# Lesson 10 – Bit:Bot Race Car Project Body Shell

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * To understand the impact design has on the public image of a product * To understand the benefits of an iterative design process | * Develop a body shell for the racing Bit:Bot where:   + The brand requirements look good and will encourage sales   + The design is functional and protects key components from damage (including the occupants)   + The design is lightweight and aerodynamic to enable you to have the best chance of winning your race |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Giving the Learners a scenario to work within * Make it a challenge with an outsider deciding on the best brand/logo etc * Works best with a team where they can discuss and decide on what best represents the image they are trying to portray | **Expected Progress:**   * Learners create a prototype shell   **Good Progress:**   * Learners use appropriate materials choosing their properties to develop their prototype   **Exceptional Progress:**   * Learners explain how their design both supports the aerodynamic requirements and represents their brand image and style |
| Key concepts | Key words |
| * The style and functionality of your racing shell will be critical to your chances of winning the race * It will need to be lightweight, stylish and aerodynamic | * Aerodynamics * Prototype * Material * Critique * Revise * Iterative |
| Differentiation | Resources |
| Some Learners will need guidance with measuring and cutting | * Paper and planning sheets * Materials such as card, balsa, straws, adhesives etc * Scissors |
| Lesson Flow | |
| * Remind Learners of the purpose of the project * Use examples such as the Bond Bug and Reliant Robin as examples of why image is as important as aerodynamics * Go on to discuss style, aerodynamics etc and why each has its place * Introduce the concept of iterative design. Use the Daddy Dollar as an excellent example of this technique * Show the video regarding critique and revise of the Learners drawing the butterfly shown on the Activity Sheet [https://www.youtube.com/watch?v=dOSiU42P8Gc](%20https:/www.youtube.com/watch?v=dOSiU42P8Gc) * Look at a range of materials available to create the body design – identify other materials that might be used of Learners could acquire * Consider the properties of the materials * Discuss the bodyshell, need for accuracy and access to sensors and switches * Get Learner to work as teams to develop their prototype * Encourage Learners to decide on areas of responsibility ie style, aerodynamics, testing etc | |
| Making | |
| Making prototype bodyshell | |