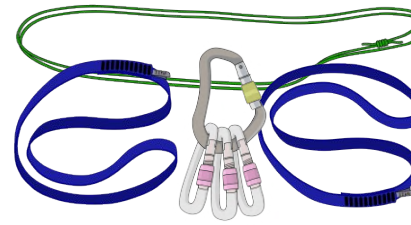
Chalk soaks up finger and hand sweat, therefore increasing your grip on the rock. However, too much chalk on holds can actually make them less grippy. Many climbers carry a brush to scrub these holds clean. An excessively chalked route can be an eyesore. It also reveals all the key holds, making the route much less exploratory for the next climbers.

Rain usually cleans away chalk marks from exposed rock. Overhanging routes tend to stay sheltered and so the chalk remains through all but the windiest storms. In some areas, you must use specific rock-coloured chalk. Consider your impact on the environment before you 'chalk up'.

Anchor Kit

To set up a top-rope at the anchor, or to prepare for abseiling you'll need:

* 4 spare screwgates
* 2 short slings
* A cordelette/ long sling



Helmet

At many sport crags, it is rare to see someone wearing a helmet. The main reason is that sport crags tend to be overhanging, making both the leader and belayer safely sheltered from rockfall. Although it's possible to injure your head in a leader fall, this rarely happens on steep, overhanging rock because the leader will fall into 'space'.

However, you should wear a helmet at a sport crag if:

- There are any signs of loose rock above
- There are people directly above you (e.g: on a multi-pitch)
- You are leading a vertical or slabby route

In these cases, it is better to be safe than fashionable.

Buying Used Gear

You'll probably begin climbing using other people's gear but at some point you'll have to invest in your own. Be prepared though — climbing gear is expensive.

Pieces of equipment which your life depends on (e.g: ropes, harness, carabiners) should be bought new. You can save money on other gear (e.g: shoes, chalk bags) by getting it used. With your own gear, you will know the history of it and therefore know it's reliability.

Looking After your Gear

It's important to inspect your climbing gear frequently and replace anything which shows significant signs of wear. Frayed or faded slings, or any metal gear which has been dropped off a cliff should be replaced.

Nylon gear (ropes, slings and harnesses) degrades over time and should be replaced every five years, even if you've barely used it. UV radiation from direct sunlight will speed this time up.

Exposure to battery acid or acid fumes will significantly reduce the strength of nylon. Keep your rope out of the dirt. Grains of rock and sand can cut tiny fibres inside it. Wash your rope occasionally in lukewarm water and allow it to dry in the shade.

Store your climbing gear in a cool, dry place out of direct sunlight. If any gear gets wet, let it dry completely before you store it away.

How to Inspect your Climbing Rope

You should check your rope for damage frequently. Starting at one end, feed the rope through your hands, looking and feeling for non-uniform sections. Look out for:

- Cuts
- Burns
- Flat or soft spots
- Sheath bunching up over the core

A slightly fuzzy sheath isn't a problem. However, severe fuzzing may make a rope unsafe.

As a general rule, if you can see a rope's inner core, the sheath has worn too thin and you should retire the rope. Make a nice rug out of it, or use it as a washing line.

Climbing Etiquette

There are different rules when you venture outside of the climbing gym. When you go to a new climbing venue, ask the locals if there are any special considerations. Generally, it all comes down to being polite, respecting other climbers and having common sense. Here are some basic etiquette guidelines:

- Avoid making excessive noise
- Keep your stuff in a small, tidy pile
- Take your litter and human waste home
- Stick to recognized trails to avoid trampling vegetation
- Keep pets on a leash or leave them at home
- Don't alter the natural environment (never chip holds)
- If other climbers arrive at a route before you, they get to climb first
- If you're moving slow on a multi-pitch, it is polite to allow faster teams to pass — if you have plenty of time and there is no danger of rockfall

Bolt Quality

Bolts are either adhesive or mechanical. Adhesive bolts are glued into the hole with specially formulated epoxy.

Mechanical bolts work either by expansion or compression, though expansion bolts are most common on sport routes. The bolt is placed into a drilled hole and tightened. This expands the rear part of the bolt into the hole.

Both types of bolt are incredibly strong. A new, well-placed bolt will not break or fall out in a normal sport climbing situation. However, many sport climbing areas have no regulations on what type of bolt must be used. There are also no qualifications needed to bolt a route. This has led to some areas being poorly bolted.

If you choose to bolt, or re-bolt, a route, make sure you fully understand how to do it. We recommend joining a UIAA approved course to learn how to bolt safely. All bolts should abide by the UIAA Standard 123 regulation.

Don't trust bolts that are:
- Rusty or corroded
- Smaller than 3/8 inch (approx 10mm) in diameter
- Loose (e.g: the hanger can spin around)
- In bad rock
- Have an obviously home-made hanger

The same goes for anchor chains or lowering rings. It is your responsibility as a climber to inspect every bolt and anchor that you clip. If you come across a badly bolted route or a worn out anchor, consider downclimbing to the ground instead of lowering.

Finding a Climbing Partner

It takes two to climb! There are a few different ways to find a climbing partner, including:
- At the indoor climbing gym
- On a climbing course
- At a climbing club
- Through friends
- On internet forums

However you find a partner, it's important to assess how safe they are. A good 'first date' is to climb at the gym. Be upfront and honest about your skills but be aware that some people will exaggerate their abilities in order to impress. If you are unsure of their abilities, have a staff member test you both on belaying and lead skills before you climb together. Progress to a single pitch crag after the gym. Inspect the quality of their equipment and their anchor building techniques carefully before you move on to more committing multi-pitch routes.

Don't blindly trust someone with your life until they have proven themselves trustworthy. Stop climbing with someone who does strange or dangerous things. Instead, recommend that they take a course, or read this book, or both.