Automotive Painters

NOC 7322

Introduction

Automotive painters prepare body surfaces on motor vehicles, and apply paint and other coatings. They are employed by automobile dealerships, automobile body repair shops and automobile appraisal centres.

The most important Essential Skills for Automotive Painters are:
- Document Use
- Decision Making
- Job task planning and organizing

Document Sections
- Reading Text
- Document Use
- Writing
- Numeracy
- Oral Communication
- Thinking Skills
    - Problem Solving
    - Decision Making
    - Critical Thinking
    - Job Task Planning and Organizing
    - Significant Use of Memory
    - Finding Information
- Working with Others
- Computer Use
- Continuous Learning
- Notes

A. Reading Text

Reading Text

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • read instructions for use and storage on the labels of paints and thinners. (1) • read letters and comment cards written by customers to determine the reasons for high or low satisfaction levels. (1) , (daily) • read memos to learn about work schedules, performance goals and changes to operating procedures. (2) • read about new auto body products and equipment in brochures and pamphlets. (2) • read notes on work orders. For example, they may read notes from shop supervisors requesting the application of special pin striping designs. (2)
Most Complex	2 to 3	• read short articles in trade magazines and newsletters to stay informed about new products. For example, they may read about how new paint booth technology is expected to save time and money. (2) • read about the safe handling and use of fillers, thinners, cleaners and paints in material safety data sheets and product information sheets. (2) • read instructions for assembly, use, cleaning and repair in equipment manuals. For example, they may read instructions about the assembly and safe use of air respirators. (3)

Reading Summary

The symbol √ is explained in the Use of Symbols section.

Type of Text	Purpose for Reading			
	To scan for specific information/To locate information	**To skim for overall meaning, to get the 'gist'**	**To read the full text to understand or to learn**	**To read the full text to critique or to evaluate**
Forms	√	√		
Labels	√	√	√	
Notes, Letters, Memos	√	√	√	
Manuals, Specifications, Regulations	√	√	√	
Reports, Books, Journals				

B. Document Use

Document Use

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • scan product labels to locate specifications such as mixing ratios, drying times and expiration dates. (1) • check order forms to identify vehicles which they have to paint, and the promised delivery date for each. (1) • record preparation and paint job times on time sheets and work orders. (1) • may make lists of supplies to be ordered such as tapes, paints and sand papers. (1) • may refer to viscosity tables to determine the thickness of primers and paints using drip-rates. (2) • read tables to determine the drying times and temperatures for primers, paints and clear coats. (2)
Most Complex	2	• refer to codebooks, colour code labels and microfiche to produce the desired paint formula. (2) • complete forms to record vehicle makes, paint codes, dates, the equipment used and any unusual problems encountered. (2) , (daily) • use colour chips to locate paint codes for non-standard vehicle colours. They locate paint codes by visually comparing different colour chips to a vehicle's paint colour until a direct match is found. (2) , (daily) • use colour wheels and colour charts to determine the various tints required to produce a desired colour. (2)

Examples
- may make sketches to help customers visualize how colours and pin stripping could be used to create custom paint designs.

Document Use Summary
- Read signs, labels or lists.
- Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or text of a paragraph or more. The list of specific tasks varies depending on what was reported.
- Read tables, schedules or other table-like text (e.g., read work shift schedules).
- Obtain specific information from graphs or charts.
- Make sketches.
- Obtain information from sketches, pictures or icons (e.g., computer toolbars).

C. Writing

Writing

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • write short statements on product defect forms to describe defective materials. For example, they may note that a particular batch of paint does not adhere properly to primed surfaces. (1) • write short notes on work orders to explain work that was carried out, note any irregularities or deviations from the estimates and point out additional repairs needed. For example, they may note that a job took longer because additional structural damage was uncovered during a repair. (2)
Most Complex	2	• may write work estimates. They use short, concise statements to detail the condition of a vehicle and to outline the proposed work. (2) • may outline the events leading to workplace accidents and incidents, and actions taken afterwards on reporting forms. (2)

Writing Summary

The symbol √ is explained in the Use of Symbols section.

Length	Purpose for Writing						
	To organize/ to remember	**To keep a record/to document**	**To inform/ to request information**	**To persuade/ to justify a request**	**To present an analysis or comparison**	**To present an evaluation or critique**	**To entertain**
Text requiring less than one paragraph of new text	√	√	√				
Text rarely requiring more than one paragraph		√	√				
Longer text							

D. Numeracy

The symbol √ is explained in the Use of Symbols section.

