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PARK PARADE, LONDON, NW10 4HT. MANUFACTURED BY HANGZHOU ZT MODEL COMPANY LIMITED. ADDRESS: NO 6  
MINGDE RD., PUYAN, BINJIANG, HANGZHOU, CHINA.

ReCYCLE N Make

# THE LEARNING BOOKLET

*Love the Ocean*

## Robotic Fish

MECHANICAL

*Fish Tail*



**WARNING:**  
CHOKING HAZARD - Small parts,  
Not for children under 3 years.

AGES **6+**





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## WARNING MESSAGE

### GENERAL WARNING

*Before you begin, please read through the instructions together with your children. Make sure you understand the safety messages. Please keep the packaging and instructions, as they contain important information.*

*This kit is designed for children over 6 years of age. This product contains small parts which may pose a choking hazard. It is not suitable for children under 3 years old. Please keep individual parts and the fully-assembled product away from children under 3 years of age.*

*Screws and other metal parts may have sharp edges. Children should have adult supervision when assembling the product. Children should have adult supervision when using cutting tools.*

*Last but not least, please clean the parts and finished product with a damp cloth. Make sure to remove the batteries from the battery compartment before cleaning. Do not use any soap or cleaning solutions.*

### OTHER WARNINGS

#### **Using a screwdriver**

1. Please ask parents or another adult permission to use the screwdriver.
2. You must always be supervised by an adult when using the screwdriver.  
*The metal may have sharp edges that can cause injury.*
3. Do not throw the screwdriver at other people or animals.
4. Put the screwdriver back in its proper storage place after use.
5. Do not use a screwdriver near children under 3 years of age.

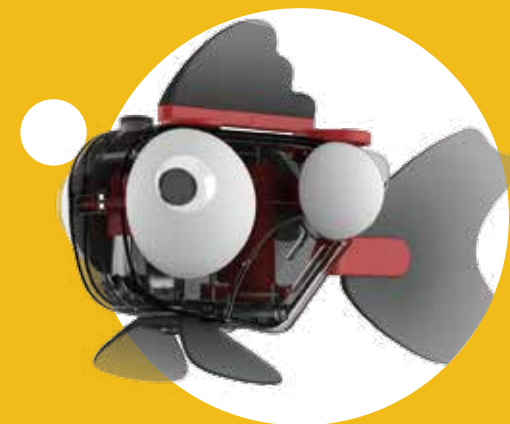
#### **Using batteries**

- Do not charge non-rechargeable batteries.
- Do not mix different types of batteries or new and used batteries.
- Insert batteries with correct polarities.
- Remove exhausted batteries from the toy.
- Do not short-circuit supply terminals.
- Remove rechargeable batteries from the toy before charging.
- Charge rechargeable batteries under adult supervision only.
- Do not use rechargeable batteries.



