

Grain Direction

Date _____

By doing this task you will learn that the way a shape is drawn onto a piece of wood affects its strength.

The way the grain goes across a wooden object affects its strength. Look at the two planks below. You can see that the one with the grain going in the shortest direction is weaker (short grain). The one with the grain going in the longest direction is stronger (long grain).



You can see by these snail shapes that if the grain went from top to bottom then the neck may be weakened. On the other hand if it goes from left to right it would be stronger. This is because the grain would be going the longest way across the thinnest area.



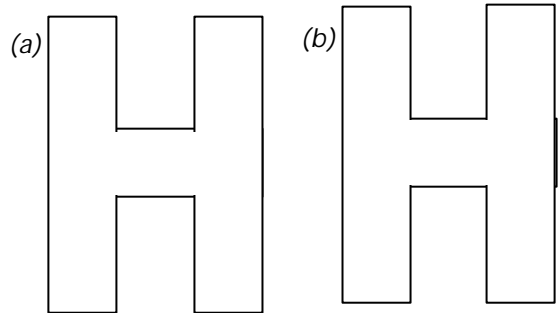
Grain going from top to bottom. Weak neck.

1. On the 'H' marked (a) draw grain lines going from left to right.

2. On the 'H' marked (b) draw grain lines going from top to bottom.

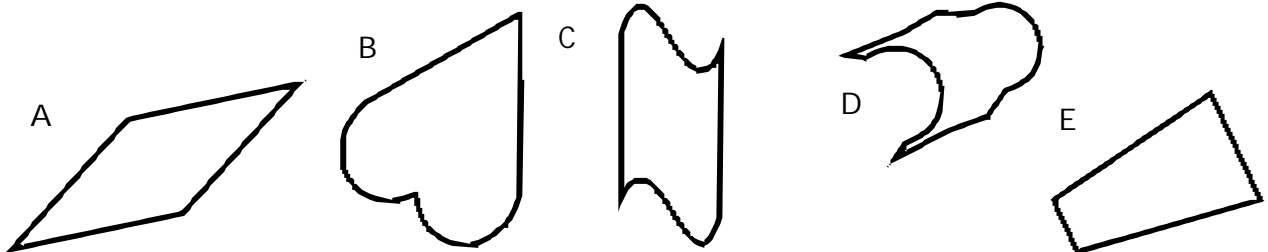
3. Where the grain is shortest across an area mark with 'Xs'

4. Which 'H' has more potentially weak areas? _____



TASK: imagine you have been given some shapes which need to be drawn on wood. You would need to position them on the wood to get the grain in the right direction to ensure they are not too weak when cut out.

Draw the grain on the shapes below in a direction which will provide the strongest structure. You can draw the grain in any direction as long as it makes it strong.



Extension: draw the numbers 1-10, add the grain and describe why you have chosen those directions

Has answered all question