Numeracy

Tasks	Complexity Level	Examples
√ Money Math	1 to 2	Automotive Painters
		• may pay cash on delivery to suppliers for parts, materials, and supplies ordered. (Money Math), (1)
√ Scheduling, Budgeting & Accounting Math	2	• may check quantities, prices and totals on supplier invoices and approve them for payment. (Money Math), (2)
		• may create schedules to plan and control the amount of time spent on vehicles. (Scheduling, Budgeting & Accounting Math), (2)
√ Measurement and Calculation Math	1 to 2	• may tally hours on work orders to determine the total amount of billable time. (Measurement and Calculation Math), (1)
		• may measure the viscosity of primers and paints by timing drip-rates using Zahn cups. (Measurement and Calculation Math), (1)
√ Data Analysis Math	1	• use ratio sticks and electronic scales to measure quantities of tints and base colours needed to produce different amounts of coloured paint. (Measurement and Calculation Math), (2)
		• may compare the actual times taken to complete repairs and painting tasks to flat rates in order to gauge their own productivity and determine which charges will have to be explained to customers. (Data Analysis Math), (1)
√ Numerical Estimation	2	• estimate how long it will take to complete repairs and painting tasks. They consider the size of the areas to be repaired or painted, painting and drying techniques employed, materials used and special requirements such as pinstriping. (Numerical Estimation), (2)

Math Skills Summary

a. Mathematical Foundations Used

The symbol √ is explained in the Use of Symbols section.

Mathematical Foundations Used

Code	Tasks	Examples
	Number Concepts	
√	Whole Numbers	Read and write, count, round off, add or subtract, multiply or divide whole numbers. For example, reading and writing paint codes; Counting materials and supplies to verify inventory levels.
√	Integers	Read and write, add or subtract, multiply or divide integers. For example, reading integers to determine how varying temperature and humidity levels will increase or decrease the amount of time needed for paints to dry.
√	Rational Numbers - Fractions	Read and write, add or subtract fractions, multiply or divide by a fraction, multiply or divide fractions. For example, adding fractions of hours to determine total drying times.
√	Rational Numbers - Decimals	Read and write, round off, add or subtract decimals, multiply or divide by a decimal, multiply or divide decimals. For example, adding flat rate time expressed as decimal hours; using decimals to prepare bills and cost estimates.
√	Rational Numbers - Percent	Read and write percents, calculate the percent one number is of another, calculate a percent of a number. For example, using percentages to express the portion of a vehicle that needs repainting; calculating goods and services tax.
√	Equivalent Rational Numbers	Convert between fractions and decimals or percentages. For example, converting fractions of an hour to decimal hours.
	Patterns and Relations	
√	Use of Rate, Ratio and Proportion	Use a rate showing comparison between two quantities with different units. Use a ratio showing comparison between two quantities with the same units. For example, comparing drip rates and time periods to determine viscosity, mixing products using ratios such as one to one or two to one.

Code	Tasks	Examples
Shape and Spatial Sense		
√	Measurement Conversions	Perform measurement conversions. For example, converting litres into quarts.
Statistics and Probability		
√	Summary Calculations	Calculate averages. For example, determining the average job time by dividing the total amount of time it took to paint all vehicles by the number of vehicles painted.

b. How Calculations are Performed
- In their heads.
- Using a pen and paper.
- Using a calculator.
- Using a computer.

c. Measurement Instruments Used
- Time. For example, using clocks and watches.
- Weight or mass. For example, using electronic scales.
- Distance or dimension. For example, using ratio or paint mixing sticks.
- Liquid volume. For example, using ratio or paint mixing sticks.
- Temperature. For example, using thermometers.
- Pressure. For example, using gauges to ensure sufficient air pressure is available for the proper operation of spray guns.
- Density. For example, using viscosity cups to measure the thickness of primers and paints.
- Use the SI (metric) measurement system.
- Using the imperial measurement system.

E. Oral Communication

Oral Communication

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • order parts, materials and supplies such as masking tape, paints and thinners by telephone. (1) , (daily) • speak with shop supervisors about their schedules, activities and tasks. For example, they may be asked when vehicles will be finished or what supplies are needed. (1) , (daily)

