Becoming an Automotive Service Technician

Description

Becoming an automotive service technician requires physical and mental perseverance, ambition, a willingness to work in adverse conditions and a willingness to take the necessary steps to eventually reach the level of a certified tradesman. For this Activity Plan it is suggested that the students work on a small library research assignment.

This assignment should not take more than two classes; the goal is for students to have some idea of the wide variety of options and working conditions that an automotive service technician may face.

Lesson Outcomes

The student will be able to:

• Recognize that becoming an automotive service technician takes years of hard work and effort
• Have a good idea of the working conditions of an automotive service technician
• Understand what is required, and the order of events necessary to become an automotive service technician

Assumptions

The students will have been informed in advance that this Activity Plan material involves completing a small research assignment.

Terminology

Apprenticeship: the term used to describe the graduated step-like progress in becoming an automotive service technician.

Automotive parts store: an automotive business that primarily concentrates on selling various parts from a wide variety of manufacturers.

Automotive specialty shop: a repair facility that specializes mainly in one type of repair, such as a muffler and exhaust shop, oil change shop or tire shop.

Car dealership: a business that sells vehicles, repairs vehicles and sells parts for specific brands of vehicles.

Flat rate: today’s mechanics are primarily paid on a flat rate system. This means they are paid for the quantity of work that they can produce, not based on an hourly wage.
Fleet maintenance: a contract to a repair facility that maintains and repairs a fleet of vehicles owned by another business (e.g., a taxi fleet or trucking fleet).

Independent garage: a business that primarily repairs vehicles of various different manufacturers.

Quick lube centre: an automotive business that sells regularly scheduled maintenance requirements (e.g., “McQuick” lube centres).

Red Seal Interprovincial Trades Ticket: the qualification designated to allow a person to work as a journeyman automotive service technician in any province in Canada.

Repair facility: a vehicle dealer, independent garage or service station.

Service station: a business that primarily repairs vehicles of various different manufacturers but also sells gas. It is owned by the oil or gas company.

Vehicle dealer: a business that sells vehicles, repairs vehicles and sells parts for specific brands of vehicles.

**Estimated Time**

1–2 hours

**Recommended Number of Students**

20, based on the *BC Technology Educators’ Best Practice Guide*

**Facilities**

Computer lab or library lab

**Resources**

Automotive Mechanic—Working in Canada
[https://www.youtube.com/watch?v=kHORanjPxQc](https://www.youtube.com/watch?v=kHORanjPxQc)

Red Seal Program
[www.red-seal.ca](http://www.red-seal.ca)

WorkBC
[www.workbc.ca](http://www.workbc.ca)

Trade National Occupational Analysis (NOA)—Automotive Service Technician
[http://www.red-seal.ca/trades/autoservtech/2011n.4.1_.4v.2rv.3.2w-eng.html](http://www.red-seal.ca/trades/autoservtech/2011n.4.1_.4v.2rv.3.2w-eng.html)
Trades and Apprenticeship—Employment and Social Development Canada (ESDC)

Careersintrades.ca
www.careersintrades.ca

Additional Resources

• Bring in a guest speaker from the automotive trades.
• Organize a field trip: Bringing the class into an industry setting such as a busy dealership or independent garage would be a great optional activity.
Activity

The teacher will give a brief explanation of the computer lab activity. The worksheet provided is designed to take approximately 1–2 hours. There are several websites listed on the sheet that students are directed to for answers. Some reflective questions are also asked. These answers are not found on any particular website. They are designed to get students thinking a little deeper about working as an AST and what they have learned in this assignment.

Preparing to Become an Automotive Service Technician

1. What type of shop courses would you take in high school if you were interested in becoming an automotive service technician?

2. What type of academic courses would you take in high school if you were interested in becoming an automotive service technician?

3. Do you need your grade 12 graduation in order to become an automotive service technician?

4. List three different activities or hobbies at home that would help you become an automotive service technician.
   a. 
   b. 
   c. 

