



## 4.1 Ski Playgrounds and Terrain Parks

### 4.1.1 Ski Playgrounds

A ski playground is a designated location which has been developed or set up to assist children to learn to ski naturally, and which provides a variety of skiing discoveries.

Figure 4.1 - Terrain Park



The requirements of a ski playground include:

- varied terrain (both slope and flat terrain);
- close proximity to a day lodge; and
- shelter from the wind.





Features or components (not exclusive) that may be incorporated into a ski playground include:

- a terrain park;
- an adventure trail;
- an obstacle course; and
- animated cartoon characters.

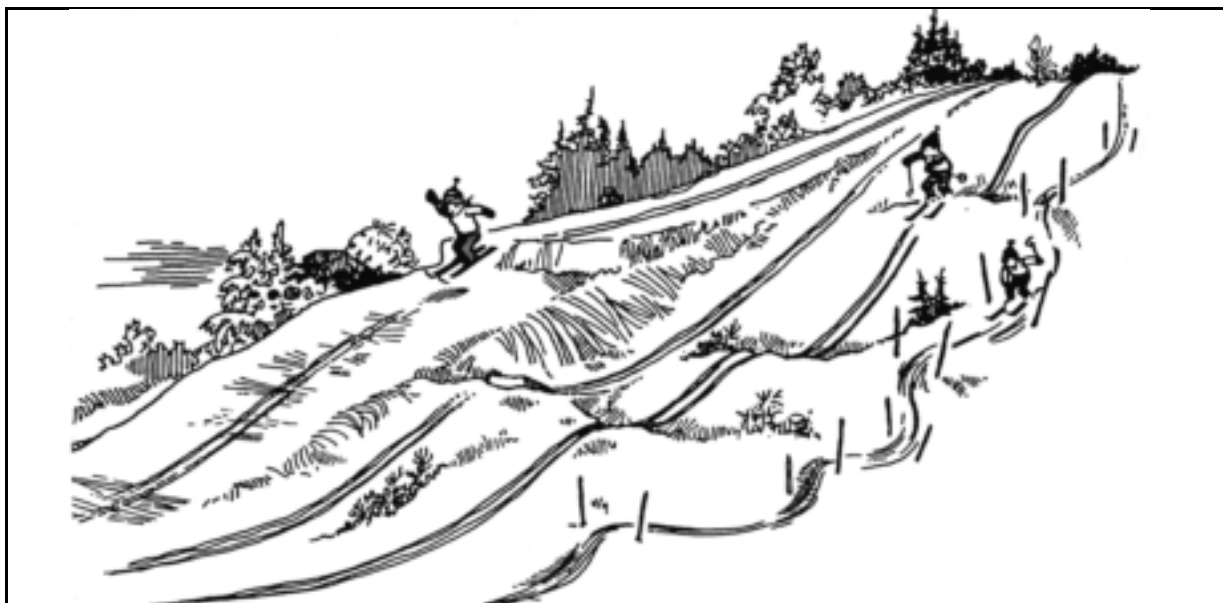
### Choosing a Site

A ski playground could be developed almost any place there is snow. Although an established ski area is preferable, a snow-covered school playground, golf course, community park or pasture will also work. The playground requires a relatively large, flat surface with a gentle slope nearby. Shelter and washrooms should also be close by. Once a suitable site has been selected, it should be used for the duration of the program. Young children are comfortable with a familiar site and routine.

### Preparing the Site

Ensure appropriate preparation of the snow surface. Young skiers are not ready to face the challenges of hard, icy conditions or deep, wet snow! Plan for one or more coaches to spend one-half to one hour repairing the ski area before each session. Pack and track-set with a snowmobile, and prepare the bicycle dips, etc. with snow scoops and shovels. Each week the site can be altered to provide variety and new challenges. By changing the snow surface in a few places to create corridors, bumps, ditches and so forth, a new dimension can be added to the play area. Use a pair of skis to move around on while manually preparing the terrain features. Being on skis will allow you to test the features and you will be better able to match the size and spacing of bumps to the skill level and size of your skiers. This will have the additional benefit of preventing you from sinking in the newly prepared snow and leaving big footprints.

