

KFE4Skills Competition Spec – AUTOMOTIVE TECHNOLOGY – LEVEL 3

KFE4Skills general rules and guidance latest version is at: <https://www.kentfurthereducation.org/skills-competitions-1>
 Relevant WSUK Occupational Standard: <https://api.worldskills.org/resources/download/12362/14935/15863?l=en>

Section	Criteria Guidance	Spec Criteria
1	Entry Criteria	Entrants must be in education and/or employment with training, at one of the KFE college organisations (EKC Group, MidKent College and North Kent College (including Hadlow College), and/or have completed or be undertaking a relevant Level 2 or 3 or above programme within the last 12 months.
2	Entrant Numbers	<ul style="list-style-type: none"> ○ Each college organisation (not campus) may register up to (2) students. ○ Confirmed max number of students in total showcase: 6
3	Competition Prep	<p>Preparatory Brief</p> <p>Competitors will be expected to be proficient in “Auto data”, various testing principles and measuring devices. This competition is aimed at Level 3 skills. <u>Each college group may enter up to two competitors only.</u></p> <p>Competition rounds will take place simultaneously with each competitor moving around each task. There will be 6 vehicles set up (2 for each task). Each competition task round will last approx. 1 hour.</p>
4	Core Competency	<p>The individual needs to know and understand work organisation and time management which will include Health and Safety, correct selection and use of appropriate equipment, correct process of diagnosis and fault finding and comparison to manufacturer specifications.</p> <p>The core competences to be demonstrated via the competition rounds are:</p> <ul style="list-style-type: none"> ○ Full braking system inspection (vehicle will have discs and drums) ○ Diagnosis of abnormal tyre wear ○ Diagnosis of a misfire ○ Diagnosis of a charging system fault

5	Duration	<ul style="list-style-type: none"> ○ 5 Hours (approximately) ○ Additional time for familiarisation, health and Safety and general event briefings, judging and awards should be added to this time.
6	The Skills Competition Task Details	<p>Competition Round 1 – Full Braking system inspection and adjustment (Time allowed 60 minutes)</p> <ul style="list-style-type: none"> ○ Open to all levels of students ○ A job card with inspection information will be provided. ○ A vehicle will be placed on a two-post ramp with all four wheels removed. The vehicle is to have disc brakes on the front, drum brakes on the rear and ABS. ○ Competitors are to carry out a full braking system inspection, taking measurements where necessary and comparing them to manufacturers data. ○ Measuring equipment to be used may include: Engineers rule, Micro-meter, Internal Vernier for drum diameter, brake fluid boil tester, suitable diagnostic tool. ○ Any components removed must be refitted in the correct safe manner. ○ The handbrake must be adjusted to a professional standard and a report produced. ○ Time allowed is 60 minutes <p>Competition Round 2 – Diagnosis of abnormal tyre wear (Time allowed 60 minutes)</p> <ul style="list-style-type: none"> ○ Open to all levels of students ○ Competitor will be given a job card explaining that the customer has had two new tyres fitted to the front of their vehicle and they were told that the old tyres had abnormal wear. ○ Vehicle is to be placed on a two post ramp with the wheels still attached. ○ Competitors will be expected to carry out the necessary checks of wheel and tyre, suspension and steering components which could lead to abnormal tyre wear before checking the wheel alignment using laser wheel alignment equipment such as “Super-tracker” or “Sealey”. Link for equipment here: https://www.supertracker.com/products/str1-lctr24 ○ Adjustments to the wheel alignment do not need to be made, however all findings to be recorded. <p>Competition Round 3 – Diagnosis of a misfire (Time allowed 60 minutes)</p> <ul style="list-style-type: none"> ○ Open to all levels of students

		<ul style="list-style-type: none"> ○ A petrol vehicle is to be on the floor with a mechanical engine fault causing a misfire. (For example a poorly adjusted valve clearance) ○ Competitor will be expected to carry out all necessary diagnostic checks to locate the cause of the misfire. ○ Specialist equipment will be made available including, suitable diagnostic equipment, compression tester and cylinder leakage tester, multimeter, fuel pressure. ○ Competitors will be expected to write a report on their findings and compare to manufacturers data. <p>Competition Round 4 – Diagnosis of a flat battery (Time allowed 60 minutes)</p> <ul style="list-style-type: none"> ○ Open to all levels of students ○ Competitors will be given a job card stating that a new a battery has been purchased and fitted and it is still going flat. ○ A vehicle will be placed on the floor and have a wiring fault which will prevent the alternator charging the battery. The vehicle should have a conventional method of sensing charge (not ECU lead). ○ Competitors will be expected to use a logical approach and test equipment to locate the fault. ○ Equipment which will be available includes: multimeter, amp clamp. ○ The vehicle should be returned to a ready for customer state with any clock / radio / window programming completed by the competitor. 						
7	Marking & Assessment Requirements	<p>Each competition module will be assessed and marked independently of any other competition activity, using objective and judgement criteria or a combination of both during each task. See marking sheet appendix.</p> <p>Panels will normally number three to five judges and in some cases may include an external judge from the industry sector or an awarding body. Judges decisions are final in all instances, although scoring will be open and transparent.</p>						
8	Judges & Marking	<p>Assessment/observation and marking will be carried out throughout the competition. Each competition round will be assessed and marked independently of any other competition activity, using objective and judgement criteria or a combination of both during each task.</p> <table border="1" data-bbox="495 1257 1693 1367"> <thead> <tr> <th>Judging Criteria</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>Health and Safety</td> <td>5</td> </tr> <tr> <td>Use of technical data</td> <td>10</td> </tr> </tbody> </table>	Judging Criteria	Marks	Health and Safety	5	Use of technical data	10
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		Logical approach	15	
		Accuracy and thoroughness of work	15	
		Housekeeping	5	
		Total	50	
9	Student Support Required	<ul style="list-style-type: none"> ○ Not Applicable 		
10	Resources	<p>Competitors are responsible for providing all consumable products and equipment needed for the competition.</p> <p>Automotive competitors will be expected to as a minimum:</p> <ul style="list-style-type: none"> ○ Wear appropriate overalls ○ Wear/bring suitable industry standard protective footwear and other PPE <p>Two vehicles for each competition will need to be provided with space for all 6 competitors to be able to compete at once. All tools and specialist equipment will be available next to each of the competition vehicles.</p>		
11	Health & Safety	See relevant risk assessments and additional competition round specific rules and guidance requirements.		
12	Risk Assessment	<ul style="list-style-type: none"> ○ The host college must have completed a relevant risk assessment and filed this centrally for KFE4Skills. ○ Participating visiting colleges should complete risk assessments relevant to their event participation. 		
13	Competition Spec additional rules and requirements	<p>The following is in addition to the overall KFE4Skills General Rules & Guidance. A completed registration is a confirmation that a competitor has agreed to the overall rules and specific competition rules.</p> <p>All electrical equipment must be PAT tested and labelled before using at the competition and all the supporting equipment must be fit for purpose.</p>		

JUDGE MARKING SHEET: Automotive

Competitor	College	Score Task 1 Brake Inspection	Score Task 2 Abnormal Tyre wear	Score Task 3 Misfire	Score Task 4 Flat Battery	Total Score
	<p>Comments:</p> <p><i>Use this space for any specific comments noting the competitors as appropriate.</i></p>					