Youth Explore Trades Skills
5. What type of people would you talk to or question if you were interested in becoming an automotive service technician?

6. List three different part-time jobs that would assist you in becoming an automotive service technician.
   a. 
   b. 
   c. 

7. List three different full-time jobs that would assist you in becoming an automotive service technician, other than full-time automotive mechanic positions.
   a. 
   b. 
   c. 

8. What qualities, skills or talents would a prospective employer want to recognize in you if they were to consider giving you an apprenticeship to become an automotive service technician?
Automotive Service Technician Apprenticeship Training

Answers to questions 1 and 2 can be found at
www.careersintrades.ca/

1. What is an apprenticeship?

2. Are you interested in a career as an AST? Explain your answer.

Answers to questions 3–5 can be found at
http://www.itabc.ca/ Search for Automotive Service Technician, then open the Program Profile.

3. How many years of apprenticeship does it take to become an automotive service technician?
4. How many weeks of technical training do I need to do during my apprenticeship to become an automotive service technician?

5. How many hours of on-the-job training do I need to do during my apprenticeship to become an automotive service technician?

Answers to question 6 can be found at www.tradetrainingbc.ca/

6. Where in British Columbia can I complete the technical training portion of the apprenticeship training? (List four separate locations.)
   a. 
   b. 
   c. 
   d. 
National Occupational Analysis (NOA) and Red Seal Certification

Answers to questions 1–4 can be found at www.red-seal.ca, including the information specifically for students.

1. What are the five objectives of the National Occupational Analysis (NOA)?
   a. ________________________________________________________________
   b. ________________________________________________________________
   c. ________________________________________________________________
   d. ________________________________________________________________
   e. ________________________________________________________________

2. List three out of the eight categories of information that the NOA outlines as vital for every tradesperson.
   a. ________________________________________________________________
   b. ________________________________________________________________
   c. ________________________________________________________________

3. What is the NOA's code number (NOC) for the automotive service technician?
4. Name five benefits of having a Red Seal Certification.
   a. 
   b. 
   c. 
   d. 
   e. 

5. In your own words, what advantage would there be to your having a Red Seal Trade Certification?
Answers to questions 6 and 7 can be found at

6. Scroll through the standard tool kit in Appendix B: Tools and Equipment. On the basis of this list, what important commitment would you need to make if you decide to become an AST?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7. Scroll through Appendix C: Glossary. How many of these terms do you already know? This is a small number of the acronyms an AST comes in contact with. Find out what the following additional acronyms stand for:

CVT:____________________________________________________________________

ABS:___________________________________________________________________

SAE:___________________________________________________________________

HC: ___________________________________________________________________

VIN: __________________________________________________________________

TSB: __________________________________________________________________
Automotive Service Technician

Answers to questions 1–10 can be found at www.workbc.ca (including the video)

(Hint: Click on Browse Career Profiles box partway down the page. Then type the correct NOC code into the box.)

1. What are the responsibilities of an automotive service technician?

2. As an AST, other than inside an automotive garage, what environments could you possibly end up working in?

3. List several ways you think that cold could have a negative effect on an AST, if he or she is not working inside a heated automotive garage.
4. Besides working on vehicles and having knowledge about them, what are three personality traits that are important to be successful as an AST?

a. 

b. 

c. 

5. List four different areas where an AST might work.

a. 

b. 

c. 

d. 

6. What kind of salary does an AST make?

7. Discuss in a sentence or two what you think the AST work environment might be like.
8. Describe each of these required skills for an AST.
   a. Manual dexterity
   b. Spatial perception
   c. Detail-oriented
   d. Object-oriented
e. Motor coordination

Answers to question 9 can be found at
www.careersintrades.ca/index.php?page=transportation&hl=en_CA

9. List five other careers related to AST.
   a. 
   b. 
   c. 
   d. 
   e. 

10. Choose any two of the five careers you listed in question 9 and compare/contrast them with an AST. Include skills, environment and wages in your answer.
Questions on Workplace Safety

