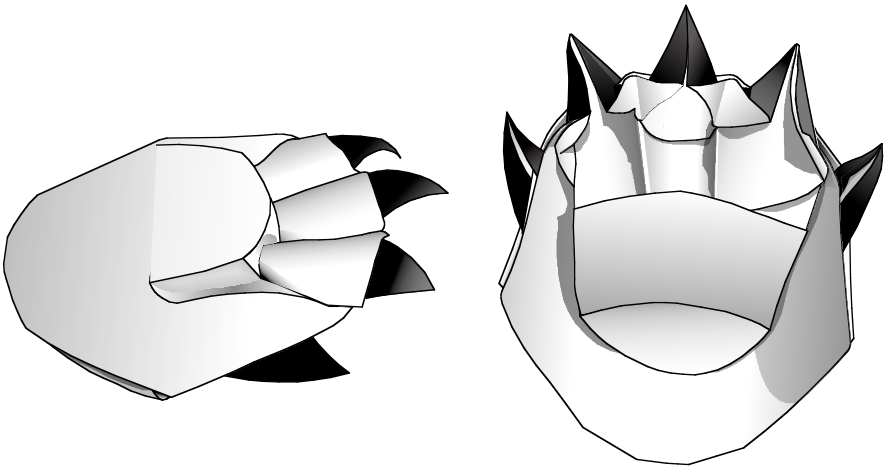
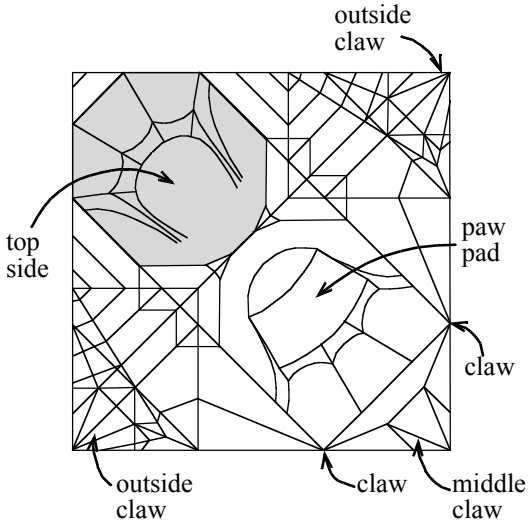
Bear Paw

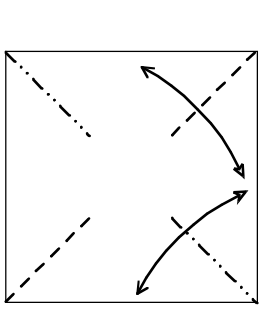


Created / 1998
Difficulty / Complex to more complex (there are 2 versions of this model)
Time to Create / 30-50 min.
Dimension / R=0.5

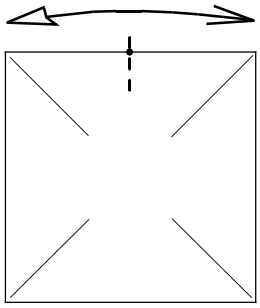
Author's comments: Use a bicolored square. I wet fold a medium weight paper, either white or brown on one side for the paw, and blue, gray, or black on the reverse side for the claws. Foil is suitable to make paw earings or pins. Read these directions entirely before folding.

I designed this model for the 3rd International Symposium on Trade in Bear Parts held in Seoul, South Korea in 1999. Bear paws can fetch upwards of $800 apiece (US) in Korean restaurants. The lucrative trade in bear parts threaten bear species worldwide. My inspiration for the look of this model came from the art of Maurice Sendak.

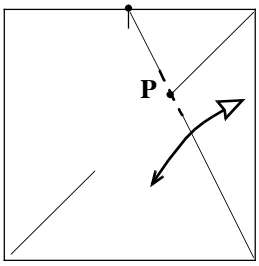




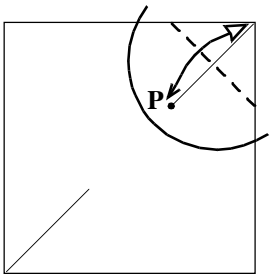
1. Crease the diagonals on the light side. Don't crease the middle third of the square.



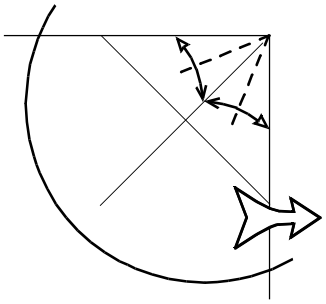
2. Crease the midpoint of the top edge.



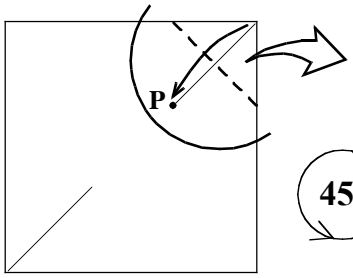
3. Crease the upward diagonal at point P.



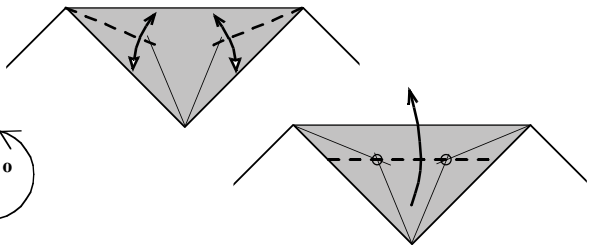
4. Fold and unfold the top right corner to point P.



