



Making Hard-bodied Poppers

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Objectives

Participating young people and adults will:

1. Practice preparing hard-bodied popping bugs for assembly
2. Practice assembling popper bodies
3. Practice painting popping bugs
4. Practice dressing poppers
5. Have fun while learning

Youth Development Objectives

Participating young people will:

1. Practice hand-eye coordination
2. Effectively plan and execute complex processes
3. Analyze potentially effective patterns
4. Critique results and plan for improvement
5. Practice communication and social skills

Roles for Teen and Junior Leaders

1. Assist with set up and clean up of teaching area
2. Prepare cast popper bodies in advance
3. Assist with procedures as needed
4. Demonstrate techniques
5. Discuss personal preferences in poppers

Potential Parental Involvement

1. See “Roles for Teen and Junior Leaders” above

Best Time: anytime after fly tying fundamentals are learned

Best Location: any comfortable, well-lighted location

Time Required: 1-3 hours

Equipment/Materials

assorted popper bodies*
 assorted popper hooks
 waterproof epoxy glue
 epoxy or vinyl paints paint brushes
 cleaning solvents tying vise
 bobbin and thread hackle pliers
 bucktail (colors of choice)
 saddle hackles (colors of choice)
 fine file head cement
 fingernail emery board doll's eyes if desired
 * or casting forms and materials

References

See introductory reference list

Evaluation Suggestions

1. Observe and critique body preparation
2. Observe and critique glue-up procedure
3. Observe and critique painting procedures
4. Observe and critique dressing selections and procedures
5. Observe interactions of participants and cooperative learning
6. Observe adult-youth interactions

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2. Arrange for or provide materials
3. Arrange for or provide teaching location
4. Arrange for or provide transportation
5. Arrange for or provide refreshments
6. Arrange for or provide popper fishing locations
7. Discuss personal experiences with poppers

Safety Considerations

Painting should be done in a well-ventilated area since the solvents used may be noxious.

Lesson Outline

Presentation

- I. Hard-bodied poppers - introduction
 - A. Surface fishing for many species
 1. Surface feeders
 2. Quiet to noisy styles
 3. Many sizes and shapes
 - a. Dished-face poppers
 - b. Flat-faced poppers
 - 1) Skipping bugs
 - 2) Pencil poppers
 - c. Bullet-shaped and sliders
 - c. Ball-shaped "poppers"
 - B. Matching size and shape to use
 - C. Materials
 1. Hooks
 - a. Size to use
 - b. Material to use
 - c. Hump-shanked hooks
 - d. Wide gaps common
 2. Body materials
 - a. Balsa wood
 - b. Cork
 - c. Open-cell foam
 - d. Closed-cell foam
 - e. Pre-shaped, blanks or home cast
 - D. Paint
 1. Vinyl
 - a. Easy to use
 - b. Quick drying
 - c. Many colors available
 - d. Waterproof and tough
 - e. Somewhat brittle
 2. Epoxy
 - a. Requires mixing
 - b. Hard finish
 - c. "Bright" finish
 - d. Longer drying time
 - e. Very tough finish
 - f. May overcoat vinyl
 - E. Dressing materials
 1. Hackle feathers
 - a. Saddle hackles
 - b. "Chinese" necks
 - c. Large neck hackles

Application

DISPLAY an assortment of poppers in various sizes and styles and **DISCUSS** some of the shapes and sizes used for various fish in your area.

NOTE that shape and size influence both casting characteristics and the manner in which they are fished for various fish species.

LAY OUT some materials that will be used in the class and **DISCUSS** some of the materials that may be used in poppers, including hooks, body materials and dressing materials.

NOTE that anything that floats and can be shaped can be used to build poppers, but that the types mentioned are proven and effective. **DISCUSS** the possibility of molding foam bodies on hooks as well as gluing them on.

DISCUSS the use of vinyl and epoxy paints or some combination, like a clear epoxy finish over a vinyl color coat.

ILLUSTRATE some of the applications of hackles (splayed, straight, wound and inserted in the sides), bucktail, and rubber or vinyl "legs" in dressing poppers for effectiveness.