Figure 4.2 – Terrain Park





## Features of a Ski Playground

A ski playground should provide a variety of terrain that will help develop a child's balance and coordination skills. It can include the following features:

- Cartoon Characters.** Try a different theme every session (e.g. Sesame Street, animals, a trip to the zoo, choo choo trains, Jungle Book, dinosaurs, Ninja Turtles, Disney characters...).
- Obstacle Course.** Easily obtained materials such as stakes, poles, plastic pipe, course flags and signage can be used to create obstacles. Rolls of two inch diameter ABS plumbing pipe or natural gas pipeline are suitable for making archways. Cartoon characters can be cut out from painted corraplast signboard.
- Adventure Trails.** This component of a ski playground is a favorite with children. Each trail should have its own theme – e.g. jungle, Peter Pan or Star Trek. Use your imagination and develop adventure trails that are unique to your own ski area.

Forest trails which have narrow access and plenty of bumps, uphill, downhill, dips and turns throughout make an exciting route. Trees are essential in order to create a closed in "tunnel" effect. Tunnels appeal to a child's sense of adventure. Moreover it is important to choose trails that have a variety of terrain variations because this encourages the natural development of ski skills.

It is best if the trail is a circuit route, both departing and returning to the main ski playground in the stadium area. Because the route should be narrow, it will require packing and setting with a snowmobile. Use weight shifting creatively and bank up the turns to add to the challenge.

- Roller-Coaster Dips.** Roller-coaster dips are gradual bumps and dips that are added to a slight downhill trail. The downhill should permit the skier to carry enough speed to get over the dips. Use a snow scoop to create a dip in the track and pile the snow beyond the dip to create the hump. Repeat this process along the track and ski it in to compact the snow and smooth out the humps. This teaches balance, coordination and control of parallel skis. Refer to section 4.1.4 for detailed information.
- Bicycle Dips.** This is the next step up in challenge from roller-coaster dips. These can be made on a slight downhill or on flat terrain. More advanced skiers can use steeper slopes. Select a downhill track that has been skied in. Scoop out snow from a track to make a dip, and pile some of it on the parallel track to make a hump. Alternate this procedure as you move down the hill. Round off the hills and dips and ski them in yourself. Space the crest of the humps about 3-4 meters apart. Prepare this course so that the height differences between the bottoms of the dips and the crests of the humps are half the leg length of the smallest child to use it. This teaches balance, coordination and independent arm and leg action on skis, plus it provides a lot of fun. Refer to section 4.1.4 for detailed information.

The articles on the following pages (sections 4.1.2 and 4.1.3) give us a look at how two clubs have applied this concept.





## 4.1.2 Building an Adventure Trail

In 1997 the 100 Mile Nordics developed a “kid size” lit adventure trail for their youngest skiers (3 to 7 years of age). The purpose of this adventure trail was to teach technique through a combination of play, discovery and appropriate terrain. It was the first step in the club’s plan to develop a full ski playground.

This new trail featured both “kid size” trail lighting and motion detectors to highlight animal characters posted in the trees. The trail is fun to ski night or day, but it is the most fun at night. Based on the 100 Mile initiative, the following are some tips for setting up your own adventure trail:

### □ Lighting

- ✓ When determining the location of the adventure trail, take into consideration access to your existing power supply and lit trails system.
- ✓ Use underground wiring.
- ✓ In this case, 20 mini-lights were used for a 254 meter trail. The height of the lights was determined by the average snow fall for the area and what would be appropriate in order to keep the trail kid size. For this trail, the lights were approximately  $\frac{3}{4}$  meter (75 cm) high.
- ✓ The adventure trail lights turn on as soon as a skier moves from the club’s main lighted trail system onto the adventure trail. A motion detector is at the start of the adventure trail and when the skier passes the sensor, it triggers the first spot light and starts up the 20 mini-lights. The lights were initially set on a 20 minute timer, and after 20 minutes, the lights shut off automatically. This amount of time turned out to be a bit short for this trail for some of the smallest skiers, but the timer is easily adjustable, as are the motion detectors, and the club can adjust the system to meet the needs of the children once those needs are determined.
- ✓ Four motion detectors are set up along the trail. As each child passes the detector, a spot light comes on highlighting one of the animal characters posted in the trees.
- ✓ The lights used for this project use an ordinary light bulb under a plastic shade. This allows the use of different colored light bulbs for different effects on different occasions, e.g. red or green for Christmas.

