

An *amappo* (crossbow trap) is an animal-hunting device that shoots an arrow automatically. In some other regions it's known by different names, such as "amaku" and "kuwari." It's set up on trails used by brown bears, Yezo deer, and other prey. When a passing animal trips the trigger string, the device automatically shoots a poison-tipped arrow to bring down the prey.

This paper craft project is based on a model *amappo* used in demonstrations at Upopoy. It uses a simplified design to show, in an easy-to-understand way, the structure and action of the device from setup to launching an arrow. Through assembly and play, you can learn how an *amappo* works.



Implements and Materials You'll Need

- Sturdy paper
- Rubber bands (4)
- Twine
- Scissors or utility knife
- Ruler
- Pencil
- Tweezers
- Glue (Using stick glue for broad surfaces and wood glue for small and intricate pieces is recommended.)
- Pointed object, such as a ballpoint pen that has run out of ink
- Toothpicks (These are useful for applying glue thinly and to small and intricate pieces.)

What the Symbols Mean

- | | | | |
|------|-------------------|------|------------------|
| (1) | part name | — | Slit line |
| — | Cut line | □ | Cutout |
| ---- | Outward fold line | ---- | Inward fold line |
| → | Apply glue | ↺↻ | Curl |
| □ | Glue site | | |

How to Make

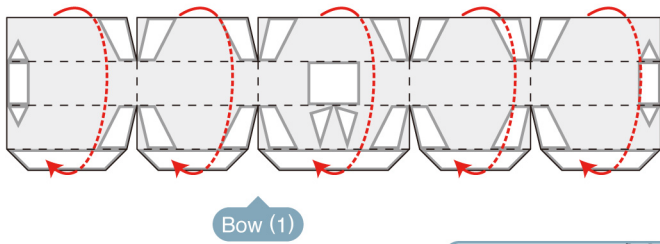
1. Use the pointed object to make creases along the fold lines.
2. Before cutting out the pieces, use the pencil to write the part names on the back of each one.
3. Carefully cut out the pieces along their cut lines.
4. Following the instructions for outward and inward folds, fold the parts along the dotted lines.
5. Assemble by attaching the pieces as shown in the diagram.

Important Notes – For Parents and Guardians

Preschool children must be supervised by an adult and be kept in sight while assembling the item. Papercraft uses a variety of implements. To prevent unforeseen accidents, please give careful attention to the following points while enjoying crafting.

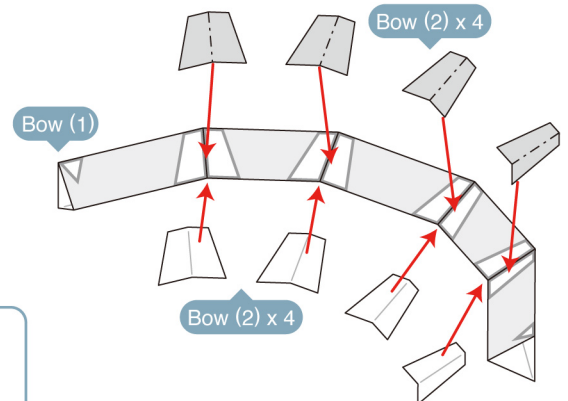
- Be very careful to avoid injury when children use scissors, utility knives, and other objects with blades.
- Be careful to ensure that small children do not put glue or adhesive in their mouths or swallow small pieces.
- This craft uses paper, which may become unusable if it gets wet. Be careful not to handle pieces with wet hands.
- Display near open flame or other heat sources can cause fire or discoloration.
- Some finished papercraft items have pointed areas. Be careful to ensure that children do not strike others with these items.

1



Assemble bow (1) into a tube whose shape resembles a series of connected prisms.

- Assemble so that the yellow area is hidden in the interior of the tube.



Arrange bow (1) into a semicircular shape and glue on the bow (2) pieces over the seams on the top and bottom to hold the shape in place.

2

Rubber-band anchor (1)



For each of the two rubber-band anchor (1) pieces, fold over the portion shown in the figure, glue the flush underside surfaces together, then shape the piece so that it curls inward.



- Ordinary rubber bands: No. 16, 6 cm in diameter



Join 3 rubber bands together.

