

— MAKE IT YOURSELF —
CHIP CARVING A PICTURE FRAME



*Skill Development:
Chip Carving*

 Lee Valley

MAKE IT YOURSELF

CHIP CARVING A PICTURE FRAME

#LVMadeByMe #LVLetsDoSomething

Skill Development: Chip Carving

Chip carving is a technique used to decorate wooden surfaces of all kinds. For this project, you will embellish a 9 1/2" × 11 1/2" basswood picture frame with a series of "chips" carved into triangles, squares and rectangles. The resultant cavities will create shadows to bring out the design. Before carving the project itself, you will practice making a variety of cuts and patterns using each of the three chip carving knives on two 12" × 4" basswood practice boards. You will draw a simple grid template with a pencil and a ruler to guide your cuts. Since there are endless ways to combine these basic shapes, you can use your imagination to create your own unique pattern and design. As you learn how to use each knife safely, you will eventually find your rhythm and discover the calming nature of this carving technique. You will also learn how to care for the knives and keep them sharp, as well as how to finish your wooden frame with Walrus Oil furniture finish.

Skill Level: Beginner to intermediate; 14+

Time to Complete: Take as long as you need; 5 or more hours, plus 24 hours for the finishing oil to dry and cure.

Note: *We have divided the project into two days; one day for practicing the cuts and working out your pattern, and one day for chip carving the picture frame, but please take your time and work on this project at your own pace. Since you will be using repetitive movements that might not be familiar to your hands, you will need to take frequent breaks along the way to rest your hands and eyes.*

Also, keep in mind that this project presents one chip carving technique. This method is intended to make it easy for you to familiarize yourself with chip carving.



CONTENTS

- Chip carving knives (3)
- Basswood frame, 9 1/2" × 11 1/2"
- Plexiglas, 5" × 7"
- Basswood practice boards (2), 12" × 4" × 1/2" thick
- PushMate tool and glazier's points
- Sawtooth hanger
- Brass screws (2)
- Sandpaper (180x, 220x and 320x)
- Pencil
- Walrus Oil furniture finish
- Leather strop
- Veritas honing compound
- Cotton rag
- Vinyl gloves
- High-friction guard tape

Other things you will need (not included):

- Metric ruler or T-square
- Safety glasses
- Mask
- Screwdriver
- Utility knife or pencil sharpener
- Lamp
- Piece of cardboard, 5" × 7"

Note: Basswood is a light-colored, medium-density wood favored for carving. It is easy to work, with straight grain and a fine, even texture that takes detail well.



**DAY 1: COVERS STEPS 1 TO 5,
AND CAN TAKE 3 MORE HOURS.**

1 SETTING UP YOUR WORKSPACE

- a. Select a clean, well-lit work area.

***Tip:** Carve in a comfortable position in a place such as a kitchen table so that you are able to sit in a relaxed position, and look carefully at the work that you are doing. Have a lamp over your work or try to carve next to a window in direct sunlight, so that you can clearly see the details of the work that you are doing.*

- b. Remove the contents of the kit from the box and set them aside, but nearby. Use the box to protect your worksurface and collect wood chips.

2 GETTING ACQUAINTED WITH CHIP CARVING KNIVES AND GRIPS

Three chip carving knives are included. You can use the different knives for making cuts at different angles, or simply use the one that feels most comfortable in your hands. Use the practice boards to discover the subtle nuances of each knife.

***Note:** While the chip carving knives come sharp enough to use right away, it's a good idea to touch-up the knives before you start carving. A sharp knife works better and is safer. To keep the blades sharp, you will need to strop them frequently with honing compound and the leather strop, especially when you start noticing a difference in how the knives behave. When you start feeling some resistance, or when the blade seems to catch in the wood, then it is time to strop the blade. The section entitled **Knife Care** explains how to do this.*

The #2 cutting knife is sometimes called a sheep's-foot chip carving knife because of its shape. It has a slight downward crank, making it easier to reach deeply into cuts. You can use it for your first and second cuts.

