



Audio Master Class
Pretend You Have Power
Progressive Hill Repeats at
Constant Cadence

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Ride Objective: Five progressive climbs to educate students about the concept of power (or, *how not to cheat!*)

Working intensity: Zones 3–5a

Class Length: 60 minutes

Ride Objective

The primary objective of this ride is hill repeats on five progressive climbs, each at the same cadence. Riders will learn how to set a baseline resistance at that cadence and not drop below it. The ulterior motive is to teach them “how not to cheat” when they are riding, by educating them on the concept of power, even if your bikes do not have power meters. Don’t tell them that up front, however. You don’t want to worry them that you are going to get complicated (you won’t!) and you don’t want to influence them into setting an artificial baseline on the first hill because they are worried about how hard it might get on successive hills.

What do I mean by “cheating”? I don’t mean it in a derogatory way; virtually all of us have done this at some point. There are times when it’s even a good thing, because we recognize our bodies should not go as hard on that particular day. While it is often done unconsciously, we all know there are some students who consciously do not want to work as hard, even though they won’t admit it. Some of them are even the ones who complain that “Spinning doesn’t work!” That can get pretty frustrating as an instructor, because we know that if they rode at the resistance and cadence we are asking, they would see more success than they are experiencing.

This profile helps your riders become acutely aware of their actions and how their choices affect their success. You are not calling them out individually, but if they see themselves in your description of someone purposely dropping resistance too low too often, then it could be a lightbulb moment for them. They may say to themselves, “Hmmm, interesting. I guess I do usually turn it too low!” You have made them aware of their responsibility for their own actions that might even be keeping them from seeing the success they desire, whether it be weight loss, increased endurance, or pushing longer on a hard climb.

Indoor bikes without power meters (i.e., most of them) do not have a way to objectively measure output. There is no way to know how much actual work you are doing (and no, the heart rate monitor you are wearing is not an objective measure of “work”), so as you move that resistance knob to the right, you often just guess at what “gear” you should use. When changing resistance from a very steep hill to a moderate hill, many riders take off too much. In other words, they are “cheating.”

You may tell me, “Jennifer, I never cheat and neither do my students!” but I bet if I were to put a power meter on your bike without your knowledge, I could prove that *you think* you are working harder than you actually are, especially if your heart rate monitor shows a high heart rate.

[Note: To more deeply understand heart rate and why it’s not a measurement of output, hopefully you’ve taken the workshop “Mastering the Art and Science of Heart Rate Training” at the Indoor Cycling Summit. As an ICA member, you can search the member topic *Physiology, Heart Rate, and RPE* to find numerous articles and interviews that touch on heart rate.]

Following is a cycling scenario of how Mother Nature doesn’t allow us to cheat outdoors, and how she doesn’t always give us what we want or need in that moment. In other words, the hill doesn’t always ease up just because we want it to!

Suppose you are climbing a long hill and it becomes moderately challenging (say a 6% grade) and you are already in your second to lowest gear, so you don’t have a lot more options available. You are able to maintain a solid (but slow) cadence 65 rpm. (Let’s assume you don’t have “granny gears,” the really low gears such as those found on a mountain bike or a road bike equipped with a triple chain ring in the front.) When the hill becomes steeper (8% or 9%), you drop to your lowest gear and power through to maintain your 65 rpm. You may have to stand up and add body weight to the equation. You tell yourself that you don’t want your cadence to fall any lower, because you will slog up that hill way too slowly.

Now let’s suppose the hill lets up a little bit. It feels a little better, but is still pretty challenging (it is now “only” 7%). It may be easier than it was a moment ago, but by this time your heart rate is high and your legs are fatigued from the steep section you just went through. You wish you had one more gear, but you are already in your lowest one. (You cyclists reading this know exactly how that feels, don’t you?!)

What are you going to do? You aren’t going to give up or turn around, right? It’s not like you’re dying; it’s just hard. You still want to maintain the 65 rpm, you still want to maintain your power output, *so you have no choice* but to accept the hill as it is and teach yourself to recover while still working. You cannot cheat and you cannot take any more hill off! Mother Nature doesn’t just make it easier whenever you want it to be.

Now think of that outdoor scenario and let’s go back indoors.

On an indoor bike, it’s so easy to simply sweep off more resistance when you are in that situation. Don’t get me wrong, there is certainly a time and place to do that when our intensity is too high or the legs just cannot maintain it. Also, some of our students are not fit enough to go back to the resistance they were at before the steeper part, and they have to take off even more. Less experienced students may have even selected too much resistance to start with.

This profile will help them become aware of *how often* they subconsciously select resistance that is too easy when backing the resistance knob down.

