Activity 12: What is Drag?

Question

What factors affect drag?

Resources

- sink or bathtub full of water
- your hand

Hypothesis

Think of all the times you have gone swimming or played in the bathtub. Based on those experiences, construct a hypothesis by selecting the word to complete the following statement:

1. An object moving through a denser (thicker/heavier) fluid experiences **more** or **less** drag.

    Hypothesis: _____

2. A faster moving object experiences **more** or **less** drag.
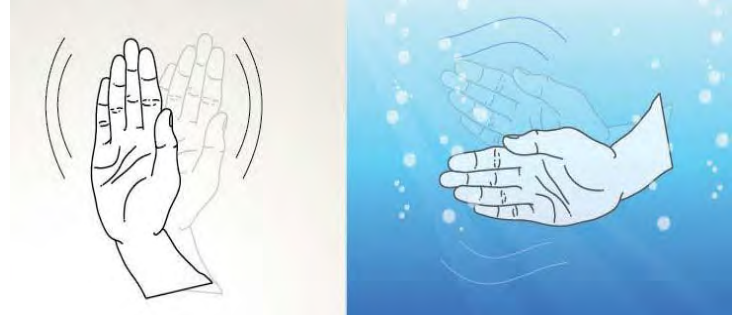
    Hypothesis: _____

3. A narrower, smoother object experiences **more** or **less** drag.

    Hypothesis: _____

Procedure

Part A

1   Fill a bathtub or sink full of water.

2   Wave your hand through the air. Then, wave your hand through the water.

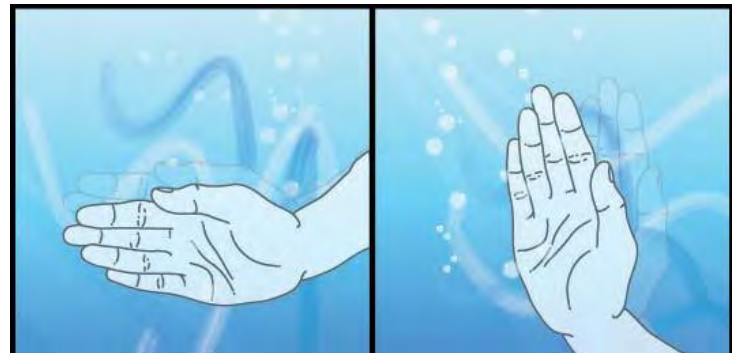3   Which fluid did you notice produce more drag? Record your observations in the **Observations Table**.

Part B

1   Move your hand through the water slowly.

2   Move your hand through the water faster.

3   How does the drag change as you move your hand faster. Record your observations in the **Observations Table**.

Part C

1   Slide your hand sideways through the water.

2   Then, try moving your hand palm flat facing directly into the water.

3   Which way produced more drag? Record your observations in the **Observations Table**.

Observations

Part	Question	Observations
A	Which produced more drag, the air or the water?	
B	How does the drag change as you move your hand faster?	
C	How does the drag change as you change the shape of your hand?	

Conclusion

Re-visit your hypothesis to see if you were correct. If you need to, make changes in the statements in your conclusion to reflect what you observed in this activity.

1.   An object moving through a denser (thicker/heavier) fluid experiences ***more*** or ***less*** drag.

     Conclusion: _____

2.   A faster moving object experiences *more* or *less* drag.

   Conclusion: _____

3.   A narrower, smoother object experiences *more* or *less* drag.

   Conclusion: _____