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Grade: 10
Subject: Power Technology
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Introduction

Most of you have now removed your wheel and taken the hub apart. I know, also, a few of you have tried taking apart your second hub. I believe one of you got one side of that hub apart with the bearings, but the other side was stuck. This is because the cassette is still on the hub and we cannot take it apart before removing the cassette. Today I am going to show you how to remove the cassette in order to take apart the rear hub. We will also be cleaning and rebuilding our hubs. We have cleaning stations for your parts. When you are at the point of having finished your drawing and taken apart your hubs, you will clean them and begin putting them back together.

Goals

- Identify methods to improve their abilities to work with others during problem-solving activities
- Sharing and maintenance of an efficient cooperative workspace
- Demonstration of safe work habits and attitudes, including using tools and equipment with an awareness of their impact on others

Objectives

Students will be able to:

- Remove cassette safely, without damaging wheel
- Clean and inspect hubs, bearings and races for damage
- Grease and rebuild hub

Lesson strategy

Round table discussion Demonstration
Hands on work

Demonstration

Gather students around demo bike	2 mins
Have a student remove the rear wheel as you introduce	3 mins
Difference between Cassette and Free Wheel	2 mins
Removal tools	1 min

The demonstration will allow students to see first hand the process from start to finish.

Demonstrate removal	5 mins
Demonstrate cleaning	3 mins
Demonstrate reinstallation	3 mins

Instructional materials

Bike
Cassette remover
Wheel with cassette
Grease

Lesson procedure

Introduction	5 mins
Demonstration – Rebuilding hub	10 mins
Work time	30 mins
Demonstration – Removing cassette	5 mins
Work time	15 mins
Clean up	10 mins
Closing	5 mins

Evaluation/Assessment

Hub worksheet	The worksheet will have diagrams for students to label, and review the procedure.
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Special safety

Proper rebuilding of hub is important as it ensures safety of bicycle.

Integration

None

Implications

Learning to take apart and rebuild parts rather than throwing them out and replacing them is important. It is hoped that students appreciate the need to develop the skill to rebuild and refurbish parts. Students should think critically about this culture of always just replacing parts and making things disposable.

New terms

Cassette – rear set of cogs must be mounted on free hub
Free wheel – rear set of cogs, which thread directly on to hub

Questions

Ask class the names of parts as we go through the demonstration

Summary

Have students summarize what they learned directly after the demonstration