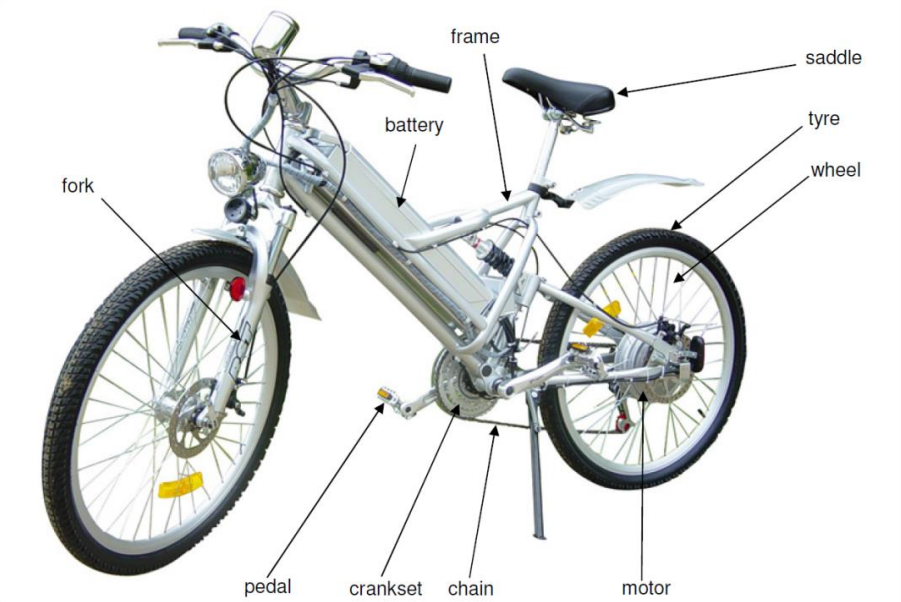
Electric bike

Technology in English

Goal: know the main vocabulary about an electric bike and be able to describe how it works.

1. Part one of the video (00:00 → 00:50)

✍ Which components are mentioned in the video (*electric bike*)? Underline them on the picture below.



Video electric bike

✍ **The electric motor**: fill in the blanks (one blank = one word)
The electric motor is made up of a _____ attached to the wheel, and a _____ attached to the frame.

✍ **The battery**: what voltage does it supply to the motor? _____ V.

✍ What is the maximum speed the electric bike can go? US units: _____ FR units: _____

✍ What distance does the battery allow you to travel? US units: _____ FR units: _____

✍ Do you know what materials are used to make the bike parts (frame, crank …)? Tick the right answers:
❒ steel ❒ wood ❒ copper ❒ carbon ❒ titanium ❒ plastic ❒ aluminum alloy

2. Part two of the video (00:50 → 02:10)

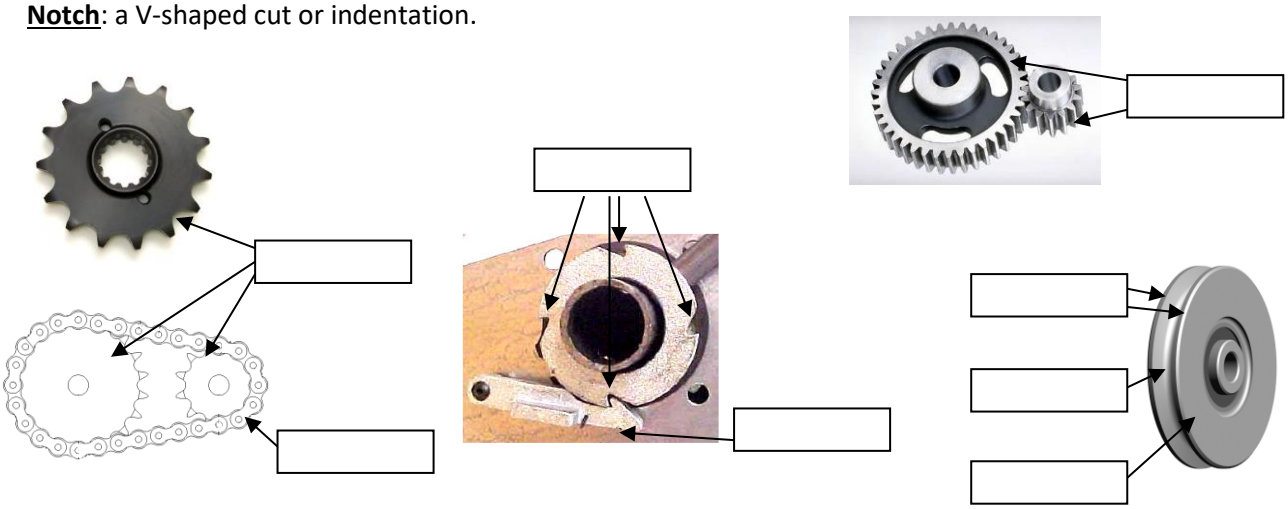
✍ Fill in the blanks while and after listening to the video (one blank = one word).

"The _____ of the _____ is attached to the frame of the electric bike. It's fixed, it doesn't _____. The _____ _____ is the piece that moves: it turns around the _____ and is attached to the _____ _____ of the electric bike. When the rotor turns, the wheel _____ _____.
Attached to the rotor is the first half of the _____ _____. The second half is in the inside of the sprockets. When the _____ _____, the chain moves the _____. The notches at the center of the sprockets push on the pawls - two little mobile _____ _____ _____ on each side of the first half of the freewheel mechanism. Since the _____ push on the _____, the _____ of this sprocket is _____ to the rotor, and the wheel turns."

Electric bike

✍ Read the following definitions and find the correct place to put the **underlined vocabulary** on the pictures below:

- **Sprocket**: profiled wheel with teeth that meshes with a **chain** or other perforated or indented material. It is distinguished from a gear in that sprockets are never meshed together directly, and differs from a pulley in that sprockets have teeth.
- **Gear**: a rotating machine part having cut teeth (or cogs), which mesh with another toothed part in order to transmit torque. Two or more gears working in tandem are called a transmission and can produce a mechanical advantage through a gear ratio.
- **Pulley**: (also called a sheave or a drum) mechanism composed of a wheel on an axle or shaft that may have a **groove** between two **flanges** around its circumference. A rope, cable, belt, or chain usually runs over the wheel and inside the groove.
- **Pawl**: a pivoted tongue or lever that is adapted to fall into notches or interdental spaces so as to permit motion in only one direction.
- **Notch**: a V-shaped cut or indentation.



3. Part third of the video (02:10 → 02:43)

✍ Fill in the blanks while and after listening to the video (one blank = one word).

"If the motor is _____ at full _____, and the cycle _____ _____ and starts pedaling nor together, the chain _____ _____ moves the sprockets. They can do stand still, the rotor turns at full speed.

Since the pawls are _____, they slide across the _____. So, the _____ _____ of the rotor is not transmitted to the sprockets, which _____ _____. The chain doesn't move, and the crankset is _____ _____ from the _____ _____ thanks to the freewheel mechanism."

✍ Complete the structural diagram below with the following vocabulary:

Battery – Chain – Crankset – DC Motor – Force sensor – Pedal – Speed sensor – Sprockets