5. Fold and unfold corner edges to the diagonal.

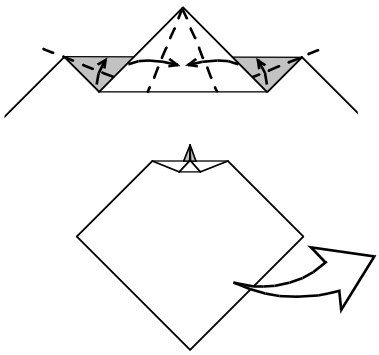


6. Valley-fold the corner to point P.
Rotate the model.

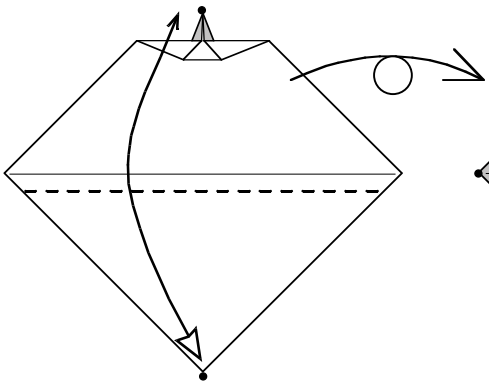


7. Bisect the indicated angles of the dark triangle with valley creases.

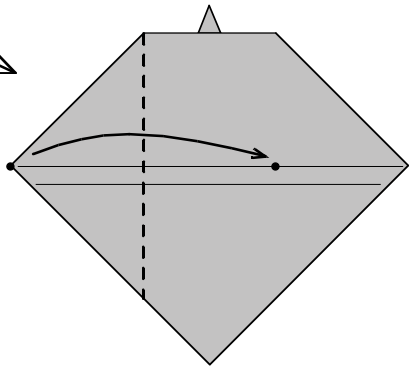
8. Valley-fold the corner up.



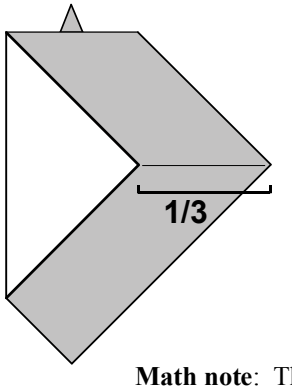
9. Swivel-fold edges along the valley folds of steps 5 and 7.



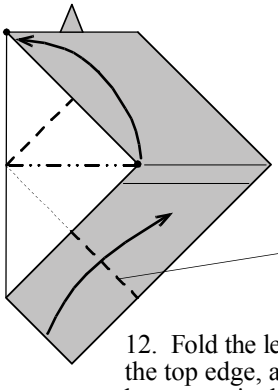
10. Fold and unfold the bottom corner to the tip of the claw. Turn the model over.



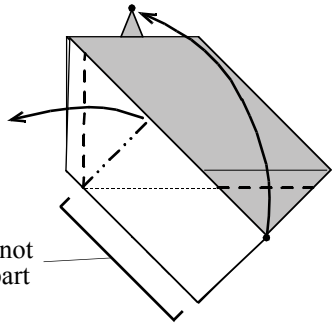
11. Valley-fold the left corner to the center diagonal.



Math note: The last fold divided the center diagonal in thirds. Amazing!

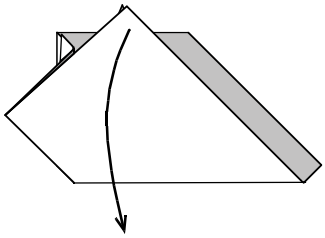


12. Fold the left corner to the top edge, and let the bottom swivel up.

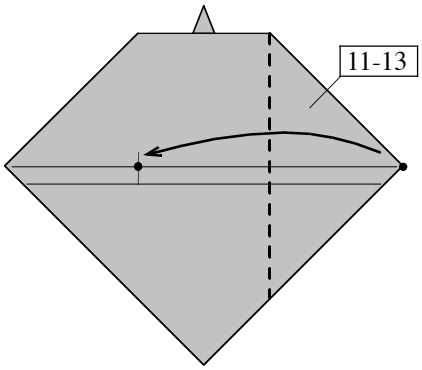


Experts: Try not to crease this part of the edge.

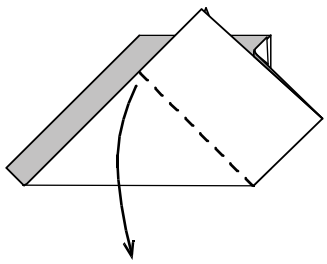
13. Place the bottom corner on the tip of the claw and let the paper's edge swing to the left along the valley fold of step 10.



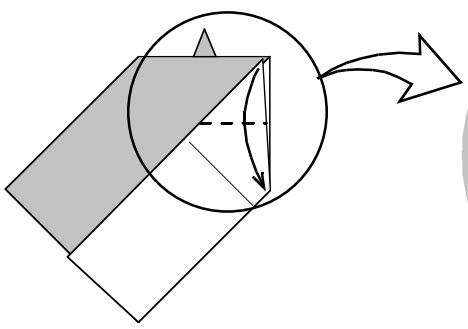
14. Unfold the model to step 11.



