

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION <p style="text-align: right;"><u>High School Graduation Years 2013, 2014 and 2015</u></p> <p style="text-align: center;">Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid</p>
	Secondary Competency Task List
100	SAFETY
101	Establish general shop safety.
102	Demonstrate proper use of personal safety devices and clothing.
103	Locate and identify fire extinguishers.
104	Locate and operate emergency switches.
105	Explain fire and tornado drill procedures.
106	Demonstrate proper handling of hazardous materials.
107	Identify proper chemical disposal techniques.
108	Operate shop and spray area ventilation systems properly.
109	List rules for care and safe use of hand tools.
110	Demonstrate safe and proper use of hydraulic tools; electric powered, pneumatic equipment.
111	Identify the proper methods and options for safely moving vehicles in the shop area.
112	Identify information on Material Safety Data Sheets (MSDS).
200	PRINCIPLES OF AUTOBODY DESIGN AND CONSTRUCTION
201	List the differences between a unibody vehicle and a full frame vehicle.
202	Describe major advantages of a unibody vehicle.
203	Identify front body panels of a unibody vehicle.
204	Identify under body panels of a unibody vehicle.
205	Identify side body panels of a unibody vehicle.
206	Identify rear body panels of a unibody vehicle.
207	Identify vehicles by V.I.N. number (vehicle identification number).
208	Demonstrate knowledge of autobody (space frames).
209	Describe advantages and disadvantages of a full frame vehicle.
300	NON-STRUCTURAL REPAIR - PREPARATION

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	High School Graduation Years 2013, 2014 and 2015
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
301	Use hand and power equipment.	
302	Remove dirt, grease, wax, and corrosion protection.	
303	Protect panels and adjacent parts to the repair area.	
400	PANEL REPLACEMENT AND ALIGNMENT	
401	Use panel replacement and alignment tools.	
402	Install panels using various alignment methods (weld, bolt).	
403	Remove and install bumper, fascia, and header panels.	
404	Remove, reinstall, and align hoods, deck lids, and hatches.	
405	Remove, reinstall, and align fenders, doors, and tailgates.	
500	WORKING WITH TRIM AND HARDWARE	
501	Identify the types of fasteners.	
502	Remove and replace belt molding and trim.	
503	Remove and replace adhesive-held molding and trim.	
504	Select and repair fasteners.	
505	Identify interior components and trim.	
506	Remove and replace seats.	
507	Remove and reinstall seat belt components.	
508	Remove and reinstall carpeting.	
509	Use trim removal tools.	
510	Remove and install interior door panel.	
511	Remove and install door lock and handle assembly.	
512	Remove and install decklid lock cylinders.	
513	Remove and install exterior trim and moldings.	
514	Remove and install pinstripes, decals, and emblems.	
600	STRAIGHTEN AND FINISH METALS	
601	Use metal straightening tools to include hammers and dollies.	
602	Straighten damaged metal.	
603	Shrink stretched metal.	
604	Use weld-on nail gun to repair sheet metal.	



Autobody/Collision and Repair Technology/Technician
CIP 47.0603
Task Grid

Unit/Standard Number	
605	Repair metal to within 1/8 of an inch or original shape.
700	USING BODY FILLERS
701	Select correct body filler and tools.
702	Prepare surface for body filler.
703	Prepare and apply body filler.
704	Prepare and apply specialty fillers (fiberglass, aluminum, and polyester).
705	Finish body fillers.
706	Apply corrosion protection according to manufacturer's specifications.
800	MOVEABLE GLASS AND HARDWARE
801	Remove and replace a door regulator.
802	Remove and repair moveable door glass.
803	Remove and replace rear stationary side glass.
804	Remove and replace glass gaskets.
805	Repair stationary glass with urethane sealant.
900	STRUCTURAL REPAIR - DAMAGE ANALYSIS
901	Classify the various types and extent of damage a vehicle sustains from an accident.
902	Select and interpret body dimension specification sheets and/or manuals.
903	Set up and use tram gauge to diagnose vehicle length and width damage.
904	Explain how to diagnose vehicle height damage with datum line gauges.
905	Identify aspects of universal measuring system.
1000	STRAIGHTENING STRUCTURAL PARTS
1001	Demonstrate knowledge to mount and anchor vehicle to a pulling system.
1002	Remove and reinstall mechanical components.
1003	Prepare vehicle for gauging and analysis.
1004	Prepare vehicle for alignment.
1005	Align vehicle with DIAMOND damage, twist, sag side swag and mash.
1100	FULL OR PARTIAL PANEL REPLACEMENT
1101	Identify the principles of full or partial panel replacement.
1102	Select and understand the use of various types of joints used in sectioning.

