ATV Adventures! Fit To Ride
Chapter Three
Riding Right-size Machines

Quick Prep for Instructors

Background Information

One of the biggest issues related to ATV use is young people under age 16 riding adult-size machines. Fitting an ATV to the youth–making sure he or she can operate the vehicle in terms of size and power–helps keep riders safe. (The ATV Safety Institute recommends ATVs have engines of 70 to 90ccs for riders ages 12 to 16, and less than 70ccs for riders under age 12.)

But just fitting correctly on an ATV doesn't guarantee safety. The American Academy of Pediatrics maintains that "off-road vehicles are particularly dangerous for children younger than16 years who may have immature judgment and motor skills."[1] Riders need to be mature enough to be able to make good decisions while riding. Adults need to assess whether their children can control their vehicles. Many children lack the ability to simultaneously operate the throttle, gear shift, choke, and brakes while making accurate judgments of speed and terrain that require substantial shifts in body position and weight to keep the vehicle stable.

Why do adults need to intervene? Because young riders may not care if they've mastered a skill such as riding an ATV. Supremely confident and energized by the idea of risk taking, young riders may just start their engines and go. This is decision-making at its worst. To better protect themselves, youth need to develop broad decision-making skills, including evaluating options and weighing consequences. And they need to ride properly fitted machines and of course, take a certified ATV course.

And importantly, adults must actively supervise any rider under age 18.

Major Points of Chapter Activities

Activity A focuses on fitting a youth to an ATV, so that he/she can physically operate the machine. However, just because a child meets the *Fit Guidelines* does not mean he or she is able to operate the machine. Some children lack the ability to work all the controls simultaneously. Others may not be able to judge speed or may lack the maturity or experience to make good decisions. Activity B focuses on the decision-making model to help participants think through potential hazards before they ride.

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[1] American Academy of Pediatrics. "All-Terrain Vehicle Injury Prevention: Two-, Three-, and Four-Wheeled Unlicenced Motor Vehicles, Policy Statement." June, 2000.

Chapter Three
Activity A CORE
Fit Like a Glove

Objectives: Participants demonstrate proper fit of an ATV and describe how riding a wrong-size machine can be dangerous.

Life Skills: Critical thinking, problem solving, personal safety, communication, healthy lifestyle choices

ATV Safety Messages: Riding an ATV that is too big (or too small) is dangerous. An ATV should fit the rider.

Number of Participants: Two to 40

Ages: 4th to 10th grade. Mix ages in teams so that young children have older ones on their teams.

Time: One to two hours or more; activity lends itself to a safety or county fair format

Location: Outdoors or indoors in a large space

Teaching Strategies: Led by adults or teens. You'll need at least seven trained well-trained volunteers. Teens should be an important part of the planning process for this activity, and may adapt the activity to fit a safety day or county fair.

Materials Needed:

* ATVs of different sizes, including youth and adult models

* Photocopies of *Fit Guidelines*

* Signs to be posted outdoors that read: *Clearance*, *Upper Legs*, *Foot Length*, *Grip Reach*, *Throttle Reach*, and *Brake Reach*

* Optional *Riding Safe: Tips for the ATV User* brochures and *Fit Guidelines* poster to distribute to participants

* Optional *ATV Adventures! Rider Handbook* to use for referencing ATV parts

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Activity Background

Children under age 16 are at particular risk of injury or death when they ride adult-size ATVs.

Children riding adult-size ATVs have two major risks to contend with. The child may lack the judgment and skills required to operate an ATV. Or, the ATV may not fit the rider. He or she may be too short or lightweight to use the critical equipment located on the ATV, such as the brake and throttle. Young people who have received ATV safety training have the basic skills necessary to operate right-size machines, but they will be at risk if they are operating a machine that is too big or too small.

Before You Begin

Note: This is one of the few activities in the book where ATVs are required.

You'll need to set up six stations for ATV *Fit Guidelines* trials. These stations correspond to the *Fit Guidelines*:

- Clearance
- Upper Legs
- Foot Length
- Grip Reach
- Throttle Reach
- Brake Reach

Teaching Tip
This activity can be combined with a field trip to an ATV dealership. Or, adapt the activity to present at a safety day or county fair.

Set up the signs to identify each station and assign a volunteer trained in *Fit Guidelines* to be in charge at each one. Place at least one ATV at each station. Keep ATVs secured so they cannot be started by curious participants!

Start Here

Teaching Tip
The *ATV Adventures! Rider Handbook* shows parts of an ATV.

Explain to participants that all ATV riders and especially youth under age 16 must be a good match for their ATV, both in terms of fitting on the machines and being able to handle the power of the machine. The group will spend some time today trying out different machines to see which ones do and don't fit.

Do the Activity

Divide the group into six teams. Assign a volunteer leader to each team. Give everyone a copy of the *Fit Guidelines*. Ask leaders to escort their teams to their first assigned station (Clearance, Upper Legs, Foot Length, Grip Reach, Throttle Reach, and Brake Reach).