**The toy is to be operated in water only when fully assembled in accordance with the instructions.**

# 1 | WARNING MESSAGE



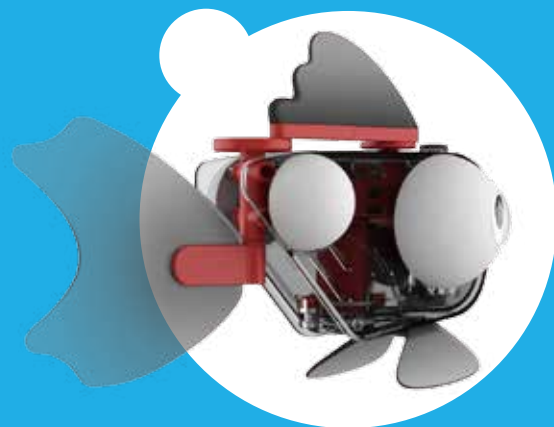


*Read to be inspired!*

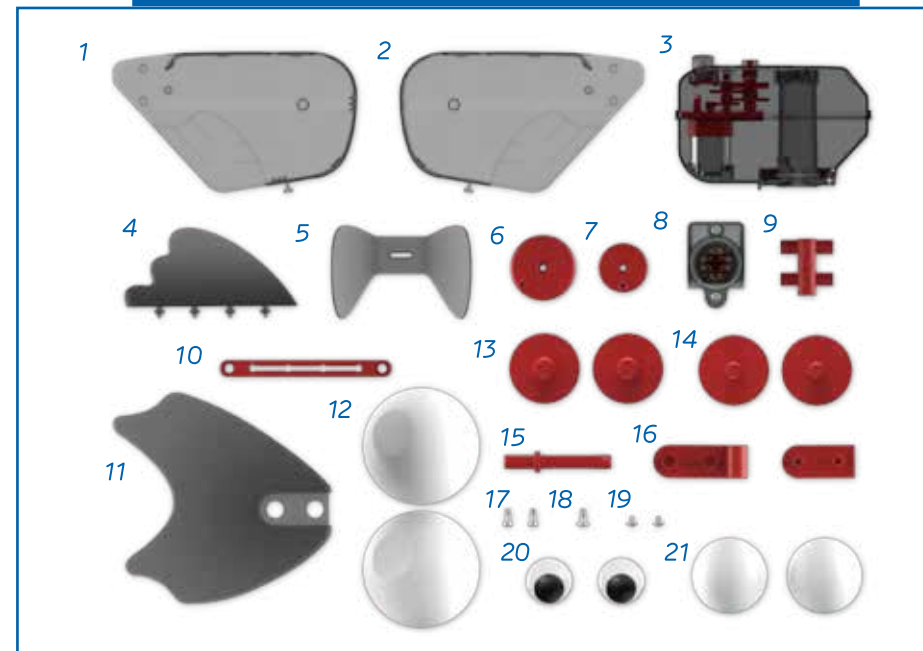




# 2 | PACKAGE CONTENTS



## Package Contents



Serial	Name	Quantity	Serial	Name	Quantity
1	Left casing	1	12	Front floaters	2
2	Right casing	1	13	Front floater holder (for DIY activities)	2
3	Fish body unit	1	14	Rear floater holder (for DIY activities)	2
4	Dorsal fin	1	15	Tail shaft	1
5	Pectoral fins	1	16	Tail Fin Connectors	2
6	Big pulley	1	17	PB2*6 screws	2
7	Small pulley	1	18	PWB2*6 screws	1
8	Battery compartment cover	1	19	PWB2*4 screws	2
9	Shaft holder	1	20	Eyes	2
10	Connecting rod	1	21	Rear floaters	2
11	Tail fin	1			

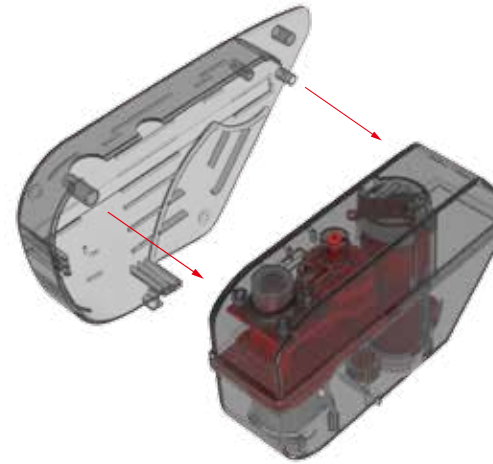
Required but not included: Cross-head screwdriver



AA Battery (x1)