Rubber-band anchor (1)

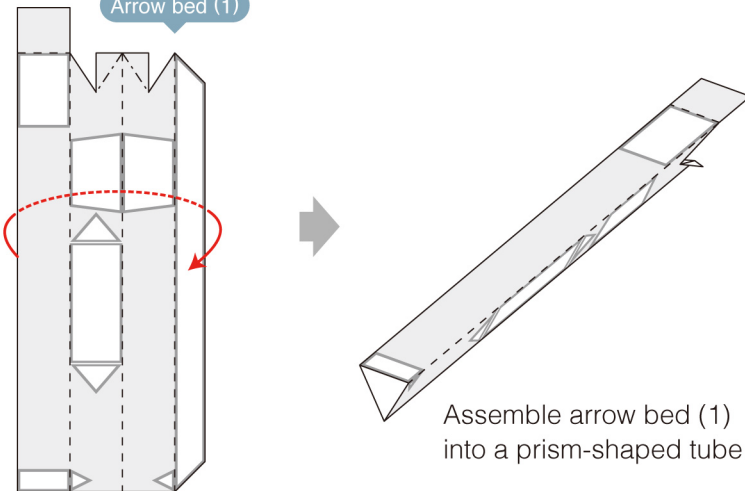
Rubber-band anchor (1)



Wind each end of the joined rubber bands twice around one of the rubber-band anchor (1) pieces, then fold over the ends of each rubber-band anchor (1) piece and glue together the overlapping areas on the underside.

3

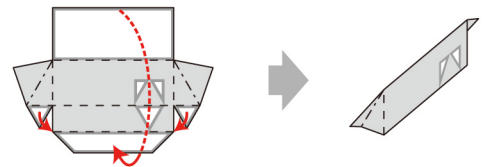
Arrow bed (1)



Assemble arrow bed (1) into a prism-shaped tube.

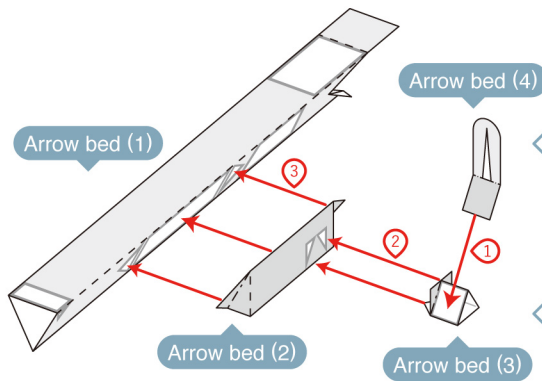
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Arrow bed (2)

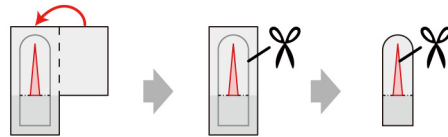


Assemble arrow bed (2) into a triangular box shape.

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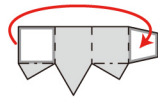


Glue arrow bed (2) through (4) onto arrow bed (1) in the order shown in the figure.



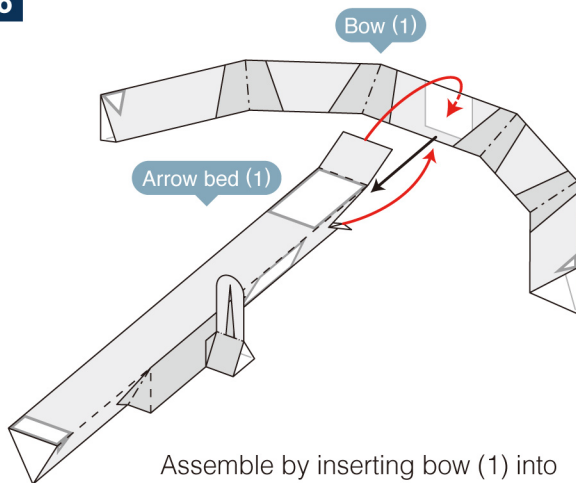
For arrow bed (4), make an outward fold for the portion shown, glue together the flush surfaces, and cut away the outer portion along the inner line. Then cut out the inner area.

- This requires a utility knife.