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	High School Graduation Years 2013, 2014 and 2015
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
1103	Weld and adhesively bond panel replacement.	
1104	Demonstrate knowledge of bonded door panels.	
1105	Remove and replace bumpers, steel and aluminum.	
1106	Remove and replace energy absorbers.	
1107	Apply corrosion protection.	
1108	Remove and replace quarter and rockers panel.	
1200	STATIONARY GLASS REPLACEMENT	
1201	Identify and select different types of automotive glass.	
1202	Operate stationary glass removal tools.	
1203	Remove and reinstall stationary glass.	
1204	Identify the properties and characteristics of adhesives and sealants.	
1300	RESTORING CORROSION PROTECTION	
1301	Identify corrosion principles and factory corrosion protection.	
1302	Identify repair methods and materials for corrosion protection.	
1303	Protect interior and exterior surfaces including weld seams from contamination.	
1400	WELDING AND CUTTING - MIG (GMAW) WELDING	
1401	Explain the differences between welding, silver soldering, and brazing.	
1402	Demonstrate personal safety practices and vehicle protection measures.	
1403	Set up the Mig welder.	
1404	Make a weld and tune the welder.	
1405	Complete a butt joint with backing in various welding positions.	
1406	Complete a fillet weld lap joint.	
1407	Complete a plug weld in various positions.	
1408	Perform destructive tests.	
1409	Demonstrate welding of high strength steel.	
1410	Protect adjacent panels, glass, vehicle interior, etc. from welding and cutting operations.	
1411	Identify different methods of attaching structural components [squeeze type resistance spot welding (STRSW) riveting, structural adhesive, silicon bronze, etc.].	
1500	CUTTING AND HEATING PROCESSES	
1501	Identify cutting processes.	

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	High School Graduation Years 2013, 2014 and 2015
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
1502	Demonstrate sheet metal cutting processes.	
1503	Set up and use plasma arc cutters.	
1600	REFINISHING - SAFETY AND ENVIRONMENTAL PRACTICES	
1601	Explain various environmental regulations and other items regulated in an automotive refinishing department.	
1602	Locate hazardous warning information.	
1603	Select and inspect personal safety equipment and clothing needed for protection during refinishing operations.	
1604	Demonstrate safe painting practices and use of protective clothing equipment.	
1605	Identify personal health and safety hazards according to OSHA guidelines.	
1606	Demonstrate knowledge and skill in applying water borne automotive finishing materials.	
1700	UNDERSTANDING AUTOMOTIVE FINISHES	
1701	Describe the difference between paint systems and why the materials are applied by the manufacturer.	
1702	Describe paint defects - causes and cures.	
1703	Identify primer clean coats and topcoats finishes.	
1800	PREPARING THE SURFACE FOR REFINISHING	
1801	Demonstrate proper steps to pre-wash entire vehicle.	
1802	Chemically and mechanically remove paint finish when necessary.	
1803	Dry sand and featheredge areas.	
1804	Wet sand and featheredge areas.	
1805	Apply suitable metal treatments.	
1806	Identify the color of paint on vehicle with use of paint catalogs.	
1807	Apply undercoats.	
1808	Use a block sander.	
1809	Prepare panels for blending.	
1810	Apply caulking and seam sealers.	
1811	Apply chip-resistant coating.	
1812	Mask a vehicle.	
1813	Select the proper grid of abrasive paper.	
1814	Identify safety and personal health hazards according to OSHA guidelines.	
1900	PREPARING THE EQUIPMENT, PAINT AREA, AND REFINISH MATERIALS	