The #3 stab or skew knife excels for making plunge cuts and downward stop cuts at a 90° angle. You can also use it at a 45° angle for the last cut to remove the chip or for making unique and delicate decorative marks. You would grip it with the blade facing down and the handle nestled in your palm.

The #8 knife is a good all-purpose chip carving knife, since it can be used for all types of cuts. It also has a sheep's-foot style blade, but this one is not cranked and the blade is not as deep.



Caution: Always wear proper eye protection when carving. It is essential that you do not carve when you are tired or otherwise fatigued. Carve in intervals and take breaks whenever you feel your hands getting tired or your eyes getting blurry. You will be focusing up close with a sharp tool, so listen to your body and take all proper precautions to ensure that you do not make any unnecessary slips.

Tip: There are several styles of knife grips that you can use when chip carving. Try them all to determine which of the grips are most comfortable for you. Use your non-dominant hand to brace the wood and guide the dominant hand when carving.

Palm and finger squeeze: This style of grip works well with the #2 and #8 chip carving knives.



Lay the handle with the point of the blade facing outwards, across your fingertips. You will then squeeze with the base of your thumb against the lower corner of your knife (under the base of the blade).

Use your thumb and knuckles of your knife hand to brace against your wooden surface as you carve, allowing for control and stability, and to keep a consistent angle with your knife edge as you pass through the wood grain.

You will always keep your thumb locked into the bottom corner of your knife for consistency, control and safety's sake, as you do not want to risk being injured by the blade.

While using this grip, you will always travel down your pattern and towards yourself, turning your project as needed to access the various sides. This grip is useful for maintaining a consistent angle that will ensure chips are removed from the wood accurately. It can be used to perform downward slices for stop cuts as well as undercuts.

While this grip can also be used with the #3 knife, you will need to adjust the front angle to respect the blade's bevel.



Plunge/pull grip: With the #3 knife tip pointing down and the bevel of the blade travelling towards you, hold the handle of the knife in the fingertips of your dominant hand. Use your fingers and hand muscles to control your knife down into the wood grain. Use your palm to stabilize your knife and your non-dominant hand to hold your wooden project in place. Place your thumb from your non-dominant hand on the base of the knife handle above the blade to help control and guide your cuts.



Plunge/push grip: Hold the #3 knife in the same way as the plunge/pull grip, but turn the blade around with the point down and the bevel of the blade facing the opposite way of your body. With this grip, you will push away from yourself and into the wood grain. You will use your non-dominant hand to control your cuts and hold your wooden piece.

3 MAPPING A GRID ON THE PRACTICE BOARD

Chip carving designs can be as simple or as complicated as you want to make them. Seemingly simple triangles, squares and rectangles can be combined in endless ways to make virtually any kind of designs and patterns.

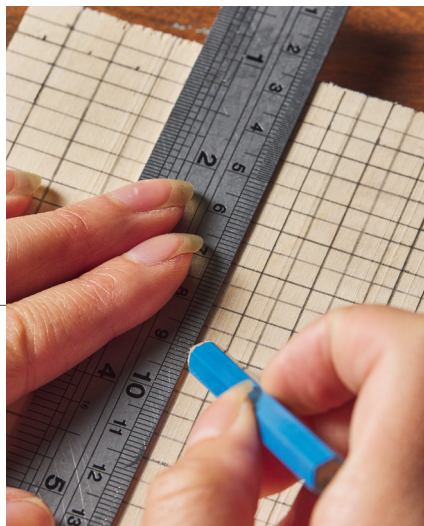
Practice boards are useful for helping you develop a sense for how much pressure to apply with a knife in order to achieve cuts that are at the correct angle and depth. The more you practice, the more you will learn how to adjust your technique so that you end up with clean, crisp, fuzz-free cuts.