The fact is, we all cheat at times, usually without realizing it. I do it, you do it, our students do it! When you have a power meter, it keeps you honest. When you do not have a power meter, you don't always realize what's happening because you don't have the quantifiable evidence (i.e. wattage) staring you in the face.

This profile will help fix that.

The Importance of Teaching AS IF You Have Power

If you are not wearing a heart rate monitor, is your heart still beating?

Of course it is! Silly question, right? And if you are not wearing one, it doesn't mean you dismiss heart rate, correct? Some instructors or students seem to think that if they aren't wearing a heart rate monitor, then they don't think they should be concerned with understanding heart rate.

It's the same with power.

If you don't have a power meter, *you are still producing power* whether you care about it or not. Power is even more important to be aware of than heart rate, because your choices of cadence and resistance will affect how much power you produce, which ultimately affects how many calories you burn. Power is a direct measurement of work, the amount of kJoules you are producing to turn those pedals. Those kJoules, in turn, are ultimately a direct measurement of calories (kcal) burned.

If your cadence or resistance choices are unwise (e.g., high cadence with low or no resistance for extended periods), and/or your technique is poor, your power output and caloric burn will be lower, even though heart rate might be high.

I emphasize that last sentence because it is one of the single most important things you can learn about the effectiveness and success of your profiles and your coaching.

If you know the elements that work together to increase average power output, then it should follow that you should respect them whenever possible. That does not mean that your goal should be to *maximize* power output at every moment—you'd be a wreck after every class if you tried to do that. Rather, the goal is to optimize power output during your working segments (outside of your warm-up, easy recoveries, or cool-down) based on the objectives of that profile. The power objective of a tempo profile below threshold is obviously different from a VO2 max profile of Zone 5b intervals.

Without a power meter, you cannot know exactly your output in watts, but indoors, if your cadence and resistance are the same on successive work efforts, then your output is going to be the same. If you reduce either one of them, cadence or resistance, then power will drop. Our intention in this profile is to *not* let it drop below the baseline you set in the first hill.

The other things that reduce power output, and hence, reduce caloric consumption, are the following:

- Poor form
- Poor setup (saddle too low or too high, or too far back or too far forward)
- Superfluous upper body movements (push-ups, crunches, twisting, turning, lifting weights, etc.)
- Hovering, squatting, or other lower body manipulations
- Isolations or freezing any part of the body
- Fast jumps or tap-backs
- Very high cadence with little to no resistance (depending on the skill of the rider, this can be around 90 rpm, but usually we're talking about >110 rpm)
- Very high resistance with very low cadence (<50 rpm)

It's important to keep these things in mind when designing and teaching your classes. Now this is not a session or profile about contraindicated movements, so I won't go in-depth into the reasons why, but suffice it to say, that one of the many reasons why these techniques are not advised, is because every single one of them will reduce power output. Often, due to the vast misinformation that is so prevalent these days, riders and instructors believe that some of these techniques are increasing caloric burn, when in fact they are not.

Ride with a power meter to see the proof!

To learn more about how these improper techniques reduce power, reduce effectiveness, and increase chances of injury, please read my e-book *Keep it Real*. It can be found in the e-store at the Indoor Cycling Association website.

RPE and Heart Rate

When working with power, heart rate is still important, but it is secondary. Power is a measure of output; heart rate is the response to that effort. In other words, heart rate reflects how all of your systems are responding to the work you are putting forth through the pedals.

In this profile, since we don't have power meters, we will pay close attention to both perceived exertion and heart rate; however, perceived exertion will be the first indicator of intensity, and you will then notice how that affects the heart rate and make any adjustments if needed. In other words, you will establish intensity by using verbal descriptions of what riders should feel in their legs and cardiovascular system while climbing. After they've been climbing for a few minutes, you will ask them to look at their heart rate monitor to see how it has responded.

The goal of this profile is to set a baseline intensity for the first hill. You won't know the wattage, of course, but you are going to pretend that it is "X." Their heart rate at that "X" should be somewhere below threshold, at a perceived exertion of "somewhat hard." From there, in each climb, you will take it up higher than "X," and ask that they not drop below that "X" except during recoveries.

This is how you will pretend that you have power. You've established your baseline output, and will not drop below it in the work efforts. Through the ride, you'll describe how this will benefit them in future rides as they make conscious decisions on whether to "cheat" or not.

Class Profile

Before I get into the profile, I am referring to indoor bicycles without power meters, most of which have a resistance knob that turns to the right to increase resistance which gradually pushes a brake pad into the flywheel or uses magnetic resistance. (If you have bikes with gears, and if you have power, you can still use this profile with the modifications I provide.)