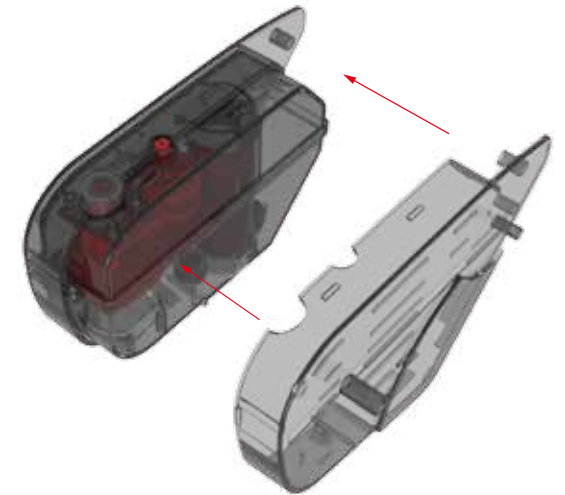


# 3 | ASSEMBLY INSTRUCTIONS

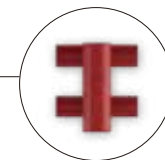


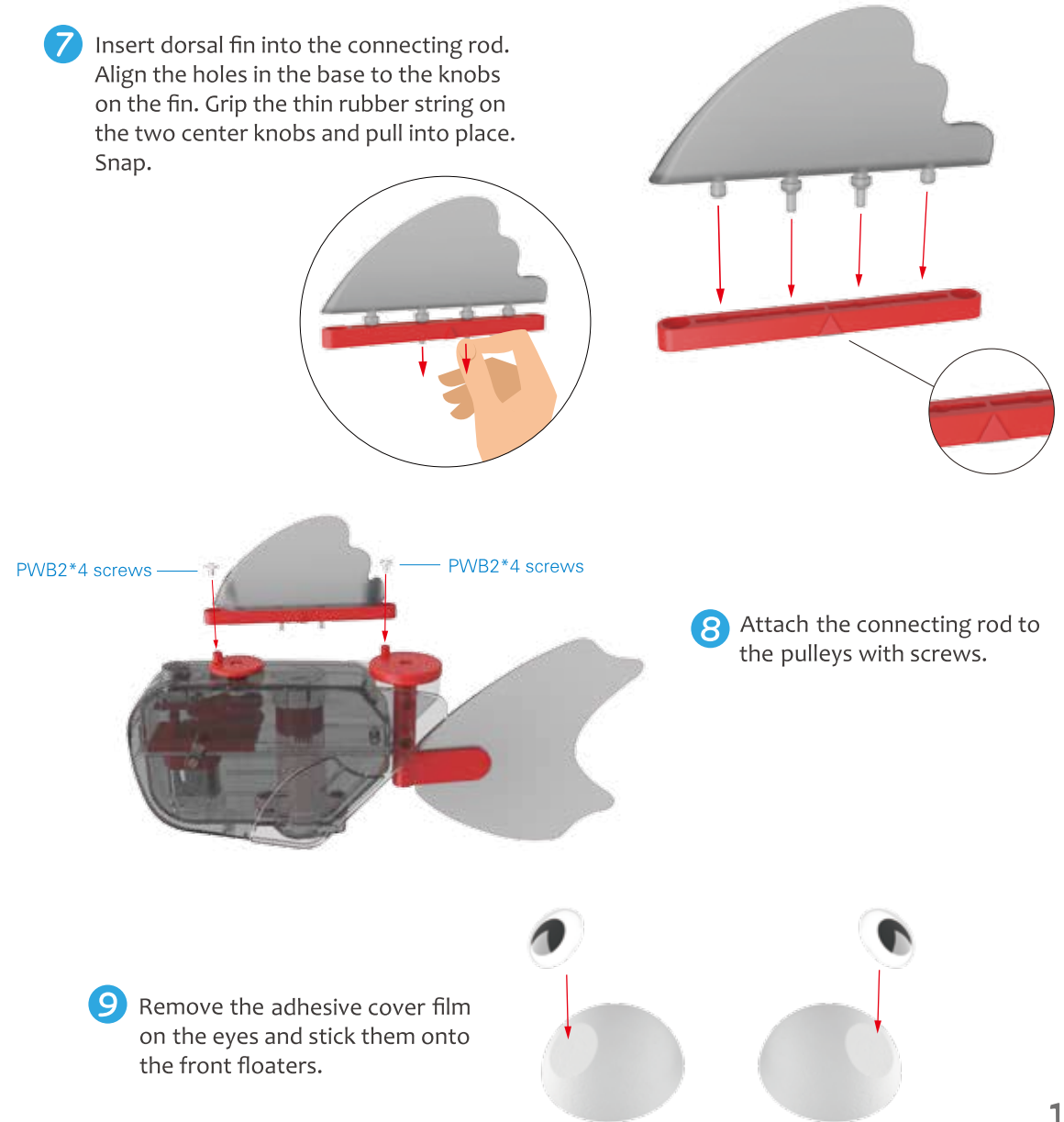
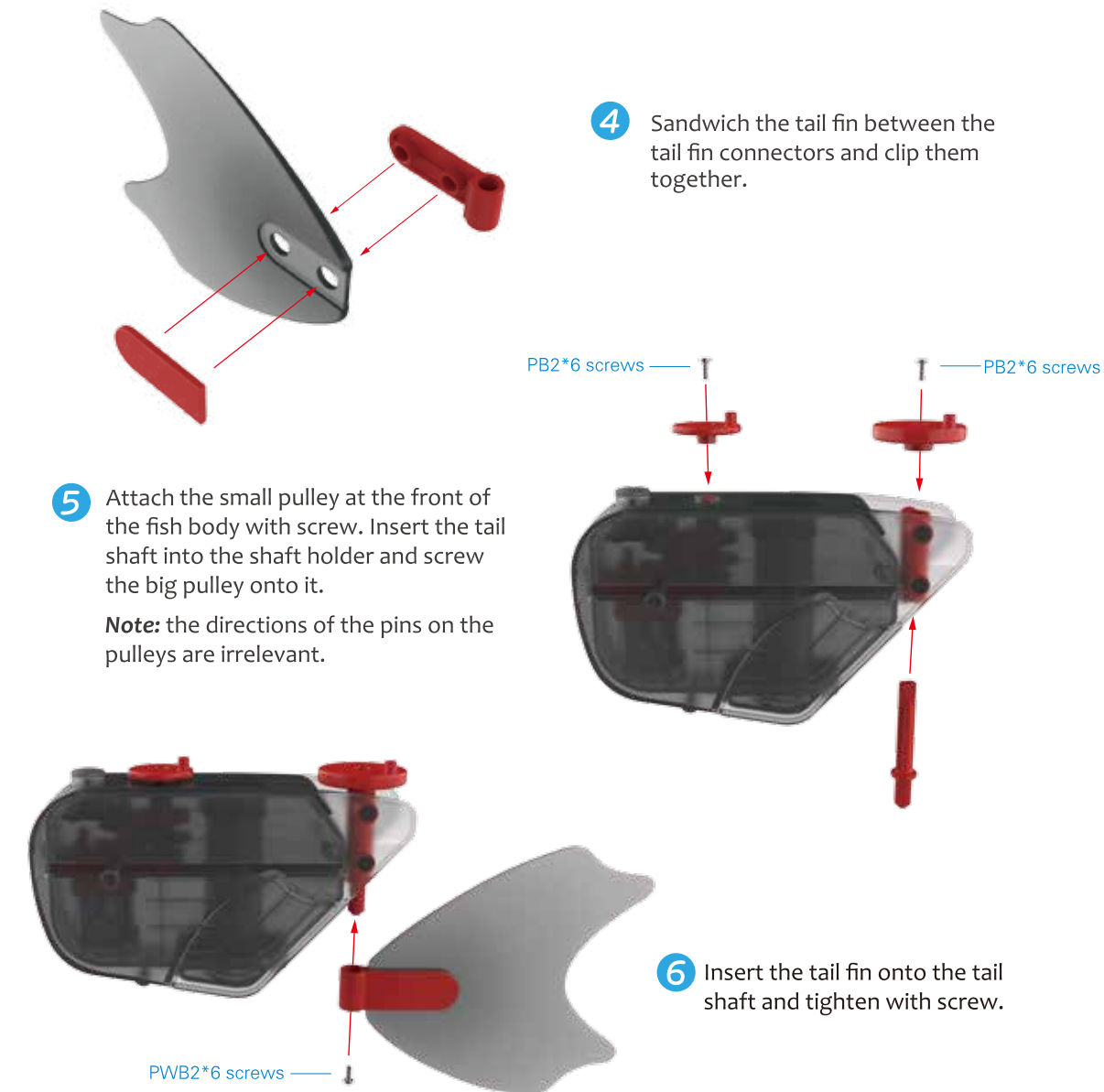
- 1 Snap the Right casing onto the fish body unit.

