# Ship's Log

#### Cape Cod Catboat Crew Challenge: BOAT BUILDING

	Sailor's name:			
		completing the Investigations in the Catboat Crew CATegory wing. You can use words or diagrams.		
VIDI	EOS			
1.	What is buoyancy?			
2.	What is density?			
3.	Explain how a bowling ball	is more dense that a basketball.		
4.	Why did the water level ris	e in the bathtub when Archimedes took a bath?		
5.	What does "displace" mean?			
	A) to make fun of	B) to cause to move from (an object's) usual place		

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6.	If an object is heavier that the weight of the water it displaces, what happens to th object?		
	A) it floats B) it sinks		
7.	What 2 main design features of cruise ships allow these massive boats to float?		
	A) they are large and hollow B) they are small and solid		
8.	Extend your thinking! Based on your answer to #7, <b>explain why</b> the Syracusia or a cruis ship floats instead of sinks. (Hint: Remember, if an object is more dense than the water it displaces, or moves out of the way, the object will sink.)		
9.	As a boat builder, would you want your boat to weigh the same or less than the weight of the water it displaces? Explain your thinking.		

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#### **INVESTIGATIONS**

1.	What happened when you placed the foil ball into the water? A) it sank	3) it floated		
2.	What happened when you placed the boat into the water? A) it sank	3) it floated		
3.	The foil ball/pennies and the boat/pennies were approximately the same weight.			
	A) true B) false			
4.	How did the density of each foil/penny combination affect (influence) your res	sults?		
5.	What happened when you carefully placed your foil ball on the boat with the pennies?			
	A) the both floated B) they both sank			
6.	Put it all together! Based on what you learned about buoyancy, why is the foil to stay afloat with both its weight and the added weight of the foil ball (which, by itself, the foil ball sank)? Think about itit's like an anchor. Throw it overbosinks to the bottom. Hoist it to the deck and does it make your boat sink?	remember,		