***Tip:** Use both sides of the practice boards to practice chip carving triangles, squares and rectangles individually, then in sequence, then in combinations. Repeating patterns will help you get used to the repetitive motions of chip carving, as well as greatly help with the consistency of your cutting angles and depth.*



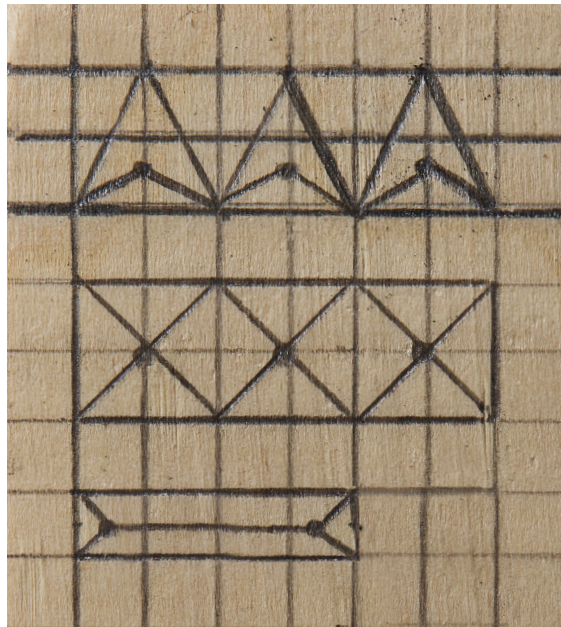
- Start with a freshly sharpened pencil; a fine pencil line will go a long way to ensure accurate marking. Re-sharpen the pencil as necessary throughout.
- Begin by mapping out a base grid. Draw a horizontal line across the width of the practice board, about 1 cm from the edge. Mark and draw horizontal lines, 1 cm apart, all the way to the bottom of the practice board.
- Mark and draw vertical lines, 1 cm apart, across the width of the practice board to complete a symmetrical grid.

- Draw vertical and horizontal lines in the center of each 1 cm square (to essentially divide each 1 cm square into four 5 mm squares).



- e. Start with a basic triangle shape. Draw a diagonal line from the bottom left corner of a square to the top right corner. Then, draw a diagonal line from the top left corner of the adjacent square (on the right) to the bottom right corner. Mark a single dot directly in the middle.

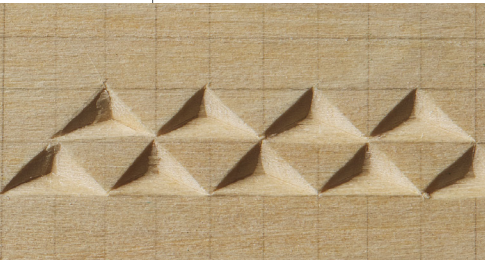
Tip: The dots will greatly assist you in guiding your knife tip to the lowest part of the cut where all angles meet. You can also draw lines from the dot towards each corner of the triangle to assist with the direction of your knife cuts.



- f. For your square shape, start with a 1 cm grid base row, and draw four solid lines around a square. Place a dot directly in the center of the square.
- g. For your test rectangle shape, draw two parallel lines, spaced 5 mm apart and 2 cm long.

Tip: A rectangle will create a line, such as for a divider or border. Once you get the hang of carving out this shape, you can make them as long as you need.

