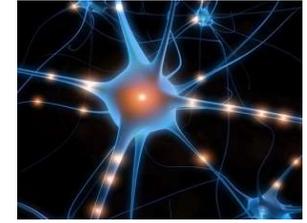


Name.....
 Form.....
 Teacher.....



Composites and Smart Materials

Starter Task

What is the definition of a 'Smart' Material?

.....

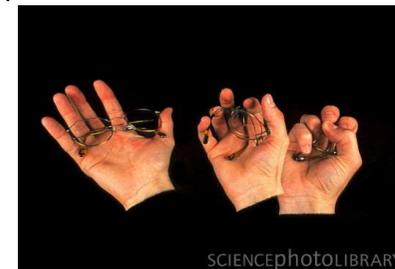
List Five individual Smart Materials that have been created within the last 20yrs?

.....

What advantages have Smart Materials given to industry and the development of new innovative products?

.....

Label the images below highlighting what Smart Material have been used to manufacture of that product?



.....

.....

.....

.....

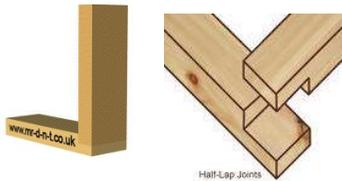
SMART MATERIALS- *Silicon Carbon Fibre Shape Memory Alloy Glass Reinforced Plastic*

Useful www.Sites=Smart materials within design and technology-
 Visual aid www.youtube-smart materials

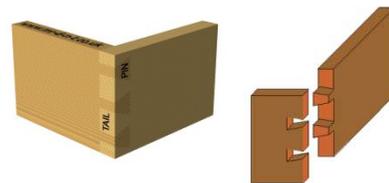
Joints Fabrication Research

Support Sheet- Use the visual designs and explanations below to complete your joint Fabrication task

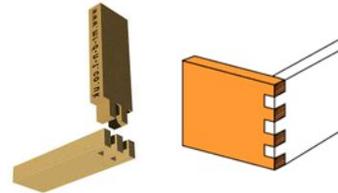
Lap joint



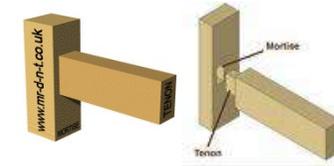
Dove tail



Comb finger

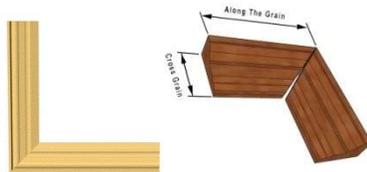


Mortise and tenon



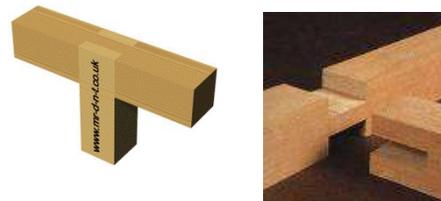
Mortise-and-tenon joints are among the strongest joints in woodworking, and are used for projects that have frame construction and need to be strong. Chairs and tables use them as does most Arts and Crafts and Mission style furniture.

Mitre joint



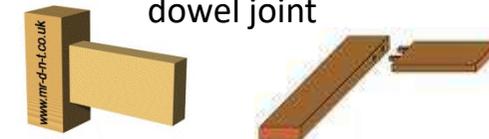
A **mitre** or **mitre joint** (**mitre** in British English) is a joint made by bevelling each of two parts to be joined, usually at a 45° angle, to form a corner, usually a 90° angle. It is often used in making picture frames.

Bridle joint



A **bridle joint** is a woodworking joint, similar to a mortise and tenon, in that a tenon is cut on the end of one member and a mortise is cut into the other to accept it. The distinguishing feature is that the tenon and the mortise are cut to the full width of the tenon member.

Double dowel joint



A **butt joint** is a joinery technique in which two members are joined by simply butting them together. The butt joint is the simplest joint to make since it merely involves cutting the members to the appropriate length and butting them together. It is also the weakest because unless some form of reinforcement is used (see below) it relies upon glue alone to hold it together. Because the orientation of the members usually present only end grain to long grain gluing surface, the resulting joint is inherently weak.

NAME:.....

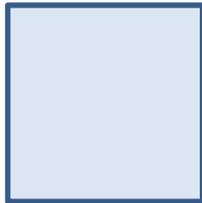
Teacher:.....

Joins Research-Traditional Wood working Joints

Research a range of traditional wood working joints listed, produce a sketched diagram/image of the specific woodworking joint including a detailed description of how and where that specific joint would be used. Select an appropriate product displaying where the joint had been incorporated. Look at the completed example below.

<p>Mitre Joint</p> 	<p>Mitre Joints are similar to Butt Joints but mitre joints are more difficult to cut and are feature joints and give an attractive visual characteristic</p>	<p>Product Image- Picture Frame</p> 
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Dowel Joint

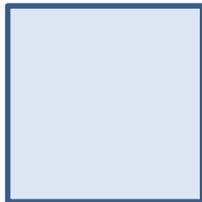


Description-

Product



Comb Joint



Description-

Product

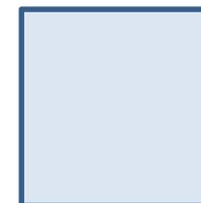


Mortise+Tennon Joint



Description-

Product



Name.....
Form.....
Teacher.....

Finishes Analysis



Acrylic paint comes in a large variety of colours and can be easily applied to all types of materials, however it detracts when added to natural materials such as softwoods and hardwoods as it disguises and covers the natural grain of the material



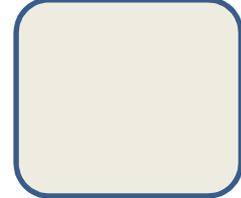
Finish Type

Description/Definition for use of purpose

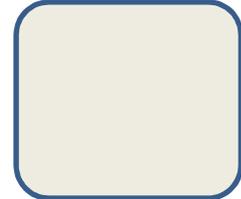
Preferred Material Use



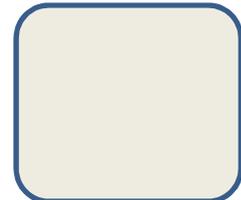
Oil Based Finish



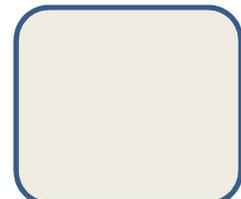
Clear Varnish Based Finish



Stain Based Finish



Spray Based Finish



Q1- What type of finish would be most appropriate for enhancing the natural grain of a material?

.....

Q2- What advantages does stain give less expensive materials?

.....