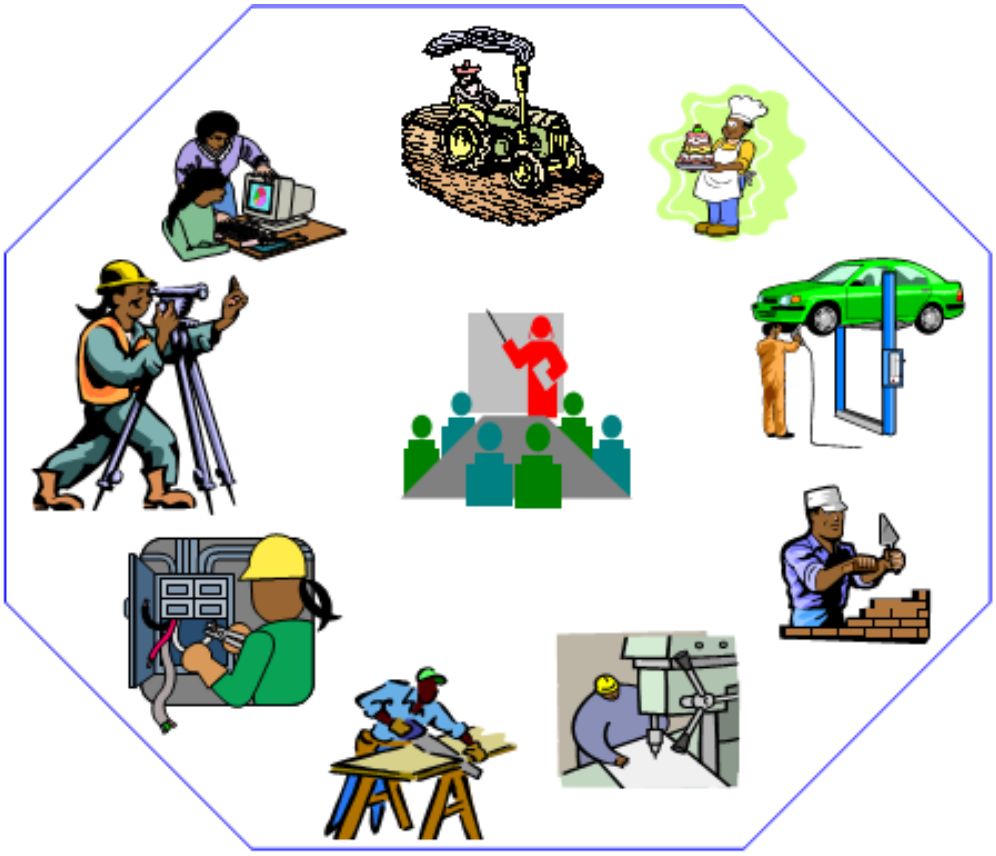
Lapidary

Level-II

Based on January 2014, Version 1 OS and April. 2021, V1 Curriculum



Module Title: - Cabbing(Make Cabochon)

LG Code: IND SHP2 M09 LO (1-3) LG (32-34)

TTLM Code: IND SHP2 TTLM 1020v1

April, 2021

Adama

Table of content

LG #22	LO #1- Prepare for Work

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

1. Planning the work
2. Safety requirements and the discipline of the workplace
3. planning and sequencing task
4. selecting and checking tools and equipment
5. Acquiring material to be slabbed or trimmed and cabbed
6. Cleaning equipment and work area
7. preparing, selecting and weighing rough material
8. Checking Coolant in saw(s).
9. checking Blades
10. Loading stones.
11. Checking Vices.
12. Checking Pump or coolant delivery system
13. Checking Caber.
14. Checking Grinding wheels
15. Filling Coolant

16. Acquiring templates, dop sticks glues and wax.
17. Acquiring doppots .

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

1. Plan the work
2. Safety requirements and the discipline of the workplace
3. plan and sequence task
4. select and check tools and equipment
5. Slab or trim and cab Material.
6. Clean equipment and work area
7. prepar, select and weigh rough material
8. Check Coolant in saw(s).
9. check Blades
10. Load stones.
11. Check Vices.
12. Check Pump or coolant delivery system
13. Check Caber.
14. Check Grinding wheels
15. FillCoolant
16. Acquire templates, dop sticks glues and wax.
17. Acquire doppots .

