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# BMX BIKING PROGRAM GUIDE

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**PURPOSE & INTENT OF THIS DOCUMENT:** The intent of this document is to provide guidance to local councils that wish to operate a BMX biking program in the future or improving existing program. There are many BMX resources available, but we hope that this document will provide a general background with enough specifics to help set your program up for success.

A quality BMX program should be rooted in education, stewardship, and skills progression. The program should provide learning opportunities for all riders, but remain challenging enough to build confidence and self-esteem at the same time. It is essential that participants are given the necessary resources to push their limits while minimizing the mental and physical risks. Challenge by choice should be respected and reinforced at all times.

## **STAFF, TRAINING and INSTRUCTION**

Traditional wisdom tells us that staff can make or break a program. This is especially true and may be the biggest challenge in establishing a biking program. Ideally, the exceptional staff member will have technical skills and knowledge, know how to provide instruction and embody the values of scouting. Your local bike shop or bike club is a great place to start. Establishing a relationship early in the program development process cannot be stressed enough.

## **EQUIPMENT:**

### **Bike Selection:**

The type of BMX bike you purchase for your program should be based on the available budget, but more importantly based on the specific type of riding/terrain that your facility contains and the age range of the participants.

### **Types of BMX Bikes:**

Compared to other types of bicycles, BMX bikes tend to be very similar. However, depending on the intended use, BMX bikes do come in a variety of types and sizes with subtle differences. When choosing bikes for a program fleet, it is important to consider maintenance, what type of riding participants will be doing and cost.



BMX Bikes can generally be put into three categories describing the type of riding they are designed for.

BMX race bikes are built for racing dirt tracks with built-up features and transitions. Races bikes tend to be lighter with a large chainring or sprocket in front, longer crank arms and only a rear brake.

Dirt jumpers, park, or street bikes tend to have a smaller chainring, medium to long crank arms, and are often built up with pegs attached to the axels. Flatland BMX bikes are built for performing tricks on flat ground. They are built with smaller frames and a shorter wheel base to more easily move around the bike. They will also have a smaller chainring, short crank arms and may come with pegs.

A cruiser is a BMX bike with 24" diameter wheels instead of the standard 20". Cruisers tend to have larger frames designed for racing. Adults and larger teenagers may have an easier time learning to ride on a cruiser. When racing, cruisers usually have a separate racing class.

### **Bike Fit:**

Bike fit is an important aspect to think about when purchasing equipment for a rental fleet. It is more difficult for a participant to succeed on a bike that does not properly fit. Larger bikes can be intimidating for beginning riders, which could negatively affect their experience on the trail. Fortunately, BMX bikes come in standard basic sizes though they may vary slightly by brand and style of BMX bike. Work with a bike company or shop to figure out the proper sizes to purchase for your program's participants. Most participants of Boy Scouting age will be comfortable on a standard BMX bike with 20" diameter wheels. Below is a chart for frame sizes.

BMX Frame Size	Rider's Height	Wheel Diameter
Micro/Mini	4'-4'6"	18"-20"
Junior	4'4"-4'10"	20"-24"
Expert	4'8"-5'8"	20"-24"
Pro	5'6"+	20"-24"

### **Materials:**

The primary materials used to manufacture BMX bikes today are steel, aluminum and carbon fiber. At the moment, steel is by far the standard for a program fleet. Steel BMX bikes are less expensive while maintaining durability and strength.

## **Components:**

Components are all the parts attached to the frame, including both the simple and complex mechanical pieces that enable a bike's full functionality. The type of components on each bike are also known as the "build" or "spec." Most companies offer each frame in multiple builds tiered by price or size. When thinking about what build to buy, remember price, durability, and maintenance ease. If you're buying multiple frames for different disciplines, you may still be able to keep the builds standardized as much as possible. This will make maintaining the fleet much easier and less expensive because parts can be purchased in larger/bulk quantities.

## **Wheel Size:**

The standard BMX wheel size is 20" in diameter, though can vary from 18"-24". 18" wheels are for smaller younger riders and won't apply to most Boy Scout programs. BMX bikes with 24" wheels are considered to be in the Cruiser class. Many taller adults and teenagers may find it easier to learn on a Cruiser. Most Scouting programs will be okay with a fleet of standard 20" wheel BMX bikes.

## **Personal Protection Equipment**

Helmets and pads are a vital piece of equipment for the BMX program. BSA programs should use full-face bicycle helmets, elbow pads and knee pads. By federal law, all bicycle helmets need to be CPSC bike helmet certified at a minimum. Helmets should fit snugly and comfortably with the chin strap buckled at all times while riding. BSA programs should have hard-shell knee and elbow pads. These pads also need to fit snugly and comfortably while allowing enough range of motion. Due to the wide variety of youth body shapes, helmets and pads need to be available in a wide range of sizes to fit correctly.