There will be a 9-minute warm-up with cadence surges to wake the legs up. Then there will be five climbs of approximately 4, 5, 6, 7, and 8 minutes long, with a recovery of 3–4 minutes in between. All the climbs will be at the same cadence, around 66–67 rpm (determined by songs with 132–135 bpm). This is done in order to establish an understanding of the relationship between cadence and resistance and how it determines your power output. If cadence changed on each hill, then there would be no way to pretend there was a power meter.

The first climb will establish the baseline resistance that they will visually use every time they return to a climb.

How do we do this? It will be necessary to put a marker on the resistance knob so they actually know where it is pointing when they reach their baseline resistance on the first climb. It will be like a second hand on a clock. Research has shown that with a visual marker, like the hand of a clock, people remember the position of that marker much more than if numbers indicated where it was.

It's important to realize that the resistance is going to be different from one bike to another on bikes with brake pads. Brake pads wear differently due to friction. Some require many turns before they start to show the resistance, some don't require much at all. But how many turns it takes to start the resistance does not matter for this ride, because once you have *established* a baseline climbing resistance, it should not require a huge amount to add more, regardless of the bike. Once you are on that hill, it might only be a half-inch, an inch, or a quarter turn to feel a big difference in steepness. A full turn, when you are at a baseline climb, would make a drastic difference in that climb—either to the right (where it would be impossible to continue at that cadence), or to the left (where it would become so easy that you are no longer on a hill).

Therefore, by marking the resistance knob like a second hand on a clock, you can easily guide your students to return to their baseline resistance and never drop below it. (When you start playing with this on your bikes, it will make a lot more sense!)

The resistance knob on each model of bike is a little bit different. Most are red (why, I'm not sure). Some are solid red with no markings, some have a design with the Spinning® logo and two arrows, some have other logos, some have plus and minus signs to indicate which direction to turn. But very few that I have seen have an actual easy-to-see marker on them to indicate where they are pointing (especially in a dark room). So when students look at the knob, if there

are no markings, they have no idea where they are (except by feel), or if there are some markings, they might have a general idea (such as on the Star Trac Spinner®) but it is still not very specific.

You will need permission to do this on your bikes if you are not the owner of the studio. You can mark them with a black permanent marker (although it still may wear off in a short time, depending on how much your bikes are used), or you can find a black nail polish and paint the minute hand on the dial. If you don't want to put a permanent mark, you can place a piece of masking or clear tape on the knob, and mark the minute hand on top of that with your black pen. Or you can use a thin slice of black electrical tape.

(Obviously, if you have black knobs, then you'll need to find a white pen or polish, or use white tape.)

See the examples on the following page.



On the Star Trac Spinner® bike, you can see that the Spinningman logo provides a *general* direction for resistance, but it still isn't specific enough for a student to know exactly where they are dialing that resistance, like it is in the photo on the top right. On this bike, a piece of clear tape was placed on the resistance knob, and the black line was drawn on top of the tape. The black “minute hand” on the bike on the right indicates a time visual of almost a quarter past the hour.



The photo at left is a RealRyder resistance knob, which I have marked with a thin piece of black electrical tape. This position indicates a “time visual” of :45 for the baseline.

On both these examples, you can see how much easier it will be for the rider to visualize exactly where to put the knob on each climb, and what resistance they should not drop below when backing off on an easier segment of the climb.

So You DO HAVE POWER and Don't Need to Pretend?

Awesome! You really are lucky. You can modify this profile easily. Anytime I refer to “pretending you have power,” simply talk about how important power is and how it keeps them honest. When I refer to establishing a baseline resistance via the knob, you will simply have your riders establish a baseline number of watts that correspond to the perceived exertion described in the first climb. Each successive hill repeat after that should not drop below that number of watts.

If you do have power, I strongly recommend that you take a power-specific certification course and learn how to conduct field tests to determine 3-, 5-, 10-, and 20-minute benchmarks. The 20-minute benchmark can serve as a rider's FTP (functional threshold power).

If you have bikes with estimated power (Keiser, Schwinn, etc.), remember that whatever power output they establish as a benchmark on the first climb in this profile may not transfer to a different bike, so keep that in mind as well. However, if you have bikes with actual power (Freemotion, Spinner Blade Ion, Cyclops, etc.), it should translate to any bike they ride.

Pretend You Have Power (Hill Repeats) Coaching The Profile

Song #1: Warm-up

Indian Summer, Big Bud, 83 bpm, 8:50

While they are warming up, explain the goal of the ride. After 5 minutes of gradually increasing resistance in the warm-up, have them increase cadence up to 95–100 rpm for 30 seconds to wake the legs up. Repeat 3 or 4 times.