Learning Instruction

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
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Information Sheet 1- prepare for work

Before starting slab or cab a gem, you have to determine the type of the project or final product that you want to attain. Once you plan what to do, prepare follow the safety producer requirements and the discipline of the workplace adhered to throughout the process and arrange sequence of tasks in conjunction with other slabbing/trimming and cabbing processes.

Select and check tools and equipment like slab saws / trim saws, grinder (Caber), blades(sintered-rim or notch-rim), wheels scales, magnifiers, light source, pails / buckets, etc. and the work area and equipment's must be clean to create conducive and better work environments.

Prepare rough materials (gemstones), select and weigh them. Determine the size, color and pattern to meet the desired project. Weight the stone to know the final recovery rate or output. Check the availability of proper coolant in saw(s) or grinders and check the availability of standard blades, wheels, template, glue/wax/epoxy, despotic, depot

For more information refere **UC 6 LG-14 0f lapI** for the contents listed 1-12

Self-Check -1	Written test

Direction 1: Short answer items

Instruction1- Read the following questions and give answers for each.

1. Why do you slab? 2pts
2. Mention the general procedures to be followed while slabbing the gem material.2 pts

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Information Sheet 2 - Checking Caber

2.1 Checking Caber

Caber means cabbing machine that comes with all the lapidary supplies and accessories for grinding and polishing rocks/gemstone to create beautiful cabochon gemstones

Our lapidary cabbing machine will allow you to work effectively and without any hustle, providing the best and valuable results.This cab machine comes with a durable, direct-drive and single-shaft motor (½ HP for 6" model and 1 HP for 8"model) that ensures efficient quality of work. The cab machine is equipped with a set of 6 wheels that are well-balanced and precise .The most popular cabochon cutting **machine** is the Genie by Diamond Pacific. It has six permanently mounted wheels. The first two are 100 and 260 grit diamond on solid wheels. The other four range from 280 to 14,000 grit.

Check all the parts of caber parts that is the firmness of wheels, coolant tank,the spray of pumps,the light source etc.

Fg Cabking

Genie cabbing

Self-Check -2	Written test

Direction 1: Short answer items

Instruction1- Read the following questions and give answers for each.

1.What is the function of cabbing machine? 2pts

1. Which cabing machine is best for lapidary works ?

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Operation Sheet-1	Prepare for work

steps for slabbing gem material

1. Plan end result /project
2. Use safety requirements
3. Arrange sequenc of slabing processes
4. select tools and equipment
5. acquire gem material
6. Clean equipment and work area.
7. Check and fill Coolant.
8. Check and maintain blades.
9. Load Saws/clamp the stone.
10. Check vices for firmness.
11. Check pump or coolant delivery system.
12. close the splashhood to protect the spread of coolnts
13. turn on the machine and slab the material/stone

Information Sheet 3- Checking wheels and filling Coolant

3.1 wheel

Wheel is circular frame of hard material that may be solid, partly solid, or spoked and that is capable of turning on an axle

Grinding wheel is basically a precision tool composed of **abrasive** grains(diamond grits) held together by a bonding material. The **abrasive** grains or grits(60,80,100,120,180,220) provide the **wheel** with its cutting ability which helps in finishing the material to the required dimensional accuracy and surface finish.

Fig galaxy grinding wheel

Sanding wheel: are made with special uniform **diamonds** which do not overheat as easily wearing out the abrasive crystals. With use, these **diamonds** align and cause less pitting. As a result, they are less susceptible to clogging and quick wear They are cloth backed, long lasting, ultra-flexible allowing the pad to conform to all surfaces.Sanding wheels grits are 280,600,1200,and 3000

Fig nova sanding wheel

Polishing wheels: **Polishers** are primarily responsible for polishing. A Finishing processes that utilize abrasive belts are referred to as **polishing.** They are the ablity to make agemstone shinny**.**

The smooth, ultra-edge cutting and polishing quality of our cabochon machine's lapidary wheels will ensure there are no scratches or flat spots surfaces on your cabochons gemstones

3.2 coolants.