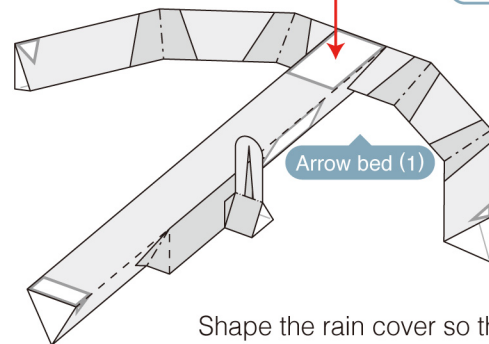
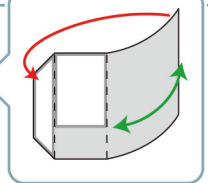
Assemble arrow bed (3) into a triangular box shape.

6



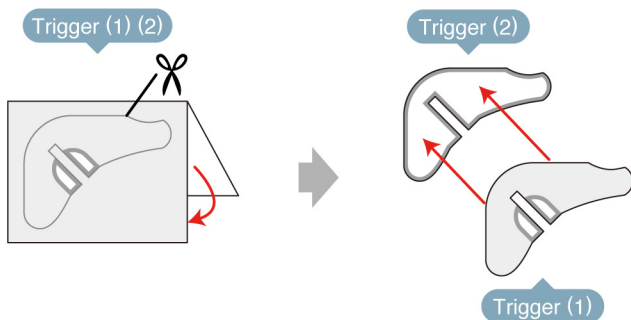
Assemble by inserting bow (1) into the tip of arrow bed (1).

Rain cover



Shape the rain cover so that it has a D-shaped cross-section and assemble it to arrow bed (1).

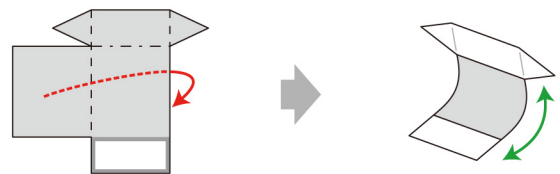
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For each of the trigger (1) and (2) pieces, fold the piece in half and glue together the undersides, then cut away the outer portion along the inner line. Then line up the two pieces and glue them together.

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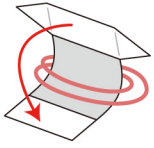
Rubber-band anchor (2)



Fold rubber-band anchor (2) as shown in the figure, glue the flush underside surfaces together, then shape the piece so that it curls inward.

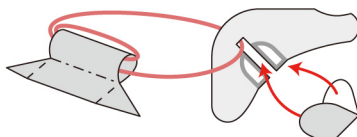
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Rubber-band anchor (2)

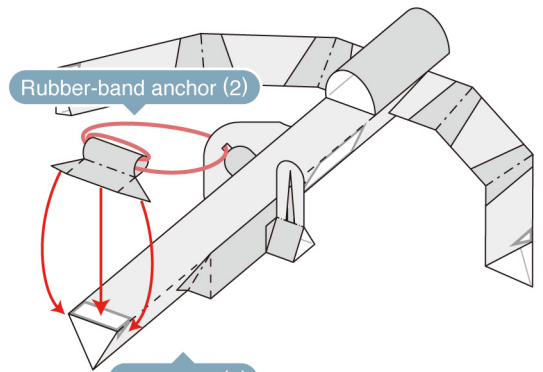


Trigger (1) (2)

• Be careful to orient this the right way.



Trigger (3)



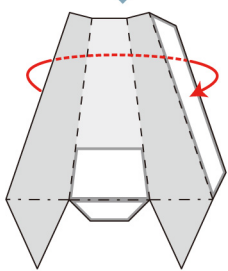
Arrow bed (1)

Glue rubber-band anchor (2) onto arrow bed (1).

Get another rubber band, wind it twice around rubber-band anchor (2), then glue the flush underside surfaces together. Stretch out one end of the rubber band and hook it onto the notch in trigger (1) (2), then glue on trigger (3).