2. Bucktail
3. Rubber or vinyl legs or tails

II. Assembling pre-cast poppers

- A. Pre-formed popper bodies with hook slot
 1. Assemble hook and body
 - a. Match body to hook
 - b. Check body for rough edges
 - c. Fill hook slot with epoxy or other waterproof glue
 - d. Insert hook in slot and allow to dry
 2. Painting the popper body
 - a. Sealer on porous bodies
 - b. White base coat on light colors
 - c. Overcoat of selected color
 - d. Pattern colors
 - e. Overcoat of clear paint
 3. Dressing the popper
 - a. Bucktail
 - b. Hackle feather tails
 - c. Wound hackle dressing

III. Making bodies from cork or balsa

- A. Carve, file or sand to shape
 1. Mark outline on material
 2. Remove material to near final shape
 3. Sand to smooth finish
- B. Cut hook slot
 1. Center of tail
 2. Bottom third in front
 3. Knife or fine hacksaw blade
 4. Simple jigs to align cuts
- C. Fill surface
 1. Shellac, varnish or paint
 2. Sand smooth with fine sandpaper
- D. Install hook and let glue set
- E. Smooth hook slot area
- F. Paint body
- G. Apply desired dressings

IV. Making cast foam poppers

- A. Foam popper kits
 1. Mold
 2. Foam filler
 3. Release agent - cooking oil
- B. Molding
 1. Treat lightly with release agent
 2. Place hooks in form
 3. Seal form halves together
 4. Mix foam
 - a. Work quickly (45 seconds)
 - b. Fill reservoir cavity only
 - c. Allow to set for 30 minutes
 5. Unclamp and open mold
 6. Remove bodies carefully
 7. Trim and file to smooth surface

PASS OUT materials for assembling a popper body from pre-formed bodies and appropriate hooks. **DEMONSTRATE** building a popper using pre-formed bodies with hook slots pre-cut. Small bass or large bluegill poppers are good choices for first attempts.

ALLOW each participant to paint a popper that has already been prepared with a vinyl or epoxy color of his or her choice. Set it aside to dry and provide a dry body for the next step.

ENCOURAGE each participant to dress a popper in a fashion that they would like. **DEMONSTRATE** each technique if needed. **NOTE** that long tails are more active, but may encourage short strikes (particularly from small fish).

DEMONSTRATE forming cork or balsa bodies using a sharp knife, file or rasp and sandpaper. **NOTE** that a fine finish requires filling the pores with a sealer. Shellac, varnish, paint or sanding sealer are recommended for filling the surface.

DEMONSTRATE cutting the hook slot (or side slots for hackles on a gerbubble bug) with either a knife or a fine-toothed hacksaw blade. **NOTE** the wisdom of using jigs to keep cuts precise.

Have participants proceed as before in finishing the popper.

If desired, **DEMONSTRATE** the process of casting and trimming popper bodies using injection foam kits. Follow the foam kit directions carefully.

NOTE that one must work quickly after the foam components are mixed and to use only as much foam as is required to fill the reservoir on the molds.

TRIM and **SMOOTH** the bodies to a smooth finish with a sharp

C. Finish

1. Wash in detergent and water
2. Dry thoroughly
3. Paint body
4. Dress and finish popper

knife, file and emery board.

EMPHASIZE the importance of washing the release agent from the foam in order to allow paint to adhere properly.

NOTE that these techniques can be applied to all sorts of hard bodied poppers.

Summary Activity

Have participants design and assemble several poppers to use for surface feeding fish in your area. Lead them on a fishing trip using the poppers they have made.

Lesson Narrative

Hard-bodied poppers are traditional fly rod lures for species like bluegills and bass in fresh water and for several species from bluefish, stripers, spotted weakfish and red drum inshore to sailfish and other big game fishes offshore. Poppers come in many styles, each one designed for a specific type of fishing application. Those with dished faces are designed to make considerable surface commotion when they are sharply pulled through the water. Flat-faced poppers may be popped with vigorous pulls or slid rather quietly over the surface where a quieter presentation is desired. Both pencil poppers and skipping bugs are of this design. Still others are made with bullet-shaped heads. These are designed to slide over the surface or even to dive under it briefly to return to the surface when tension on the line is released. A few Apoppers® are even made with ball-shaped heads that resemble large eyes.

Regardless of their design, all of these hard-bodied poppers are made in a similar fashion. Hooks are sized to their use, both the fish being sought and the type of popper being made. The vast majority of poppers are made with kinked shank or humped shank hooks. The kink or hump prevents the hook shank from rolling in the slot if the glue line breaks. Tiny poppers may use regular length #10 or #8 hooks, while larger ones may require long-shanked, heavy wire hooks in sizes 2/0 or larger. Wide gaps are commonly used to increase the hooking and holding power of the lure.