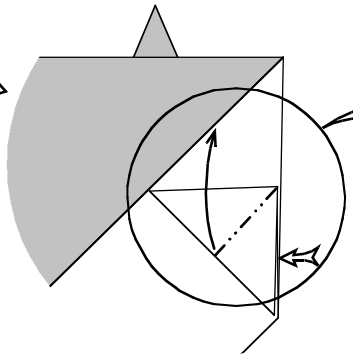
15. Repeat steps 11-13 on the right.



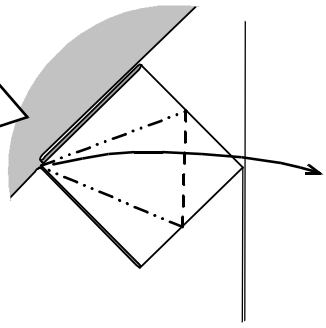
16. Fold the flap down. The result looks like the mirror image of step 13.



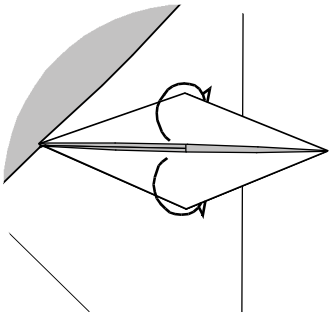
17. Valley-fold the small flap down.



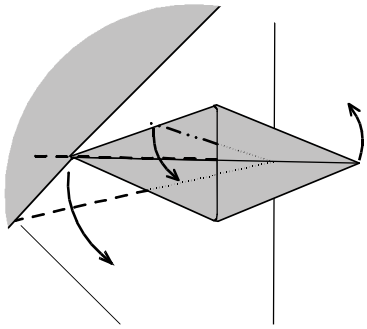
18. Squash the flap to the left.



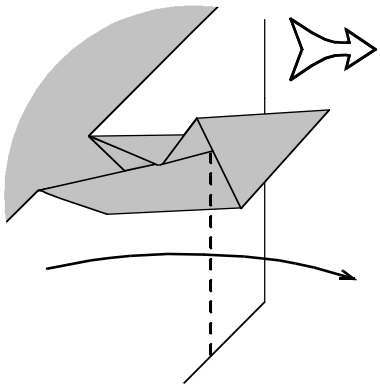
19. Petal-fold the flap. This becomes a claw.



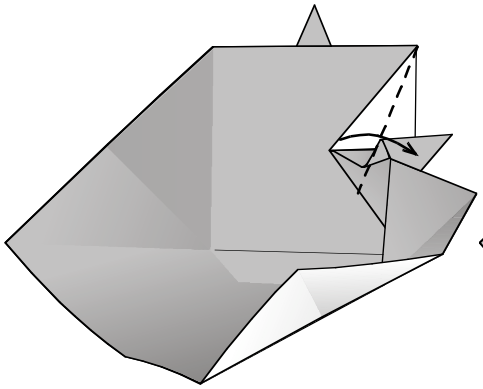
20. Wrap the outside layers of the claw behind. It helps to open the model sufficiently to do this step .



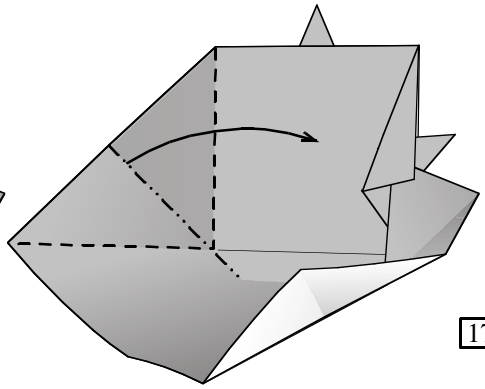
21. Swivel-fold the point of the claw up.



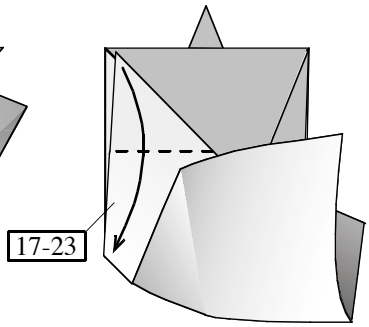
22. Valley-fold to the right (fold of step 10). The model won't lie flat.



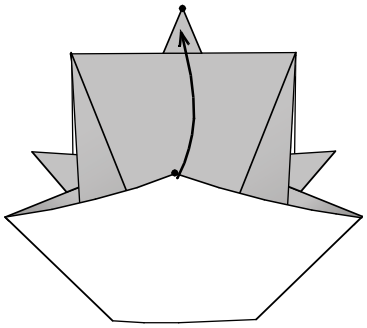
23. Valley-fold the indicated flap on top of the swivelled claw.



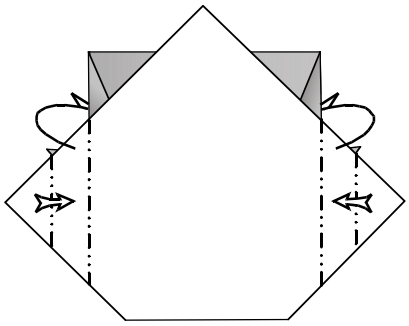
24. Refold the left side to step 17. Aren't 3-D models fun?