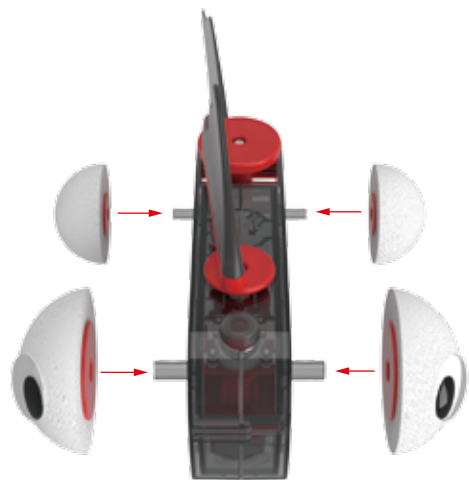
- 2 Snap the Left casing onto the fish body unit. Steadily press the two casings against each other along the edge, make sure they are firmly mounted.



- 3 Clip the shaft holder with long end downwards to the back of the fish.

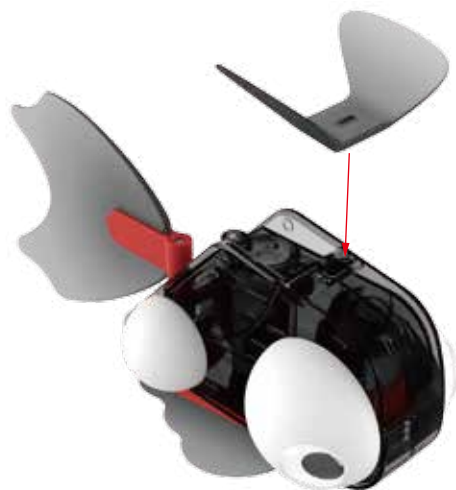




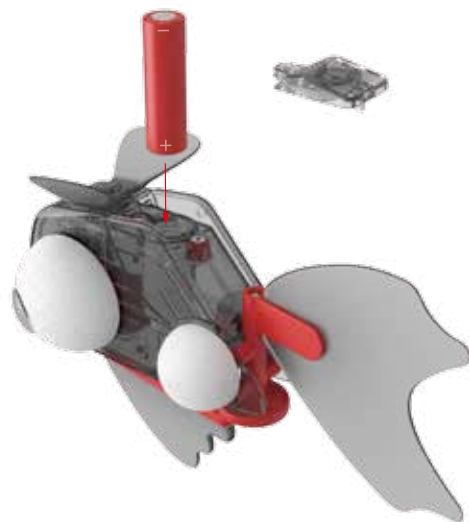


- 10** Insert the front floaters and the rear floaters onto their corresponding shafts.

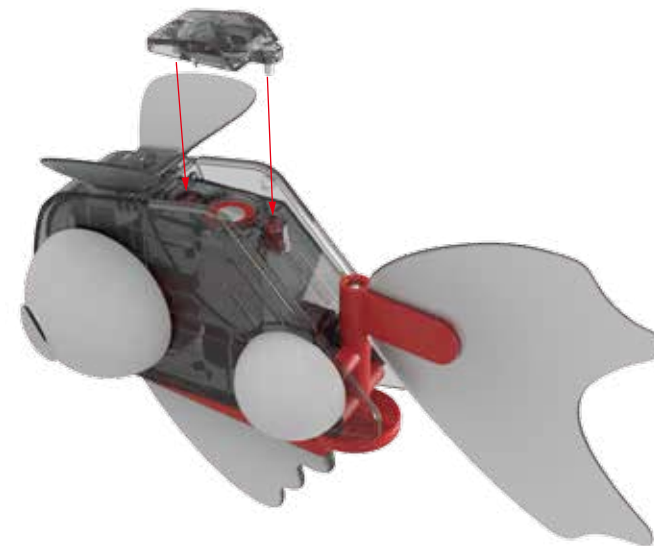
- 11** Attach the pectoral fins from the bottom paying attention to the position (the fins should face downward).



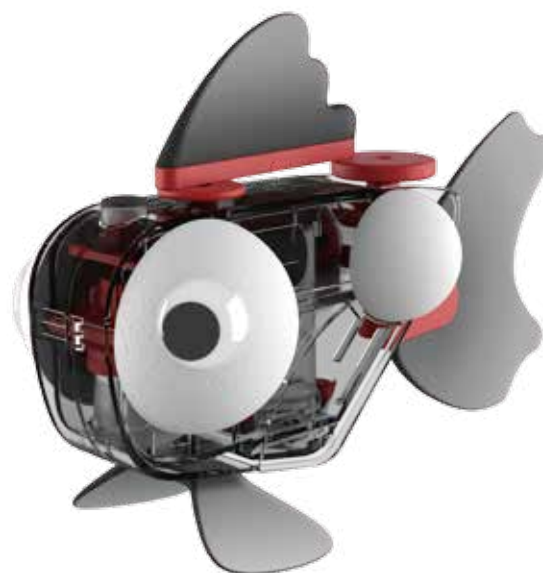
- 12** Unscrew and remove battery compartment cover, install an AA battery (positive pole down).



- 13** Close the battery compartment cover and tighten with screws.



- 14** Press the button on the fish's head to turn it ON.



You will have 4 remaining floater holders. See the Activities section for ideas on how to use these to customize your Robotic Fish.





