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| Unit of study: Structures | | | |
| Learning Objective | DT content | Learning Outcome | Key Knowledge/Skills |
| Can I explore the concept and features of structures and the stability of different shapes? | Can I generate and communicate ideas using sketching and modelling?  Can I make a structure according to design criteria?  Can I create joints and structures from paper/card and tape?  Can I build a strong and stiff structure by folding paper?  Can I test the strength of my structure?  Can I identify the weakest part of a structure?  Can I understand that materials can be manipulated to improve strength and stiffness?  Can I understand that a structure is something which has been formed or made from parts?  Can I understand that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move?  Can I understand that a ‘strong’ structure is one which does not break easily?  Can I understand that a ‘stiff’ structure or material is one which does not bend easily? | **Lesson 1 Exploring stability**  Can I can identify natural and man-made structures?  Can I understand what is meant by stability and can identify when a structure is more or less stable than another?  Can I know that shapes and structures with wide, flat bases or legs are the most stable? | Key skills  Generating and communicating ideas using sketching and modelling.  Learning about different types of structures, found in the natural world and in everyday objects.  Making a structure according to design criteria.  Creating joints and structures from paper/card and tape.  Building a strong and stiff structure by folding paper. Exploring the features of structures.  Comparing the stability of different shapes.  Testing the strength of their own structures.  Identifying the weakest part of a structure.  Evaluating the strength, stiffness and stability of their own structure.  Key knowledge  To know that shapes and structures with wide, flat bases or legs are the most stable.  To understand that the shape of a structure affects its strength.  To know that materials can be manipulated to improve strength and stiffness.  To know that a structure is something which has been formed or made from parts.  To know that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move.  To know that a ‘strong’ structure is one which does not break easily.  To know that a ‘stiff’ structure or material is one which does not bend easily. |
| Can I explore strength in different structures?  Can I understand that the shape of the structure affects its strength? | Can I build a strong and stiff structure by folding paper?  Can I test the strength of my structure?  Can I identify the weakest part of a structure?  Can I understand that materials can be manipulated to improve strength and stiffness?  Can I understand that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move?  Can I understand that a ‘strong’ structure is one which does not break easily?  Can I understand that a ‘stiff’ structure or material is one which does not bend easily? | **Lesson 2: Strengthening materials**  Can I understand the meaning of the words strength, stiffness and stability?  Can I know there are different ways paper can be folded to improve its strength and stiffness?  Can I can build a strong and stiff structure by folding paper?  Can I test the strength of my structure? | Key skills  Building a strong and stiff structure by folding paper.  Exploring the features of structures.  Comparing the stability of different shapes.  Testing the strength of their own structures. Identifying the weakest part of a structure.  Evaluating the strength, stiffness and stability of their own structure.  Key knowledge  To know that shapes and structures with wide, flat bases or legs are the most stable.  To understand that the shape of a structure affects its strength.  To know that materials can be manipulated to improve strength and stiffness.  To know that a structure is something which has been formed or made from parts.  To know that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move.  To know that a ‘strong’ structure is one which does not break easily.  To know that a ‘stiff’ structure or material is one which does not bend easily. |
| Can I make a structure according to design criteria? | Can I make a structure according to design criteria?  Can I create joints and structures from paper/card and tape?  Can I build a strong and stiff structure by folding paper?  Can I understand that a structure is something which has been formed or made from parts? | **Lesson 3 Making Baby Bear’s chair**  Can I remember that chairs are structures and need to be strong, stiff and stable?  Can I understand how to create joints and structures from paper/card and tape? | Key skills  Making a structure according to design criteria.  Creating joints and structures from paper/card and tape.  Building a strong and stiff structure by folding paper.  . Evaluating the strength, stiffness and stability of their own structure.  Key knowledge  To know that shapes and structures with wide, flat bases or legs are the most stable.  To understand that the shape of a structure affects its strength.  To know that materials can be manipulated to improve strength and stiffness.  To know that a structure is something which has been formed or made from parts.  To know that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move.  To know that a ‘strong’ structure is one which does not break easily.  To know that a ‘stiff’ structure or material is one which does not bend easily. |
| Can I produce a finished structure and evaluate its strength, stiffness and stability? | Can I test the strength of my structure?  Can I identify the weakest part of a structure?  Can I evaluate the strength, stiffness and stability of my structure? | **Lesson 4 Fixing and testing Baby Bear’s chair**  Can I understand that the chair I design for Baby Bear needs to: support Teddy; be strong, stiff and stable?  Can I understand how to create joints and structures?  Can I evaluate my structure according to the design criteria? | Key skills  Evaluating the strength, stiffness and stability of their own structure  Key knowledge  Recap of all previous key knowledge |