## **OPERATIONS:**

### **Instruction & Staff**

Ultimately, BMX participants have safety in their own hands and can make mistakes. Safety risks can be mitigated with proper assessment and instruction for each rider. There needs to be a solid process to assess the skill levels of participants to know what tracks and features are appropriate. Then there needs to be instruction to teach participants required skills to be riding at a more advanced level.

Quality training is the key to ensuring that instructors have the ability to adequately assess and instruct BMX skills. Instructors should be trained in proper bike fit, technical body movements, instruction, mechanics, track maintenance, and first aid. Even when the risks have been mitigated as much as possible, instructors still need to be well trained in first aid skills and concussion awareness.

### **Program Logs:**

Each time a bike is used, it is imperative that you document its use in a program log. A program log sheet should include the specific bike number, ride time, date, type of group riding, the number of youth/adults, and that staff members that facilitate the ride. Keeping a log of how many times each bike is ridden and whether or not any specific problems were encountered is an essential part of running a safe program and maintaining the bike at the highest standard.

### **Maintenance and Local Bike Shop Partnership:**

Maintenance is a serious consideration for any BMX program. Bikes require constant maintenance which can be expensive in both materials and labor. There are many factors that can affect maintenance costs, including type of bike, quality of materials, terrain and roughness of trails, climate conditions, and skill of the riders. Paying a little more for middle range componentry compared to less expensive low end components can greatly reduce maintenance costs.

Hiring a good mechanic can help reduce maintenance costs. It is in your best interest to create strategic relationships with local bike shops to pursue better pricing on bikes, parts, and maintenance work. Good stewardship should be a part of the program and supporting local bike shops helps support the biking industry as a whole. Whether or not you perform the maintenance in house or send the bikes to a shop, it is essential that you keep detailed maintenance logs and routine safety inspection worksheets on each bike. See the resources section for an example maintenance and bike build checklist.

### **CONCLUSION:**

Creating a quality BMX program will take many hours of time and energy, but will provide meaningful access into a sport growing in numbers and popularity. Councils, troops and camps are highly encouraged to reach out to local resources for help in creating BMX programs. Local clubs, tracks, and bike shops are potential resources for Scouts, and in turn Scouts can be a potential resource for helping their local bike communities through meaningful service opportunities. BSA programs should focus on the educational introductions to the sport itself, but also on how to engage the community and create dialogue surrounding sustainability/conservation.

## REFERENCES/RESOURCES:

### Internet:

Heads Up: Concussion – a CDC program aimed at recognizing and preventing concussions with resources, information and policy guides for youth sports. Online at <http://www.cdc.gov/concussion/headsup/index.html>.

USA BMX – A plethora of resources to help councils and troops build BMX programs and tracks. They can also help to get into contact with local tracks or track builders. Online at [www.usabmx.com](http://www.usabmx.com)

Basic BMX track dimensions overview –  
[http://www.prm.nau.edu/prm423/bmx\\_track.htm](http://www.prm.nau.edu/prm423/bmx_track.htm)

UCI – the Union Cycliste Internationale, the organization for international cycling racing including BMX. Online at <http://www.uci.ch/bmx/about/>

UCI Track Build – guide to building a track to meet official UCI standards online at [http://www.uci.ch/mm/Document/News/NewsGeneral/16/58/58/UCIBMXtrackdesignguideline\\_v5\\_140326\\_Neutral.pdf](http://www.uci.ch/mm/Document/News/NewsGeneral/16/58/58/UCIBMXtrackdesignguideline_v5_140326_Neutral.pdf)

Guide to Safe Scouting – A guide to staying safe in all BSA activities with a specific section on bicycle safety. Online at <http://www.scouting.org/scoutsourc/HealthandSafety/GSS.aspx>.

### Books:

*Pro BMX Skills* by Lee McCormack – A technical manual on increasing BMX skills and techniques.

*BMX Racing* by Tom Jefferies and Ian Thewlis – A technical manual on increasing BMX skills and techniques.

*Pump Track Nation* by Lee McCormack - A guide to designing and building pumptracks.

## BSA BMX PROGRAM STANDARDS

These are the minimum standards that all BSA BMX programs should maintain. Local councils should customize their own standards to fit the needs and goals of their program. In the resources section is an example policies and procedures from the Summit Bechtel Reserve BMX Program. It is important to note that the SBR has constant radio communication with its instructors and EMS on site that can respond to an incident within minutes.