1. List three different activities where you think an AST might get injured.
   a. 
   b. 
   c. 

2. Do you think that working as an AST is a safe job? Give a reason for your answer.

3. How do you think these injuries could be prevented?
Answer Key

Preparing to Become an Automotive Service Technician

1. What type of shop courses would you take in high school if you were interested in becoming an automotive service technician?
   • Any shop course would be of benefit (working with your hands and tools) However the following courses would be particularly beneficial:
     – Power Mechanics 9, 10,
     – Automotive 11, 12
     – Metalwork 9, 10, 11, 12
     – Drafting 9, 10, 11, 12

2. What type of academic courses would you take in high school if you were interested in becoming an automotive service technician?
   • Math 11, 12
   • Chemistry 11, 12
   • Physics 11, 12
   • English 11, 12

3. Do you need your grade 12 graduation in order to become an automotive service technician?
   • Grade 12 is recommended

4. List three different activities or hobbies at home that would help you become an automotive service technician.
   • Answers may vary. Possible answers include:
     a. Working on the family car or boat engine
     b. Working on lawnmowers or edge trimmers (weed wackers)
     c. Fixing anything that needs fixing (toaster, RC car, etc.)

5. What type of people would you talk to or question if you were interested in becoming an automotive service technician?
   • Parents, shop teacher, school counselor, school career counsellor, mechanic at a local garage

6. List three different part-time jobs that would assist you in becoming an automotive service technician.
   • Answers may vary. Possible answers include:
     a. Pumping gas
     b. Car wash
     c. Lawnmower repair shop
7. List three different full-time jobs that would assist you in becoming an automotive service technician, other than full-time automotive mechanic positions.

- Answers may vary. Possible answers include:
  a. Mr. Lube/Jiffy Lube
  b. Car sales lot
  c. Auto body shop

8. What qualities, skills or talents would a prospective employer want to recognize in you if they were to consider giving you an apprenticeship to become an automotive service technician?

- Answers may vary. Possible answers include:
  - Good communicator—verbal and written
  - Good with tools
  - Some kind of related experience/interest
  - Punctuality and commitment

Automotive Service Technician Apprenticeship Training

Answers to questions 1 and 2 can be found at

1. What is an apprenticeship?

   Apprenticeship is a form of post-secondary training that teaches the skills and competencies necessary to perform tasks to an industry standard. Apprenticeship training provides the opportunity for hands-on learning under the direction of a certified journeyperson, with the ability to earn while you learn. The training combines alternating periods of on-the-job (80 to 85%) and technical training (15 to 20%). Technical training can occur at a college, a union training centre, a private trainer or online. Once the apprentice has completed the required hours and/or modules for the trade, the apprentice can write a certification exam. Apprenticeship is regulated by the provinces and territories, with 13 unique systems geared to the labour market needs and conditions in each region of Canada.

2. Are you interested in a career as an AST? Explain your answer.

- Answers will vary.

3. How many years of apprenticeship does it take to become an automotive service technician?

- Four years
4. How many weeks of technical training do I need to do during my apprenticeship to become an automotive service technician?
   - Level 1: 210 hours (7 weeks)
   - Level 2: 180 hours (6 weeks)
   - Level 3: 210 hours (7 weeks)
   - Level 4: 180 hours (6 weeks)
   - Total: 780 hours (26 weeks)

5. How many hours of on-the-job training do I need to do during my apprenticeship to become an automotive service technician?
   - Level 1: 1500 hours
   - Level 2: 3000 hours
   - Level 3: 4500 hours
   - Level 4: 6000 hours
   - Total: 15,000 hours

Answers to question 6 can be found at www.tradestrainingbc.ca/

6. Where in British Columbia can I complete the technical training portion of the apprenticeship training? (List four separate locations.)
   a. Lower Mainland:
      - Vancouver Community College
      - BCIT (Burnaby campus)
      - UFV
      - Kwantlen Polytechnic
   b. Vancouver Island:
      - Camosun College (Interurban Campus)
      - Vancouver Island University (Nanaimo)
   c. Southern Interior:
      - Okanagan College (Kelowna)
      - College of the Rockies (Level 4 only)
      - Thompson Rivers University (Level 4 only)
   d. Northern Interior:
      - Northern Lights College
      - College of New Caledonia
      - Northwest Community College
National Occupational Analysis (NOA) and Red Seal Certification Questions

Answers to questions 1–4 can be found at www.red-seal.ca, including the information specifically for students.