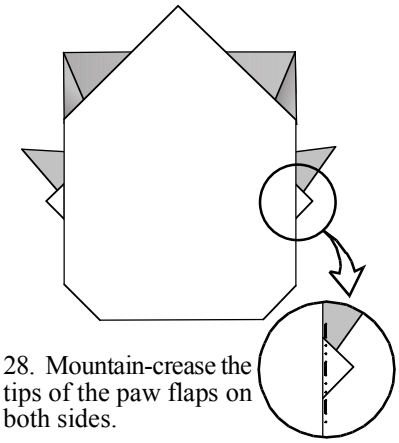
25. Repeat steps 17-23 on the left. The bottom corner will not lie flat.



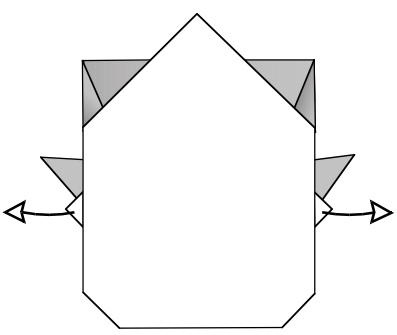
26. Place the bottom corner on the tip of the middle claw.



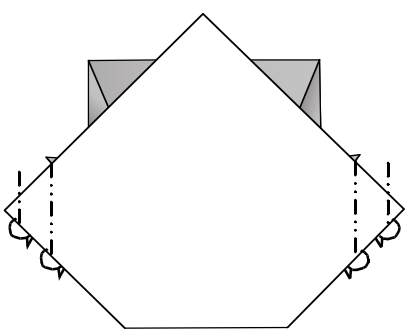
27. Tuck side flaps of the paw into the pocket behind as far as they will go.



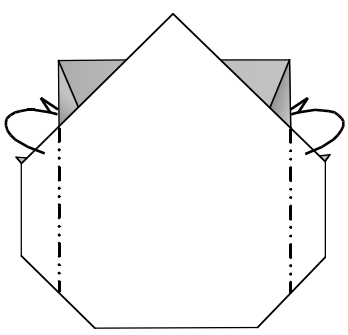
28. Mountain-crease the tips of the paw flaps on both sides.



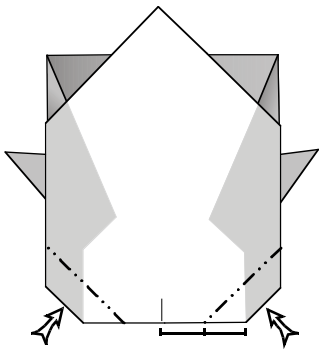
29. Pull the paw flaps back out.



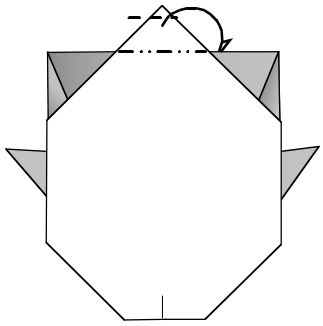
30. Roll the paw flaps with successive mountain folds starting at the tips.



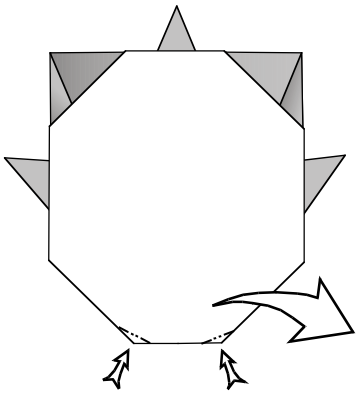
31. Tuck these rolled packages into the pockets behind.



32. Close-sink the back of the paw under the the hidden layers marked by shadows.

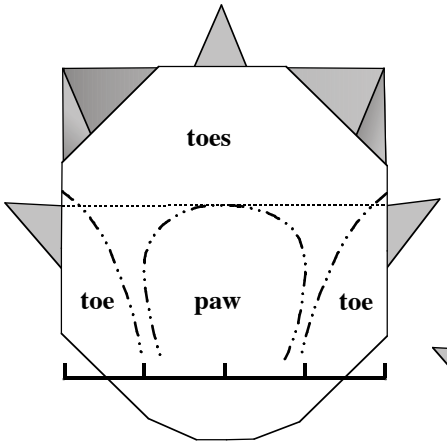


33. Tuck the corner flap into the pocket behind.

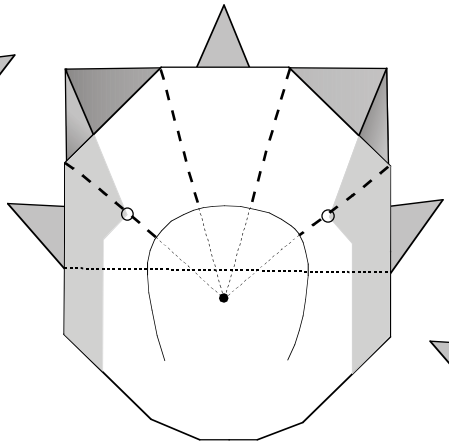


34. Close-sink edges to round the back of the paw.

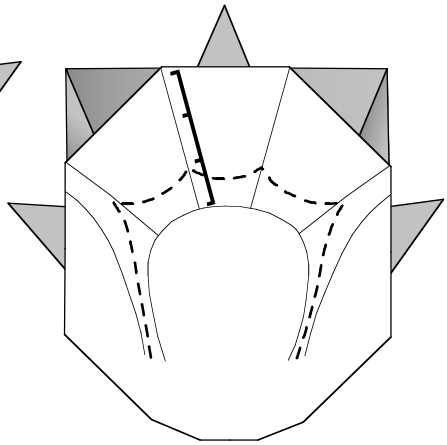
Crease through all layers for steps 35-41.



