Seat Height and Tire Pressure

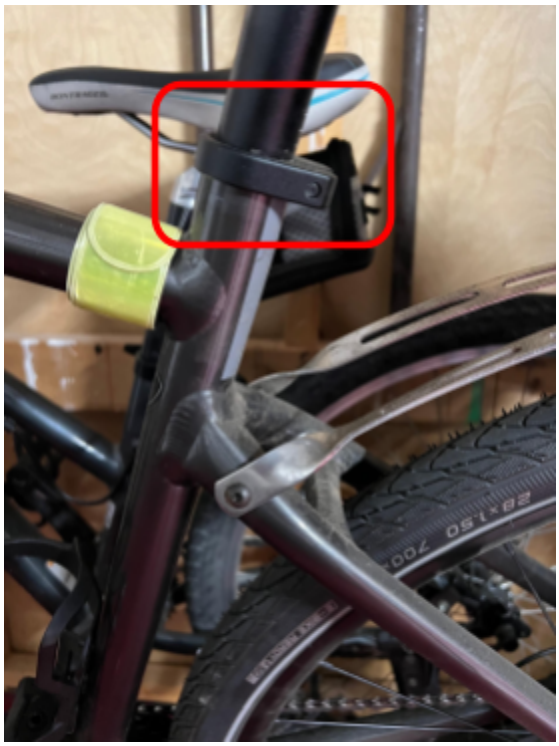
In this week's discussion, we are going to talk about two very common settings which you want to make sure are correct on your bike. These are seat height and tire pressure. These two items have several things in common:

1. They are easy to set.
2. Getting them right makes riding a lot easier
3. Novice bikers almost always have these wrong.

Seat Height

Getting seat height correct is critical, especially when you are going to be riding 8+ hours in a day. Incorrect seat height can lead to knee and / or hip pain and can severely reduce the efficiency and power of your pedaling.

Adjusting seat height is fairly simple. First, locate the seat height adjustment bolt on your bike. This will typically either be a simple bolt which accepts a hex wrench or it will be a quick release mechanism. It will be located at the top of the tube which your seat post slides into. The figure below shows a typical example.



Seat post adjustment bolt (inside the red box)

Once you have located the seat post adjustment bolt, go ahead and loosen it until the seat post can slide up and down. Now you are ready to adjust the height. Initially, you want to set the seat height so that the seat is the same height as your hip while you are standing beside the bike. Use this as a starting point for the next step. Make sure to tighten the bolt when you have the seat height correct.

Climb on the bike and try pedaling. You can either do this by riding the bike in a safe area or have a friend hold the bike up while you pedal backwards. Note the position of your leg when you are at the bottom of the pedal stroke. Ideally, your leg should be slightly flexed at maximum extension. A simple way to dial in the right extension is to use the “heel method”. In this method, you shift your foot forward on the pedal until your heel is aligned to the center of the pedal. Now try pedaling, your goal is to set the seat height so that your leg is just straightening out when you hit the bottom of the pedal stroke. If you find that you need to rock your hips or can’t reach the pedal with your heel over the center of the pedal, then your seat is too high. Loosen the seat post adjustment bolt and lower the seat a little bit and try again. If your leg is still bent when you hit the bottom of the stroke with your heel centered on the pedal, then your seat is too low. Adjust the seat upward.

If you have done this correctly, then when you shift your foot back to the correct pedaling position with the ball of the foot centered on the pedal, you will find your knee is slightly flexed when your foot is at the bottom of the stroke.

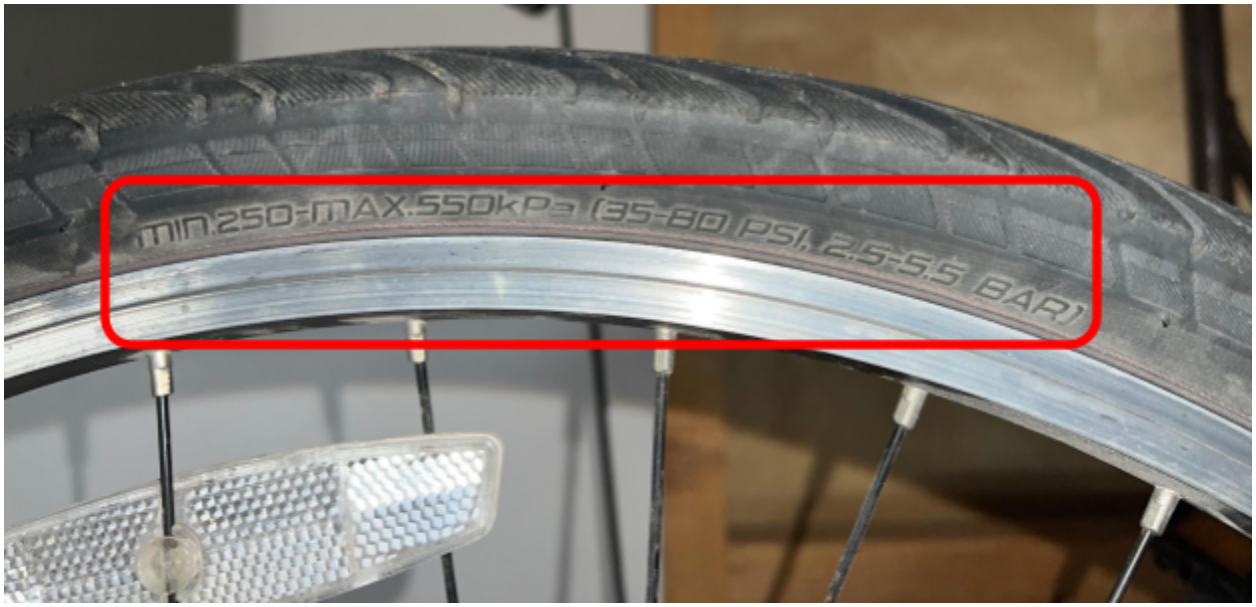
A common problem when we are setting seat height for the fifth graders is that they like to have the seat low so their feet can reach the ground while they are sitting on the seat. This is way too low and will make efficient pedaling much harder. Before adjusting the seat height, get your fifth grader used to being off the seat and straddling the top tube when they are stopped. From this position, they should be able to transition to sitting on the seat and pedaling using the “power pedal” technique we have been teaching you.

