Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: \_\_\_\_\_\_\_\_\_\_\_\_/400

Machine Safety

**Use** <https://nickcornwell.weebly.com/machinelab-safety.html> **if you do not get every answer you need from the class presentation. Each question is worth 4 points.**

**Band Saw**

1. The blade guard should be \_\_\_\_\_\_\_\_\_\_ inches above the wood you are cutting.
2. How do you adjust the band saw blade guard?
3. TPI stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Teeth on any saw should be facing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What is resawing? What additional saw will help you resaw faster? Draw a picture as example and label how it is done. Make sure you refence the fence or a wood clamp in your drawing.

6. Band saws are sized by how big the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is. Draw a picture explaining this.

7. Your hands should never be in line with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. What is a steering stick?

9. If the band saw starts to squeal, it means the blade is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and you should use \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cuts.

10. What is a relief cut? Explain why it is important to use relief cuts.

11. How do you cut out a circular piece of wood on the bandsaw?

12. Explain how you hold your fingers when you are cutting stock on the bandsaw.

13. Stock should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the band saw table when cutting.

**Drill Press and drilling**

14. Draw the outline of a forstner bit

15. Draw the outline of a paddlewheel or spade bit

16. Draw the outline a brad point bit

17. Explain when and how you should clamp something down on the drill press.

18. What should be under your work when drilling?

19. Draw a chuck key and explain what it does. Where do we keep the chuck key?

20. How do you change a bit in a cordless drill?

**Wood Lathe**

21. Where should long hair and long sleeves be when using the lathe?

22. Draw the shape of a skew and what it is used to shape.

23. Draw a gouge and state its purpose

24. Draw a parting tool and state its purpose

25. Draw a spur center and state its purpose

26. Always hold lathe tools in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hands. Never \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ turning wood stock.

27. Draw and caliper and explain how to measure with it.

28. When using the lathe, large chips of wood/sawdust means you are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Small chips/sawdust means you are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and your tools are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

29 & 30. Label the steps in order to mount wood on a lathe.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Use a rubber mallet (not a hammer!) to hit spur center into end of one side of wood |  | Insert spur center into head stock |
|  | Adjust tool rest so that it is ¼” away from turning wood.  |  | Draw perpendicular lines on the ends of each side of wood (corner to corner) |
|  | Saw perpendicular lines 1/8” deep so spur center will fit in cuts.  |  | Rotate wood one time to see that it will not hit tool rest, then turn on.  |
|  | Lock tail stock and tighten tail stock point so that the end of wood is dented (roughly 1/8” deep)  |  | Adjust tail stock so point is in the center of the X on the end of wood.  |

**Disc and Belt Sander and Orbital Sanders**

31. What side of the disc sander should you use to sand on?

32. What should be turned on before turning on the sander?

33. What is the maximum thickness of wood that should be sanded off? Draw a 1/4” line below and label it.

34. Explain how to use the sander cleaner.

35. The sander is only to sand \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. No metal, plastic, etc.

36. Draw the direction that a random orbital sander takes when sanding.

**Scroll Saw and Jig Saw**

37. The maximum thickness of wood that a scroll saw or hand-held jig saw can cut is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

38. Explain how you cut out the middle of a piece of stock using the scroll saw.

39. What is the pressure foot and what does it do?

40. When cutting thick stock, you should go \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, you can go \_\_\_\_\_\_\_\_\_\_\_\_ when cutting thin stock.

41. If the blade breaks, turn the scroll saw off, release the tension, unclamp the blade, remove broken blade, insert new blade with teeth pointing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, re-clamp the bottom clamp first, clamp the top, then retighten the tension.

**General Wood Shop Safety Questions**

42. Explain the difference between a push stick and push pad. Draw and label an example of each below.

43. What should you do before you use any machine in the shop?

44. List the general safety rules needed for every machine in the lab.

**Portable Power and Hand Tools**

45. Explain the difference between 80, 120, 220 and 400-grit sandpaper.

46. Draw and label a bar clamp and a wood clamp.

47. Explain the difference between hook and loop orbital sanders and peel and stick sanders.

48. What tools are needed to properly open a paint can? What tools are needed to properly close a paint can?

**Important woodworking terms and information**

49. What is the difference between ripping and crosscutting a piece of lumber?

50. Explain what wood grain is. Draw a picture below to help illustrate your definition.

51. Softwoods come from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trees; Hardwoods come from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trees.

52. Define kerf-

53. What is a vise? What are vise dogs and bench dogs and how are they used with a vise?

54. Steel wool is classified in 0, 00,000, and 0000. Which size is the finest? \_\_\_\_\_\_\_\_\_

55. What should you do if you find a broken tool or machine?

56. Where are the emergency stop buttons in the shop? Why should you use them? What will happen if you push the button and there is no emergency.

57. What is the only thing that should be swept in the dust collector? \_\_\_\_\_\_\_\_\_\_\_ What happens if you put nails or scrap wood in it?