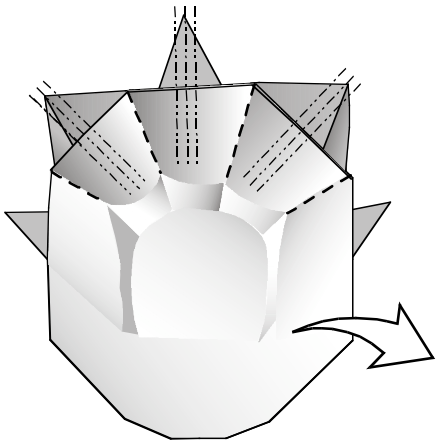
35. Mountain-crease using the outside claws as guides. The horseshoe-shaped fold defines the paw part of the model. The rest will become toes and claws.



36. Valley-crease to create toes. Crease extensions meet below a horizontal guideline at the dot. Folds for outside toes pass through corners of hidden shaded layers (open circles).

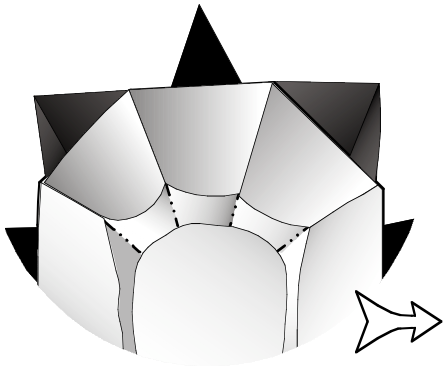


37. Crease with curved valley folds.

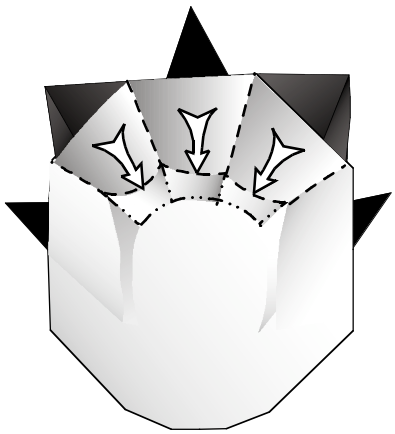


38. Bend the 3 middle toes around your finger to round them. Make the valley folds between toes sharp.

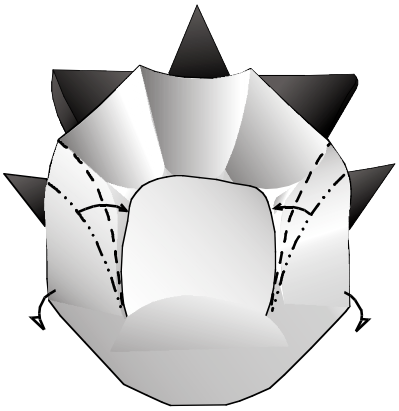
From this point onward the model is increasingly 3-D. I can now change colors for the claws.



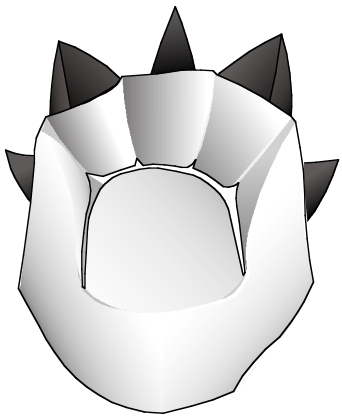
39. Change the valley folds of step 36 nearest the paw to mountain folds.



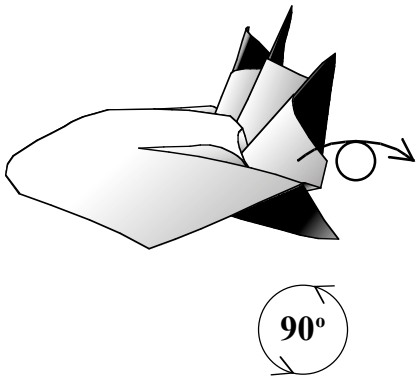
40. Shove the ends of the rounded toes (white arrows) under the paw. These toes will bend upward.



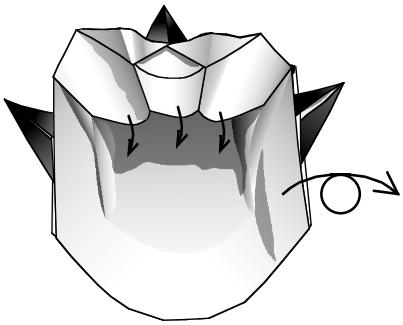
41. Round the outside toes and squeeze them toward the paw. Curve their sides. Round the middle 3 toes again.