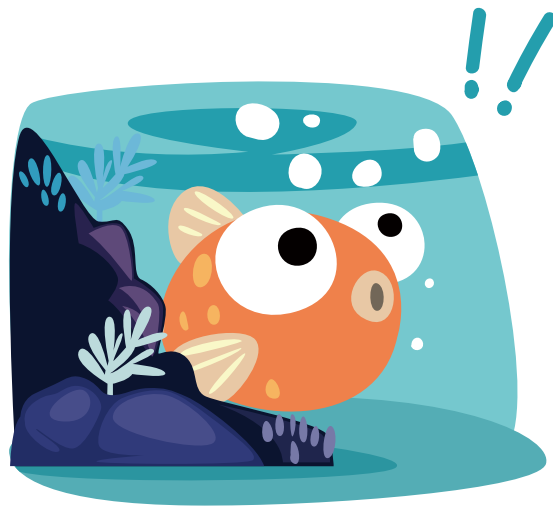
# **4 | FUN FACTS**

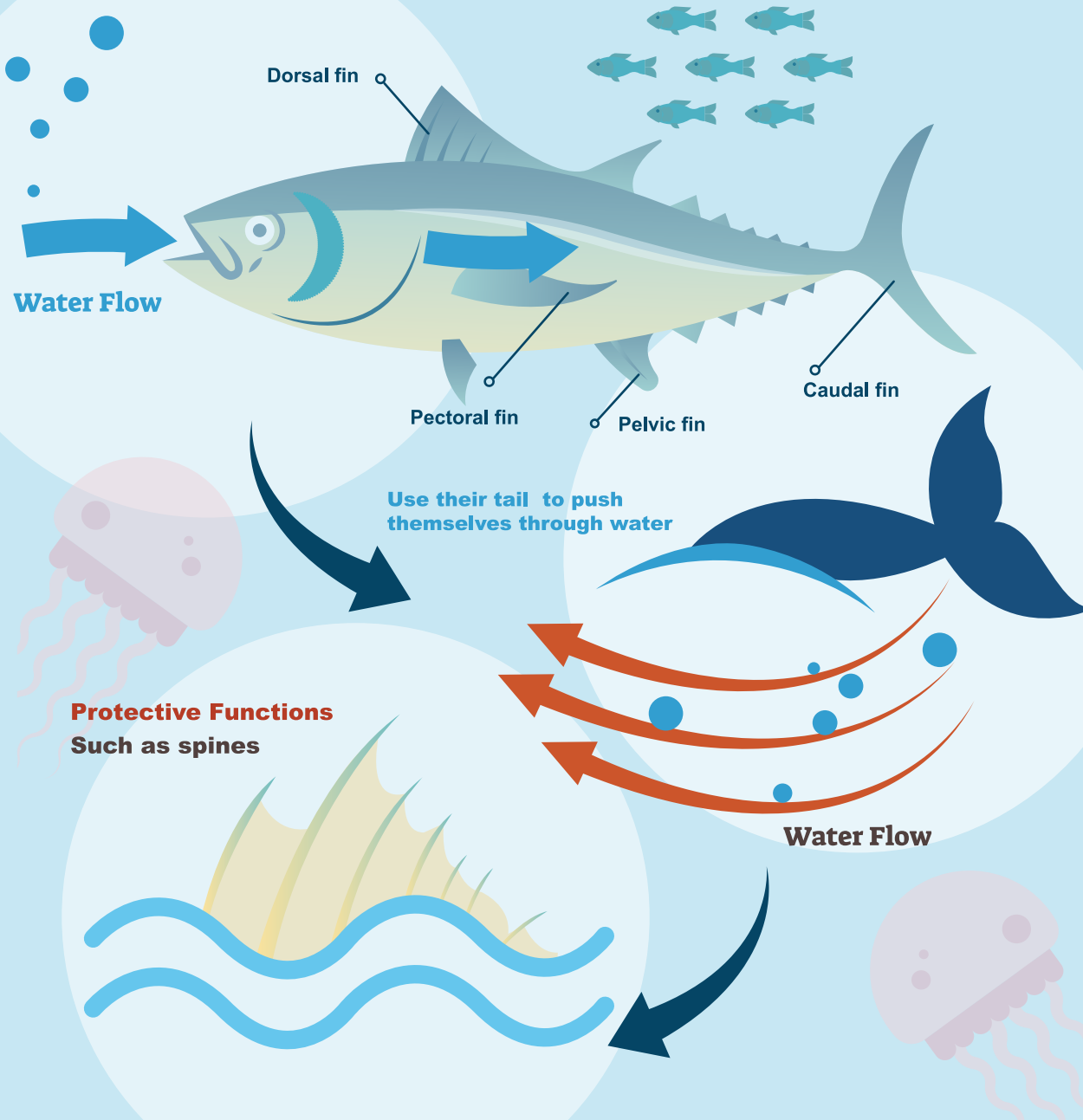
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## HOW DOES IT WORK

This Robotic fish has several fins and mimics real fish movements to swim. Equipped with recycled foam eyes, it will float and swim at the surface.