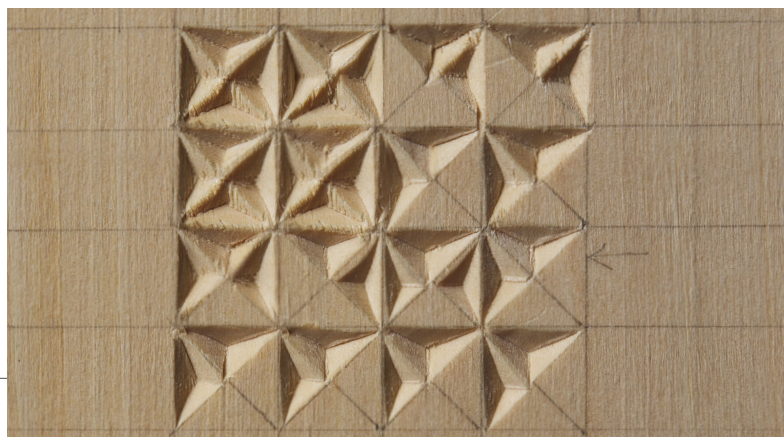
- h. As a starting pattern, you can create rows of repeating triangles or squares. A change in the triangle's direction will produce a variety of looks.



- i. Proceed with simple combinations, then work your way to more complex ones. A simple embellishment can change the look of a shape so it appears more complex. On a triangle, for example, cut a small two-sided wedge on each side of a positive diamond, starting at the end of the diamond and finishing in the center. Or, cut a smaller triangle inside a negative diamond.



- j. As a practice design on another section of your practice board, create a grid pattern with 16 squares, 1 cm × 1 cm each. Draw a solid 1 cm thick border around this design. Divide the 16 squares equally into 4 squares. Create a series of alternating squares and triangles to figure out your frame's design, which you can then use as a reference guide.



4 PRACTICING THE CUTS

Note: It is essential to keep your chip carving knives sharp at all times. A sharp knife will make it easier for you to make cuts while avoiding slips, and alleviate hand fatigue. Refer to **Knife Care** for how to do this.

Tip: To increase your grip and protect your fingers against cuts and abrasions while you chip carve, wrap some high-friction guard tape around your fingers.



When chip carving, you are removing sections of wood from the surface to create designs. Cuts must be made into the surface at such angles that when they meet, the material will pop out. A low angle will create a shallow cut; a high angle will create a deep cut. With practice, you will get the hang of making perfect cuts where you are able to pop out each chip in a satisfying way. Practicing will also help you establish your picture frame's design so it reflects your abilities.

Tip: Not all your cuts will be perfect, especially when you are starting out. Practice will lead to much improvement and allow you to develop muscle memory. Take care not to force the sections out, or you may tear the surface, which may affect your design. It is all right to go back to a cut to clean up any fibers that are still connected. Take care to follow the same lines at the same angles and depth, and work your way around the shape to remove the chips. Also, remember to strop your knives often. Once you are confident with carving the different shapes and cuts, you can apply these techniques to your picture frame.

Stop Cuts

Stop cuts are performed by making incisions in the wood. These incisions act as guides for subsequent cuts. A triangle, for example, starts with three stop cuts from the center dot to the edge of the shape. Plunge the tip of the #3 skew blade straight down at a 90° angle and about 1/8" deep into the lowest part of the shape (marked with the dot), and then gently rock the blade back towards the opposite corner of your shape, such that the cut is deepest at the center and shallowest at the edge. Make a stop cut for the remaining two lines, again going from the center dot towards the opposite corners.



When making stop cuts with the other two knives, use the downward palm and finger squeeze grip towards the center dot.

Note: *No chip is removed at this stage.*

Tip: *While not necessary, stop cuts will greatly help you to remove material efficiently, especially as a beginner, so we recommend that you use them. As you develop your chip carving skills, you can decide for yourself whether to keep using initial stop cuts.*

Undercut

Tip: *Pay attention to the direction of the grain when carving and adjust your knife pressure accordingly. The long fibers of the wood will tear at the cut line when cutting against the grain. Having a sharp knife and a steady hand will ensure that you do not inadvertently break through the grain.*



Depending on your experience level, an undercut can be performed with or without the initial stop cuts. Starting at a corner and working in the direction of the grain, hold the edge of your knife at a 45° angle and in line with the outer line of the triangle. Press the tip down about 1/8" deep into the center of the shape indicated by the center dot and slice along the line. Delicately guide the knife with the thumb of your non-dominant hand to complete the cut.