### □ Terrain

- ✓ The adventure trail needs to be easily accessible for the smallest skiers. It should be in close proximity to the stadium area.
- ✓ When determining the width of the trail, keep in mind that this is an adventure trail. It should have a narrow entrance, and give the impression of “skiing into the forest”. This is all a part of the atmosphere that you are trying to create. Another factor to consider is that the width of the trail should be kept in proportion to the age of the skier, i.e. “kid size”. This is because a regular ski trail may look like a super-highway to a four year old. The 100 Mile Nordics adventure trail is no wider than two metres, and this allows sufficient room for little skiers to both snow plow downhill and side-step up hill.
- ✓ The trail is packed with a snowmobile. No track is set.





- ✓ The intention of this project is to encourage the development of technique by creating situations in which children learn to ski naturally. The terrain used is quite challenging for the age of the skier. The trail system is geared towards fun, adventure and exploration so that children do not really comprehend that they are acquiring skills (balance, rhythm and coordination) and learning to master fairly difficult terrain.
- ✓ The trail drops somewhat in elevation between the beginning and the end, making the downhill quite challenging. The intention was to make the terrain difficult, but to keep it fun. It is important to find just the right balance.

#### ❑ **Animal Characters**

- ✓ You can find suitable illustrated animal characters in books, coloring books, etc.
- ✓ Photocopy the illustrations that you want to use. You may want to enlarge the photocopy if the illustration is too small.
- ✓ Next photocopy your illustrated animal characters onto transparency paper (i.e. make overheads).
- ✓ Using an overhead projector, trace the illustrations onto sheets of corraplast. Corraplast is available at most hardware stores and comes in a variety of colors.
- ✓ Cut out the corraplast figures. In this case the corraplast was cut with a sharp exacto knife. Later it was decided that the figures should be strengthened with plywood, so the corraplast sheets with the figures on them were attached to pieces of plywood and both were cut out with a jig-saw.
- ✓ To paint the characters, the club used varathane paint and tremclad. The club also tried spray painting the clear corraplast, but this meant painting both sides and waiting for drying.

#### ❑ **Protecting the Adventure Trail from Vandalism**

- ✓ During the summer the corraplast animal characters are removed and stored in a safe place.
- ✓ During the summer, the club placed five gallon plastic oil buckets upside down over each light to protect them. First the buckets were cleaned and the handles removed. Two holes were drilled, one on each side of the bucket close to where the handles had been. A (two foot) soft, pliable wire was attached to one side of the bucket. This wire ran down below the bucket, was wrapped around the post and then ran back up to the hole in the other side of the bucket where it was fastened.

### **4.1.3 Kid Magnet - A Ski Playground Primer**

#### **Why Build a Ski Playground?**

The concept of ski playgrounds and terrain gardens has been around for quite some time. Experts agree that in the early development of ski skills amongst children the value of this type of learning environment cannot be overstressed. But too often these facilities are overlooked, as the tendency at most cross-country ski facilities is towards the development and maintenance of smooth, linear trails only.



For young children, a ski playground is just what it says it is. In the process of having fun in a playful surrounding, children develop the basics skills for cross-country skiing. This is referred to as the “natural learning” approach. Spontaneous fun and imagination are the motivators; the snow, terrain and obstacles are the teachers; and balance, coordination and confidence are the results. Skills are developed through repetition. There are no errors; there is no right or wrong way, only an ongoing learning process.

