

Project Outline

This outline is only one of many different ways the challenge could be introduced and managed. Hopefully the GBMO materials will spark your own thoughts and ideas and get you started on developing your own plan for running the challenge in your school

Prep – Promoting the challenge

Session (1 hour)	Suggested sequence and resources
<p>Use all the means at your disposal to promote the challenge including:</p> <ul style="list-style-type: none"> • Posters and web site from the D&T Association, • Notes in registers, • Staff briefings, • Assemblies • School/department web site • Social media • Word of mouth <p>Co-opt colleagues to lead each of the categories you will be supporting.</p>	<p>Colleagues – teachers, technicians, support staff, STEM Ambassadors, parents. Posters, web site Notes Web pages Sample video recorded by pupils</p>
<p>Gather examples of products in each of the categories you will be offering.</p> <p>Seek pupils, staff, parents who are cycle commuters, enthusiasts or competitors and ask if they will model clothing, demonstrate equipment and answer questions. Brief them to talk about shortcomings in existing products but resist offering their ideas for solutions at the initial meeting.</p> <p>See if you have pupils who will help by recording a video about a product that already exists to use as an example during the first session.</p>	<p>Examples of products Video camera/smart phone Keen pupils</p>

One – Introduce the challenge

Session (1 hour)	Suggested sequence and resources
<p>Pupils will already know a little about from announcements and efforts to promote the challenge such as posters. Some pupils will know more if they have visited the web site.</p>	<p>Intro video Posters for reference and inspiration</p>
<p>Referring to the poster(s), point out which of the categories you will be supporting and pupils are able to enter:</p> <p>Food, Textiles, Product Design, Systems and Control.</p> <p>Emphasise pupils will be working under similar time pressures as professional designers and engineers. They do not have to make their final design freeing them from the restrictions of equipment materials and processes in school.</p> <p>Prepare pupils for the video asking them to look for and write down opportunities for new products and improved designs.</p> <p>Show the introductory video</p> <p>Ask pupils for their ideas record them on the white board for the entire group under the challenge categories you are offering.</p> <p>Make sure presentations and pupil responses are being recorded.</p> <p>Ask the volunteers to talk briefly about their cycling highlighting any shortcomings and requests for improvements, record these under the previous lists.</p> <p>Ask for a show of hands to see which ones are most popular.</p> <p>Ask pupils to group themselves (maximum four) and sign up for a design idea.</p> <p>Begin to brainstorm areas for research and possibilities for new products.</p> <p>Set homework see right ></p>	<p>Leads for each category Support staff Volunteers Video camera/smart phone to record presentations and responses</p> <p>Homework Groups/individuals research their area of interest refining the area of study defining problems/, existing solutions and reviews highlighting shortcomings for existing solutions</p> <p>Get pupils to: Create a brief and draft specifications for their ideas</p> <p>Research existing solutions and any feedback from individuals or online. See note about child protection – teachers may need to get parental permission.</p> <p>After this session/before the next Retain samples of existing products and</p> <p>Make any photos/videos Including official intro available on the web/school network for pupils to access.</p>

Two – Design spec, initial research

Session (1 hour)	Suggested sequence and resources
<p>Recap on the cycling context</p>	<p>Posters for reference and inspiration</p>
<p>Teams present to everyone their ideas and draft specification.</p> <p>After each presentation a short session for constructive comments from the floor, and suggestions about how to improve the specification and proposed new product.</p> <p>Remind pupils of the range of graphic, modelling and prototyping materials available including any 2D drawing and 3D modelling software.</p> <p>Groups work on their ideas creating sketches, investigating materials, components, ingredients, creating real/virtual models and all the time capturing visuals for their video submission.</p> <p>Adults monitor groups using questioning, modelling and scaffolding techniques to keep them on track and focus towards products that are achievable in the short time available.</p>	<p>Photos/videos on network</p> <p>Modelling and prototyping materials including found, re-usable/re-cycled.</p> <p>A range of sketching, modelling, materials and kits.</p> <p>Illustration, drawing and modelling software.</p> <p>Homework</p> <p>Work on their designs and how to communicate it to others</p>

Three – Develop ideas into a viable design

Session (1 hour)	Suggested sequence and resources
<p>Introduce this session as an opportunity for teams to:</p> <ul style="list-style-type: none"> • Finalise their design idea • Decide on the best way to present it to others • Begin creating the visuals and models to communicate the idea as a video for their competition entry. <p>Teacher input on:</p> <ul style="list-style-type: none"> • Story boarding a video. • Capturing still images and screen captures • Editing video to include titles, photos and screen captures. <p>All of these can be recorded using a smart phone.</p> <p>Impress on teams the quality of the video is not the main focus. The focus of the challenge is on creative and innovative ideas for new or improved products.</p>	<p>Examples of story board for the intro video</p> <p>A range of sketching, modelling, materials, kits, 2D/3D modelling software.</p> <p>Homework</p> <p>Create a story board for the video</p> <p>Create a list of resources needed for the video.</p> <p>They might include:</p> <ul style="list-style-type: none"> • Sketches • Physical models • Kit models to prove the mechanical operation • 2D computer drawings of parts and assemblies. • 3D computer models to measure surface area, volume, mass, inertia, test for strength and the operation of mechanisms, etc. • Rendered images of the suggested design

Four – Planning video

Session (1 hour)	Suggested sequence and resources
<p>Support groups pulling together all the materials</p> <p>Teacher input on techniques for producing good video.</p> <ul style="list-style-type: none"> • Good lighting, consider recording some or all outside? • Choose a quiet space with few hard surfaces to reduce echo. Consider recording some or all outside. • Use wide angle setting to keep the microphone close to the presenter • Avoid zooming, better to move the camera closer/further away • Unless you are going for a street movie atmosphere, move the camera slowly and pan even slower to avoid making the viewer feel sick! 	<p>Completed story boards</p> <p>Finalise script and allocate parts, including who will act as camera person for each scene.</p> <p>Homework Gather all the resources needed to record the video. Learn scripts and practice.</p>

Five – Recording video submission

Session (1 hour)	Suggested sequence and resources
<p>Final practice for video presentation.</p> <p>Record video and edit, if necessary.</p> <p>Upload video to web site: http://gbmakeoff.co.uk/</p> <p>Cross fingers and wait...</p>	<p>Video camera/smart phone</p> <p>Editing software</p> <p>Web access to upload the video entry</p>