Hey everyone, did you notice that I've put a marker on the resistance knobs? Think of it as the minute hand on a clock. This is going to make it so much easier to know where you have turned the knob. I'll get back to this in just a moment...

I have a question for you today. I want you to be honest with the answer, too. You don't have to tell me, just tell yourself...

Have you ever cheated in Spinning® class? Do you realize how easy it is to "cheat"? I know I have! And I bet you all have a little bit more than you think you do! Now I'm not talking about making a conscious decision to go easier because you are recovering, injured, or overly fatigued; that is called taking care of yourself—it's not cheating. That is a good thing. But I am talking about those moments when we KNOW we can go harder, push harder, but we just get lazy. Yes, sometimes you know it and you do it consciously. You think, "No one else will know." But the truth is that YOU know, and the only person that matters is YOU.

But...I admit, often times it is unconscious, and you don't realize that you are cheating, you don't realize that you are not getting as much out of your ride as you could be. This is often because we don't pay attention to where our resistance is, especially when easing up on a climb, or taking off way too much for recoveries.

Well, those days are going to be over, because today, I'm going to teach you a method that is going to keep you honest! Honest about your resistance and honest about your cadence. As a result, it will keep you honest about your output on these bikes—your output is how much work you really are doing.

If we had bikes with power meters, it would keep you honest all the time, because you would see the amount of watts you are producing. Watts is a measure of output. If you fell below a certain number of watts on a section of road in which you needed to work hard, you would know that you weren't working to your potential.

Your heart rate, believe it or not, is not always a reliable measure of your output. Your heart rate is the RESPONSE to that output. Heart rate is the input of all your systems—cardiovascular, muscular, hormonal, emotional, etc. Lots of things can affect your heart rate outside of the effort you are putting forth, even things that have nothing to do with

your effort, such as stress, or caffeine, or having a cold, or the room being hot, etc. But only TWO things affect your power output, and those two things are the force that you put into the pedals to turn them (or in our case, the resistance we push against) and how fast you are turning the pedals, which is your cadence.

Now I'm not going to get all "scientific" on you today—so I won't go into power in great detail, but in today's ride, we are going to learn how to pretend we have power meters!

How? I'll tell you more as we go along, but today we will do five climbs, and each one will get gradually longer and longer. You are going to do each one at the same exact cadence, which will allow us to anchor one of those two elements of power. I'll be giving you some cues along the way that will help you.

Are you ready for the first climb?

Song #2: First Climb

World on Fire (Junkie XL Club Edit), 135 bpm, 4:17

On this first climb, you'll coach them to gradually increase their hill to the point where it feels somewhat challenging, and then you will have them set that as their baseline. But don't tell them too much on this climb and don't refer to the line on the resistance knob until the end of this climb, because you don't want to influence their baseline choice. Let them find what feels right. Don't use heart rate as a guide for output; use perceived exertion. You will look at heart rate at the end of the climb.

This first hill is about 4 minutes long, and is our test climb. Begin climbing by dialing in some resistance so you feel a slight hill, and grab the beat of this song; make sure to leave room for your hill to grow harder. We will load some resistance each minute, so by the end of the 3rd minute, you'll be at a moderately challenging climb that makes you think, but doesn't make you want to slow down or quit.

(After 1 minute) Stay seated and add a little more, feeling an increase in resistance against your feet.

(After 2 minutes) Again, turn up your hill, imagining the road gaining in steepness. Still manageable, but now you know you're committed to this climb.

(After 3 minutes) Here we go again, ease in a little bit more hill; if you ride outside, it might feel like a 6% grade now. You should feel your quads and glutes working to turn the pedals and you are breathing deeply, but still not suffering, and you should not be out of breath.

This is very important...this should feel like a hill you could hold for a long time if you had to, knowing it could get steeper, even much steeper. I want you to be on a moderately hard hill that you can return to again and again. Make sure you assess that honestly...not too easy but not too hard.

Because you know what? Where you are right now is where we will START each hill from now on (a few will be even higher than this), and you will NOT drop below this point while climbing! You have 45 seconds left, so decide right here and now if you are OK with that. Decide if it is too hard; if you don't think you can maintain this over the next 4 climbs, then you may want to back it off a tiny bit. That's OK, but make that decision right now, because this will become your baseline.

(With 15 seconds left) GREAT—you've made your mind up! You accept the challenge of this hill you are on right now. Now, before we recover, I want you to look down at your resistance knob. See that black line I drew on the knob, that minute hand of the clock? Where is it pointing? Is it at the :15, or the :35, or :45? This minute hand is a great visual for you. It is what is going to keep you honest from this point forward. I need you to REMEMBER your MINUTES!