58. Wood glue is completely cured/dried after \_\_\_\_\_\_\_\_\_\_\_ hours.

59. Correctly clamped and cured wood glue will hold \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pounds.

60. What should you do during a school lock down?

61. How do you change the belt on a belt sander or drum sander?

62. How do you change the blade on a jig saw or saws-all?

63. What should you never do with pressurized air?

**Table Saw**

64. Never \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cut on the table saw. Only straight cuts!

65. Never use the \_\_\_\_\_\_\_\_\_\_\_ fence and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gauge at the same time. Use one or the other.

66. What does the height adjusting handwheel do? How far above the stock should the blade be set to?

67. What does the blade tilt handwheel do? What is the angle range of cuts for each table saw?

68. Is it safe to cut round stock on the table saw? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

69. True or False: You should never stand in line with the blade or have your hands in line with the blade.

70. The miter head gauge is calibrated in \_\_\_\_\_­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

71. True or False: You should cut boards that visibly have nails or screws in them.

72. The large part of the wood being cut should be on the fence side of the wood.

73. What does the splitter/riving knife do?

74. How do you cut dados and grooves on a table saw?

**Jointer**

75. What is a Byrd head on a jointer? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

76. To joint wood, the direction of our machine is from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

77. Always stand to the \_\_\_\_\_\_\_\_\_\_\_ and out of line of the cutterhead knives. Always use the \_\_\_\_\_\_\_\_\_\_\_\_\_ guard when jointing.

78. Do not allow the hand to pass directly above the cutterhead while applying pressure to the stock. Keep hand(s) at least \_\_\_\_\_\_\_\_\_\_\_\_ inches away from the cutterhead.

79. Never joint \_\_\_\_\_\_\_\_\_\_\_\_\_ grain on the jointer. Only edge or face jointing.

80. Keep stock flush against the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when jointing.

81. The minimum length of stock you can joint is \_\_\_\_\_\_\_\_\_\_\_\_\_ inches.

82. When face jointing, you must use a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

83. For our class, keep the jointer fence set to \_\_\_\_\_\_\_\_\_\_\_ degrees.

84. Before using the jointer, make sure no one is standing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Planer**

85. The maximum amount of wood you can plane off in one pass is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. One complete turn on the bed elevating handwheel = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

86. Two basic safety rules for the planer: Wear \_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_ protection. Never \_\_\_\_\_\_\_\_\_\_\_\_ into the machine while it is running.

87. The minimum length of board you should run through the planer is \_\_\_\_\_\_\_\_\_\_ inches. If it is shorter it could spin like a frisbee and shoot out of the planer at over 70 mph.

88. Never send wood through the planer where the end grain has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_ together to other pieces.

89. The only direction that wood should go into the planer is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

90. Where should you stand when using the planer?

91. How many boards can you plane at one time?

92. Never plane wood \_\_\_\_\_\_\_\_\_\_\_\_\_\_ grain when planning glued pieces.

93. When should you use a helper on the planer? What does the helper do?

94. Explain what to do if the wood stops halfway through the machine.

95. Make sure your wood does not have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ before you run it through the planer. Also never put \_\_\_\_\_\_\_\_\_\_\_\_\_ wood into the planer.

96. How do you adjust the planer before you start?

97. Your hands should never go past the front of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

98. When panel gluing after jointing pieces, a biscuit jointer is often used. Explain how to use a biscuit jointer.

**Router**

99 & 100. Draw the 10 types of most common router profiles in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Chamfer | Cove | V-Groove | Round-Nose | Dado |
|  |  |  |  |  |
| Rabbeting  | Dovetail  | Round Over | Roman Ogee | Beading  |
|  |  |  |  |  |

101. The part used to hold bits in a portable router is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

102. When starting a cut with the router, the bit should NOT \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. You should also have both hands on the router.

103. What should you do with the power cord to the router while routing stock?

104. A major safety precaution to observe when changing router bits is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

105. To prevent splintering at the corners, one should cut the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first.

**Miter Saw**

106. How must the saw blade be held after the cut is finished and before the blade stops rotating?

107. Your fingers should be at least \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inches away from any stock you are cutting.

108. Always hold or clamp stock to the miter saw to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when cutting.

109. Never \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ your arms when cutting.

110. What should you do if there is a kickback on the miter saw?

111. What is a compound miter?

112. Long stock should be supported by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Never a \_\_\_\_\_\_\_\_\_\_\_\_\_.

113. True or false: You can rip on a miter saw.

114. Align the saw blade on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side of the cut line.

115. Never cut anything smaller than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inches in length.

116. True or false: You can cut boards wider than 12” on a miter saw.

117. True or false: Never reach behind or across the blade while the miter saw is plugged in.

118. What is a stop block used for on a miter saw?

**LASER MACHINE**

119. The LASER machine beam is focused when it is exactly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inches above the work plane.

120. Never leave the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the LASER machine open/up.

121. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ extractor must be on to use the LASER machine.

122. Do not look \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the LASER.

123. LASER is an acronym that stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

124. The LASER machine will only cut or etch in 8 colors of RGB. List the three most common.

125. True or False: You may use glass, metal, wood, and plastic in the LASER machine.