## Advancing the Quality of Physics Teaching using Peer Instruction



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## quick reflection

think of something you are good at

## quick reflection

## how did you become good at that?






## 



1. transfer of information

# 1. transfer of information 

2. assimilation of that information

## 1. transfer of information (in class)

2. assimilation of that information
3. transfer of information (in class)
4. assimilation of that information (out of class)

## Should focius on THIS! <br> 1. transfer of information (y) <br> 2. assimilation of that information (out of class)

1. transfer of information (in class)
2. assimilation of that information (out of class)
3. transfer of information (out of class)
4. assimilation of that information (in class)
5. transfer of information (out of class)
6. assimilation of that information (in class)

## question

think







## Archimedes Principle

An object submerged either fully or partially in a fluid experiences an upward buoyant force the magnitude of which is equal to the magnitude of the force of gravity exerted on the fluid displaced by the object.

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After the boulder sinks to the bottom of the pond, the level of the water in the pond is

1. higher than
2. the same as
3. lower than
it was when the boulder was in the boat.

A boat carrying a large boulder is floating on a small pond. The boulder is thrown overboard and sinks to the bottom of the pond.

After the boulder sinks to the o t $m$ of the pond, the level of the water in the ro $a$ is

1. high
2. th sar jeas
3. low $r$ than
it was when the boulder was in the boat.

A boat carrying a large boulder is
flı
ds
Before I tell you the answer, let's analyze what happened.

A
th
1.
2.
3.
it was when the boulder was in the boat.

A boat carrying a large boulder is
flı
ds
Before I tell you the answer, let's analyze what happened. You...

A
th
1.
2.
3.
it was when the boulder was in the boat.

A boat carrying a large boulder is
fla
ds
Before I tell you the answer, let's analyze what happened. You...
A. 1. made a commitment
1.
2.
3.
it was when the boulder was in the boat.

A boat carrying a large boulder is
fla
ds
Before I tell you the answer, let's analyze what happened. You...
A. 1. made a commitment
th 2. externalized your answer
1.
2.
3.
it was when the boulder was in the boat.

A boat carrying a large boulder is
fla
ds
Before I tell you the answer, let's analyze what happened. You...

1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning
4. 

it was when the boulder was in the boat.

A boat carrying a large boulder is
fla
ds
Before I tell you the answer, let's analyze what happened. You...

1. made a commitment
2. externalized your answer
3. moved from the answer/fact to reasoning
4. became emotionally invested in the learning process
5. 
6. 

it was when the boulder was in the boat.

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## remember: amount of displaced water

$\checkmark$

## remember: amount of displaced water


$\checkmark$

## remember: amount of displaced water

$\checkmark$

## remember: amount of displaced water


displaced water

## remember: amount of displaced water



displaced water<br>weight<br>of rock

## remember: amount of displaced water


displaced
$=\begin{gathered}\text { weight } \\ \text { of rock }\end{gathered}$

$$
=\begin{gathered}
\text { volume } \\
\text { of rock }
\end{gathered}
$$

remember: amount of displaced water

## points worth noting

- my "clear" lecture wasn't very good
- discussion promoted "aha" moments







Better retention

## Education is not just about:

- transferring information
- getting students to do what we do


## Education is not just about:

- transferring information
- getting students to do what we do
active engagement/social interaction a must!
for a copy of these slides


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