Plunge Cut

A plunge cut will work well with smaller lines. Beginning at one corner and following a line, plunge the tip of the blade forcefully down into the design, towards the center dot. You then lightly come out towards the other corner, or you can rock the knife edge gently back towards the end to complete the cut.



Slicing Cut

A slicing cut can be used for all the shapes, and will work well on longer lines, including larger triangles. It will require that you hold the knife at a consistent angle and travel through the wood grain and along the template lines. It will require control and a firm grip on the tool to ensure accuracy, and you will need to manually control the level at which the knife is passing through the wood. Slice towards the deepest part of a shape (usually in the middle area), and end at the stop cut. Repeat as many times as is required for the shape. The last cut should remove the chip cleanly.



Cutting a Triangle

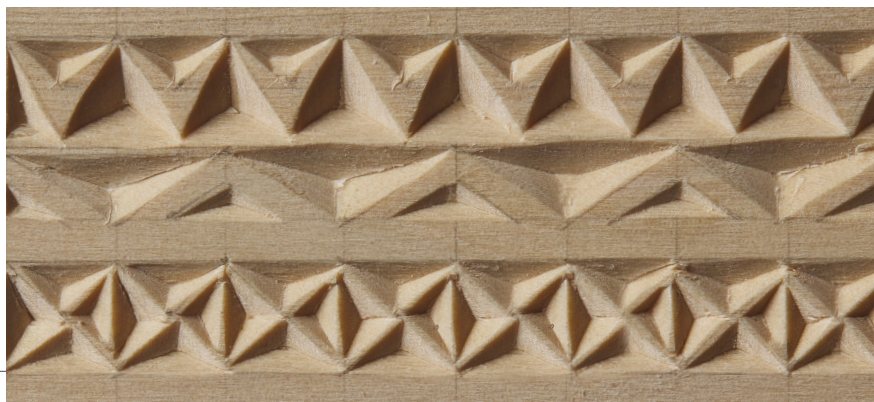
The triangle is a key shape when chip carving, so you will need to practice this one many times before moving to another shape.

Starting at one corner of the triangle, plunge the tip of the knife straight down until it hits the bottom of the dot at a 45° angle. Take care not to rock the knife back towards your body prematurely, and keep the knife stiff in your hands to ensure consistency with your cuts. The aim is to start at the corner, lightly carving towards the center (using an outside line of the triangle as a guide) at first and then plunging down in the middle towards the center dot. You will gradually travel out of the grain, making the cut much shallower until you reach the opposite point of the triangle. Rotate the wood and repeat the process for the second side of the triangle. Turn the piece again, and cut the third side. If your angle was proper and true, you will reach the bottom of the cut. A slight upward twist with the tip of your knife will yield a satisfying pop with the chip, sending it away from the cut.

Tip: Be sure to clear the chips as you work to ensure they do not scuff your project.



With practice, you will see how the triangle can look quite different, depending on where you cut, especially when it is used in combination. Practice making positive diamonds, negative diamonds, chevrons, stars, crosses and flowers.





Cutting a Square

Carving a square shape is much the same as carving a triangle shape, only there is just one extra side that needs to be cut. Start at one corner and perform a plunging cut, follow a line and travel down into the center dot at a 45° angle. You will then raise the tip of the blade up through the grain so that it slopes up towards the opposite corner and exits. Then, while keeping your knife at the same angle, turn the project with your non-dominant hand and perform the same cut at the same angle on another side of the square. Once you have done this on all four sides, if you have kept the same consistent angle each time, you will be able to effectively pop out the chip.

Tip: For both the square and the triangle shapes, if you have lined either shape up in a repeating pattern, you can perform all of the same side cuts in a line at the same angle, and then rotate the wood and repeat for all of the different sides. This will ensure that you are keeping the same relative angle when making your cuts. The goal is to have all your cuts meet at the same lowest spot so that a section of wood can be removed.

