The Pre-Ride Inspection

Sources: www.rei.com/LearnShareDetailArticlesList?categoryId=Cycling&url=rei/learn/cycle/preridef.jsp
www.rei.com/learn/Cycling/rei/learn/cycle/helmetf
REI Contributor: Karl Schumacher, Novara bike tech specialist
Modifications by Guy Jett, Troop 405 Cycling Merit Badge Counselor.

The key to good bike maintenance is catching and addressing small problems before they become big ones. Use this checklist before each ride to keep your bike in peak condition.

What to Check

__ Helmet	__ Chinstrap unbuckled: Snug fit, not loose on head. __ Chinstrap buckled: Sits level on head with front edge no more than 1-inch above eyebrows. With opened mouth, chinstrap pulls helmet snugly down on forehead. __ Condition: Helmet shows no overt signs of a crash, straps in good condition, and new within last 5 years.
__ Tires:	__ Proper inflation; __ Good condition; __ no signs of cuts or excessive wear.
__ Wheels:	__ Quick-release levers secured; __ Wheels true and centered in frame/fork; __ No loose spokes.
__ Brakes:	__ Pads secure and aligned properly; __ Brakes centered; __ Brake levers symmetrical and secure; __ Cables and housing free of kinks/frays; __ Lever travels 1" before hitting handlebar.
__ Handlebar/stem:	__ Aligned and properly secured.
__ Frame/headset:	__ No cracks in frame; __ Headset aligned and properly secured.
__ Saddle/seatpost:	__ Aligned and properly secured.
__ Drivetrain:	__ Check for over- and under-shifts; __ Chain clean and lubed
__ Pedals:	__ Properly secured.
__ Crank arms:	__ Properly secured.
__ Bottom bracket :	__ No side-to-side play; __ Spins freely.
__ Accessories:	__ Secured racks, bottle cages, fenders, etc

A Closer Look

Helmet	With the chinstrap unbuckled a good-fitting helmet will be snug, but not tight. Push the helmet from side to side and back to front. If the helmet shifts in any direction, use the sizing pads provided with the helmet to snug up the fit. Buckle and tighten the chinstrap. It should sit level on your head (not tilted back) with the front edge no more than 1 inch above your eyebrows. Push up on the front edge of the helmet, then up on the back edge. If the helmet moves significantly in either direction, tighten the chinstrap and try again. Open your mouth. If the helmet doesn't press firmly down against your forehead as you do so, tighten further and repeat. Replacement: • Any time your helmet is involved in an accident, it's likely to get damaged. Since damage isn't always easy to spot visually, replace the helmet after any significant impact, even if everything "looks" okay. • You should also replace your cycling helmet after 5 years, even if it hasn't been involved in a crash, since pollution, UV light and weathering can weaken its component parts over time.
Tires	Check for cuts and wear in the tread and sidewall. Look for excessive wear which can decrease traction and improve your odds of getting a flat. Make sure your tires are inflated to the recommended pressure. (Just like on a car, tire pressure ranges can be found on the sidewall of the tire.)
Wheels	Grab the wheel at the top and see if it wobbles from side to side. If there is noticeable play, the hub needs to be adjusted. Now spin the wheel. If you hear a grinding noise, or if the wheel feels rough as it spins, the bearings and/or cones likely need to be repacked or replaced. Spin the wheel again and watch the gap between the rim and the brake pad or caliper. If the rim has a noticeable wobble or an up-and-down movement where the brake contacts the tire, the rim needs to be trued. Check the spokes be squeezing parallel sets. All should have similar tension. **Do not ride a wheel with loose spokes. This must be repaired, which may require special tools.** Unless you're confident in your truing skills, this is best left to a bike pro, such as those at your local REI or professional bike shop.
Brakes	Most brakes use rubber brake pads, which have a line or notch to indicate pad wear. Pads worn down to the line or notch should be replaced. Make sure the brakes are even on both sides of the rim. If not, they may need to be adjusted. Make sure that the brake levers do not touch the handlebars when firmly squeezed. (Disc brakes, visually check that the rotor is clean (do not touch with your fingers). If dirty, wipe with isopropyl alcohol. Also check that the rotor is true and not warped or cracked.) **Caution: Do not ride a bike with brakes that are out of adjustment.**
Handlebar / stem	Make sure the handlebar stem is parallel to the bike's center line and clamped tight enough that the bar can't be twisted out of alignment.
Frame / headset	Look the frame over for cracks. Use the front brake to hold the bike still while you rock the bike back and forth. Any noticeable play means the headset (steering bearings) needs to be adjusted. **Caution: Do not ride a bike with a cracked frame or loose headset.**
Saddle / seatpost	Make sure the saddle and post are parallel to the bike's center line and clamped tight enough that you can't twist them out of alignment.

Drivetrain Chain & Shifting	Check the chain for weak or bent links. Rotate the cranks backward and watch the links as they pass over the rear derailleur (where the chain makes its tightest turns). Bad links will hitch a little as they pass. You can use a chain tool to loosen any links that stick. Run the chain through again. If it still hitches, see a bike pro to have the links repaired, or replace the chain. Shift through the gears as you turn the pedals. As you shift, the chain should transfer smoothly from gear to gear. If it doesn't, you may want to adjust your derailleurs or to take it to a bike shop. Do this for both the front and the rear derailleurs.
Crank arms	These attach the pedals to the bike. Give each a pull. If both cranks have noticeable play, you probably need to have the bottom bracket adjusted. If just one crank is loose, the crank itself likely needs servicing which requires special tools. **Caution: Do not ride a bike with a loose crank.**
Bottom bracket	This contains the bearings that the crank uses to turn. Check for any lateral or side-to-side play and adjust or replace if necessary. Make sure the spindle (bottom bracket axle) spins freely. Repairs require the crank to be removed which requires special tools.

You're done. If your bike has passed inspection, then get out and ride!