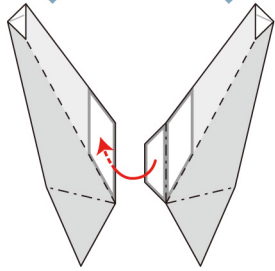
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Base (1) (2)



Base (2)

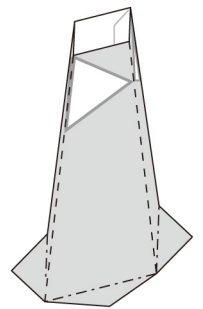
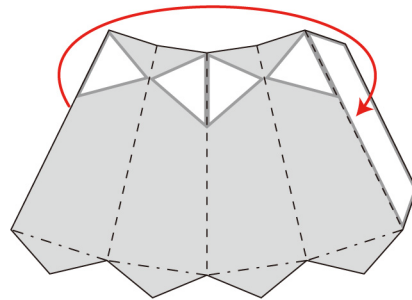
Base (1)



Assemble each base (1) (2) piece into a tube, then line up the two pieces as shown in the figure and glue them together.

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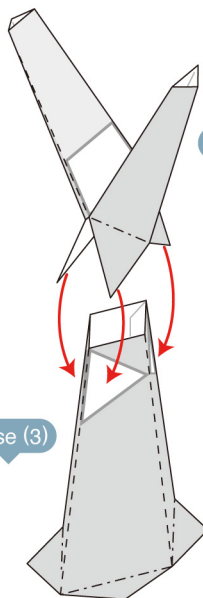
Base (3)



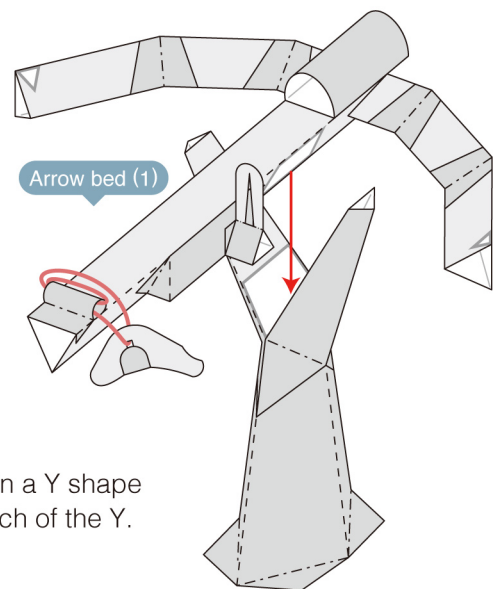
Assemble base (3) into a tube.

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Base (1) (2)

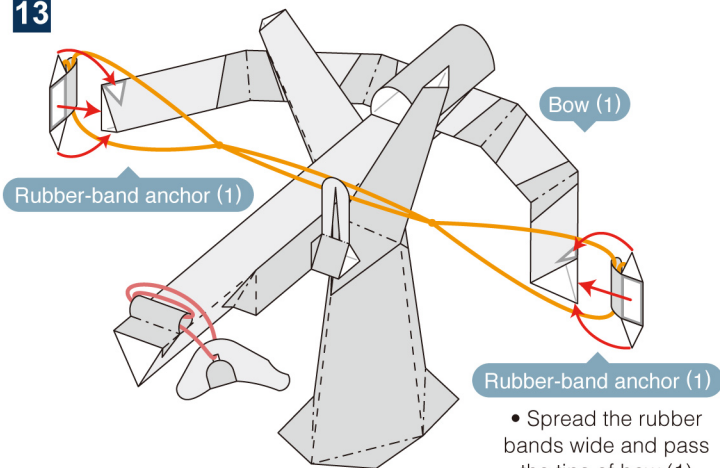


Base (3)



Assemble base (1) (2) and base (3) in a Y shape and glue on arrow bed (1) in the crotch of the Y.

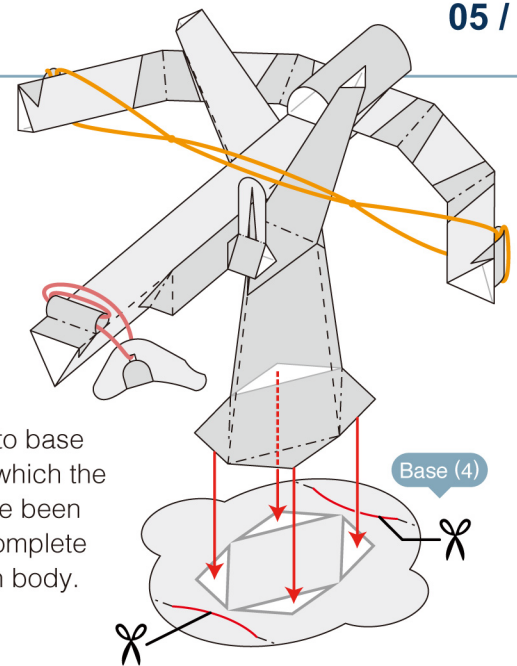
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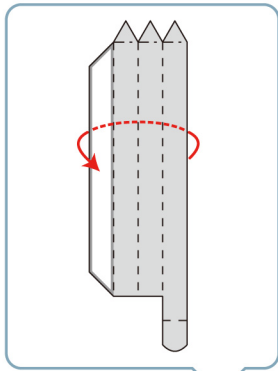
At each tip of bow (1), glue on one of the two rubber-band anchor (1) pieces.