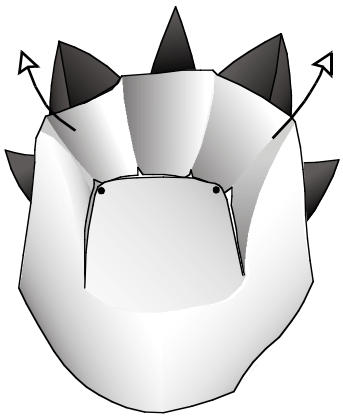
Go to step 55 if you want to make pins or earings from these paws or if you do not want to be very challenged by shaping the paw underside.



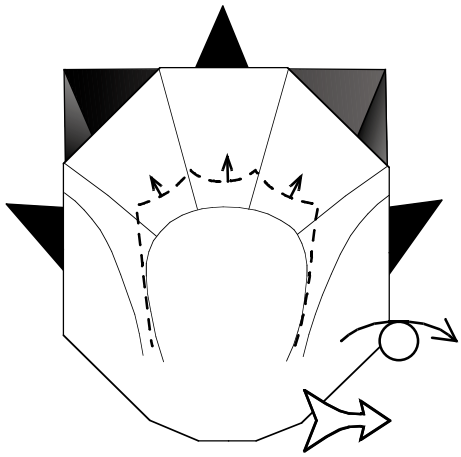
42. If your toes stick up too high, turn the model over and do steps 43-45. If not, turn the model over and go to step 46.



43. Push down three toes. Turn the model over.

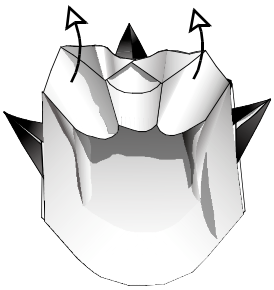


44. If that flattens the front end of the paw (between the dots), undo the model to step 37.

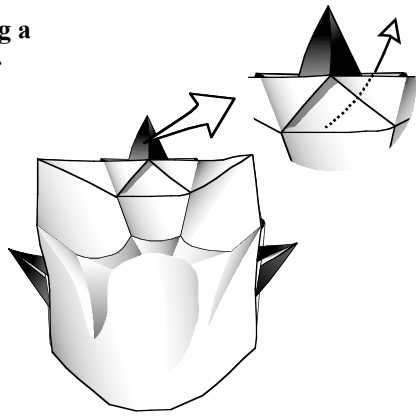


45. Move the valley crease up further toward the claws. Refold the model to test the result, then turn the model over.

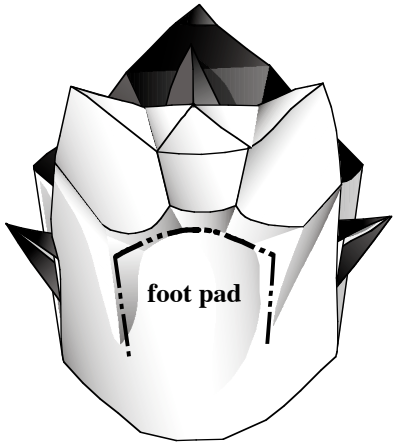
The next 5 steps describe shaping a pad on the underside of the paw.



46. Undo steps 40-41 and flatten the model.

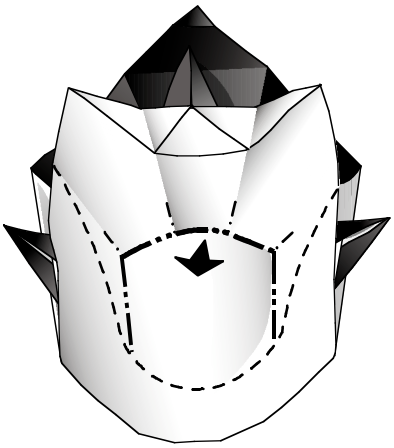


47. Untuck the corner of the bottom layer (step 33). Work only on the top layers for the next 3 steps.

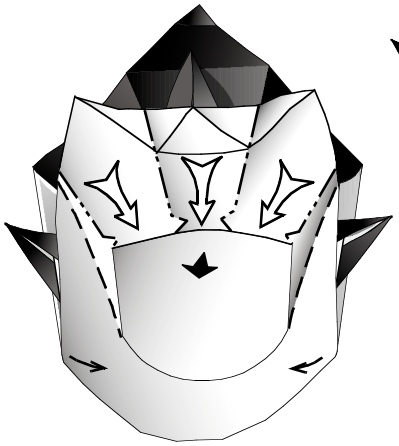


48. Mountain-crease the top layer by reaching inside the model. This is the foot pad.

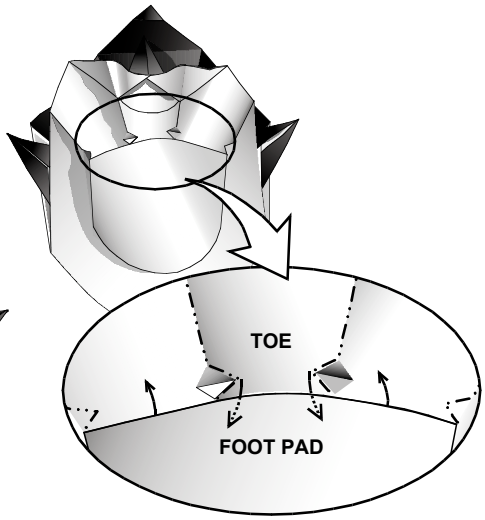
Biology note: The claws of bear cubs are sharp like razor blades. This helps them run up tree trunks to escape danger. Their claws become more blunted with age and use, however they retain their ability to climb trees. When you next see a bear, notice that its paws turn inward. This pigeon-toed stance enables bears to grasp tree trunks. Field biologists sometimes can determine whether a track was made by a black bear or a brown bear by examining how far the claws extend in front of the foot pads. The claws extend further for brown bears than for black bears of comparable size.