## HOW DO FISH SWIM?

Fish bend their body in a wavelike shape and use their tail or "Caudal fin" to push themselves through water. The other fins, namely the "pectoral", "pelvic" and "dorsal" fin are mainly used to steer. However, some species have developed dorsal fins with protective functions such as spines. Watch out next time you catch a fish and use gloves to avoid any injury.





## *Read to be inspired!*

### FLYING FISH

Not only humans dream of flying, but also fish. After millions of years of evolution, some species of fish have developed the ability to fly or glide.

To "take off" flying fish surge to 60 kilometers per hour (37mph) angling upward and rapidly flap their tail. They break the surface of the water and can reach a height of 6 meters (20 feet) and glide on a distance of 200 meters (650 feet). Once they fall, they can flap their tail again to go further.

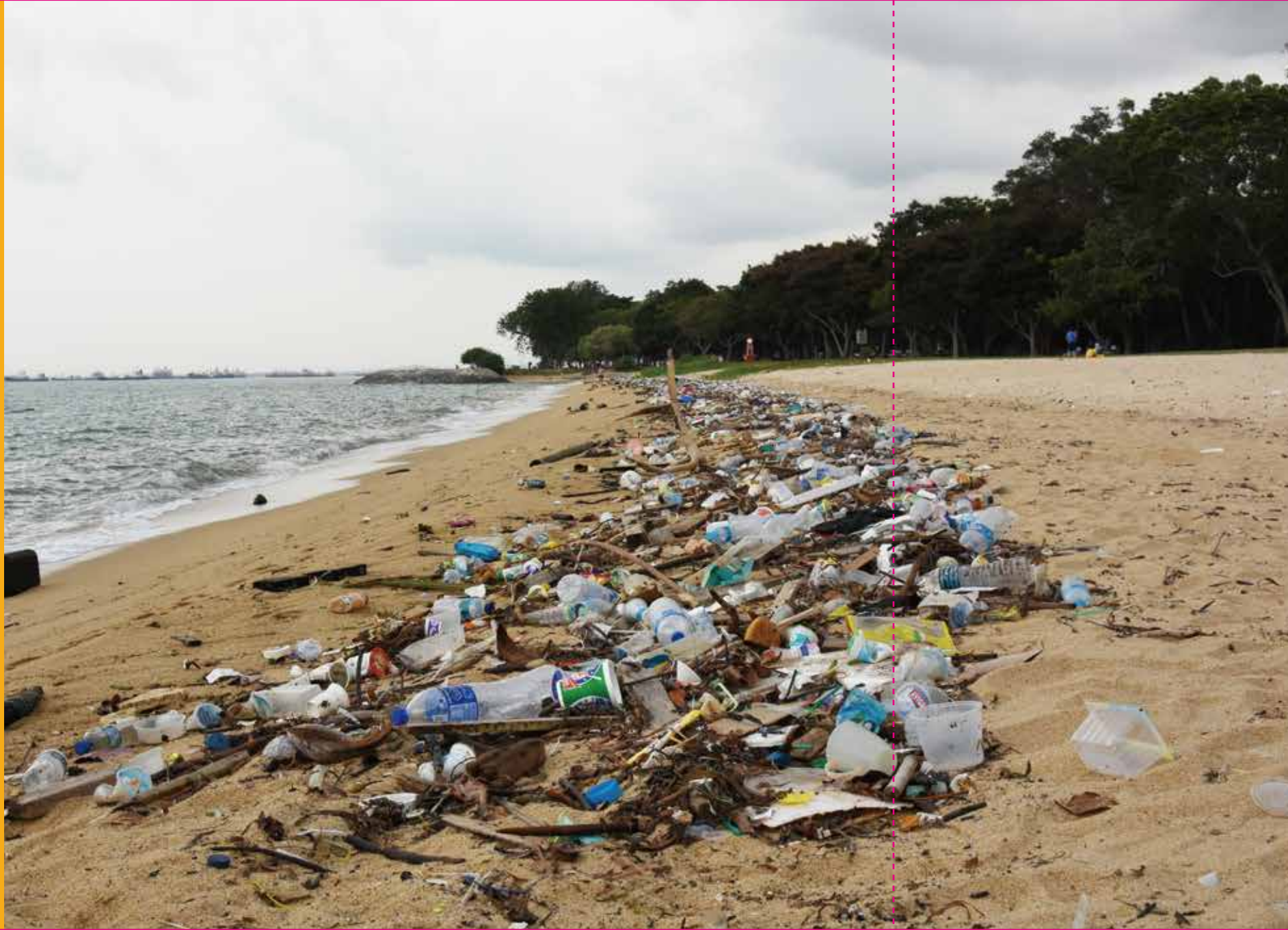


## *Read to be inspired!*



BIONICS or "biologically inspired engineering" is the science of creating engineering systems inspired by nature. Then what is the difference between robots and bionic systems? Robots are machines that are capable of executing complex tasks, they are not necessarily inspired by nature. However, when we think of robots we imagine these machines resembling humans or animals, these are actually bionic robots.