Cutting a Rectangle

For carving a long rectangle line shape, start by adding a stop cut the end furthest away from your body. You will then start on the right line and the same angle, and hold the knife firmly for a slicing cut, bracing against the piece with your thumb and middle knuckle as you make your pass. You will use your non-dominant hand to hold the piece steady, as well as carefully guide the knife until you reach the end of the cut. Rotate the piece and repeat for the other line. If you carved the correct angle on both sides, you will see a thin strip of wood grain curl out. Add a stop cut at the opposite end to free this chip.

Tip: The goal is to maintain a consistent depth and angle. There is no need to make cuts any deeper than 1/8". You will have to take it slow so that you can accurately travel down the length of your line. Repeating the angle on the other side will allow you to see the chip curling out as you make your pass.



END OF DAY 1

**DAY 2: COVERS STEPS 5 TO 8 AND
CAN TAKE 2 OR MORE HOURS.**

5 SANDING THE FRAME



Caution: Be sure to wear a mask when sanding to reduce the risk of developing respiratory problems.

- a. Lightly sand the frame smooth with 180x sandpaper in the direction of the grain.

Tip: Sand the frame before you start chip carving because you won't be able to do this after carving without dulling the crisp points and carved details. Sanding first will also make it easier to remove any remaining pencil marks.

- b. Repeat the sanding with 220x sandpaper, then 320x.
- c. Wipe the frame with a dry cloth to remove the sanding dust.

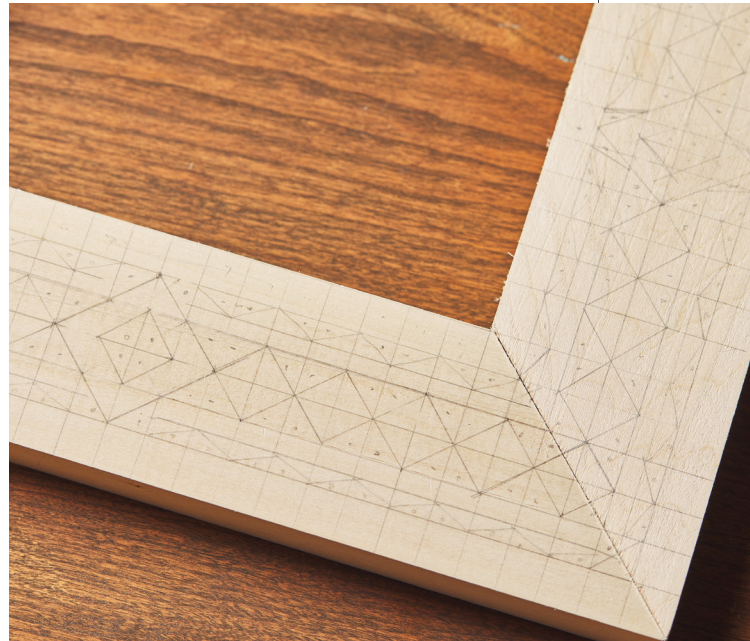
6 MAPPING YOUR DESIGN ON THE PICTURE FRAME

- a. Map out your design by creating six equal 4 cm squares across the bottom of the frame, and centered on your frame.
- b. Continue to map 4 cm squares centered around the frame's border.