Most Complex	2 to 3	• talk with other painters about a wide range of topics including paint preparation methods, application techniques, problems and job task scheduling. (2) , (daily)
		• discuss production problems and workflow processes at staff meetings. (2) , (daily)
		• may explain procedures to apprentices and show them how to correct errors. For example, automotive painters may give apprentices directions for sanding a featheredge or provide explanations while demonstrating the skill. (2) , (daily)
		• may speak with customers about the scope and expected cost of repairs. They describe how repairs are to be done, indicate the type of paints to be used and answer any questions that customers may have. (2)
		• may talk with customers who are angry about the quality of work performed on their cars. Automotive painters listen to customers' concerns, explain why the work turned out the way it did and attempt to negotiate fair settlements. (3)
		• may talk with co-workers and supervisors to resolve conflicts. For example, they may speak with shop supervisors about missed timelines and negotiate solutions to prevent reoccurring problems. (3)
		• may speak with helpers and co-workers experiencing work related problems such as workmanship and the timely completion of tasks. They describe how the problems impact operations and suggest ways to improve performance. (3)

Modes of Communication Used
- In person. For example, Automotive painters explain to helpers the tasks they are expected to perform.
- Using a telephone. For example, Automotive painters contact vendors by telephone to order supplies.
- Others e.g. video conferencing, public address system. For example, Automotive painters listen and react to announcements made over public address systems.

Environmental Factors Affecting Communication
In paint shops, loud equipment noises sometime impede oral communication.

Oral Communication Summary

The symbol √ is explained in the Use of Symbols section.

Type	Purpose for Oral Communication (Part I)					
	To greet	To take messages	To provide /receive information, explanation, direction	To seek, obtain information	To co-ordinate work with that of others	To reassure, comfort
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers			√	√	√	
Interact with those you supervise or direct			√	√	√	
Interact with supervisor/ manager			√	√		
Interact with peers and colleagues from other organization						
Interact with customers/ clients/ public			√	√		
Interact with suppliers, servicers			√	√		
Participate in group discussion			√	√		
Present information to a small group						
Present information to a large group						

The symbol √ is explained in the Use of Symbols section.

Type	Purpose for Oral Communication (Part II)					
	To discuss (exchange information, opinions)	**To persuade**	**To facilitate, animate**	**To instruct, instill understanding, knowledge**	**To negotiate, resolve conflict**	**To entertain**
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers	√			√	√	
Interact with those you supervise or direct	√			√		
Interact with supervisor/ manager	√				√	
Interact with peers and colleagues from other organization	√					
Interact with customers/ clients/ public	√				√	
Interact with suppliers, servicers	√					
Participate in group discussion	√					
Present information to a small group	√			√		
Present information to a large group						

F. Thinking Skills

1. Problem Solving

Problem Solving

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • realize that too many vehicles have been scheduled for work. They speak with their shop supervisors to determine which vehicles have priority. (1) • determine that vehicles will not be ready for delivery as promised. They inform their shop supervisors and tell customers to expect delays. They change work schedules to minimize delays and work overtime to finish priority jobs. (2) • discover that insurance claims allow for too few hours to complete the work. They review and itemize the work required and submit detailed quotes to shop supervisors for follow-up. (2) • mix the wrong paint colours. They discard the paints or attempt to correct the colours by adding tints that neutralize the incorrect shades. (2)
Most Complex	2 to 3	• cannot properly apply paints or primers because chemicals such as washes, solvents and adhesives were used improperly. Painters determine the best way to remove or neutralize the chemicals by referring to product information sheets or by discussing the problem with other painters. (2) • lose time when paint guns become clogged. They use other paint guns to complete jobs and then either clean the defective guns, have the guns repaired or buy new equipment if the problem is recurring. (2) • experience production problems when important pieces of equipment such as ventilation systems and paint booths break down. They inform their shop supervisor about the breakdowns and complete other work until the equipment is repaired. If the equipment can not be repaired immediately, they may negotiate temporary access to equipment used by co-workers or by painters in other shops. (3) • may have to face angry and upset customers. Once they have determined the reasons for the dissatisfaction, painters attempt to negotiate settlements with customers that may involve removing blemishes, repainting entire vehicles or providing cash discounts. (3)

2. Decision Making

Decision Making

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters
		• decide what grits of sandpaper to use. They consider the state of the surfaces and whether they will be dry or wet sanded. (1)
		• decide how much primer is needed to fill depressions. They consider the properties of the primers and the porosity of the surfaces being filled. (2)
		• decide how to cure fresh paints and primers. They consider the size of the surface areas to be dried and the benefits of using ultraviolet, infrared or air-drying techniques. (2)
Most Complex	3	• make decisions about what paints to use to create desired finishes. They choose paint products according to the types of surfaces being painted, budgets and the results desired by customers. (2)
		• decide which personal protective equipment to use when painting. They consider the size of the areas to be painted and the types of paint being used when choosing between facemasks and air respirators. (2)
		• notice that paint finishes have defects such as fish-eyes and embedded dirt. They determine probable sources of contamination, assess the severity of defects and decide how to effect repairs. For example, they may power buff imperfections caused by small contaminates such as dust or dirt to correct the defect and then replace air filters, repair damaged seals, clean spray equipment or use stronger cleaning solvents to prevent future occurrences. (3)

