

Canon Science Papercraft Mini-book

Biology Series

Manta

The manta is the largest type of ray in the world; large specimens can be about 7 meters (23 feet) long. Mantas migrate between the tropical and subtropical ocean regions. They are peaceful animals, living on plankton and similar foods. Mantas sometimes use their large bodies to hurl themselves into the air. You can fly this Papercraft sculpture!



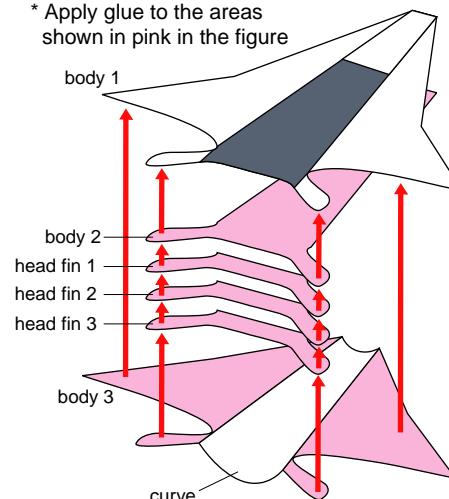
* Cut out the card above and save it. You can collect the cards from each of the Papercraft projects to make your own mini-book!

★ Directions

Print out Page 1 through Page 6. Cut out all the parts, and fold along the mountain and valley fold lines.

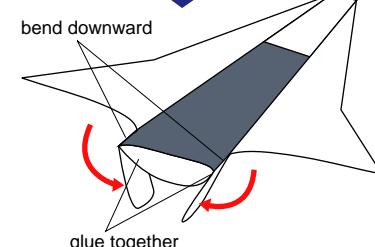
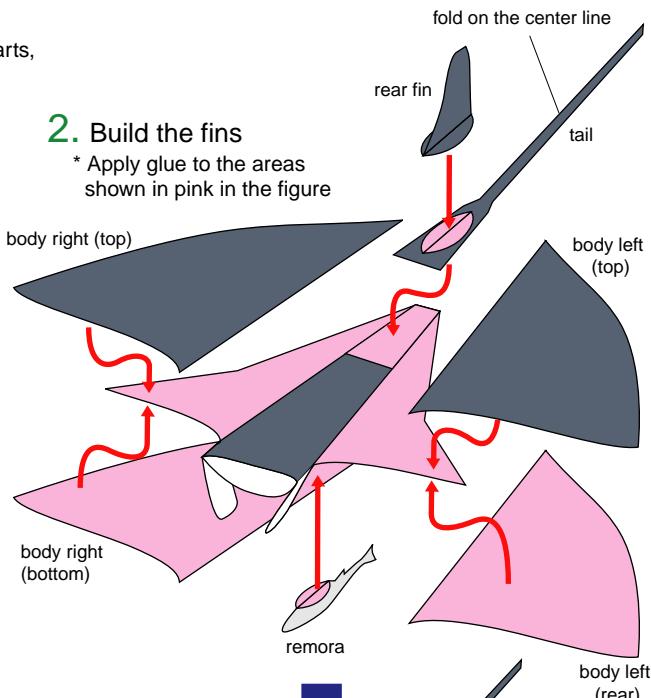
1. Build the body

* Apply glue to the areas shown in pink in the figure



2. Build the fins

* Apply glue to the areas shown in pink in the figure



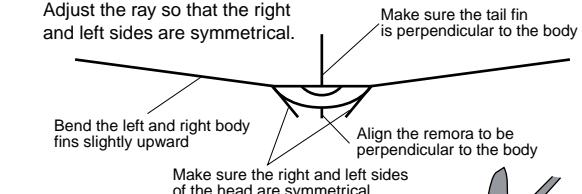
★ How to Fly

Make any adjustments after the glue is fully dry.

1. Adjust the body shape

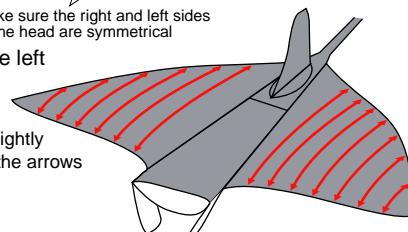
- front view

Adjust the ray so that the right and left sides are symmetrical.



- View from above left

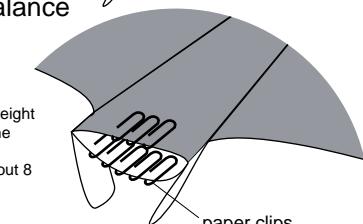
Curve the fins slightly as indicated by the arrows



2. Attach weight to balance

Attach paper clips as shown in the figure.

* The number of paper clips needed will depend on the weight of the paper and glue, and the size of the paper clips. Your Manta will probably need about 8 ~10 one-inch paper clips.



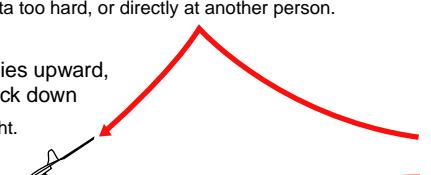
3. Test fly and make adjustments

Hold your Papercraft sculpture by the remora and throw it gently forward.

* Don't fly the Manta too hard, or directly at another person.

- If your Manta flies upward, then comes back down

Add more weight.



- If your Manta dives down immediately

Remove some weight.



- If your Manta curves right or left

Adjust the Manta so that the right and left sides are symmetrical, as shown in the figure for #1 above. If the Manta still curves in flight, try adjusting the position of the weights.

The shape of the Manta makes it more difficult to adjust than an ordinary airplane or glider. Make small adjustments and many test flights to get the balance just right.

* Note that this Manta Papercraft sculpture has been modified somewhat from the shape of an actual manta ray to make it fly better.