(Instructors, give your students an example by telling them where yours is pointing. You could say, "Mine is pointing to 20 minutes past the hour. That means every time I say 'baseline hill' I'll make sure it's always pointing there.")

Great, now look at your heart rate and make a mental note of where it is at this resistance and this cadence.

Before you back off, I also want you to count how many times you have to turn the knob back to find a flat road to recover on. I won't tell you how many; every bike is different, every person is different. But start now to take off your hill and count. It might be 2 turns, or 1 and 1/2. Or just 1. It doesn't matter, but make sure that you feel some resistance underneath you, even in the flat road recovery.

Song #3: Recovery

Best Friend, The English Beat, 83 bpm, 3:05

If needed, let them stand for a saddle break partway through this recovery. Explain why you are using the minute-hand method to visualize where their resistance knob is pointing.

You can tell time on a clock without numbers right? That's because studies show that the visual is all you need. That is what you are doing here—that visual of where that minute hand is pointing will help you remember where you need to return to.

Let the legs spin on a flat road, 83 rpm. You've got 3 minutes; let the heart rate come down, and breathe easily. Now while you recover, let me explain how we are pretending that we have power.

Remember I said that power output is a result of your cadence and your resistance? Outdoors, the force you put into the pedals must counter the gear you've chosen, the wind (that's why aerodynamics is important outside) and road resistance, and also your weight

against gravity when climbing. Indoors it's just the resistance knob that simulates all of those things.

You have now established a baseline resistance for the next four hills. All of the songs are about the same bpm, so your cadence for each climb will be right around 66 or 67 rpm. Therefore, at that cadence, by never dropping below the baseline resistance that you have selected on that first climb, you can assume that your power output will not drop below your baseline power. Does that make sense? We will have the same cadence and the same starting resistance, which will be as if we were starting at the same power output for each climb. Got it?

So this is how we are pretending that we have a power meter! If we had power meters, we would simply look at our baseline watts, and then on every successive climb, not drop below that number of watts.

This may be stating the obvious, but even if you don't have a power meter, you are still producing power, right? That doesn't occur to some people. It's kind of like saying that even if you don't wear a heart rate monitor, your heart is still responding to your workout, right? Yeah, makes sense now!

We are going to call whatever resistance you've established for your baseline as your X , and anytime we increase it, it will be a factor greater than X . Since cadence will stay constant, then your power will necessarily increase, right? This is what I mean by keeping you honest. If you raised your resistance but lowered your cadence, your power might not increase; in fact, it could even decrease depending on how slow you pedal. But not today!

Make me a promise: No matter what we do, for each of our hills, once we start climbing, you won't let your hill drop below that baseline of X ...that is UNLESS you find that today you aren't up to it. If it hurts or you are just too exhausted because of a rough week, that is OK. But if you are feeling fine and have the desire to work hard, then that is the promise you make to yourself and to me.

Song #4: Second Climb

Silent Agreement, Etnoscope, 135 bpm, 5:14

The beat picks up at :25 into the song.

Start dialing in some resistance, and within these first 15–30 seconds, I want you to bring yourself to your baseline resistance.

Grab that beat. Imagine, if there was a power meter, you'd be at the same watts as when you finished that last climb.

So let's start making this hill a little harder.

(After 1 minute) *Ease on a little more hill; turn the knob to the right. It might be a few millimeters, it might be a half an inch—everyone is different. Leave room for two more increases.*

(After 2 minutes) *Add a little more. Stay seated another minute. This is starting to be pretty hard, isn't it? At the next increase you're going to stand up. Before we do, check in with your heart rate. You're just checking to see how your heart rate is responding to this hill. It should be approaching your threshold, if not already there. Work? Yes!*

(After 3 minutes) *Give me another percent grade on your road, but don't let your cadence drop—remember, that would mean your power output would drop. Go ahead and stand up, hold this cadence, hold this resistance. Let the HR do what it is going to do. It may bring you close to breathless.*

After a minute of standing, now 4 minutes into the song:

*Sit back down. Listen up now—you've got 1 more minute, and I want you to turn your hill **down** a little bit. This is the key...in the past, you might have taken off MORE than you thought. Your first instinct may be to turn it way down, because you're breathing kind of hard, but by bringing it BACK to your baseline, and not below it, there is no cheating! Mother Nature doesn't always ease up as much as you would like her to on those climbs outdoors, so indoors we need to simulate that as well. You want to learn to recover here while still working, while still climbing. Keep that cadence strong and consistent...*

Song #5: Recovery

How Far We've Come, Matchbox Twenty, 168 bpm, 3:21

OK, ride easy. This one is 84 rpm. Remember on the last recovery, you turned it down X number of turns, maybe it was 2, maybe 1 1/2. Let's go right back there.

