

## Core Skills Analysis

### Technical Skills

- Natasha developed hands-on skills by engaging with different tools and equipment necessary for car repairs, enhancing her understanding of automotive mechanics.
- She learned the importance of safety protocols in a practical setting, which is crucial when working with potentially dangerous machinery and tools.
- Through this activity, Natasha improved her problem-solving skills, particularly in diagnosing issues and implementing solutions on various car models.
- The experience allowed her to apply theoretical knowledge of vehicles practically, bridging the gap between classroom learning and real-world application.

### Science

- Understanding the mechanical system of a car gave Natasha insight into physics concepts such as force, motion, and energy transfer.
- She observed chemical reactions, such as how exhaust systems work and the importance of fuel types and oil viscosity in engine efficiency.
- The activity provided practical experience in thermodynamics, specifically in how heat is generated and managed within an engine.
- By recognizing how different components of cars interact, Natasha gained a foundational understanding of systems thinking and correlations within science.

### Mathematics

- Natasha applied measurement skills by calculating the dimensions needed for parts and understanding tolerances for fit and function.
- She utilized basic arithmetic when managing costs for repairs, essential for budgeting and resource allocation in automotive work.
- The activity involved analyzing data from instruments, like pressure gauges and temperature readings, reinforcing her ability to interpret numerical information.
- She learned about ratios and proportions when mixing fluids and performing maintenance tasks, fostering her quantitative reasoning skills.

### Tips

To further enhance Natasha's learning experience, it would be beneficial for her to explore advanced automotive courses or workshops that dive deeper into specialized topics like electric vehicles or automotive technology. Parents or teachers can facilitate field trips to local repair shops or automotive shows, allowing her to network with professionals in the field. Additionally, engaging in DIY projects at home, such as basic maintenance tasks on family vehicles, can reinforce her practical skills and encourage independence. Exploring online resources or tutorials that demonstrate complex repairs could also broaden her knowledge and confidence in car mechanics.

### Book Recommendations

- [Auto Repair For Dummies](#) by Deanna Sclar: A comprehensive guide that covers a broad spectrum of car repair tasks, providing clear instructions and useful illustrations.
- [How Cars Work](#) by Tom Newton: An illustrated guide detailing the mechanics of automobiles, including engine functions and the basics of vehicle maintenance.
- [The Complete Book of Automotive DIY Projects for Car and Motorcycle](#) by Glen Gordon: This book presents engaging projects for car and motorcycle enthusiasts, offering step-by-step guidance on various repairs and modifications.

## Learning Standards

- ACARA Science Understanding: Physical Sciences - Explore how forces and energy work in different systems (Code: ACSSU155)
- ACARA Technologies - Investigate the functional design of products and processes (Code: ACTDEK001)
- ACARA Mathematics - Use measurement concepts and techniques to solve problems (Code: ACMNA013)