A **coolant** is a substance, typically liquid or gas, that is used to reduce or regulate the temperature of a system and wash the particls and chips during grinding.

An ideal coolant has high thermal capacity, low viscosity, is low-cost, non-toxic, chemically inert and neither causes nor promotes corrosion of the cooling system. Some applications also require the coolant to be an electrical insulator. Water is the most common coolant for lapidary grinding machins . Its high heat capacity and low cost makes it a suitable heat-transfer mediumn. The coolant reachs to the wheel throught the pumping system. Fill the coolant tank by water until the pump is covered.

Self-Check – 2	Written test

Directions: Answer all the questions listed below.

Short Answer Questions

1. What is wheel ?(2pts)
2. Write the functions sanding wheels?(2pts)
3. What is the difference between gringing and polishing wheels?4 pt

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

Score = _____

Rating: _____

You can ask you teacher for the copy of the correct answers.

4. Information Sheet - **Acquire templates, dop sticks ,glues ,wax and doppots**

Templates is a tool of lapidary **used for outling on the slab of a gem. It has diffenret shaps with different sizes**

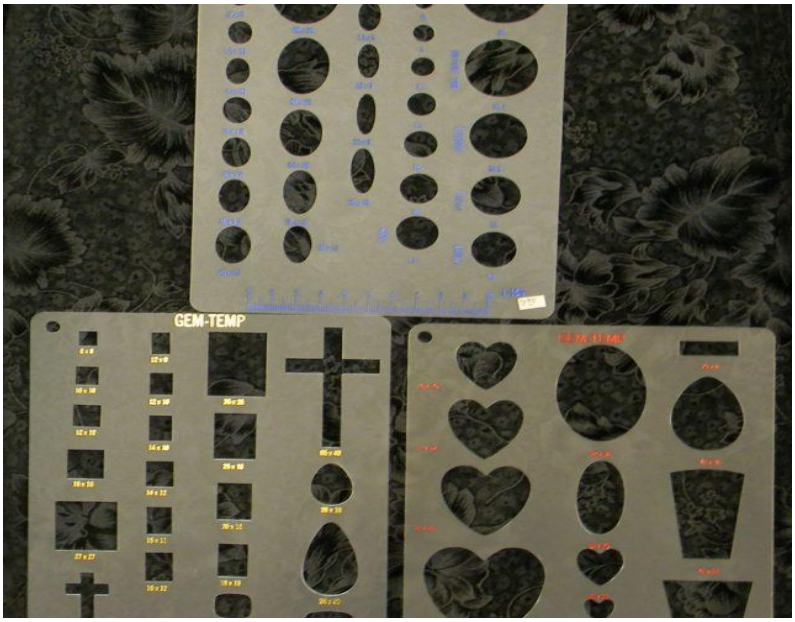


Fig PlasticTemplets

Dop sticks

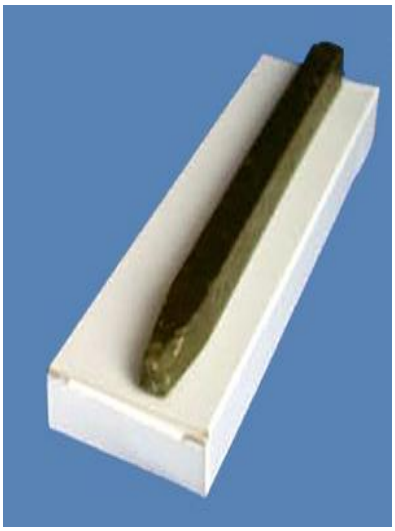
Dop sticks are used to hold your stones in place to ease the cabbing process. **Dop sticks** are made out of wood and metals.It is usefuu to protect the contact of hands with wheels.

Fig Dopsticks

Glues or wax

Glue is a sticky material (usually a liquid) that can stick two or more things together. **Glue** can be made from plant or animal parts, or it can be made from oil-based chemicals. ... A simple **glue** can be made at home by mixing wheat, flour and water. This **glue** will stick pieces of paper together.