Breathe, relax, and get ready for our next climb, which will be 6 minutes long. And yup, you're going to START right at your baseline.

Song #6: Third Climb

Jump N Twist, Freestylers, 132 bpm, 5:57

This song allows you to grab that beat right away. Bring your road up to meet your cadence, and find your baseline climb right away. Settle into this for 1 minute. But we are going to do this climb a little differently. You're going to alternate between a seated climb at your baseline to a harder standing climb that you're going to establish when we stand up the first time. Then we'll alternate between them for 30 seconds each.

(After 1 minute) *Turn it up to a hill that requires you to get out of the saddle. I want it to be challenging, borderline breathless. This will be like switchbacks.*

(After they've been standing about 30 seconds...) *Look at your minute hand, the black mark on the knob. Where is it? Is it "15 minutes" beyond your baseline? 20 minutes? Whatever it is, remember it...*

(Sit back down, and go back to baseline for 30 seconds.) *I want you to notice your heart rate as well. Does it stay constant, or does it back off a little bit after you sit back down? Notice it, but don't try to control it...*

Alternate them between their baseline and the new standing climb resistance they've established. No need to talk a lot for the rest of this song. Just remind them that they are putting out some good power, and are never allowing themselves to "cheat."

Song #7: Recovery

Tusk, Fleetwood Mac, 91 bpm, 3:32

Ah yes, let this feel easy. Appreciate the recovery! We've got two more hills. Each one will be a little different.

Let them stand and jog towards the end if they need more of a saddle break (but slow cadence if they do). Just before the end of the song, tell them that the next hill will start off steep; they will take it to the same standing climb steepness that they had on the last hill and hold it for 1 minute.

Song #8: Fourth climb

Human (Pink Noise Dub), The Killers, 132 bpm, 7:09

This hill is different in that you will start off harder and then gradually ease up the steepness little by little until you get them back to baseline. This helps them realize they can learn to recover while still working. It also teaches them not to sweep off too much resistance when easing up on a hill, which is something that so many students do—one way of cheating themselves!

Turn it up to that same place you had it on the last climb, past your baseline, and stand up! This particular hill starts off like a wall.

(At 1:00) *Now sit back down; we are going to gradually ease the hill down until we get it back to your baseline. Right now, split the difference between where the knob was while standing and where your baseline is. Only go halfway back. Feel the challenge in the legs. Meet this challenge. No cheating here...I'm keeping you honest! In the past you might have wanted to take off even more...but I'm not going to let you...at least not yet!*

(At 2:00) *Now reach down and split the difference again, getting closer to your baseline, but not quite there.*

(At 3:00) *OK, now take it to your baseline. It may feel like a respite, but remember, you are putting out that same baseline power, so you are not cheating! This is realistic—this is what it's like outside on hills that may ease up, but not as much as you want them to!*

Your legs are screaming that they want you to turn it down even more but you won't do it. Try to get your heart rate down while still climbing, by breathing with your belly and relaxing your upper body. All of a sudden that baseline doesn't seem as easy as it did earlier, does it?

(At 4:00) We're going to repeat what we just did. Turn it up again to the same standing climb we started with, and stand for a minute...

(At 5:00) Sit down and only reduce it halfway to your baseline. Breathe deeply to lower the heart rate while still working.

(At 6:00) Split the difference again, not quite to your baseline, and stay seated until the end of the song...

Song #9: Recovery

Are You Happy Now, Michelle Branch, 89 bpm, 3:50

Once again, go easy. Recover. There is one more climb; this last one is 8 minutes. We're going to treat this next one more like an undulating mountain bike trail that alternates between steeper and less steep (though always climbing), but remember, no matter what,, do not drop below your baseline.

Song #10: Fifth climb

My Dear Masters, Freeman, 134 bpm, 7:56

Find that beat right away and start out at your baseline climb. I'll be giving you changes every 15–30 seconds. You are in control—be ready to challenge yourself, but again, DO NOT drop below your baseline. If you need a break from the added steepness, then don't do what I'm asking when I ask for more—just ride at your baseline. I want you to make your increases very subtle, enough to feel a slight difference, but I guarantee you, you don't need a huge amount to make this challenging. Also, remember to never drop below this beat, this rpm of 67.

