This link takes you to a series of professionally produced videos on the basics of Milling Machining parts, terminology, set up and use of milling machines. There are a total of 9 videos outlining milling machine basics.

<https://www.youtube.com/watch?v=U99asuDT97I&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=1> - Chapter 1 : Basic anatomy

1. What are three basic operations performed by a milling machine?
2. What 3 axis do a lathe follow when performing machining activities?
3. How is power applied when moving the table on a manually powered mill?
4. What axis does the table follow when moved vertically along the saddles?
5. Which of the machine structures of the lathe travel on rails?
6. What is the function of a lead screw?

<https://www.youtube.com/watch?v=RIbdYmmhPDI&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=2> - Chapter 2 : Basic operation

1. What is the purpose of a draw bar?
2. What are two situations were the spindle brake lever may be used?
3. Why are machines with variable speed heads better than step pulley heads?
4. How do you engage the back gear?
5. Why would the option of different feed rates be available when the power quill is in use?

<https://www.youtube.com/watch?v=hMK7g_PpCv8&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=3> - Chapter 3 : CNC Mill Operation

1. What type of attachment is screwed into the back of tool holders on CNC machines?
2. What does the acronym “ATC” stand for?
3. What is the purpose of the control panel?
4. Explain how a CNC machine operated.
5. What is water soluble coolant used for when machining?

<https://www.youtube.com/watch?v=J1VtofzVG24&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=4> - Chapter 4 : Work holding devices

1. What is the most common type of work holding device for milling operations?
2. What device is used to determine parallel alignment of vises on the milling machine table?
3. Why are “parallels” used for some milling operations?
4. What shaped materials are held in place using “Vee” blocks?
5. When step clamps are employed as holding devices, what must the user ensure about their position?

<https://www.youtube.com/watch?v=r7eEj_qq5M&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=5>

– Chapter 5: Work Locating

1. What is meant the term “work locating”?
2. What are we trying to determine when we are using a mechanical edge finder?
3. Why is the step important in the set up of the milling machine prior to the completion of milling operations?
4. What should you do with the dial indicator, edge finder and other devices for work locating after they have been used?

<https://www.youtube.com/watch?v=IPWGV_EGAHw&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=6> – Chapter 6 : Tool Holders

1. Explain what a tool holder does
2. What are the 4 standard machine tapers on tool holders?
3. What are 2 uses for milling chucks?
4. What advantage does a keyless chuck offer the machine operator?

<https://www.youtube.com/watch?v=9OsNUi_o6C4&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=7> – Chapter 7 : Face Milling

1. What is accomplished in face milling operations?
2. How does face mills with positive axial rake affect the milling machine?
3. Describe the position of the quill when using a face mill and why this position is preferred.
4. What materials require coolant or lubricant when facing?
5. What is a common lubricant that can be used when machining aluminum that is readily available in our shop?

<https://www.youtube.com/watch?v=HfIaISnqHOk&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=8> – Chapter 8 : Choosing and using End Mills

1. What are 90 Degree end mills used for?
2. Describe the differences between a rough end mill and a finishing end mill
3. What type of “milling” technique is recommended for manual milling?
4. Why is a ramping technique recommended rather than a plunging method when starting to cut?
5. What method can be employed to make large holes if a boring bar is not utilized?

<https://www.youtube.com/watch?v=om6GQKfoS1g&list=PLyv4Q1JxT_Rh0Fv5loUN9ZTm74VkxYjhJ&index=9> - Chapter 9 : Drilling, tapping and boring

1. What is the most common used tool for creating holes?
2. What is the name of the drilling process used to clear chips?
3. What is the advantage of using a screw machine drill?
4. Why do we spot face and what do we use to do this?
5. What is utilized to give the best finish and highest precision?
6. What could happen if any of the processes described in the various videos are done without the machinery having proper guarding, loose or damaged machines, dull or broken tooling/attachments etc.?