Wax is alspidary consumable materials used for stick/attatch two or more things

 Wax	 Hotsaff glue	 Epoxy

This specially formulated low temperature wax is ideally suited for heat sensitive stones such as opal and turquoise. Melts at 160 degrees Fahrenheit+

Dop dop is thermostatically controlled pot for melting lapidary dop wax. Its non-stick surface melts wax in under 15 minutes and keeps it at the right temperature while you work.

Dop pots are made to heat your way to the correct temp of 150°. It takes about 20 minutes for the dop pot to heat the wax to the correct temperature and one minute to heat the stones around its edge. It not only melts dop wax in under 15 minutes, but keeps it softened at the

right temperature. Advanced features makes this dop pot a popular tool and eases the cabbing process

Fig Dop pot

Self-Check – 3	Written test

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Test I: Short Answer Questions

1. What is the importance of glue of wax.(2 pts)
2. What is the difeerence between wax and doppot?(2pts)

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

Score = _____

Rating: _____

You can ask you teacher for the copy of the correct answers.

LG #23	LO #2- Slabbing stone to be cabbed

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Loading saw slabbed stone.
- Starting Saw.
- Keeping Saw
- Turning off Saw
- Removing Cut slab.
- Cleaning slab.
- cleaning up Saw area

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Load saw slabbed stone.
- Start Saw.
- Keep Saw
- Turn off Saw
- Remov Cut slab.
- Clean slab.
- clean up Saw area

Learning Instructions:
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Information Sheet 1- Slabbing stone to be cabbed

This Lo contains 7 information topics to be mentioned indetail.There fore to accomplish this information sheet refere **UC 6 LG-14 0f lapI**

Self-Check – 1	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Test I: Short Answer Questions

1. List the function of splashhood durning slabbing gem materials? (3pts)
2. Why coolant is important fo slabbing gem materials? (2pts)

Note: Satisfactory rating - 5 points Unsatisfactory - below 5 points

Score = _____

Rating: _____

You can ask you teacher for the copy of the correct answers.

Operation Sheet 1	Slab the stone

Slab the stone to make cabochon

Step 1- wear PPE.

Step 2- select the rough stone.

Step 3- check and adjust the necessary parts of slab saw

Step 4- turn on the slab saw

Step 5- check the rotation of blade

Step 6 - turn off the machine

Step 7- take out the slab

Step 8- clean the slab

Step 9- clean up work area

LAP Test 1	Operate the slab saw

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Slab the stone using the following steps? (10 pts)

TASK:-Slab the stone with the thickness of 10mm

LG #34	LO #3- Cab Hand Craft (HCR) Material

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics –

- Material selection
- Creating the rough cabochon
- Creating the preform
- Doping
- Creating the cabochon shape
- Sanding and final shaping
- Fine sanding
- Polishing
- Finishing
- Making decorative or gift items

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to –

- Select Material gemstone
- Create the rough cabochon
- Create the preform
- Dop the stone
- Create the cabochon shape
- Sand and final shaping
- Fine sanding
- Polish the cabochon
- Finish the cabochon
- Making decorative or gift items

Learning Instructions:

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Information Sheet 1- **Material selection**

A **cabochon** (/ˈkæbəˌʃɒn/, from Middle French caboche "head") is a gemstone which has been shaped and polished as opposed to faceted. The resulting form is usually a convex (rounded) obverse with a flat reverse.It was the default method of preparing gemstones before gemstone cutting was developed.

Today there is a wide variety of pre-slabbed rocks available from which you can create beautiful cabochons. You have to:

- Select slabs that are free of fractures, cracks, and pits that could potentially cause the piece to come apart in the process. Make sure to check both sides of the material. Inclusions may enhance or detract from the finished project.
- Pick a slab size and thickness that suits the size of the cabochons you want to create. You will find most cabs are made from 1/8" to 1/4" slabs. Larger cabs may be made from material closer to 3/8" thick.
- Look for pieces with interesting colors, patterns or design that you can bring out in the cabbing process. If the material is translucent, look at it through a strong light. Hold it up to the sun to look for colors and interesting banding. It is important to remember that your finished cab will be significantly thinner and even more translucent than the original slab. Wet the material to see what it may look like when polished.