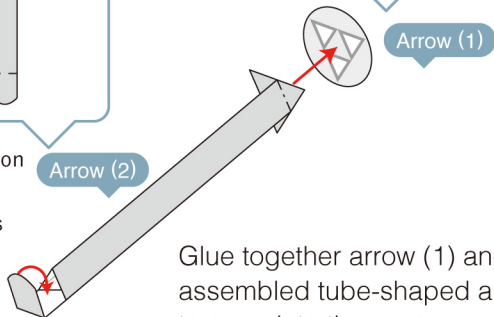
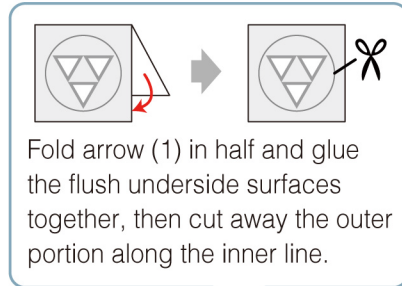
Glue onto base (4) into which the slits have been cut to complete the main body.



14

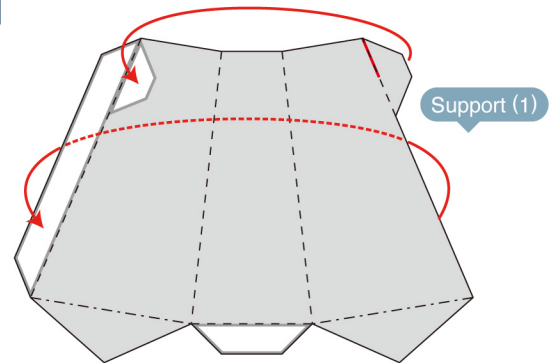


• Fold the tab portion and glue the flush underside surfaces together.

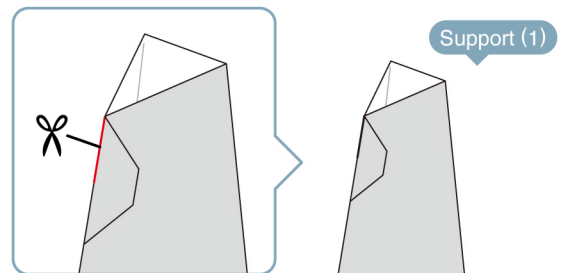


Glue together arrow (1) and assembled tube-shaped arrow (2) to complete the arrow.

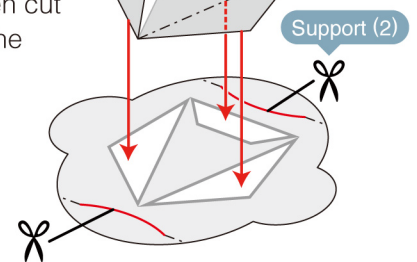
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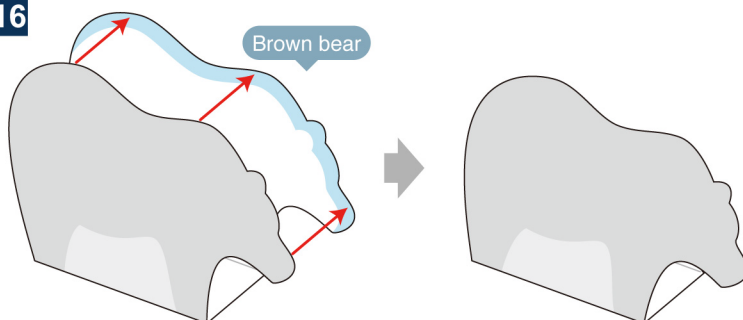
Assemble support (1) into a tube and cut the slit at the corner.