Body materials most often are made of balsa, cork, open-cell foam, closed-cell foam or similar materials. These bodies may be pre-formed, shaped by the maker from wood pieces or cork cylinders, or cast at home using foam kits. Some would argue that popper color is not important, while others are convinced that any color is fine as long as it is yellow, black, red or some other favorite. Most popper makers have a few favorite patterns or color combinations that they like to use in the waters they fish. The bodies can be painted with vinyl paints like those used on jig heads, enamels, or epoxy paints. Some people like to use a combination of paint types, like a vinyl base color with a clear overcoat of clear epoxy to give it a more durable, shiny finish.

Vinyl paints are relatively inexpensive and easy to use. They dry quickly to a waterproof and relatively resilient finish. Many colors are available from plenty of sources. They tend to dull with exposure to sunlight and abrasion, and the finish is somewhat brittle. Enamels take a long time to dry and leave a hard but easily chipped finish. Epoxy paints must be mixed and have a relatively short shelf life (hours to days). They take somewhat longer to dry, usually several hours to a day or so. They are bright, tough finishes that are durable and very hard to damage. Paint selection is a matter of choice for the popper maker.

Poppers are dressed in many ways. Hackle feathers, bucktail, mylar tinsel, crystal hair, and rubber or vinyl skirt or leg material are all useful in dressing poppers. Most tiers prefer saddle hackles or “Chinese” neck hackles, although some large neck hackles can be used effectively. Hackles can be tied to pull straight, presenting a slim profile both in the air and on the water. They can also be splayed by placing the convexly curved sides together. This is somewhat more air resistant, but it provides a bit of “kicking” action in the water. Many tiers use a wound hackle skirt between the popper body and the tail. Bucktail or other long hair can be used for a tougher, straight tail. The tails can be enhanced with a touch of tinsel, crystal hair, or similar flashy materials. Rubber strands can be added to the tail area or built into the body by threading it through with a sewing needle.

Making Poppers from Pre-formed Bodies

The easiest way to make poppers is to assemble them from pre-formed popper bodies and matched hooks. Popper bodies are available cast from plastic foam or as shaped bodies in cork or balsa. These may be supplied with or without a hook slot. When bodies are purchased, the manufacturer or supplier usually provides suggested hook styles and sizes to match the body.

Before assembling the popper, the body should be inspected and filed or sanded smooth. If a hook slot is not present, it can be cut with a sharp knife or a fine-toothed hacksaw blade, but pre-cut hook slots are easier for beginners to handle. The hook slot is filled with epoxy or some other waterproof glue, and the hook is pressed into place. After the hook is properly positioned, the excess glue is wiped off smoothly and the assembly is set aside to dry.

When the cement is firmly set, check the body for rough edges again, smoothing any rough edges back to the contour of the body. If the bodies are made from wood, cork or some other porous material, they must be sealed or filled to form a base for painting. Shellac, sanding sealer, or a base layer of paint can be used as filler. Once the fill coat is dry, it can be sanded lightly to make a good base for the paint. For light colors, a base coat of white paint produces a better finish. Darker colors may not require the undercoat, but they may appear brighter over a white base. The body can be painted a solid color or a combination of colors in a pattern pleasing to the maker. Two-tone bodies in red and white, yellow and red, black and white, or other combinations have been effective for many years. Some popper makers prefer to use patterns that look like frogs or fish. Others use tiger stripes or spots of contrasting color as a pattern. Eyes may be added if desired, either by painting an iris and a contrasting pupil or by gluing on a set of doll eyes. Finally, the body can be given an overcoat of clear epoxy or vinyl paint to preserve the color and brightness of the body.

Once the body has dried, the popper is ready to be dressed. A tail of bucktail, hackles or some combination is tied in at the back of the body. For slim-profiled poppers, like skipping bugs or pencil poppers, this may be adequate. For more traditional popping bugs, a tail of either splayed or matched hackles is applied with one or more long hackles wound around the tie down area for the tail. The hackle is bound down and whip finished immediately behind the body with a narrow band of thread. A drop or two of head cement or clear epoxy paint over the whip finished thread completes the popper.

Making Cork or Balsa Poppers

More adventurous popper makers may want to start with pieces of balsa or cork cylinders (even bottle corks) or similar materials, like plastic foam from floats or buoys, to make their own customized bodies. The materials can be carved with a sharp knife to approximate shape, then filed or sanded to shape. The body can be finished with fine sandpaper to a smooth surface. Most bodies are basically round in cross section, but others are flat ovals or even slightly rounded rectangles (e.g. gerbubble bugs).