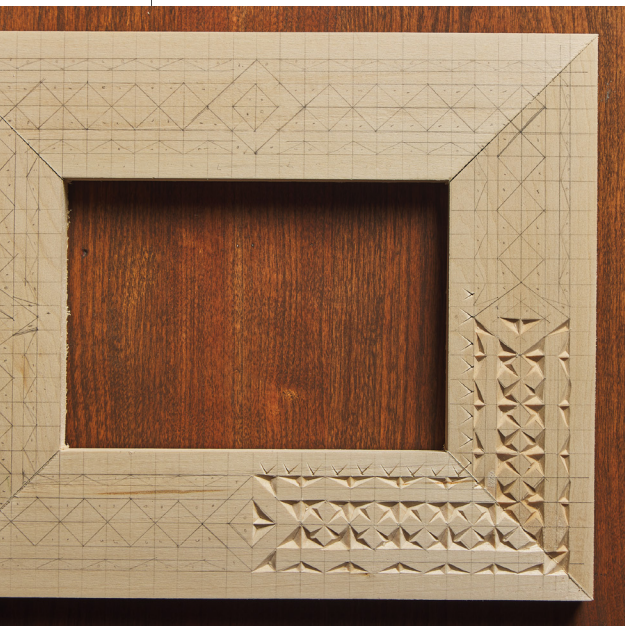
Note: As you map out your design, keep in mind that chip carving into the miters of the frame will be a bit more difficult due to the glue line.

- c. Divide each of these squares into four 2 cm squares, then divide each of those squares into four 1 cm squares. (Divide these into four 5 mm squares if that suits your design.)
- d. Add a pattern of triangles and squares of your choice to create your own unique design.

Tip: Map out your frame's design to match your abilities, or keep practicing until you are confident you can satisfyingly complete the design you want. Your first chip carved frame should have just enough complexity to challenge you, not discourage you.



7 CARVING OUT THE CHIPS



- a. Carve each individual chip in sequence, stropping your knives often to ensure clean cuts.
- b. Once your design is all carved out, examine the frame and clean up any incomplete cuts and loose wooden fibers.
- c. Gently erase any remaining pencil marks with sandpaper, being careful not to round-over the crisp points.

Tip: Do not panic if you feel you made a mistake. First, there are no mistakes, only evidence that the frame was chip carved by a human. Plus, unintentional cuts add character to your project. However, if a piece of wood chipped out accidentally, you can carefully reglue it in place or modify your pattern.

8 FINISHING YOUR FRAME

- a. Slip your vinyl gloves on and apply Walrus Oil furniture finish to the frame's front, side and back, then wipe it down with the cotton rag.
- b. Let the finish dry and cure for 24 hours, or overnight.
- c. Attach the sawtooth hanger with the two brass screws.
- d. Install the Plexiglas, insert a picture of your choice, as well as a cardboard backer, and use the PushMate tool to secure all the layers in place with glazier's points.

KNIFE CARE

The key to efficient and safe chip carving is having a sharp chip carving knife at all times. Each time your knife passes through the wood grain, it is effectively dulling the edge.

Rub a thin layer of the honing compound onto rough (suede) side of the leather strop. Set the leather strop on a flat surface and hold it firmly down with your non-dominant hand. Grip the handle of the blade in your dominant hand and lay the bevel of the blade as flat as possible on the leather strop. Pull the knife across the strop, using trailing strokes towards you, then away, giving each side of the blade an equal number of passes against the strop (five to ten passes per side), making sure keep the bevel as flat as possible against the strop. (A leading stroke will cause the blade to slice the leather.)

Repeat the honing process on the other (smooth) side of the leather.

You will need to do this approximately every 15 to 30 minutes of straight carving to ensure that your tool does not get too dull. You will soon get a feel for how often you should do this.



NOW WHAT?

The tools and supplies in this kit are reusable. The more you make, the more the tools will be of continued service. We hope that you will be inspired to continue practicing your chip carving skills to embellish many more items such as spoons, trivets, cheese boards, boxes or Christmas ornaments.



CREATED BY LEE VALLEY. MADE BY ME.

Now that you have completed your picture frame, we would love to hear about your experience and see how you made this project your own.

#LVMadeByMe #LVLetsDoSomething



MK109 Chip Carving a Picture Frame

Lee Valley Tools Ltd. Ottawa ON K2H 1C2 Canada leevalley.com

© Lee Valley Tools Ltd. 2022