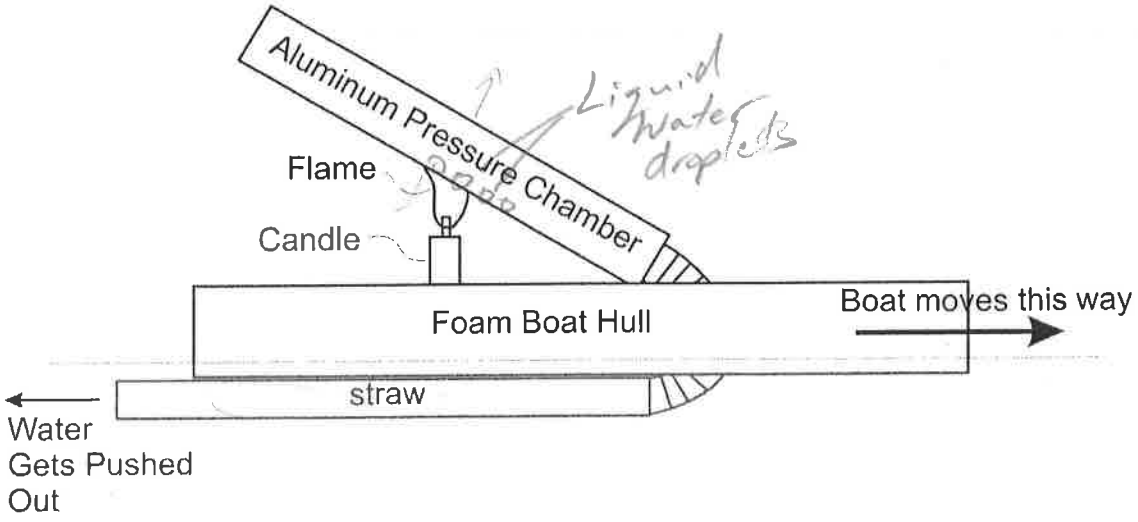
Physics
Putt-Putt Boats

Name: _____



1. Where does a putt-putt boat get its energy?

Flame

2. Newton's 3rd Law begins with "for every action..." Use Newton's 3rd Law to explain why a Putt-Putt Boat moves forward.

Action: Water is pushed backward

Reaction: Boat is pushed forward

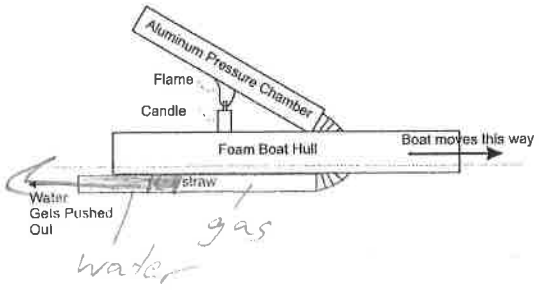
3. A putt-putt boat moves forward because water is pushed out of its straws. Water is pushed out of its straws due to a pressure change inside the pressure chamber. Is this pushing caused by an increase or a decrease of pressure in the chamber?

4. Why does the pressure chamber need to be a little wet on the inside, and how does that moisture facilitate the change in pressure?

Liquid droplets (water) are necessary because heating them up turns them to a gas, which expands and creates pressure

5. Why are the putt-putt boats' pressure chambers made out of aluminum?

Aluminum does not burn and it is springy



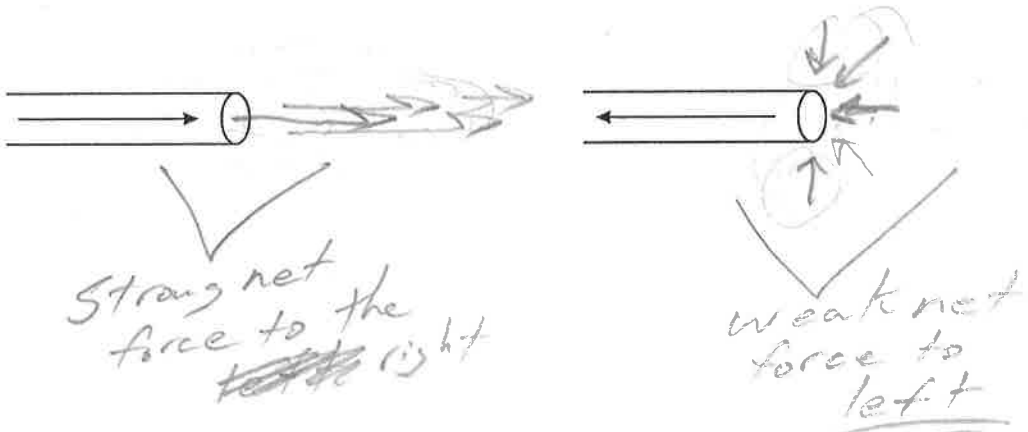
6. For a short time after the pressure chamber is dry (and water is no longer expanding into a gas) water continues moving out of the straw. Why?

Water's inertia makes it keep moving.

7. In the beginning, boiling water pushes water out of the straws. What eventually stops the water's movement and pulls it back in?

Springy force of the aluminum chamber.

8. A putt-putt engine works because water is continually being pushed out of the straws and pulled back into the straws. Newton's 3rd Law tells us that the boat should move forward when water squirts backward out of the straws. Why doesn't the boat move backward when water is pulled forward into the straws?



9. Why won't your putt-putt engine work if it has holes in its pressure chamber?

Pressure leaks out, so there is not enough pressure to push the water backward.