This is going to be challenging, so make sure to check in with your less fit students and make sure they aren't overdoing it. At 1:00 start resistance loading in small increments every 15–20 seconds, or if you want, use the energy of the song to determine increases/reductions. After 3 or 4 increases, stand up, but only stay up for 15–20 seconds. Then sit down and back it off just a little, then a little more, then add some more while staying seated, then add and stand, then sit and reduce, etc. Do this throughout the song, all the while coaching them to hang at their baseline if they need to, if it's too much. I would practice with this song before you do it with your students.

This song has some fabulous energy surges and layering to use to change what you are doing. Here is an example of how I might do it (but honestly, I let the energy guide me in the moment):
Resistance load until 2:19, where you add resistance and stand up.

2:39 Sit back down, reduce a little

2:53 Add more and stand with the drums

3:22 Sit and back off a little, begin building again every 20–30 seconds

5:17 Where you stand up—the beat goes away, just climb out of the saddle until...

5:45 Sit with the drums, back off a little so you can begin building again, continue adding every 1520 seconds, then at 7:39 with what sounds like an audience cheering, stand up till the end

Also, check in with their heart rates halfway and towards the end. They will most likely be above their threshold. If during the song their heart rate gets away from them, have them sit and ride at their baseline (unless, of course, they simply cannot and need to recover).

Song #11 and #12: Cool-down and Stretch

Fernweh, Schiller, 93 bpm, 4:44

Alegria, Cirque Du Soleil, 84 bpm, 5:47

Time to bring down the heart rate to your Zone 1. Use your breath to lower your heart rate and calm the mind.

Power output: If it's in your face, you cannot cheat; it keeps you honest, doesn't it? Today, we didn't have any watts to tell you what to do or where to be, but while keeping the same cadence on the climbs and never dropping below that baseline resistance, then you knew for sure that your power output was solid, and that you did not cheat. Without a power meter there is no way to know your watts for sure, but at least you've got an idea of how power works.

You can take this concept with you when you are doing intervals in any class, on any terrain, flat or hills. To make sure your power output is at least as high as (or higher than) the first interval, you come back to the original cadence and resistance (or a little higher) of your first interval. The point is to make sure it is NOT lower. If in fact you cannot maintain that output, then it's a message to you that you are fatigued and probably shouldn't do any more intervals.

You know how I always teach you to listen to your bodies!

Next time we will do this at a different cadence, such as 75 rpm. That will require a lower resistance to get the same power output, but can you see how it will be an entirely different challenge?

Remember, though—every resistance knob on every bike is different, so you cannot take your baseline position, where your minute hand was, and expect a different bike to feel the same. It's only relative to that particular bike on that particular ride at that particular cadence. You need to reassess it on each ride if you are on a different bike.

Make sense? Awesome! Now let's stretch...

Pretend You Have Power Playlist and Resource Directory

Song title, artist, album name, source

Song #1 Indian Summer, Big Bud, Infinity + Infinity, 8:50

Amazon, iTunes

Song #2 World on Fire (Junkie XL Club Edit), 4:17

Many versions of this song out there, but you may have to Google it to find this version.

Song #3 Best Friend, The English Beat, What is Beat, 3:05

Amazon, iTunes

Song #4 Silent Agreement, Etnoscope, 135bpm, 5:14

Available for free at www.ektoplazm.com/2010/etnoscope-drums-from-the-dawn-of-time

Song #5 How Far We've Come, Matchbox Twenty, Yourself or Someone Like You, 3:21

All sites

Song #6 Jump N Twist, Freestylers, Painkillers, 5:57

eMusic, Amazon

Song #7 Tusk, Fleetwood Mac, Greatest Hits, 3:32

eMusic, all sites

Song #8 Human (Pink Noise Dub), The Killers, Human Remixes, 7:09

eMusic and iTunes have the *Human Remixes* CD with 5 versions, but not this Pink Noise Dub remix. You can take a longer version of the song and shorten it to 7 minutes on MixMeister or iTunes. The album *Human Remixes* with 12 different “Human” versions is the only one that had this 7:09 Pink Noise Dub (one of my favorites). It can be found on Discogs.com from individual sellers.

Song #9 Are You Happy Now, Michelle Branch, Hotel Paper, 3:50

eMusic, most sites

Song #10 My Dear Masters, Freeman, Buddha Bar III [Disc 2], 7:56

Your local CD store that specializes in global music and hard to find discs. Also, Amazon and iTunes have a longer version on the album *My Dear Masters* that is 9:13 that you can cut down.