3. Critical Thinking

Critical Thinking

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters • assess the need for additional coats of primer after inspecting the results of previous applications. (1) • judge the adequacy of vehicle preparation to determine if cars are ready for painting. They analyze the quality of sanding, how well primers have been applied and surface cleanliness to assess whether painting should proceed as planned. (2)
Most Complex	2	• evaluate whether paint jobs should pass final inspection by considering the severity and frequency of defects such as blemishes, lines, paint runs and colour mismatches. (2) • may assess the skill levels of helpers and apprentices by observation. (2)

4. Job Task Planning and Organizing

Job Task Planning and Organizing

Complexity Level	Description
2	Own job planning and organizing • Automotive painters organize their daily activities according to amount and type of work booked by shop supervisors. They schedule the order in which work is carried out to ensure the efficient use of resources such as paint booths and labour. Tasks are routine in nature, but automotive painters should be prepared to work extended hours to meet deadlines. Planning and organizing for others • Automotive painters may schedule the activities of helpers to ensure work is completed as planned and within the price quoted.

5. Significant Use of Memory

Examples
- remember which work processes produce the best results to speed up delivery times.
- remember commonly-used flat rate times.
- remember commonly used paint codes.
- remember drying temperatures for various paints.
- remember where paint codes are affixed to vehicles.

6. Finding Information

Finding Information

Tasks	Complexity Level	Examples
Typical	2	Automotive Painters • locate information about the products they use by reading product information sheets, container labels and material safety data sheets and by talking with other painters. (2) , (daily)
Most Complex	2	• locate information about alternative paint techniques by talking with other automotive painters, reading trade magazines and through vendor websites. (2)

G. Working with Others

Participation in Supervisory or Leadership Activities
- Participate in formal discussions about work processes or product improvement.
- Have opportunities to make suggestions on improving work processes.
- Monitor the work performance of others.
- Inform other workers or demonstrate to them how tasks are performed.
- Orient new employees.
- Identify training that is required by, or would be useful for, other workers.

H. Computer Use

Computer Use

Tasks	Complexity Level	Examples
Typical	1 to 2	Automotive Painters
		• use databases. For example, they operate computer programs that integrate database functions with electronic measuring devices. Using touch-screen technology, automotive painters enter data to retrieve paint formulas and then follow instructions to select and mix the correct quantity of ingredients to create the desired amount and colour of paint. (2) , (daily)
More Complex	2	• use the Internet. For example, they use the Internet to access websites operated by paint and equipment suppliers. The automotive painter navigates through websites to locate the desired information. (2)
		• use other computer and software applications. For example, automotive painters use electronic, hand-held wands to scan vehicle paint colours and determine paint colours and codes. (2)

Computer Use Summary
- Use a database.
- Use Internet
- Other

I. Continuous Learning

How Learning Occurs
Learning may be acquired:
- As part of regular work activity.
- From co-workers.
- Through training offered in the workplace.
- Through reading or other forms of self-study
  - at work.
  - using materials available through work.
  - using materials obtained on worker's own initiative.
- Through off-site training
  - during working hours at no cost to the worker.

J. Other Information

In addition to collecting information for this Essential Skills Profile, our interviews with job incumbents also asked about the following topics.

Physical Aspects
Automotive painters spend much of their time on their feet but move through a variety of positions to complete their duties, including bending, standing, crouching and kneeling. Good eye-hand and upper limb coordination is required to manipulate spray guns in a manner that results in a smooth finish. Automotive painters generally are required to lift medium weight loads ranging from five to ten kilograms. They occasionally have to lift heavier items such as car doors but not without assistance from co-workers. As automotive painters need to recognize incremental changes in tone and tints, colour vision is essential.

Attitudes
Automotive painters need to be patient, thorough and possess a positive attitude. They should be capable of working well with others.

Future Trends Affecting Essential Skills
With the introduction of new materials such as high strength plastics and composites, automotive painters will have to learn new skills and master new painting techniques. If this trend continues, they will need strong reading and continuous learning skills to stay abreast. The growing importance of the Internet as a source of technical information means that many automotive painters will require computer skills.

K. Notes

This profile is based on interviews with job incumbents across Canada and validated through consultation with industry experts across the country.
For information on research, definitions, and scaling processes of Essential Skills Profiles, please consult the Readers' Guide to Essential Skills Profiles
(http://www.hrsdc.gc.ca/eng/jobs/les/profiles/readersguide.shtml).