Glue onto support (2) into which the slits have been cut to complete the support.



16

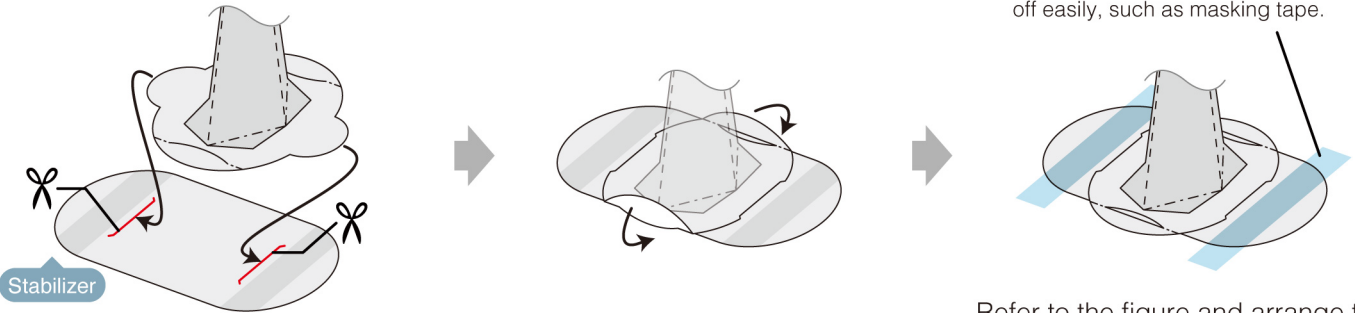


Glue the two halves of the bear together along a line running from snout to rump and stand up the piece.

• The blue area is where to apply the glue.

17 Setup

- Use something that can be peeled off easily, such as masking tape.