Self-Check – 1	Written test

Name…… ID…… Date…….

Directions: Answer all the questions listed below. Examples may be necessary to aid some explanations/answers.

Test I short answer

1. Why you find a patterns ?(4pts)
2. The minimum and maximum slab thichness is _____and _____inchs.(2pts)

Note: Satisfactory rating - 6 points Unsatisfactory - below 6 points

You can ask you teacher for the copy of the correct answers.

Score = _____

Rating: _____

Information Sheet-2	Creating the rough cabochon

2.1. **Creating the rough cabochon**

If you're going to use the cabochon in a commercial finding designed to hold a standard sized stone, it's important to cut it accurately to a specific outline so it will fit. Templates are available to help layout specific sizes and shapes. Move the template around on your slab to find the most pleasing pattern for your finished cabochon. Take a permanent marker, aluminum or brass marking stylus and run it around the inner edge of the template as close to the edge as possible. You can also use the marker or stylus to layout a free form shape.

The next step is cutting/trimng the slab close to the desired outline on the trim saw. When you trim away excess material keep in mind that some of it could be used to create other cabochons or be used for inlay, intarsia beads or tumbled. So, as you cut away the excess material, do so in a manner that will maximize the rough remaining.

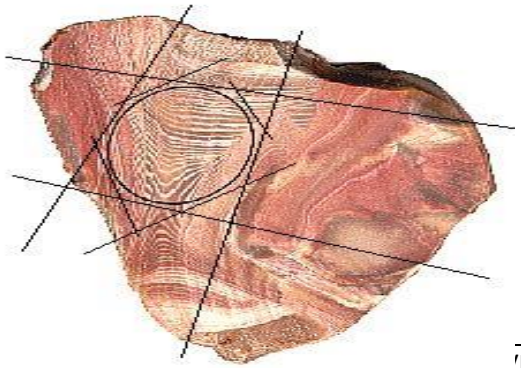


Fig outlined slabs

Fig Trimmed Agate

Always start the flow of the coolant before beginning your cuts. Coolant lubricates the diamond and keeps the working area of the blade clear of debris. You should not have water flooding the saw table. If a paste forms around the cutting area, increase the coolant flow; sawing dry will severely affect the life and performance of diamond blades. With practice you will soon develop a feel for the speed that does not slow the motor while giving you a good sawing rate. An alternative to this trim saw is to use a diamond band saw to rough shape the cabochon. Accurately cutting using a band saw can minimize the grinding step, allowing you to create more intricate shapes while conserving precious and expensive rough.

Take your time and carefully cut close to the outline using a series of eight or so cuts. Some stones will lend themselves to fewer cuts, and some will require more than just eight. All cuts should be made outside but close to your template line. Allow enough space for the material that will be removed in the grinding, sanding and polishing process. Careful cutting now will make successive steps easier and greatly enhance the appearance and quality of your final product.

After sawing, clean the cab and check your work. The next step in the process is to establish a smooth and accurate outline using the Swap Top grinder set-up to remove any margins or small corners of material left over from the sawing operation.

Self-Check -1	Written Test

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. Why you take more time and carefully cut close to the outline?(6points)

Note: **Satisfactory rating 3 points and above Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Information sheet -3	Creating the preform

Now you want to remove any margins or corners so that the cabbing “blank” is the shape and size desired.Place the cabochon flat on the grid surface. Turn the machine on and slowly move the material into the grinding head. Use a back and forth motion to remove material and shape the piece. Periodically check the stone’s size with the templete or the mounting. It should be just slightly larger to allow for material removed in the sanding and polishing processes. Do not grind until it slides through the template (outline), or it will end up being too small.