## *Read to be inspired!*

Finding a solution to the plastic pollution in our oceans is one of the greatest challenges of the 21st century. Some studies say that if we don't change anything, there will be more plastic than fish in our oceans by 2050. Try to use as less plastic as you can and sort your waste, be part of the ones who will save our planet.



# **5 | ACTIVITIES**

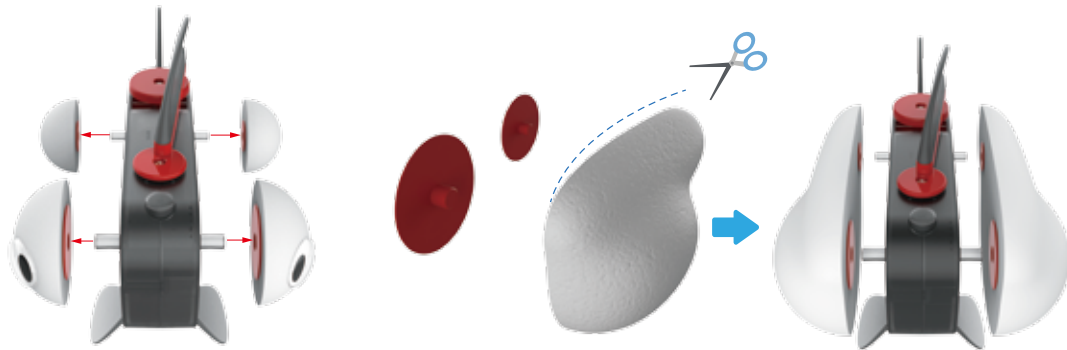


# MAKE YOUR OWN PUFFERFISH

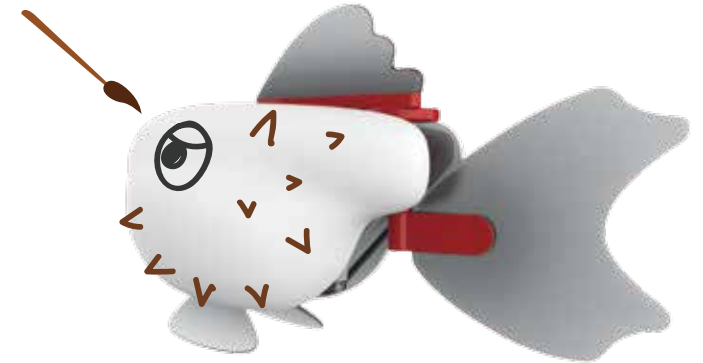
The “puffer fish” or “balloon fish” have the ability to fill their stomach with water when they feel in danger. Their skin is covered with spines as a protection against predators.

In order to create your own swimming puffer fish, you will first have to get some floating foam. Very often you can find some in packaging when you buy new household appliances. Ask your parents to keep the floating foam aside next time they buy household appliances.

- 1 Start by removing the floaters on your fish body.
- 2 Cut two cubes of floating foam by using a knife or scissors. Then shape them into half-spheres. Install the floating foam onto the fish body by using the spare floater holders.



- 3 Paint your puffer fish with the color of your choice and don't forget the eyes. Use toothpicks for the pufferfish's spines. You can cut the toothpicks in half if you think they are too big. Your puffer fish is completed!



*There are so many different fish species in our oceans, make them all. The only limit is your imagination!*