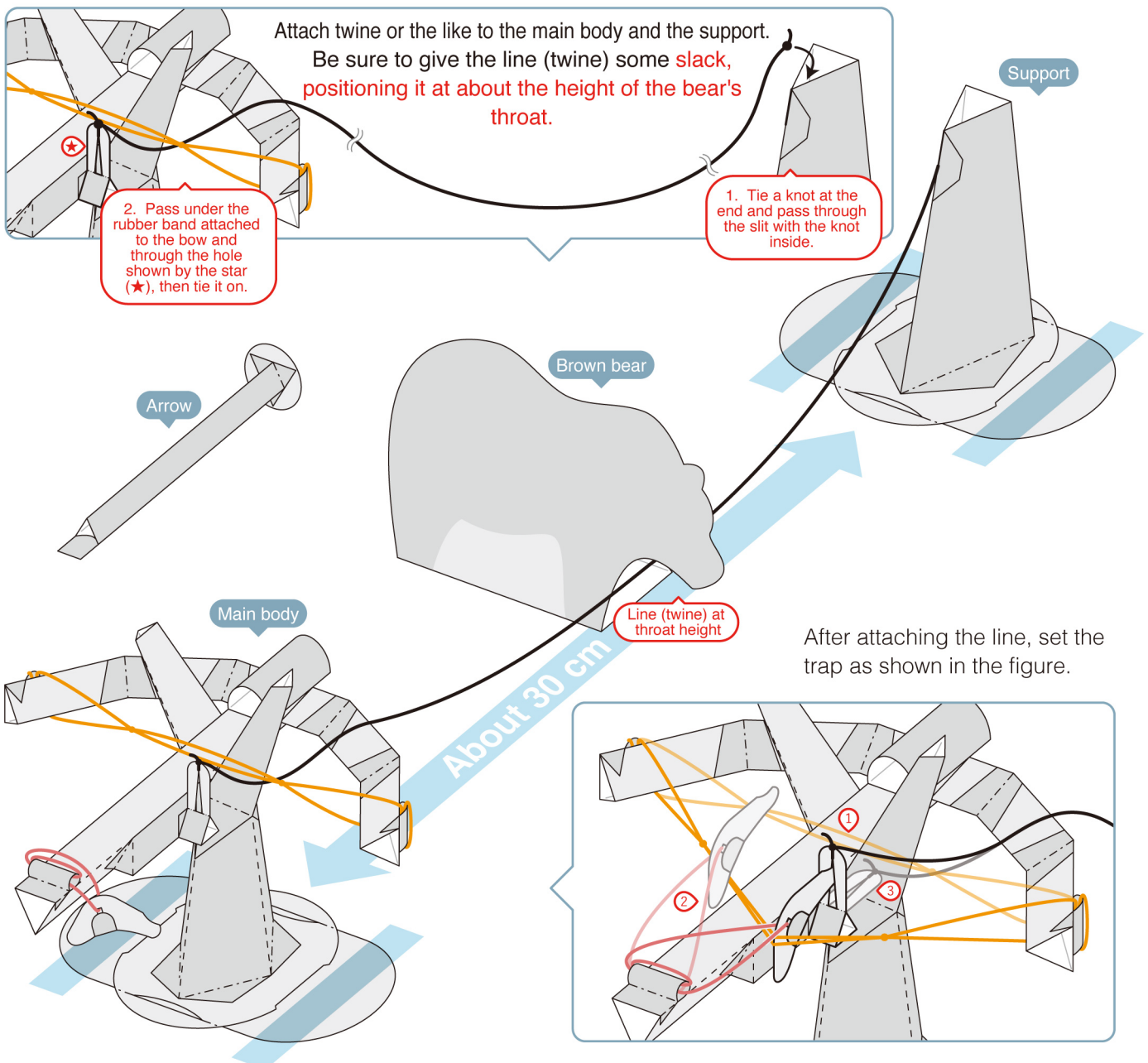


Stabilizer

Insert the tabs on the main body and the support into the slits that have been cut into the stabilizers.

Engage with the stabilizer by lifting at the slit and inserting.

Refer to the figure and arrange the pieces about 30 cm apart, then use tape to secure the *amappo* in place on the table or desk.



Attach twine or the like to the main body and the support. Be sure to give the line (twine) some **slack**, positioning it at about the height of the bear's throat.

2. Pass under the rubber band attached to the bow and through the hole shown by the star (★), then tie it on.

1. Tie a knot at the end and pass through the slit with the knot inside.

Brown bear

Arrow

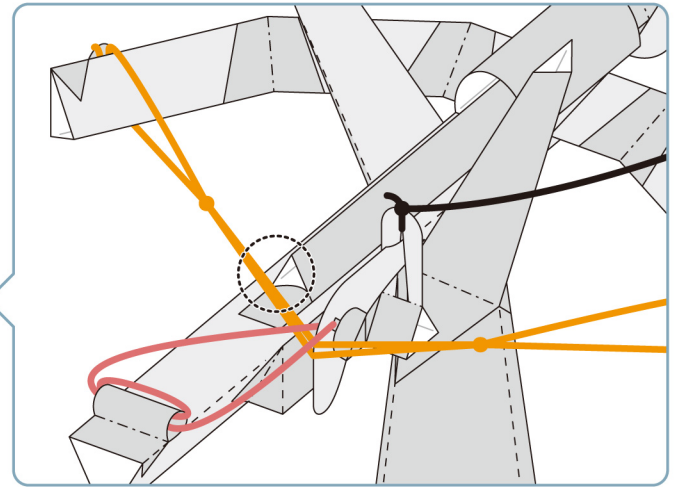
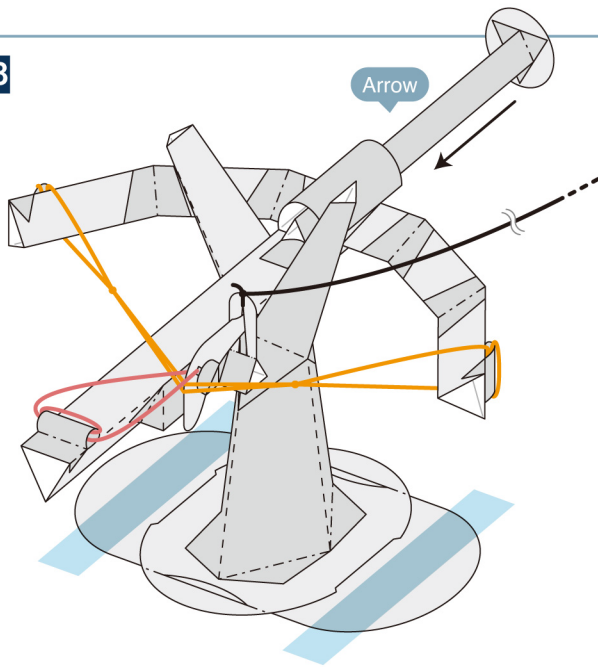
Main body

Line (twine) at throat height

Support

After attaching the line, set the trap as shown in the figure.