Note that for some fifth graders, you may find you are adjusting the seat upward more than an inch. Making a big adjustment like this makes the bike feel different when pedaling and the big change really bothers some riders. If this is the case, try raising the seat a little bit on each ride so the rider can get used to the new height gradually.

Tire pressure

A very common problem we see with new riders is that they have their tire pressure way too low. If you can push in the surface of the tire with your thumb at all, then your tire pressure is too low and you need to pump up the tire. This is frequently because the tires are not being reinflated frequently enough. A bicycle tube is fairly thin, and is actually slightly permeable to air. Over a few day’s time, your tire can lose a significant amount of pressure. We compensate for this by pumping up the tire to the correct pressure before EVERY ride.

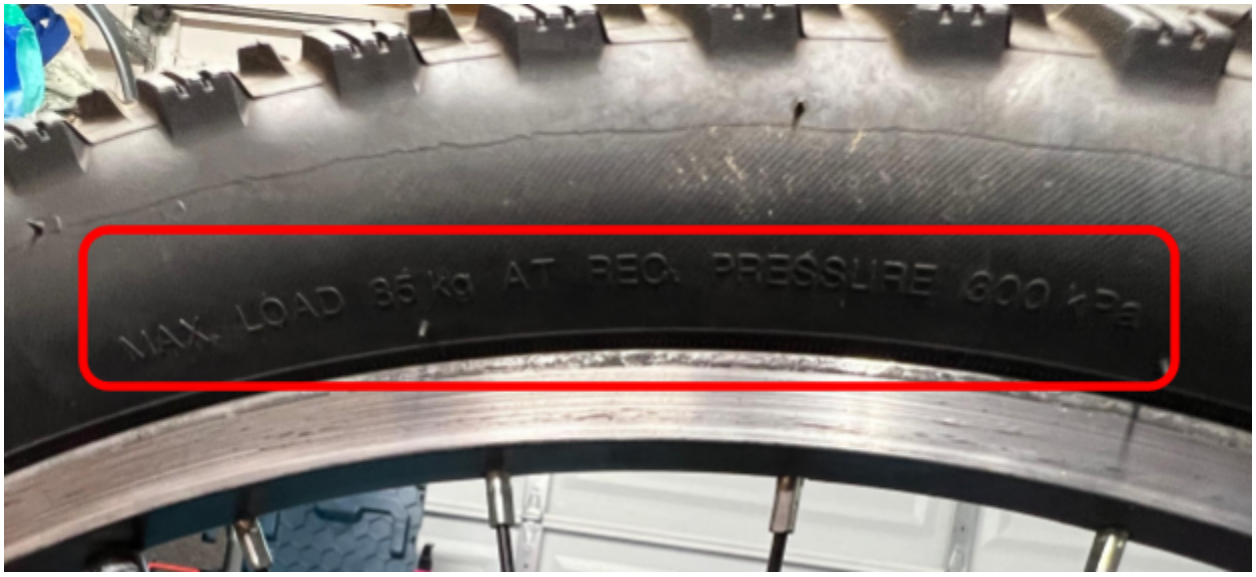
Pumping up your tire is fairly easy. I won't explain how to do this here because there are many different kinds of pumps each with slightly different operating instructions. We will show you how to pump up tires on the training rides. I will tell you, however, how to figure out the correct tire inflation pressure. The pressure you will use depends on your bike tires. Different tires use different pressures. Fortunately, manufacturers print the recommended tire pressure on the side of the tire. Look for a set of text on the side of your tire similar to what I have highlighted in this figure



Tire pressure specification

You are looking for one or two numbers followed by the letters "PSI" which stand for "pounds per square inch". You should inflate your tire to a value inside this range. If you don't know what value to pick, I typically use the max value minus 5 PSI. So, in the figure above, where we can use any pressure between 35 and 80 PSI, I would inflate my tire to 75 PSI.

Now occasionally, you will find tires which do not specify pressure in PSI. The figure below is an example. Here, instead of PSI, they specify kPa. You will also sometimes see "bar". These are just different units of pressure. If you have a tire like this then use google to figure out the correct PSI. In the example below, 300 kPa is specified. Type "300 kPa in PSI" into the google search bar to find out that for this tire we want a max pressure of 43.5 PSI.



Tire pressure specification in kPa