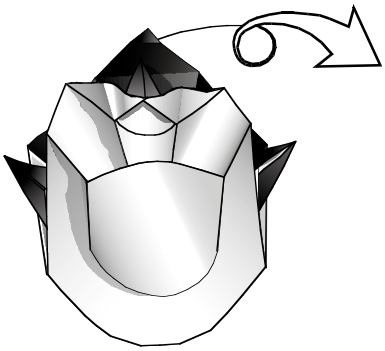
49. Extend mountain creases between toes to the foot pad. valley-crease around the bottom of the foot pad. Push the foot pad out.



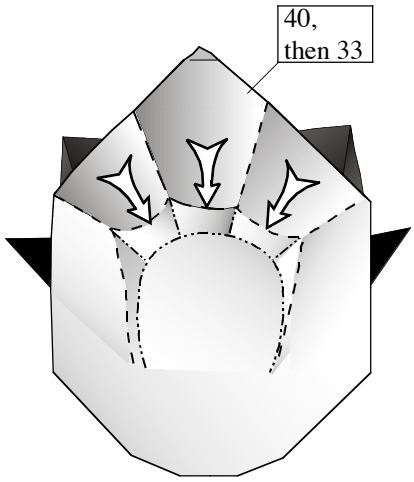
50. Push the middle 3 toes under the foot pad while maintaining their curvature (step 38). Bend the sides of the paw toward the center.



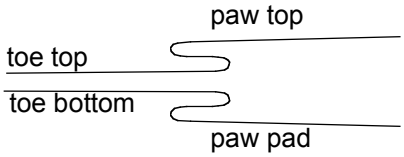
Small crimps will occur on the edge of the mountain folds at the point where the toes go under the foot pad. Crimps can go either right or left. Try to shove them under the foot pad.



51. Turn the model over to reshape the top layer. Here are two ways to do it.

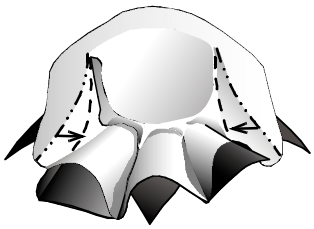


52. Repeat steps 40 and 33.

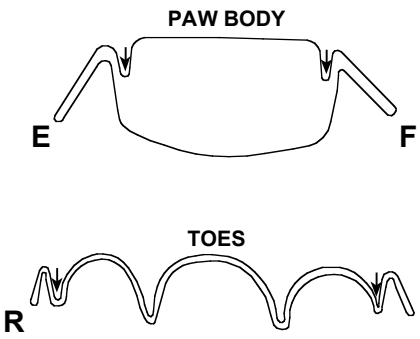


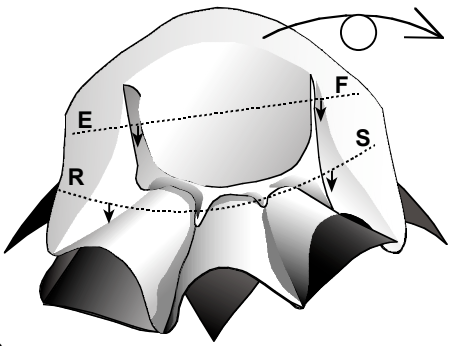
Or undo step 50, hold both layers of the 3 middle toes together, round them (step 38), and shove them between paw layers as seen in the diagram above.

Tuck the corner flap back in the pocket of the middle toe (step 33).



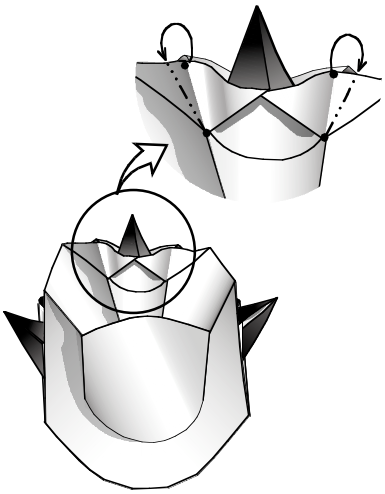
53. Finally. hold the outside toe layers together to repeat step 41. See the diagrams to the right.



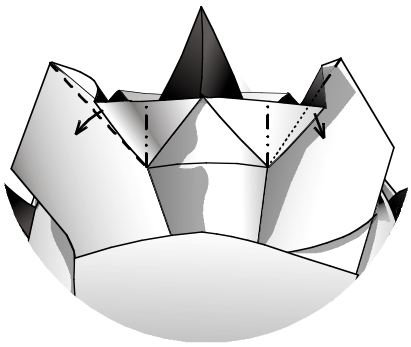


The schematic diagram above show the relationship between the top and bottom layers along two slices through the paw. The arrows indicate the grooves that define the outside toes in both diagrams.
Do not worry if your foot pad and paw top are collapsed. You will fix that later. Just make sure the layers are correctly positioned.