At each station, leaders will cover a *Fit Guideline* corresponding to that station with teams and individual participants. For example, every participant should get a chance to check their throttle reach on the machine(s) at the Throttle Reach station. Encourage individuals to check whether they meet a guideline so that they can begin to self-assess this important concept.

Rotate teams between stations. **If time permits, allow teams to cross over and try all the *Fit Guidelines* on a single machine.**

Reflect

Bring the teams back together after everyone has tried the ATVs against the *Fit Guidelines*. Ask:

- Did you find any machines that fit you perfectly? How did they feel?

- Did you find any machines that were too big for you? If so, what would happen if you tried to ride them?
- Did you find any machines that were too small for you? If so, what would happen if you tried to ride them?
- Did you find any machines that you could fit under some of the guidelines, but didn't fit under others? What would happen if you tried to ride these machines?
- Why is it important to figure out if a machine fits you?

Apply

Ask:

- If you fit onto a machine, does this mean you can ride it? (No. Some machines have too much power for younger people. Youth may lack the ability to make sound decisions. That's one of the reasons why the driving age for an automobile is 16. Even though many 12 year olds can reach the pedals, they can't consistently use good judgment to stay safe.)
- What would you do if you saw someone riding the wrong-size machine?
- What would you do if you figured out the machine you currently own is too large or too small?

Ideas to Involve Parents and/or Other Community Members
Help your community have a fit! Involve parents and other community members in a *Fit Guidelines* rally, where the ideas presented in this activity are expanded to a larger audience. You may wish to involve local ATV dealers who can loan ATVs.

Hand out *Riding Safe: Tips for the ATV User* brochures and/or *Fit Guidelines* poster, if you wish. Request that participants take the brochures home to share with adults in their homes.

What Did We Learn?

Fill in the matrix, evaluating how the group performed. Use the results to re-emphasize skills missed in future activities.

	Performed Well	No Opinion	Performed Poorly
Were able to demonstrate proper fit on an ATV.			
Were able to use and understand the *Fit Guidelines.*			
Were able to describe how riding a wrong-size machine can be dangerous.			

Note: You may identify individuals who are having trouble understanding key points or gaining skills. Use teen or adult leaders to provide special help and encouragement to these individuals.

Chapter Three
Activity A CORE -- *Fit Guidelines*

To be a safe rider, it's important that your ATV fits you. You should be a good match with your ATV, not only in size, but in strength. This helps you control it better, especially when you ride on more difficult terrain. Use these guidelines to help determine if your ATV is the right size!

Item	Requirement
Clearance between ATV seat and inseam while standing up on footpegs	***Reasons:*** It permits you to stand up and absorb shocks through the legs while riding on rough terrain. It minimizes the possibility that your seat will hit you during a ride, throwing you over the handlebars. Proper clearance also improves visibility and comfort. ***Rules*:** Three to six inches should be a minimum clearance. The maximum will be controlled by the reference point below.
Upper Legs	***Reasons:*** It keeps you in control of your vehicle. ***Rules:*** The upper portion of your leg, roughly from the top of the knee to the hip, should be about horizontal. A little above or below horizontal shouldn't be a problem, but huge differences (knees significantly below or above the hips) should be checked by an adult. If your knees are quite a bit above your hips, turn the handlebars in both directions and check for contact with knees or legs.
Foot Length	***Reasons:*** It allows you to keep control of vehicle, including the ability to brake. ***Rules:*** Lock the heel of your right shoe against the footpeg or in the proper position on the running board. Your toe should be able to depress the footbrake with a simple downward rotation of your foot. See if you have any contact with engine or exhaust protrusions. You should be able to use the brakes consistently without hesitation. (The same rule applies to the ATV's left side, where the gearshift is located.)
Grip Reach	***Reasons:*** It helps you turn and steer your ATV, and keeps you balanced. ***Rules**:* Sit normally on the ATV with your hands on the handlebars. Your elbows should have a distinct angle between your upper arm and forearm. If your elbows are straight out, you won't be able to turn the handlebars. (Make sure you aren't leaning forward to compensate for a short reach.) If your elbows are at less than right angles, you are too large for the ATV and steering and maintaining balance will be difficult.
Throttle Reach	***Reasons:*** It keeps you in control of speed and handling. ***Rules:*** With your right hand in the normal operating position, check to see if your thumb can easily operate the throttle. Turn the handlebars to the extreme left and right positions. Check again for any interference with easy operation.

Brake Reach	***Reasons****:* It keeps you in control of stopping. ***Rules:*** Place your hands in the normal operating position and your fingers straight out. Check to see if the first joint (from the tip) of your middle finger extends beyond the brake lever. If not, your hand is too small to effectively grasp the lever in an emergency. Make sure your thumb also reaches the engine stop switch. Squeeze the brake lever a few times to be sure you can comfortably operate the controls.