Fig Preformed cab

Self-Check -1	Written Test

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. what is preform ?(6points)
2. Write the advantages of preforming.4pts

Note: **Satisfactory rating 10 points and above** **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Name of the student ……. Score----------

Rating----------

Information sheet-4	Dopping

4. **Doping**

Doping is the process of securing the stone to a stick (dop stick) using a special (dop) lacquer wax. Doing this gives your cabochon a handle so you can more easily manipulate the stone on the flat lap machine. Dop sticks can be fashioned from a variety of materials; the most simple is a piece of wood dowel about 4-5 inches long.

1. It is important that the stone be clean and dry.
2. To create a good bond, the cab needs to be warmed by placing it on top of the wax heater. A good bond between cab and stick is important: If this bond breaks while a cab is being worked, it is possible for it to be thrown and possibly broken or irreparably marred. It's also possible that you or someone else could be struck by a flying rock. This is also why the prudent lapidary always wears eye protection while working with these tools!
3. When the cab is sufficiently warmed, place the dop stick into the wax and spin it around to pick up a gather of wax and then push it down on the back side of the cab. With the wax still liquid, wet your fingers and blend the wax from the dop stick down to the surface of the cab making a nice fillet. This feathering creates a supporting platform and insures a secure bond between cab and dop stick.
4. NOTE: Dop wax is hot and will burn your fingers if it sticks to them! Have a small container filled with cool water handy to wet your fingers so that you can shape the wax and properly secure the dop stick to the cabbing stone. Alternately, you can feather the wax out with something that the wax will not readily stick to, such as a cold knife blade
5. .The cab and dop stick are returned to the heater for a few more minutes, giving the wax time to flow and bond. Then the assembly is removed and allowed to cool to room temperature.

6. Test to make sure the cab is securely bonded to the stick. Once satisfied that all is properly prepared, the next step is grinding the face of the cab to a dome shape and generally rounding and smoothing it.

7. Many lapidaries do not rely on the doping system, and instead simply hold the cabs in their hands for the grinding, shaping, and polishing steps. However, it takes a lot of experience to enable you to do this safely and effectively

Fig Dopped preform

Another dopping method that The Gem Shop has used is super glue and brass or aluminum dops. It is important to make sure that the top of your metal dop is flat. Use one drop of super glue to adhereyour stone to the dopstick. Allow adequate time for your glue to set. you can then use a metal dop holder to hold your dopped stone for working..

Self-Check -1	Written Test

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. What is the importance of doping ?(6points)

Note: **Satisfactory rating 3 points and above Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

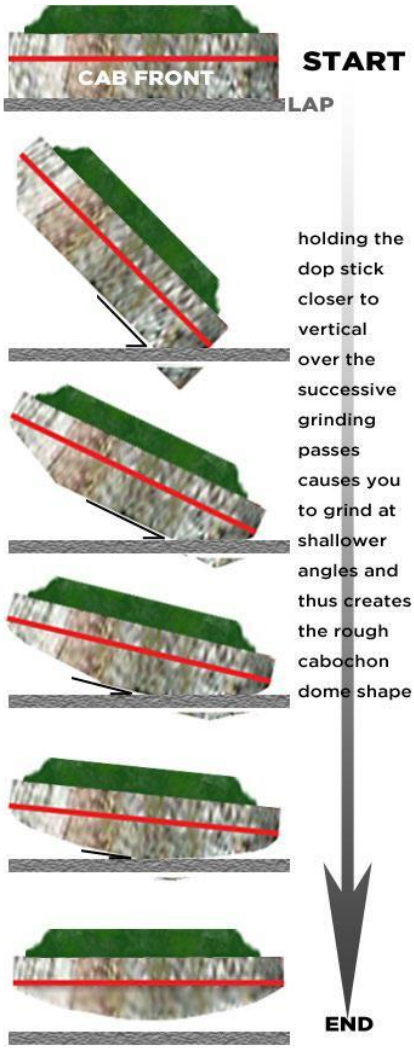
Rating----------

Information sheet -5	Creating the cabochon shape

5. Creating the cabochon shape

The goal in cabbing is to produce a smooth and properly domed surface on the face of the cab while creating uniform wear on the diamond disc (to optimize its life). Use light to moderate pressure and inspect your progress frequently. You want to use a sweeping, J-shaped motion with the cab, pulling it towards you and turning the cabochon (about ¼ turn) as you go. Always keep the contact points moving on both the cab and the diamond disc. This is probably the most difficult part of cabbing to learn. There's a certain feel when the motion and the pressure are correct. With a bit of practice you will learn that feel.