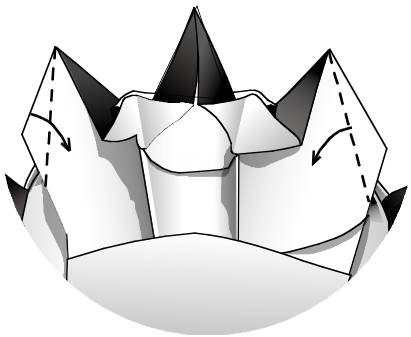
54. Turn the model over.



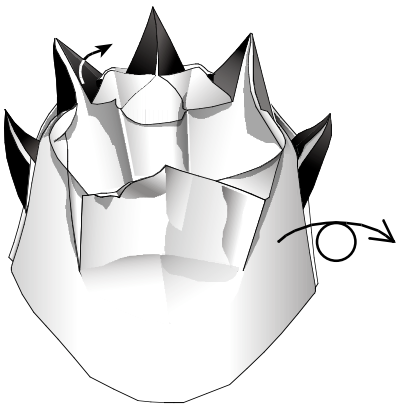
55. Reposition the end point of mountain folds between the dots.



56. Valley-fold claw edges to their toe midline. Crease the mountain folds sharply that separate toes. The model will now be under tension.

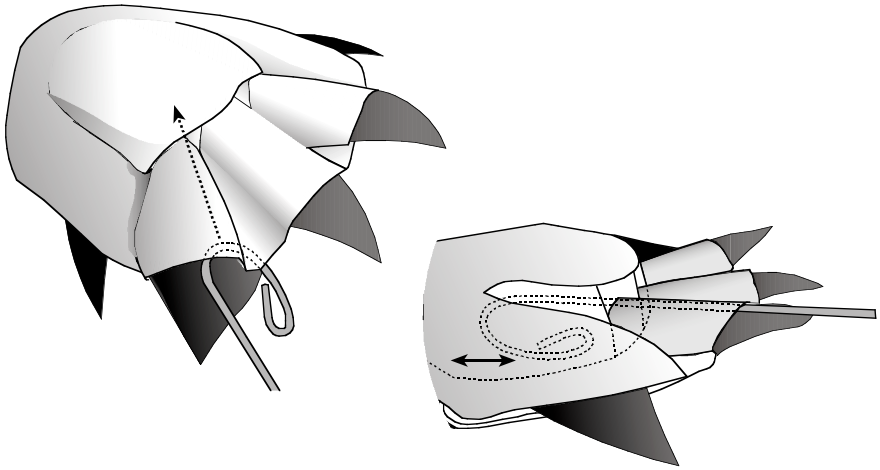


57 Valley fold outside claw edges to their toe midlines. Pinch ridges between toes again.

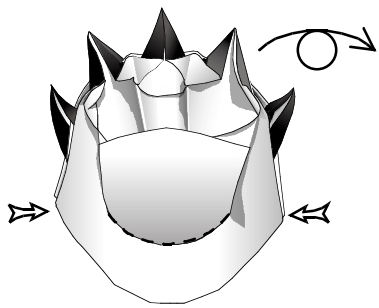


58. More than likely your foot pad will be squashed like this one. Don't panic!

Turn the model over. Open up one of the claw folds of step 56 or 57.

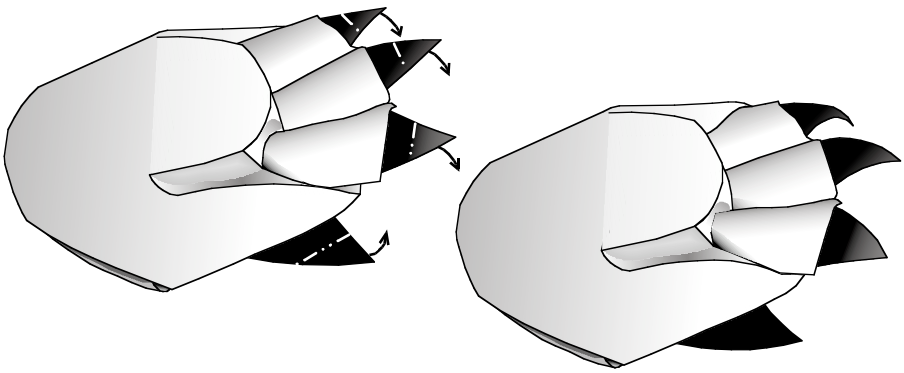


59. Insert a hook under the top layer. I make hooks out of bent coat hangers. When the hook is past the toes, rotate it 90 degrees. Gently stroke the bottom surface of the foot pad to pop it back out or remove dents. Rotate your hook 180 degrees to reshape the upper paw surface. When finished, carefully remove the hook and refold the claw.



60. **Optional:** gently push in the sides of the paw to shape the bottom of the foot pad.

Turn the model over.



61. Bend the tips of claws down to prevent the claw folds (56-57) from becoming undone. Say "Grrrrrr". Your paw is now ready to do some swimming, food gathering, and swatting!