

## Year 8

### Rotation: Resistant materials

<b>Learning objective</b>	How to use tools in Autodesk Inventor to draw, extrude and edit basic shapes and combine / assemble basic parts to form a product.		How the new GCSE controlled assessment is worded, what it means and how it can be interpreted.  How to analyse an exciting product using key word headings.  How to form a questionnaire using relevant questions, interpret the results and make use of the information gathered.  How to use your research to form a specification and how to form specification points that are realistic and measurable.	How to use their research information and specification to form a design that meets the design brief. How to apply rendering skills learnt in year 7 to their own design.  How to annotate a design so that a third party can understand your thinking.  How to use a star diagram to evaluate a design. How to interpret a star diagram and identify positive points and areas where the design could be improved.
<b>Learning outcome</b>	you are able to use Autodesk Inventor to draw, extrude and edit basic shapes. You are able to combine basic shapes together using the constraints tool You are able to independently draw and form your own shape and add it to the Basic shapes.		you are able to understand how the new GCSE coursework is presented and how to interpret it. Students are able to create an analysis of a design brief exploring in sufficient detail factors that will effect their design.  Students are able to look at an existing product and pick out a number of good points and parts about the design which could be improved. Students are able to understand key headings and terms to help analyse a product  Students are able to form a questionnaire to ask a number to people to aid in their design of an educational toy. Students are able to analyse the questionnaire and form usable points from the information gathered.  Students are able to gather all their research (product analysis, questionnaire) and use this to form a specification. Students are able to justify why the specification points are needed.	Students are able to use their analysis and specification to form two different ideas for an educational toy. Students are able to use rendering skills taught in year 7 to present their ideas well and clear for a third party to understand.  Students are able to annotate their designs to explain their thinking to a third party by stating and explaining the size, materials, finish and construction method to be used on their designs.  Students are able complete a star diagram by naming headings and asking a number of people to evaluate their design. Students are able to interpret the star diagram and name positive parts of the design and state areas where the design could improve.
<b>Descriptors</b>	<b>Exceptional</b>	You are able to form all parts (Base, Dowel and Wheels) successfully, <b>All pieces have been assembled together correctly, and You have independently formed your own letter, number of shape and Mated it successfully onto the Base piece.</b>	You are able to come up with a highly detail analysis including size, aesthetics, materials, finishes, user requirements, components and manufacturing processes, <b>two products have been analysed in detail. A questionnaire has been formed which includes questions that provide relevant information that will aid design and a specification has been formed which uses research information gathered to form realistic and measurable spec points. These spec points have been justified.</b>	You are able to come up with two different ideas for an educational toy, <b>the designs have been presented well with neat and accurate drawing and rendering. Annotation has been used to explain all aspects of your design (size, materials, finish and construction method) and a star diagram has been used to evaluate the design using user group feedback, highlighting the positive points and areas of improvement.</b>
	<b>Good</b>	You are able to form most parts successfully, <b>Most pieces have been assembled together, with some guidance you have formed a letter, number of shape and placed it onto the Base piece</b>	You are able to come up with a highly detail analysis including size, aesthetics, materials, finishes and user requirements, <b>two products have been analysed in fairly good detail. A questionnaire has been formed which includes questions that provide relevant information and a specification has been formed which uses research information gathered to form realistic and measurable spec points.</b>	You are able to come up with two fairly different ideas for an educational toy, <b>the designs have been presented well with neat drawing and rendering. Annotation has been used to explain almost all aspects of your design (size, materials and finish) and a star diagram has been used to evaluate the design using user group feedback, highlighting the positive points.</b>

	<b>Developing</b>	You are able to form some of the parts successfully, <b>wheel and dowel pieces have been formed together.</b> <b>With guidance you have formed a U shape letter)</b> and added it onto the Base piece.	You are able to come up with an analysis including size, aesthetics, materials, and finishes, <b>two products have been analysed in some detail.</b> <b>A questionnaire has been formed which includes questions that provide some relevant information</b> and a specification has been formed which uses research information gathered to form spec points.	You are able to come up with two ideas for an educational toy, <b>the designs have been presented fairly well with a drawing and rendering applied.</b> <b>Annotation has been used to state some aspects of your design (size and materials)</b> and a star diagram has been used to evaluate the design using user group feedback.	
	<b>Foundation</b>	You are able to form the Base piece successfully, <b>two pieces have been formed together.</b> <b>With guidance you have formed a basic rectangle</b> and added it to the base piece.	You are able to come up with a limited analysis including, aesthetics, materials, and finishes, <b>two products have been analysed.</b> <b>A questionnaire has been formed which includes questions that provide information</b> and a specification has been formed which uses some research information gathered.	You are able to come up with one idea for an educational toy, <b>the designs have been presented with a drawing and colour applied.</b> <b>Annotation has been used to show limited information about the design (materials used)</b> and a star diagram has been used to evaluate the design.	