- BMX program must be supervised by adults at all times
- BMX equipment must go through an annual inspection process
- BMX tracks must go through an annual inspection process using an inspection checklist  
All features should be roll-able. This means that as a newcomer to BMX you can ride the course safely without having to leave the ground and then progress to jumping as your skills and confidence improve.
- Personal equipment may only be used in camp after being inspected by a trained BMX area manager.
- BMX areas may be closed due to rain if it's heavy enough that the manager present feels it presents a safety hazard. All activities close when lightening is present and staff should help participants seek appropriate shelter.
- Protective equipment:
  - All riders must wear a full-face helmet, elbow pads and knee pads
  - Helmets must be retired after a single impact
- Training
  - BMX staff must be trained in properly fitting bicycles and protective equipment to participants
  - BMX staff must be trained in appropriate first aid, proper emergency procedures and Emergency Action Plans
  - All participants must go through an assessment process to determine ability levels and difficulty zones. See *BMX Assessment* document
  - BMX staff must be trained in assessing participant's ability levels, choosing appropriate rides and teaching a proper progression of skills
  - Extra personal protection equipment such as, gloves, protective jackets, shorts, and bicycle specific neck braces are encouraged as is appropriate
- Ratios
  - All classes need at least 1 instructor for every 8 participants. Youth protection guidelines are to be observed.

- **Important Program Components**

- Introduction
  - Welcome
  - Introduce instructors
  - Front load the day
  - Expectation of tracks
  - Expectation of participants
- Gear-up
  - Final safety check bikes
  - Fit bikes
  - Fit PPE
- Rider Assessment
- Safety Briefing
  - Instructors' roles and participants' roles
  - Communication
  - Track etiquette & Emergency procedures
  - Flora, fauna & LNT
- Ride
  - Instructors need to ride responsibly and set the example
  - Take frequent breaks, head count early, & often
  - Constantly monitor group
  - Mix up riding with instructing to keep a course interesting
- Wrap-up
  - Debrief group
  - Encourage excitement for the ride
  - Inform participants of other opportunities
  - Discuss how participants can get into the sport on their own using local BMX tracks, shops and USA BMX as resources
- Gear Return
  - Make sure to collect all gear
  - Disinfect all helmets, gloves, pads, and other PPE
  - Wash bikes and ready for next use

## BMX ASSESSMENT GUIDE

### BEGINNER

**Riding assessment:** These are riders who have ridden a bike, but never or rarely on dirt. They will often attempt to remain seated with little to no bike/body separation. Pedals will generally not be level and eyes may be wandering or looking straight down at the front wheel. Speed may be way too fast or too slow with a general lack of coordination. Movements may look shaky or jerky.

**Outcomes:** Riders will be able to stand up off the seat with a neutral body position and move into a ready position. They will be able to use some bike/body separation, keep their pedals level most of the time, brake smoothly and look ahead with their eyes. They will feel comfortable on all beginner courses and be ready to try intermediates.

### INTERMEDIATE

**Assessment:** Riders have a neutral body position with a decent ready position and pedals are usually level. They have little to some bike/body separation and steer both with the bike and with the bars.

**Outcomes:** Riders will have a strong ready position and will generally keep equal pressure on pedals and bars. They will have stronger bike/body separation and their eyes will be looking out ahead. Braking will be smooth with only one finger. Riders will feel completely comfortable on all intermediate courses and are ready for more advanced features.

### ADVANCED

**Assessment:** Riders have solid neutral and ready positions with equal pressure on pedals and hands. Eyes are looking forward with one finger covering brakes. Steering is with both bike lean and/or handlebars as is appropriate.

**Outcomes:** Riders will use subtle body movements within their body positions to maintain equal pressure throughout their feet and hands. Riders will have a large amount of bike/body separation and will use it as is appropriate. Riders will feel comfortable on advanced courses and will be ready to try for more speed and air time.



## **EXPERT**

**Assessment:** Riders will have solid body positions, advanced bike/body separation and will use subtle movements to keep equal pressure. They always use only one finger to brake smoothly on any terrain.

**Outcomes:** Riders will be using advanced maneuvers to maintain speed through course and land jumps smoothly on the transition. Riders will be exploring alternative movement patterns and tactics for variable course conditions and features. They will feel more confident selecting optimal riding situations based on course conditions and difficulty

# BMX PRE-RIDE BIKE SAFETY CHECKLIST

## Tires

- Pressure 40 - 60 psi depending on equipment, trail, rider, and ability
- Tread and sidewalls

## Wheels

- Axels are tight
- Spin true
- Spin free, no rub
- Spokes

## Brakes

- Stopping power
- Pad surface and alignment
- Cables and housing

## Drivetrain

- Crank arms straight with no play in bottom bracket
- Pedals tight
- Chain alignment, cleanliness and lubed

## Cockpit

- Handlebars
- No play in steering

## Frame

- No cracks
- Bolts are tight

## Seat

- Height
- Alignment
- Tight

## Personal Protective Equipment

- Helmet (cracks, cleanliness, etc.)
- Water
- Pads

Inspected By:

Date: