

KID STUFF

by Mark Barnes, Ph.D.



FEW ASPECTS OF motorcycling are as rewarding as helping someone else enter this world of challenge, rejuvenation, adventure and camaraderie. The teacher's joy can be even greater when the student is a child, especially his/her own. Having recently begun to partake of this exquisite pleasure, I've had to come up with some training exercises to help my own two boys—along with the growing number of their neighborhood friends whom we've proselytized—learn to ride safely and competently. An assortment of their peers have caught the fever while watching us practice in a nearby field, so I've had a chance to refine my instructional program with a variety of youngsters ranging in age from seven to thirteen, on a wide array of small-bore machinery. It's been one of the most wonderful experiences of my adult life, in part because I've vicariously relived all those thrilling discoveries from my own youthful days as a fledgling rider. But there's a big difference between how I learned and how these kids are learning: I never had a teacher, and had to learn everything on my own. Needless to say, my education was seriously flawed in numerous ways. By contrast, with the benefit of only very minimal guidance, these newbies are already riding more skillfully, confidently and safely than I did after a full season of trial and error.

So, I want to share what I've figured out with anyone who might have the opportunity to teach a young person about riding, whether your child (or grandchild, niece or nephew) got a bike this past Christmas or on a recent birthday, or a neighbor kid has taken an interest in the two-wheeled activities over at your place (get their parents' permission first, or—better yet—their parents' participation, to reduce your liability risks and increase the odds of successful contagion). No matter who the child is, I think you'll find teaching them to ride a most enjoyable gift for both giver and receiver.

What I'm about to present is a very streamlined introduction that can be accomplished in just a few hours, preferably broken up in two or three sessions to avoid information overload. No, it doesn't include everything there is to know about riding, but it's enough to make a world of difference for a beginner. It's geared toward younger children who'd necessarily be starting on small dirt bikes. Some adults who'll be teaching may have never ridden a dirt bike. Others may have done so only in the distant past. And even those who have more recent experience may never have stopped to think about what skills are most basic and fundamental—in other words, where to begin. I've written the following lessons with these possibilities in mind.



Photo 1: Help the child feel the range of motion for each hand control, so they know what you mean when you say, “a little throttle” or “a gentle squeeze.”



Photo 2: Demonstrate body positions; add visual information to your words as much as possible.



Photo 3: Slow-speed maneuvering requires lots of bodily counterbalancing—leaning away from the turn.

In general, keep in mind that young bodies contain nervous systems that are not yet fully developed. So, even though kids can astound us with their ability to learn quickly, they can also have pockets of seriously limited coordination, judgment and conceptual understanding. Some ideas and techniques are so basic that we take them for granted, and then get frustrated when the student doesn't automatically know what we assume is obvious. This can make the learning process a negative experience for both parties, so be very careful to examine a child's failures for evidence that the instruction is lacking something—probably something so simple that it slipped the instructor's mind; it may even be hard to get into words. Demonstrate, illustrate, use whatever means of communication you can invent, until you hit upon something that works for the particular student in front of you (each is different). Patience is paramount. But that's not to say dangerous impulsivity or carelessness should be overlooked or tolerated. If a child is disregarding supervision, lessons must promptly come to a halt, so that he/she develops respect for the seriousness of this project. Your attitude will make a huge impact on theirs. Also, find an appropriate setting for teaching: Soft, dry terrain, with gentle contours and no obstacles or traffic. And minimize the chance of injury with proper protective gear—at least a helmet and boots.

Note: Kick starting can be one of the most intimidating and frustrating challenges of all, and yet it comes right at the beginning. Have the bike warmed up and be prepared to do some of the starting yourself, so the child doesn't get worn out or discouraged by the struggle to simply get the engine going. On the other hand, don't deprive them of the satisfaction that comes from mastering this rite of passage if they're capable. Most kids orient easily to fixed procedures—that's how they learn in school and in rule-bound play activities. So know the starting sequence for the bike in use, and explain the steps in simple terms. You may be aware of special considerations and exceptions to the rules, but the child needs to begin with the basics and establish good habits, such as always making sure the fuel petcock and kill switch are in the proper positions before kicking. This teaching principle—get the rules well established before addressing the exceptions—applies to each of the areas below.

One more thing on teaching in general: As you go through the following drills, frequently ask the child how each operation feels. Learn where they're confident and where they're spooked. Fear is almost always a function of excessive speed. Slow things down—both the speed of the bike and the pace of instruction—whenever a child begins to show signs of insecurity. Likewise, enforce limits to address overconfidence and teach self-restraint. Talk to them in as



Photo 4: Higher speed cornering requires leaning with the bike into the turn.



Photo 5: In seated corners, the inside leg should extend out and forward to allow dabbing the foot if necessary to correct excessive lean angle.



Photo 6: Hill climbing requires a body-forward position to keep the front wheel in contact with the ground for steering.



Photo 7: Downhill control requires rearward body position to avoid exceeding front-wheel traction or doing an “endo” during braking.



Photo 8: Kickstarting can be hard on level ground, but riding in the wild will require proficiency on slopes, too.



Photo 9: Being able to back up and turn around without falling over is another essential hill skill.

much detail as possible about their experience on the bike. What do they imagine is about to happen, and when? What part of their body or the bike dominates their awareness? Are they worried about an onlooker’s opinion? How are they judging their own performance? Did they feel the difference that last change made? Also, encourage their questions to you. Remember that this sort of coaching is an emotional experience for both the coach and the coached. Be sensitive to a child’s powerful wishes to please you and prove capable—and their vulnerability to a crushing sense of inadequacy when progress doesn’t come easily. Your faith in them, along with your encouragement, is the fuel they require to persevere in the face of daunting challenges and painful frustrations.

The Lessons

After pointing out the location (adjusted for fit) and movement of the throttle, each brake, and—if applicable—the clutch, help the student get a feel for the way each works. Most kids respond more quickly to experiential lessons, rather than lectures. (Some will be curious about the mechanisms involved, which is fine, but don’t provide more information than the child can readily absorb.) Even with multiple warnings and reminders, almost every kid I’ve taught had trouble working the controls *slowly* enough at first. For example, they were accustomed to low-efficiency bicycle brakes, and initially grabbed way too much front brake on their motorcycle, falling immediately upon locking up the front wheel. This is no big deal at a walking pace, but if they’re also heavy-handed with the throttle, that first fall may come at a relatively high speed. Insist that the child do everything in slow motion until they get used to the way very small inputs can yield surprisingly big results.

It is more important to know how to stop than how to go. If you have access to a slope, you might even want to begin with unpowered coasting down the hill for the first braking exercises. For motorcycles with centrifugal clutches, have the child put the bike in gear and then *very gently* roll on just enough throttle to start rolling forward. Before they can get up any speed, have them roll off the throttle and *very gently* squeeze—not grab—the front brake. Repeat this numerous times in a straight line, at gradually increasing speeds, until they prove capable of operating the front brake smoothly. For now, teach them to keep their handlebars straight and their arms strong (but not straight) whenever they apply the brakes.

For motorcycles with manual clutches, have the child *very gently* let the clutch out while rolling on just enough throttle to avoid stalling. Before the clutch is completely engaged, have them pull it back in to eliminate forward thrust and come to a stop. Repeat this until the child demonstrates good feel for the clutch’s “friction

zone” and precise control over lever position and rate of release. This little exercise, waddling forward with the bike while feeling the clutch do its thing, really pays off later when the child tries to learn how to move off in earnest from a standing start, and when they have to feather the clutch to control wheelspin or carefully feed power to the rear wheel in ultra-low-speed or low-traction conditions. Once the clutch can be used reliably, simply move to the braking drill outlined above, with the addition of using the clutch in parallel with the brake.

Help the child notice that weight shifts forward while braking, and that it’s important to stabilize their body accordingly by scooting their butt rearward. Cultivate good habits right from the beginning, including the use of legs to grip the bike and prevent sliding up onto the tank. Make sure they keep their eyes and head up and pointed straight ahead. Also, emphasize that the left foot should be used to support the bike at a stop, since the right foot may need to be operating the rear brake. Locking elbows to brace against the bars is a bad habit that should be discouraged right away. Also, help the student feel how the brakes work differently depending on the surface under their tires (assuming your setting offers variations in traction), and that the brakes can be applied very firmly after the initial gentleness, as long as it’s done smoothly.

After the child has gained confidence using the front brake alone at relatively high speeds (about half throttle in first gear), have them use the rear brake alone for several stops. Make sure they can find it by feel without looking down. Point out that the bike slows more gradually with the rear brake, and that the rear wheel can be locked up without seriously destabilizing the motorcycle. They’ve probably delighted in skidding the rear wheel on their bicycle, and they’ll love learning to do the same on their dirt bike. However, they should be able to use the rear brake effectively without skidding, too. And, they should develop the habit of keeping a locked rear wheel until they’ve come to a complete stop, to avoid the sudden jerk of regaining traction with the rear end stepped out to one side. Once rear braking looks natural, have them come to smooth, controlled stops using both brakes. Begin with a set point at which the brakes will be applied, and then move to something more random, such as a hand signal or a yell, at which time the child is to stop as quickly as they can without losing control.

Up to this point, the rider has been seated. Now it’s time to learn about the standing position. Have the child complete the same drills above, but standing with the balls of their feet on the pegs, knees slightly bent, supporting their weight and absorbing bumps with their calf and thigh muscles. All the controls will feel different in this stance, and may need further adjustment to be comfortably usable



Photo 10: Learning to (over)steer with the throttle is a thrill, regardless of the rider's age...



Photo 11: ...and to correct a skid are two of the most thrilling discoveries for young riders.



Photo 12: Rearward body position, along with a burst of throttle and a tug on the bars, helps with crossing ruts...

in both seated and standing positions. Make sure that, while braking, the child moves rearward “butt-first,” rather than pulling back with their upper body. The stopping drills are much more difficult in the standing position, as the child will have to drop down to support themselves at the final stop, so allow for extra repetition. From now on, every lesson should start in the seated position and then be repeated standing.

With some braking competence achieved, the new rider is ready to learn more about everyone's favorite control: The throttle. Have them roll it on gradually and then more suddenly; the same for rolling it off. Teach them to hear the engine reaching a reasonable maximum rpm. This is one of those things that may seem totally apparent to you, but a child will have no sympathy for their engine's internals. One of the kids I taught kept winding out his little four-stroke motor until I thought it was going to grenade between his legs. No matter how much I told him to not rev it so high, he kept wringing its neck mercilessly. He was not ignoring me, he really couldn't hear it the way I did. After a while, it dawned on me that this was because of his experience on a little 25cc two-stroke scooter, which he regularly ran at constant full-throttle all the way down the street. His motorcycle never screamed as high as his scooter, so he never considered it to be revving to an extreme. I modeled a less sadistic use of the throttle for a couple of laps, and he got it.

The child should also do some balancing exercises, riding the motorcycle as slowly as they can without putting a foot down; this will probably feel easier in the standing position.

By now, the child has been turning the motorcycle around to restart their straight-line brake and throttle drills. Have them incorporate turning into the exercises, making elongated ovals. They should use what they've already learned about throttle and brake control to lower their speed at the end of each straight and allow for a nice, gentle arc that will point them back in the opposite direction. Don't worry about teaching counter-steering yet, as it actually doesn't apply at these super-low speeds, but do have the child look through the turn. Don't settle for rotating eyeballs; insist that the child turn their whole head in the direction they want to go. Focus the child's attention on smooth control over their speed, slowing to enter the corner and accelerating out of it. Switch to figure-eights to give them practice turning in both directions. Add random braking commands on the straights. Finally, have them make very tight circles at low speeds and then weave in a serpentine pattern. Repeat this whole section with the child in the standing position.

When the child has demonstrated competence at these tasks, it's time to teach braking during a turn. Tell them about the importance of straightening the bike—both in terms of lean angle and bar position—as they come to a stop. As with the previous exercises, start with very low speeds and gradually increase the pace as the child

gains proficiency and confidence. Have the child make a large arc around you and simply come to a stop when they wish. Later, change the circle to a figure-eight, so they can practice braking during both right and left turns. Finally, have them stop at your random signal. Provide frequent reminders about each of the lessons already learned, as it will be very hard for the new student to integrate all the separate operations until they've had lots of practice.

And now, the gears. Once the child has developed some basic mastery over slowing, stopping and turning the motorcycle in first gear in the above exercises, the last control operation to learn is shifting gears. Help them develop an ear for when the engine is lugging and when it's beginning to over-rev. This auditory information will be their primary cue for when to shift until they learn more sophisticated considerations later on. They should also get in the habit of shifting down when slowing, especially slowing to a stop. Make the figure-eight larger, and have each straight stretch begin with an upshift to second, and end with a downshift into first as they prepare to enter the curve. Kids whose bikes have clutches may need to be told now that, once the bike is underway, the clutch can be applied and released very quickly, without the trepidation that, for newbies, usually accompanies the initial launch. Also, explain that shifting requires a momentary rolling off of the throttle for bikes with or without clutches. Getting this skill down usually requires more repetition than most other tasks, but have the child keep at it until they can shift smoothly and integrate this with good throttle and brake control. Depending on the shift lever angle and the construction of the child's footgear, shifting while standing may be much more difficult than while seated. Make certain that the shift lever is adjusted to make this operation possible. While blipping the throttle on downshifts is certainly a good habit to get into, I've found this to be too much to expect of most kids just starting out. Some may be able to handle it, but most will have their hands full (literally) with just the basic operations. Save blipping on downshifts for a slightly later date.

As the child becomes able to take the corners faster, counter-steering becomes worth teaching. Have them do some figure-eights entirely in second gear, focusing only on pushing (forward, not down) on the right grip to turn right and on the left grip to turn left. Eventually, start having the child extend their inside leg forward and out, where they can dab the ground and catch themselves in the event of an imminent low-side fall. With enough speed, enough lean angle, and a slippery enough surface, they will eventually break the rear end loose during cornering. This is such a fantastic thrill that they'll endure countless wipe-outs struggling to repeat a single success. Help the child notice how sudden throttle application mid-corner increases this effect, along with sharper turn-in, more acute lean angle, and conducive ground conditions. When cornering in the



Photo 13: ...and clearing bumps (a new off-season use for Mom's garden).



Photo 14: The burnout is always a perennial favorite...



Photo 15: ...along with the doughnut.

standing position, the child will not be putting the inside leg out, but will instead begin to learn about positioning the bike between their legs. At low speeds, the bike leans toward the inside of the corner, while they counterbalance it toward the outside. At higher speeds, they lean with the bike, pressing their outside knee into it.

At this point, have the child try doing some burnouts and doughnuts to get comfortable with a spinning rear wheel. Find a spot with reduced traction. The child should start with a firm grip on the front brake and their body well forward over the tank, and then apply generous throttle (about 1/3–1/2) and dump the clutch to get the wheel spinning. With bars straight and throttle held constant, the brake should then be released and bodyweight moved rearward to allow for an exhilarating launch. For bikes with an automatic clutch, it's just a matter of holding the front brake and gassing it in first gear.

The same basic procedure is followed for doughnuts, except the bars are cocked fully to one side (left is easier because the throttle wrist isn't bent) and the bike is leaned far to that same side with the inside leg helping to support the rider's weight. The front brake may or may not need to be released, depending upon the bike and the ground condition (soft, loose dirt is most easily managed). To terminate the rear wheel's arcing around the front, constant throttle is maintained while the bars and lean angle are straightened (and the brake released, if it wasn't already); the bike will then launch in the direction it's pointed. The rear end may come around very quickly at first, so make sure the child is far away from potential obstacles. Falls are very common here, but again, the excitement of getting it right is so great that much frustration can usually be tolerated. These tasks may seem trivial or exhibitionistic, but they actually teach important aspects of bike control, such as discontinuing a skid by turning against it. They will also help a child feel more comfortable with mid-corner throttle-steering, which is vital for quickly decreasing one's turning radius.

By now, the child has almost certainly begun to figure out some body English intuitively. Still, a couple points should be spelled out explicitly. While ascending hills, bodyweight must come forward; have them lean forward with their chest over the handlebars. It's the opposite for descending slopes. Then, bodyweight must move back as though they were trying to sit on the rear fender (almost), with their butt hovering over it in the standing position, and their arms reaching far forward to the bars. (Forgo the seated position for hill work; do everything in the standing position to maximize awareness of body position.) Have the child climb a slope, then turn 90° and traverse it, getting a feel for what it's like to ride with the ground on one side much further away than on the other. Have them come to a stop like that, leaning the bike uphill to keep their balance. Do this

in both directions. Then have the child ascend, make a U-turn and descend in one smooth motion, being careful to move their bodyweight forward uphill and rearward downhill. Now make this maneuver one end of a figure-eight, so the child incorporates braking and shifting with hill approach and departure.

In preparation for encountering impasses in the wild, have the child ascend, stop, and then roll backwards, turning the front wheel and leaning the bike uphill as it moves to a position perpendicular to the original path. The wheel can now be turned to point downhill and the turnaround is completed. Do this in both directions, and add an engine restart to the mix so they get practice kickstarting on an incline. Teach the child that momentum is vital in hill ascent, and get them in the habit of rolling on the throttle to maintain speed during the climb. Likewise, they need to know it's easier to lockup either wheel during a descent—and flip over forward with too much front brake. Hence, brakes must be applied with even greater care on a downhill run. Help the child learn how to use engine braking on descents to minimize the need for front-brake application. Choose a very shallow slope to start with, and repeat these exercises on steeper and steeper grades. When a fall feels imminent, the child should dismount to the uphill side of the bike immediately to minimize the chance of bearing the falling motorcycle's weight.

Finally, find a small tree limb on the ground or a shallow rut. Teach the child to approach such obstacles at a right angle, with their weight rearward. A sudden burst of throttle just before impact, along with a tug on the bars (pull with the back muscles, not the arms) will help the front wheel stay light and nimble. Kids with relatively larger bikes (also more likely to have manual clutches), may be able to loft the front end a bit. This is trickier than anything else covered thus far, but I've seen a couple kids get the hang of it in just a few attempts. Nevertheless, wheelies fall beyond the scope of this article, even though they are an extremely useful skill in off-road riding. Save that for session number four or five.

I've covered all these exercises with (single) kids in a total of just two or three hours, and that's with breaks for conversation and rehydration. So, it's really quite a small investment of time and effort. But it's been amazing to watch them go on to frolic on trails much more adroitly than they "should be able to" with so little experience. While quantity of saddle time is an absolute requirement for developing good skills, the quality of those first few hours can give a kid a huge advantage right out of the gate. Then the practice that follows is less likely to be a matter of cementing bad habits in place out of ignorance.

Try it, and I guarantee you'll grin every bit as widely as the boy or girl you teach. 🗣️