When the body is finished, lightly draw a line down the bottom side of the body from the center of the face to the center of the tail. Cut along that line with a sharp knife or a fine-toothed hacksaw blade, cutting to near the center of the tail and about one-quarter to one-third of the way up the face. This keeps the hook low in the body and aids in keeping the popper high floating. If making a gerbubble bug, similar shallow slots are cut into the sides of the bug about half way up the sides and a folded hackle feather is glued into those slots. In that case, it is wise to complete any painting before the hackles are inserted. The remainder of the process for these bugs is the same as that outlined above, painting the body and dressing the bug as desired.

Making simple jigs to align the saw blade or blades can be an outstanding way to align hook slots and to make the process quick and simple. These can be made from scraps of wood, acrylic materials, Plexiglas, or similar materials.

Making Cast Foam Poppers

Anglers who want to make their own poppers with the hooks molded into the bodies have an option in the form of kits. Kits have a mold for a specific size and shape of popper, and they are available in sizes from

small, short panfish poppers to long, large-diameter bass and saltwater poppers. They also contain a two-part plastic foam. Most kits contain the hooks needed to make the specific poppers as well. All the angler needs to add are a release agent, paper cups for mixing the ingredients, something to cover the work surface, a measuring spoon, stirring sticks, and latex gloves to save some hard work in cleaning the skin. Release agents assist in getting the popper out of the mold, and common cooking sprays or lubricants can be used effectively.

The molding process starts with treating the mold with a light coating of release agent. This should be a very thin film, since it must be washed off the poppers before they are painted. On the other hand, too little release agent can result in breaking bodies as they are removed from the mold.

Once the mold has been treated, one side is laid flat on the work surface so hooks can be placed in the slots provided for them. Take care to be sure the hooks are in the slot at the tail end of the popper and properly seated in the eye slot. Carefully place the other half of the mold on the first one and secure it together. Stand the mold upright on newsprint surface and prepare the foam.

Mix the plastic materials together according to directions. Usually that involves mixing equal parts of the two liquids. Stir them together vigorously for about 15 seconds forming a blended mixture. Working quickly, since the mixed foam has only about 45 seconds of working time, pour enough of the foam into each mold cavity to fill the reservoir on the cavity. A very small amount of foaming plastic is needed, since it expands tremendously upon reacting and curing. Following directions by the manufacturer let the mold and foaming agent sit until the foam has cured. Usually the process is complete within about 30 minutes. When the material is cured, carefully open the mold from the hook side of the mold.

Some flashing or excess material may have squeezed out of the mold cavities during the pour and curing. It can be cut away with a sharp knife, being careful not to cut fingers. The excess material on the reservoir end of the body can be trimmed away with a set of gate cutters or a sharp knife. The gate cutters are much quicker and safer to use. A final finish to the body can be accomplished with a file or an emery board, yielding a smooth body. The bodies are now ready for a trip to the sink for a washing to remove the release agent. Hot water and some dish soap does an excellent job of removing the oily residue that might cause problems with the paint job. Many popper makers like to let the popper bodies' cure for a day or so before going on to the finishing steps.

These poppers are finished in the same way as any others. The body is file or sanded smooth before the paint is applied. After the paint is dry, the tail end of the popper is dressed as desired and finished with a drop or two of head cement or some clear epoxy. Eyes may be added as desired.

Exhibit and Sharing Suggestions

1. Make a photographic story showing the steps in making hard-bodied poppers. Share that exhibit at an appropriate event, or use it to assist your leaders in teaching others about making poppers.
2. Prepare an illustrated talk or demonstration on making poppers. Share the demonstration or talk with and appropriate audience or use it in assisting others in learning about making poppers.
3. Conduct an experiment with a variety of popper colors or patterns, keeping records on the conditions under which they were used, the amount of time they were fished, strikes from fish and the numbers of fish caught on the various patterns. Record your results in a fishing journal, and share them with friends who fish poppers.
4. Keep records of the species of fish caught on the poppers you have made. Display your "life list" at a meeting or some other gathering of popper anglers. Discuss the conditions under which those fish were caught and the techniques used.
5. Experiment with various popper materials and building techniques to determine the ones you prefer. Share your discoveries and your conclusions with others in your group.

Sharing and Community Service Opportunities

1. Participate in a field day, National Hunting and Fishing Day event, or some similar event, demonstrating how to make poppers and discussing their use.

2. Make a custom set of poppers to be auctioned or raffled at a local event or activity, aiding a community or conservation organization in raising funds.
3. Lead a group of young people in learning about popper making and popper fishing.
4. Plan or participate in a project that outlines the importance of water quality to the local fisheries and to people downstream.