18



Insert the butt end of the arrow through the space under the rain cover until it touches the rubber band.

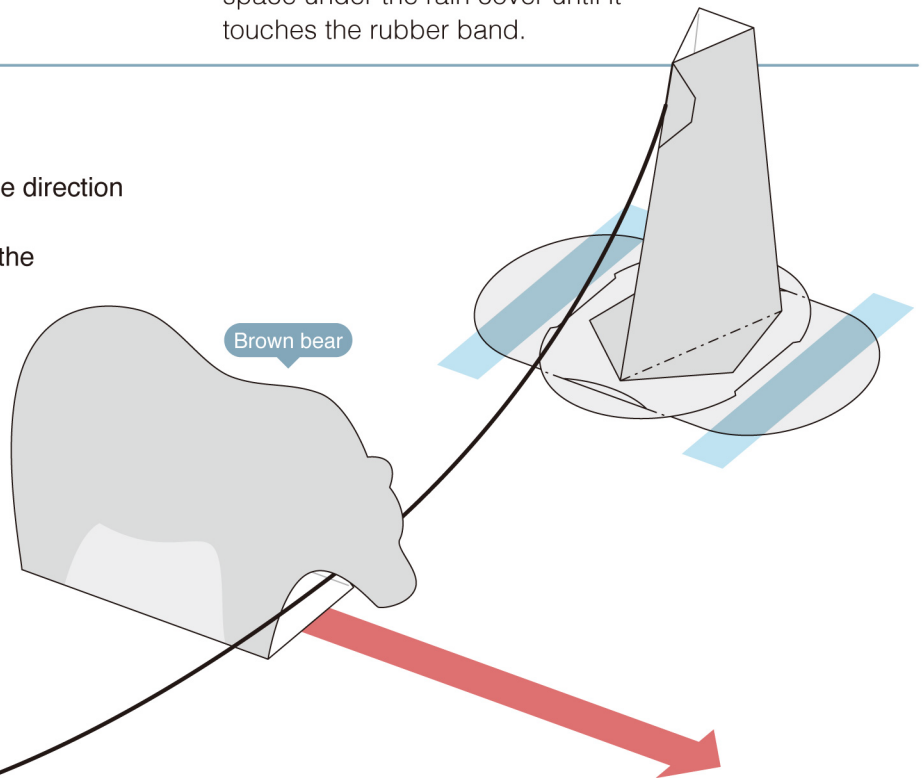
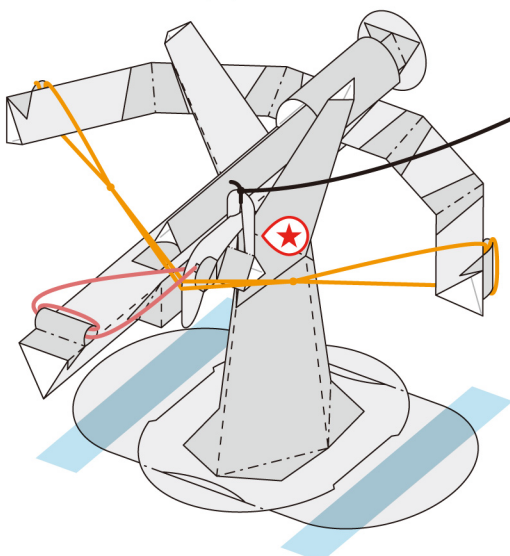
19 How to Play

With your hand, move the bear in the direction of the arrow.

When the bear catches on the line, the *amappo* shoots the arrow.

Watch how an *amappo* works!

- If the *amappo* fails to shoot the arrow, try adjusting the amount of engagement at the trigger, shown by the star (★).



Fun Fact

The Reason Why the Trap is Set with Slack in the Line

Applying tension to the line might seem to make the arrow shoot better, but the Ainu deliberately leave slack in the line so that people don't get shot by mistake.