The primary role of coaches in the context of playgrounds should be to create learning situations that motivate children to become active in this environment. The notion that ski instruction is all about explanations and demonstrations of various techniques using technical jargon is out of place in a learning situation for children. Kids want action, not talk.

The following is an account of how this approach was put to the test when the Sovereign Lake Nordic Club in Vernon, BC introduced a “Ski Bunny” program for the first time. The main objective for the “Ski Bunny” group (age six and under) was to ensure a positive, outdoor winter experience on cross-country skis. It was felt that this could be achieved by creating a dedicated environment with fun as the focus.

### Setting Up a Ski Playground

The first step in establishing a playground (or terrain garden) is to assess the potential in your ski area. A specifically designated area that will not interfere with or be interfered with by other activities is ideal. In this way, children will become comfortable with the location and the terrain features can be developed over the winter without disruption. The area should have a gentle slope nearby for up and downhill manoeuvres. Access to forest adventure trails is a bonus, and close proximity to a day lodge is always important for young skiers.

The Sovereign Lake trails conveniently had a location with all of these attributes. The first component to be developed had an obstacle-type course (flat slalom, duck under/reach up, gentle up and downhills, loose powder, small bumps and ditches). This course was important for the development of initial skills. Children would keep moving around the circuit without encouragement, because they were motivated by their own enthusiasm.

The “obstacles” were created using easily obtained materials such as stakes, poles, plastic pipe and course flags, together with appropriate signage. Archways were popular with the children as they were a very visible object in the course and their function was obvious. Two inch diameter ABS plumbing pipe that comes in big rolls or natural gas pipe-line are excellent for this purpose. Basic flattening and sloping of the playground area was done with the groomer and an Alpine snowmobile was used for track-setting a new course configuration each week.

Anyone who has ever shoveled a driveway, made a snowman, set ski tracks or built an igloo is familiar with snow’s tremendous potential for shaping. With this understanding, additional features that created new challenges were developed in the playground area throughout the season. Snow corridors, bumps and ditches and the “roller coaster” were all built by the use of a standard snow scoop. With this tool, mountains of snow can be move without being picked up. The scoop glides easily across snow surfaces and is the perfect size for building such attractions as the roller coaster.





Line ups are not something you would normally associate with cross-country skiing, but once the roller coaster trail was set up it was the site of constant activity. Inspired by pictures and descriptions in books and the well known Erik Roste video clip of the Norwegian National Team (where the men's team attempts to ski down a roller coaster trail, single file, holding onto the waist of the person in front), the roller coaster was one of the most popular activity centres with all ages. Any observer would have been impressed by the enthusiasm, confidence-building and skill development that was gained from that wavy slope.

The second component of the playground was a forest path which made use of an abandoned skidder trail. The path's disguised access, narrow width, and obvious bumps and turns made it an ideal kid's trail on two counts: it appealed to their sense of adventure; and it was loaded with the kind of terrain variations that naturally develop good skiing skills. To add to the wonderment, the path was dubbed the "Jungle Trail", and jungle animal cutouts made from painted corraplast signboard were mounted in the trees. Not only did the skiers have to negotiate the downhill slope with its dips and turns, but they also had to keep an eye out for a monkey, parrots, a lion and a tiger. The trail became a kid magnet. Sooner or later, every age group in the Ski League program discovered it and took numerous runs down the Jungle Trail. The older kids skied at much faster speeds than the Ski Bunnies, but they derived the same challenges and skill development. The trail rejoined the main network at a location not far from the day lodge and close enough to the playground to make for a rewarding circuit trek.

The Jungle Trail was track packed with an Alpine snowmobile prior to each session, whenever there was new snow. By weight shifting on the Alpine it is possible to bank up turns which gave the kids added thrills and confidence.