1. What are the five objectives of the National Occupational Analysis (NOA)?
   a. To identify and group the tasks performed by skilled workers in particular occupations
   b. To identify those tasks that are performed by skilled workers in every province and territory
   c. To develop instruments for use in the preparation of interprovincial standards, Red Seal examinations and curricula for training leading to the certification of skilled workers
   d. To facilitate the mobility, in Canada, of apprentices and skilled workers
   e. To supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations

2. List three out of the eight categories of information that the NOA outlines as vital for every tradesperson.
   • Trade activities (tasks and sub-tasks)
   • Skills and knowledge requirements
   • Essential skills
   • Safety information
   • Trends affecting the trade
   • Technical terms
   • Names of tools and equipment
   • Acronyms

3. What is the NOA’s code number (NOC) for the automotive service technician?
   • NOC: 7321

4. Name five benefits of having a Red Seal Certification.
   a. The Red Seal is the national standard of excellence for skilled trades in Canada.
   b. The Red Seal is a leading endorsement for skilled workers in Canada and provides a tradesperson with a competitive hiring advantage.
   c. A Red Seal endorsement is a nationally recognized standard that helps tradespeople obtain good, well-paying jobs across Canada.
   d. In many cases, achieving a certificate of qualification in a Red Seal trade is equal in value to the completion of college certification in terms of trade knowledge and skill.
   e. Red Seal–endorsed tradespeople obtain easily transferable skills, ideal for new workers interested in career development and industry mobility.
5. In your own words, what advantage would there be to your having a Red Seal Trade Certification?
   • Answers will vary.

6. Scroll through the standard tool kit in Appendix A: Tools and Equipment. On the basis of this list, what important commitment would you need to make if you decide to become an AST?
   • You need a lot of tools that cost a lot of money.
     Note: When discussing this question with the class you should clarify the following: most tools in the standard kit would be bought by the AST. Most shop tools and equipment would be supplied by the repair facility. Not all tools required by the AST need to be bought right away. Tools bought by an AST currently are tax deductible.

7. Scroll through Appendix B: Glossary. How many of these terms do you already know? This is a small number of the acronyms an AST comes in contact with. Find out what the following additional acronyms stand for:
   - CVT: continuously variable transmission
   - ABS: antilock braking system
   - SAE: Society of Automotive Engineers
   - HC: Hydrocarbon
   - VIN: vehicle identification number
   - DVOM: digital voltage ohmmeter
   - TSB: technical service bulletins

Automotive Service Technician

Questions from the WorkBC website
Answers to questions 1–10 can be found at www.workbc.ca (including the video)

(Hint 1: Type in the correct NOC code in the Career Profiles box partway down the page.)
(Hint 2: Click on the plus sign once you are into the profile to expand the information boxes.)

1. What are the responsibilities of an automotive service technician?
   • ASTs inspect, diagnose and repair vehicles, including mechanical, electrical and electronic components.

2. As an AST, other than inside an automotive garage, what environments could you possibly end up working in?
   • Outside in all weather conditions. On the street or side of road, on a boat, in the dirt or mud.
3. List several ways you think that cold could have a negative effect on an AST, if he or she is not working inside a heated automotive garage.
   - Working outside on vehicles that a) will not start or b) will not fit into the garage because it is full of other cars
   - Working on a cold floor (bad for the back)
   - Working with cold metal tools or cold metal parts (bad for the hands)
   - Drafty and windy conditions
   - Dressing properly—cannot be too bulky, still need flexibility of hands and body
   - Melting snow and ice dripping onto you