Always start the coolant drip and then turn on the machine. Any time white powdery residue appears on the lap it means that you are not using enough coolant and may risk damaging the diamond lap and/or your cab. Increase the coolant flow accordingly.



You can control how fast you grind by using the speed controller and the position of the cab on the lap. You will grind and sand more slowly near the center and more quickly as you move closer to the outer rim. Practice will help you determine the optimum speed and position for each step of the process.

1. Start by holding the cab about 45° to the lap. Grind completely around the cab at this angle until you reach the girdle line. This will make a smaller flat area on the top of the cab. Watch the tendency to grind down the corners too much: The girdle reference line helps you avoid this pitfall.

2. Now increase the angle (so that your dop stick is closer to the vertical) and repeat the process, grinding from the edge of the flat toward the girdle line. You will do this several more times, each time grinding at a shallower angel and de-creasing the size of the flat area (in the center of your cab) until it is completely gone and you have a rough shaped domed cabochon. There is not a set defined series of angle to follow - it's just practice over time to develop a feel and eye for the dome shape you want.

3. When you have formed the dome, work up and down over the center of the cab to the girdle line. This can be accomplished by rocking the dop stick back and forth like a pendulum, as you rotate the cabochon slowly from end to end. Do it in one direction, then turn the dop stick 90° and do it again.

Repeat this process two more times so that you are blending out the grinding lines developed during the grinding process. When you reach the point where you now have a relatively uniform domed shaped it is time to move on to fine grinding and final shaping. Thoroughly rinse the stone, dop stick, and your hands.

Use the same motion as before to continue to refine the shape; check the cabochon as you grind to be sure you are grinding symmetrically. You want to end up within a fraction of the girdle marking line. Frequently rinse and dry the stone to reveal the remaining scratches. When you no longer have any scratches from this wheel and the surface appears uniform you are ready to move on to sanding. Thoroughly rinse the stone, dop stick and your hands

.

Self-Check -1	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space providd

1. Which part of a cab you can made first ?(6points)
2. Explain the difference between preforming and dopping?4pts

Note: **Satisfactory rating 8 points and above** **Unsatisfactory - below 8 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Information sheet -6	Sanding and final shaping

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6. Make final shape

Depending on the hardness of the rock and the desired finish you may wish, this may be a single or multi-step process. Practice, the type of material, and experience will determine just when your cabochon is ready for the final polishing step. When starting out we suggest you use both the 600 grit and 1200 grit laps included with your kit. You may find that some stones will be ready for polishing after the 600 grit step while others may require even finer grit laps or sanding media.

These are available from Inland Lapidary as additional accessories.

1. Replace the 280 grit diamond lap with the 600 grit lap. Refer to the instruction guide for mounting it to the master lap and installing it onto the machine. Spin to make sure that it is centered on the master lap.

2. Work the cabochon as before until you have removed all the280 grit scratches. It is also time to check size against the template or mounting and make any necessary adjustments. The cab will now begin to have a satiny appear-acne. Depending on the hardness of the rock, you can either move on to the polishing step or finish this process on the 1200 grit lap. Rocks of Hardness 6 or less (using Moh's Scale) should be sanded on the 1200 grit lap before moving onto the polishing step. If you are unsure of the hardness of your rocks, we recommend you continue onto the 1200 grit lap and then go to polishing step.

3. Replace the 600 grit diamond lap with the 1200 grit lap. Refer to the instruction guide for mounting it to the master lap and installing it onto the machine. Spin to make sure that it is centered on the master lap.

4. Continue fine tuning the cabochon shape on the 1200 grit lap. Double check size against the template or mounting. It should fit the template or mount precisely at this point. The stone should have a semi-gloss appearance as you now have only 1200 grit scratches. Rinsed and dried you should not see any scales (aka dimples, facets, flats, etc) or scratches. Check by holding the stone up to a bright light and look for sparkles or deep lines. Scales are most easily observed by watching the piece dry. Because the “scales” will have deeper puddles of water, they will evaporate-rate more slowly. Wet your piece and watch for this phenomenon. If you see any scratches or scales, you may not have smoothed long enough. If after additional smoothing you can still see scratches or scales, they are too deep to remove. If they are present, you must return to the 325 grit lap step and follow through the steps, always using the complete order of grits.