Due to the success of the terrain-oriented areas and paths, a second adventure trail was created. Unlike the Jungle Trail, which was a cleared trail, it was purely a bushwhack trail that meandered through the trees. It was just wide enough to pack with an Alpine so that the younger skiers didn't have to slog through the deep snow and become discouraged. Although there were no animal cut-outs in the trees, the branches were close enough to brush up against the skiers' jackets and visibility was limited enough to provide some mystery. Speed was not a factor as much of the trail was uphill – perfect for refining the herringbone. This trail linked the playground to the Jungle Trail, permitting skiers to move from one discovery area to the next, spurred on by their curiosity.

Variety was one of the keys to maintaining the motivation level of the young skiers. New learning situations present a stimulating environment, in both the imaginative sense and the physical challenge/skill development sense. Time ran out and the sessions ended before all options could be tried. Bicycle bumps were built after the fact as an experiment and these were subsequently added to the terrain garden during the following season. In addition, cartoon cut-out characters joined the playground as colorful, animated obstacles (more fun!).

The effort put into the playground and terrain features was rewarded with the reaffirmation that kids can do and learn by having fun. It was a relatively simple undertaking. All children's skill development programs are encouraged to set up their own unique playground sites.





Figure 4.6 – Bicycle Dips



#### 4.14 Roller-Coaster Dips and Bicycle Dips

##### Roller-Coaster Dips

Find a gently sloping, well-packed hill, and build a series of small rolls on the hill. Start with three rolls and add more as the children gain skills. Create rolls as follows: shovel snow from nearby onto the track/slope the skiers will be using in order to build some higher spots. Then pack the snow firmly with your snow shovel and skis. The rolls should be 15-30 cm high and about four metres apart. Remember to “ski in” the roller-coaster dips yourself before you allow the children in your group to use them.

Children may fall frequently when they first try the roller coaster dips, but this is the initial stage of learning and falls are natural. *“Children will improve their skiing skills if they continue to ski on these kinds of features!”*

Always match the slope of the hill with the ability of your skiers. If some children have more difficulty in negotiating the rolls than is usually the case, take them to a flat area and encourage them to practise on that terrain first. On the other hand you should use higher rolls and steeper slopes for the more advanced skiers in your group.







Figure 4.4 – Roller-Coaster Dips - Skier Action

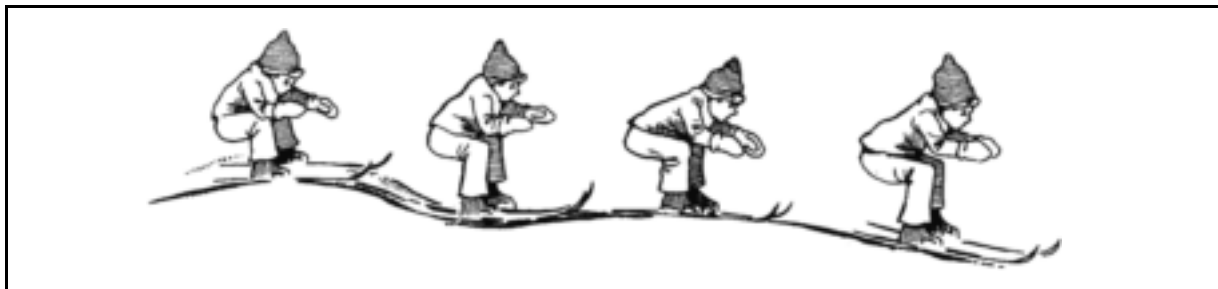
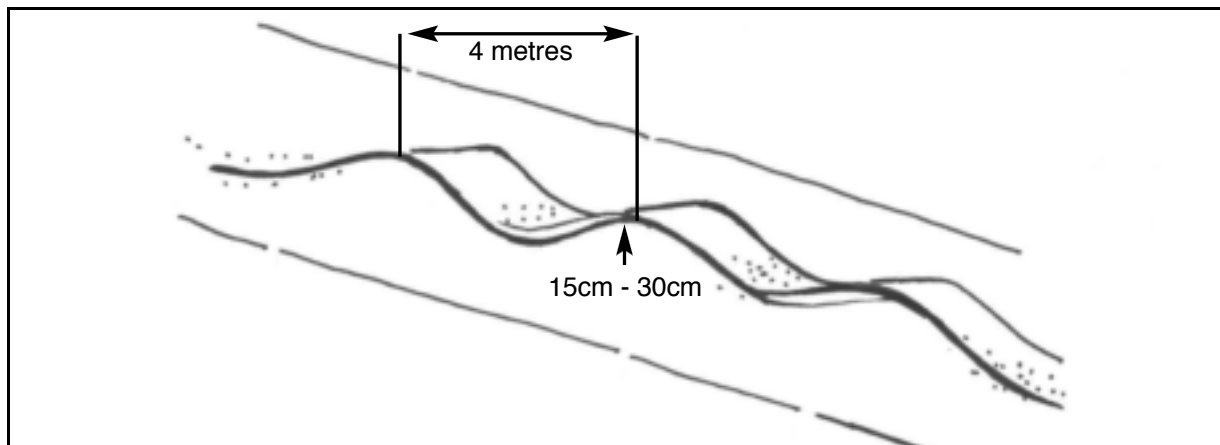