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	<u>High School Graduation Years 2013, 2014 and 2015</u>
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
1901	Prepare the painting environment.	
1902	Prepare and use the paint mixing area.	
1903	Set up, test and adjust spray guns.	
1904	Inspect, clean, and determine conditions of spray guns and equipment.	
1905	Select and use the National Institution of Safety and Health (NOISH) approved (Fresh Air Make-up System) personal painting/refinishing respirator system.	
1906	Identify and demonstrate use of refinishing equipment	
2000	APPLYING THE FINISH	
2001	Prepare surface for topcoat system.	
2002	Apply primer-sealer.	
2003	Apply single-stage finish.	
2004	Apply basecoat/clearcoat finish.	
2005	Apply tri-coat finish.	
2006	Apply stone chip-resistant coating to lower body areas.	
2100	BLENDING	
2101	Prepare an area for blending of the finish.	
2102	Blend basecoat/clearcoat finish.	
2103	Tint and blend color coat.	
2200	SOLVING PAINT APPLICATION PROBLEMS AND DEFECTS IN AUTOMOTIVE FINISHES	
2201	Identify contaminants in the paint finish.	
2202	Identify paint film defects, causes and cures.	
2203	Identify surface defects in finish.	
2300	DETAILING	
2301	Remove overspray/perform final finishing.	
2302	Clean exterior of vehicle.	
2303	Clean interior of vehicle.	
2304	Apply decals and stripes.	
2305	Demonstrate wet sand and polishing techniques.	
2306	Clean body openings.	

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	High School Graduation Years 2013, 2014 and 2015
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
2307	Clean exterior and interior glass surfaces.	
2400	ESTIMATING - ANALYZING DAMAGE	
2401	Demonstrate usage of collision estimating guides.	
2402	Identify different types of vehicle damage.	
2403	Identify mechanical damage.	
2404	Indicate repair and replace decisions.	
2405	Prepare an estimate/repair sequence.	
2500	CREATING A DAMAGE REPORT	
2501	Demonstrate proper use of a collision estimating guide.	
2502	Estimate parts and labor amounts.	
2503	Create a damage report.	
2600	PLASTIC REPAIR - IDENTIFICATION AND REPAIR DECISIONS	
2601	Identify plastic and perform tests to make repair decisions.	
2602	Select and demonstrate how to use plastic repair methods.	
2700	ADHESIVE REPAIR - PLASTIC	
2701	Demonstrate proper use of adhesive repair methods, tools, and materials.	
2702	Prepare plastic surfaces for adhesive repair.	
2703	Repair interior and exterior plastics with two-part adhesives, with and without reinforcement.	
2704	Repair rigid plastic parts with urethane or epoxy adhesives.	
2705	Repair flexible plastic parts with urethane or epoxy adhesives.	
2706	Repair rigid plastic parts with urethane or epoxy adhesives and fiberglass reinforcements.	
2707	Repair flexible plastic parts with urethane or epoxy adhesives and fiberglass reinforcements.	
2800	DEMONSTRATE KNOWLEDGE OF MECHANICAL REPAIR	
2801	Replace wheels/tires.	
2802	Inspect and diagnose causes of tire wear patterns.	
2900	ELECTRICAL AND ELECTRONIC SYSTEMS	
2901	Inspect and service batteries and battery cables.	
2902	Inspect, test and replace fusible links, circuit breakers and fuses.	

Unit/Standard Number	 pennsylvania DEPARTMENT OF EDUCATION	High School Graduation Years 2013, 2014 and 2015
	Autobody/Collision and Repair Technology/Technician CIP 47.0603 Task Grid	
2903	Aim headlights using mechanical aiming equipment.	
2904	Demonstrate skills in using a Digital Voltage, Ohm Meter.	
3000	BRAKE SYSTEMS	
3001	Identify brake components.	
3002	Inspect and diagnose disk and drum brake systems.	
3100	HEATING AND AIR CONDITIONING	
3101	Identify parts of air conditioning systems.	
3102	Evacuate and recharge an automotive air-conditioning system.	
3200	DRIVE TRAINS	
3201	Identify major drive train components.	
3300	FUEL, INTAKE AND EXHAUST SYSTEMS	
3301	Identify fuel intake and exhaust systems.	
3400	RESTRAINT SYSTEMS	
3401	Research auto manufacturers' recommended safety procedures to prevent accidental deployment of supplemental restraint systems.	
3402	Identify, inspect, and disarm supplemental restraint systems.	
3403	Diagnose supplemental restraint systems.	
3404	Replace supplemental restraint systems.	