Self-Check -1	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

7. Which grit size/s do you use for making a final shape ?(6points)

Note: **Satisfactory rating 3 points and above** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Information Sheet-7	**Fine sanding**

1. Fine sanding

It is exactly the same steps are used for fine sanding as in coarse sanding; simply substitute a fine grit cloth. Upon completion of a fine sanding the surface should show an excellent glass finish. A stons cut to fit a particular template opening should now just barely clear it.

Self-Check -1	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

8. what is the difference between final sanding and sanding?(6points)

Note: **Satisfactory rating 3 points and above** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Information Sheet-8	**Polishing**

8.

Polishing

Wash of all the dops thoroughly to remove any loose grit. This activity takes place starting from 1200 grit and then 3000, 8000, 14000, 50000grits. In addition to these grits cerium oxide, tin oxide, aluminum oxide, buffs and leathers also used here.

Here it is important to refere this wibesite https://**www.youtube.com/watch?v=AwM1dOsWsoo**

Self-Check -1	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. what is /are polishing compound/s ?(6points)

Note: **Satisfactory rating 3 points and above** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Information Sheet-9	Finishing

9.

Finish the work

After polishing the gem (cabochon) it must be separated from the dipstick by heating them. The bottom of a cabochon may be or must be polished by rotations of the cab on the wheel from the first up to the last wheel. If the material is transparent or highly translucent, finer effect is produced, if the bottom is polished.

Finally, the material must be cleaned by detergents, dry, sorted and leveled by size, type and color.

Self-Check -1	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. what do you do when you finish your work ?(6points)

Note: **Satisfactory rating 3 points and above** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student ……. Score----------

Rating----------

Operation Sheet 1	Making cabochon

Make a cabochon using the following procedures.

- Select the slab
- Out line
- Create a preform
- Dop the preform
- Create the cabochon shape
- Sand and make a final shape
- Sand a cabochon
- Polish a cabochon
- Finish a cabochon
- Clean cabochon
- Sort cabochon

LAP Test 1	Making cabochon

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Operate the slab saw using the following steps? (10 pts)

Make a cabochon using the following procedures.

Task:-Making-cabochon

Information Sheet-10	**Making decorative or gift articles**

10. Making decorative or gift articles

Gemstones used for different purposes in addition to jewelry. Some gems are used for in their rough form like tourmaline, amethyst, rock crystal, pecktolit, any geode gems and others in their slab and polished forms. You can made decorative articles from gemstone like candle holders, eggs, maps, ash tree, photo frame, table baj, etc.

Decorative stones is a collective term often used to describe assorted styles and sizes of rocks that can used for decorative affect in your garden or outdoor area. They can be used to spruce up borders and flowerbeds around the garden or landscape areas as an alternative to grass or paving solutions.

Fig 1- rough decorative items made from gemstones


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Fig 2- polished decorative items make from gemstone

Self-Check -10	**Written Test**

Directions 1: short answer Items

Instruction 1: Write the correct answers for the following questions on the space provided

1. What decorative items made from gemstones ?(6points)

Note: **Satisfactory rating 3 points and above** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Name of the student …… Score----------

Rating----------

Operation Sheet 2	**Making decorative articles**

Make decorative articles using the following procedures.

- Select agem stone
- Slab agem ston
- Create a preform
- Create a shape
- Sand and make a final shape
- Polish a stone
- Finish a stone

LAP Test 1	**Making cabochon**

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Operate the slab saw using the following steps? (10 pts).

Task:-Making-ethiopianmap

Reference

- https://www.google.com/search?q=+cabochon+making+&ie=utf-8
- https://www.google.com/search?q=Decorative+items+of+gemstone&source
- https://**www.youtube.com/watch?v=AwM1dOsWsoo**

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