Figure 4.5 – Roller-Coaster Dips - Profile



### Bicycle Dips

Bicycle dips are similar to roller-coaster dips in that the track skied is uneven. The main difference between the two features is that bicycle dips consist of a dip in one track accompanied by a parallel bump in the other track. Bicycle dips are a more advanced exercise than roller-coaster dips and can be created on either sloping or flat terrain.

To prepare the terrain for bicycle dips, lower one ski track by scooping snow out of it, and raise the other track by moving the scooped snow on to it to build it up. Always round off the dips and bumps you have made. Create four or five “pairs” of dips and bumps by alternating dips and bumps in each track (the distance between consecutive bumps on the same track should be about four metres). The final step is to ensure that the difference in height between each dip and bump is no greater than the distance between the knee and foot of the smallest child in your group. Again, “ski in” the bicycle dips yourself before you allow the children in your group to use them.

If your group has difficulty mastering this exercise, space the pairs of dips and bumps farther apart, and/or round off the bumps to reduce the difference in height between the dips and bumps.

Once your group can negotiate the dips and bumps competently, challenge them by increasing the difference in height between the two. You can also make the activity more difficult by having the children increase their skiing speed.





Figure 4.6 – Bicycle Dips - Skier Action

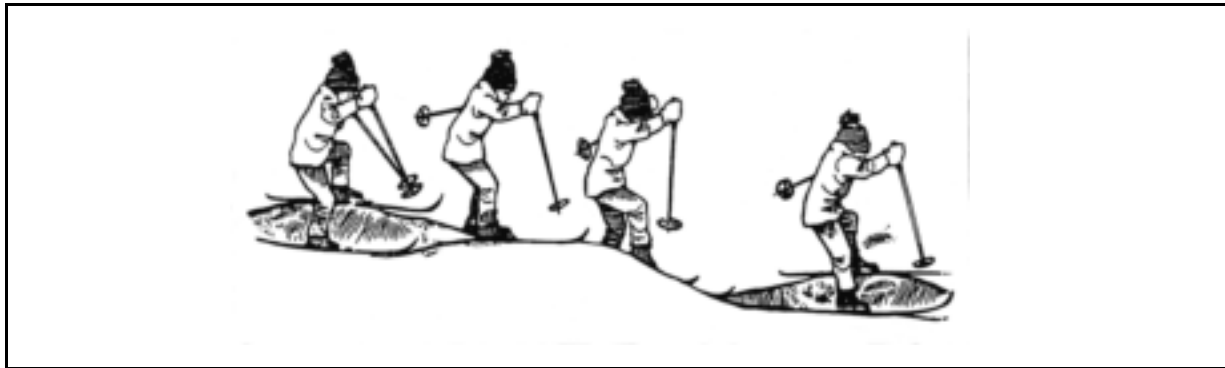


Figure 4.7 – Bicycle Dips - Profile