Song #11 Fernweh, Schiller, Voyage, 4:44

eMusic, most sites

Song #12 Alegria, Cirque Du Soleil, Alegria, 5:47

Amazon, eMusic

Alternative 4- to 8-ish-minute songs at 132–135 bpm (for a cadence of 66–67 rpm)
(song title, artist, album, song length, bpm)

The Best Revenge (Tocadisco's Macaco Gordo Mix), Fischerspooner, Danse en France, 6:15, 132 bpm
Laughing Buddha, Vanessa-Mae, Subject to Change, 6:09, 134 bpm
Thunderstruck Remix AC/DC, 5:59, 134 bpm
Click, Mittelstandskinder, Weltmusik, 6:22, 135 bpm
I Gotta Feelin (Dave Guetta FMIF Remix), Black Eyed Peas, 6:12, 130 bpm
Empire Hybrid, Disappear Here (Widescreen Edition), Disc 1, 6:01, 135 bpm
Lifelight, Rotersand, Truth Is Fanatic, 4:30, 132 bpm
All Season (FREq Slow Fat Remix), Frogacult, Frogacult (FREq All Season Rmxs), 5:12, 134 bpm
Casio, Junkie XL, Radio JXL: A Broadcast from the Computer Hell Cabin, 5:20, 132 bpm
Vital Signs, Midnight Juggernauts, Vital Signs, 5:33, 132 bpm
Days Go By (Paul Oakenfold Vocal Remix) Dirty Vegas, Greatest Hits And Remixes, 5:33, 135 bpm
Right Here Right Now (Redanka's "66 Voca Mix), Fatboy Slim, Thrivemix, Vol. 3, 5:20, 134 bpm
The Best Revenge (Tocadisco's Macaco Gordo Mix), Fischerspooner, Danse en France, 6:15, 132 bpm
Spiritual Spiral (Carmen Rizzo Remix), Cirque Du Soleil, Delirium, 6:44, 132 bpm
My Spine, Fluke, Puppy, 7:22, 132 bpm
Jetstream (Redanka Mix), Doves, 8:02, 132 bpm
Madonna, Isaac Vs. Ofra Haza (Offer Nissim Remix), 8:58, 133 bpm
Not Fade Away, Saafi Brothers, Play Loud VLS, 8:39, 132 bpm
Blowout, The Crystal Method, Tweekend, 7:58, 134 bpm
Simultaneously (Lauren Flax Remix), MEN, 7:06, 132 bpm
Archer, Osiris Indriya, Entheos Audio Archive 2.0, 7:52, 134 bpm
Penetrate, Vissal, 5:56, 132 bpm
Kincajou, Banco de Gaia, 10 Years (Disc 1), 6:13, 132 bpm
New Born (Paul Oakenfold Mix), Muse, Swordfish Soundtrack, 4:28, 135 bpm
Waterfall (Club Mix), Atlantic Ocean, 5:02, 135 bpm

Quick Profile: Pretend You Have Power (Progressive Hill Repeats)

Length	Cadence	Description
8:50	83	Warm-up and Introduction Indian Summer, Big Bud, Infinity + Infinity, 83 bpm Explain about the tendency to “cheat” without a power meter.
4:17	67	First Climb World on Fire (Junkie XL Club Edit), 135 bpm Resistance load each minute to establish the “baseline” climb by 4 th minute, which they will return to on each climb, never drop below
3:05	83	Recover Best Friend, The English Beat, 83 bpm. Explain the concept of power and
5:14	67	Second Climb Silent Agreement, Etnoscope, 135 bpm Start at baseline, resistance load seated until 3 rd minute, then stand. For final minute, sit back down and return to baseline
3:21	84	Recover How Far We've Come, Matchbox Twenty, 168 bpm
6:04	66	Third Climb Jump N Twist, Freestylers, 132 bpm Begin at baseline. After 1 st minute, alternate seated climb @ baseline and a hard standing climb, 30 seconds each. Pay attention to where the standing climb resistance is (for next climb).
3:32	91	Recover Tusk, Fleetwood Mac, 91 bpm
7:09	66	Fourth Climb Human (Pink Noise Dub), The Killers, 132 bpm Start out in the same hard standing climb as last hill 1 min, then ease up each minute 3 times to return to baseline. Then repeat.
3:50	89	Recover Are You Happy Now, Michelle Branch, 89 bpm
7:56	66	Fifth Climb My Dear Masters, Freeman, 134 bpm Start at baseline, then add and reduce little bits over entire song every 15–30 seconds, occasionally standing up, never dropping below baseline.
4:44	93	Cool-down Fernweh, Schiller, 93 bpm Remind them they never got to “cheat” while pretending they had power!
5:47	*easy*	Stretch Alegria, Cirque du Soleil 84 bpm