

This resource is intended to be read in conjunction with the case study on the project led by Derby College

This is what this resource is	A PBL brief used with Level 3 Engineering Students during Induction
This is what it is for	To demonstrate how a PBL brief can be created
This is how it could be used	As a PBL brief for your students or to inspire your own ideas on a PBL episode

OUTSTANDING TEACHING, LEARNING AND ASSESSMENT TECHNICAL SKILLS NATIONAL PROGRAMME

PBL Brief 4: Design a Rollercoaster

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Output 12

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Assignment brief – QCF BTEC

Assignment front sheet

Qualification		Unit number and title	
BTEC Nationals Level 3		Problem Based Learning Project 2017	
Learner name		Assessor name	
		Lewis Overton	
Date issued	Hand in deadline	Submitted on	Re-submitted on
11 th September 2017	22 nd September 2017		

Assignment title	Rollercoaster challenge 2017
In this assessment you will have opportunities to provide evidence against the following criteria.	

Criteria reference	To achieve the criteria the evidence must show that the learner is able to:	Task no.	Achieved
1	Produce a mind map and mood board on an electronic resource	1	
2	Draw 3 detailed, fully annotated designs, producing a detailed evaluation of all three	2	
3	Produce a CAD drawing	3	
4	Produce a Multisim Circuit	4	
5	Produce a business and marketing plan for your chosen design	5	
6	Produce mathematical calculations to find the size motor required for your chosen design	6	
7	Present your project using an electronic resource	7	

Internal verifiers approval to use with learners
Learner declaration
<p>I understand that if I do not hand in my assignment on time- only Pass grades will be accepted and marked.</p> <p>I certify that the work submitted for this assignment is my own. I have clearly referenced any sources used in the work. I</p>

understand that false declaration is a form of malpractice.

Learner signature:

Date:

I certify that the work submitted for this assignment is the learners own work

Lecturers signature;

Date:

Assignment brief

Scenario: You and your team are bidding to win the contract to build a new Rollercoaster at a new theme park opening next summer. In order to win the contract with the theme park you will need to complete the following tasks. Remember there will be other engineering teams bidding for this contract so you will need to go above and beyond.

Task 1 - **Produce a mind map and mood board on an electronic resource**

In order to start your designs you will need to conduct some research. This will need to be evidenced using a mind map and a mood board. This will need to be presented to the board using an electronic resource of your choice. You will need to look at previous designs as well as possible materials and production techniques.

Task 2 - **Draw 3 detailed, fully annotated designs, producing a detailed evaluation of all three**

Once you have conducted your research you will be then ready to start designing your rollercoasters. These will need to be fully annotated with materials required, theme of the rollercoaster and detailed dimensions.

Task 3 - **Produce a CAD drawing**

You need to produce a detailed CAD drawing of a specific part of your rollercoaster. This will be given in more detail during your masterclass.

Task 4 - **Produce a Multisim Circuit**

You will need to become familiar with the Multisim software package. You need to produce a Multisim circuit and include with your designs.

Task 5 - **Produce a business and marketing plan for your chosen design**

You will need to decide on a theme of your rollercoaster. This doesn't just mean what the rollercoaster looks like but the customer experience. This goes from the queue all the way to exiting the ride. How will you market your rollercoaster? Who is your target market? What type of rollercoaster is it?

Task 6 - **Produce mathematical calculations to find the size motor required for your chosen design**

You will need to then calculate the size of motor you will require for your rollercoaster. This will depend on your design.

Task 7 - **Present your project using an electronic resource**

Your project will then need to be presented back to the board. All of your findings, initial designs and drawings will need to be presented. Try not to use PowerPoint and be inventive.

Assessor's comments

Assessor feedback			
Learner feedback			
Assessor signature		Date	
Learner signature		Date	