4. Besides working on vehicles and having knowledge about them, what are three personality traits that are important to be successful as an AST?
   a. Need to be able to troubleshoot and solve problems
   b. Must be able to work independently or as part of a team
   c. Need customer service and communication skills

5. List four different areas where an AST might work.
   - Vehicle dealerships
   - Independent garages
   - Fleet maintenance companies
   - Service stations
   - Automotive specialty shops (e.g., muffler or tire shops)
   - Transportation companies

6. What kind of salary does an AST make?
   - Provincial average salary $44,000–$53,000 (Source: Census, 2006)
   - Provincial average full-time hourly rate: $12.75/hr–$35.00/hr (Source: Working in Canada Wage Report)
   - Most ASTs are paid at a flat rate.

7. Discuss in a sentence or two what you think the AST work environment might be like.
   - 35- to 40-hour work week; this may include evenings and/or weekends
   - Can be a drafty, noisy and dirty environment
   - Involves considerable bending, kneeling and lifting
8. Describe each of these required skills for an AST.

a. Manual dexterity
   Can you move and turn objects skilfully with your hands?
   • The ability to skilfully use your hands. You can move and turn objects and use hand tools.
   • Use hands skilfully
   • Manipulate objects with your hands
   • Use hand tools
   • Move and turn objects
   • Sort objects

b. Spatial perception
   Can you draw things accurately?
   • The ability to perceive or react to the size, distance or depth of the environment
   • Recognize size, distance or depth
   • Can imagine a 3D form from a diagram
   • Awareness of surrounding environment
   • The ability to draw things accurately
   • Understand geometry

c. Detail-oriented
   Can you pick out differences in two similar pictures?
   • The ability to see fine details in objects
   • Eye for detail
   • Recognize small parts
   • See fine detail in objects
   • Visually perceptive
   • Inspect objects

d. Object-oriented
   Do you like to build and/or repair things?
   • You are interested in finding out how things operate and how they are built.
   • Interested in how things work
   • May work with tools, instruments and machinery
   • Like to build and repair according to specifications
e. Motor coordination
   Do you have good hand-eye coordination?
   • The coordination of large, small and fine motor movements using the body (arms, legs, hands, etc.)
   • Hand-eye coordination
   • Gross and fine motor movement
   • Can take things apart and put them back together

Answers to question 9 can be found at
www.careersintrades.ca/index.php?page=transportation&hl=en_CA

9. List five other careers related to AST.
   • Agricultural Equipment Technician
   • Aircraft Maintenance Mechanic
   • Auto Body Repairer
   • Automotive Electrical Technician
   • Automotive Glass Technician
   • Automotive Painter
   • Heavy Duty Equipment Technician
   • Heavy Equipment Operator
   • Inboard/Outboard Mechanic
   • Motor Vehicle Body Repairer (Metal and Paint)
   • Motorcycle Mechanic
   • Parts person
   • Recreational Vehicle Service Technician
   • Small Engine and Equipment Mechanic
   • Transport Refrigeration Mechanic
   • Transport Trailer Technician
   • Truck and Transport Mechanic

10. Choose any two of the five careers you listed in question 9 and compare/contrast them with an AST. Include skills, environment and wages in your answer.
    • Answers will vary.
Questions on Workplace Safety

1. List three different activities where you think an AST might get injured. Answers may vary, but could include:
   - Working with harsh chemicals such as solvents
   - Burns from hot engine parts or exhaust
   - Crushed, broken, pinched or bruised hands/fingers/legs/toes from heavy engine parts
   - Broken or skinned knuckles and fingers from slipping tools
   - Hitting your hand with a hammer instead of the tool
   - Getting electrical burns from wearing jewellery and touching live wires
   - Getting chemical burns from battery acid
   - Getting arthritis in the fingers or wrist from overuse
   - Being crushed by a car falling off a jack, jackstands or hoist
   - Other answers as deemed acceptable

2. Do you think that working as an AST is a safe job? Give a reason for your answer.
   - Answers will vary.

3. How do you think these injuries could be prevented?
   - Answers will vary.