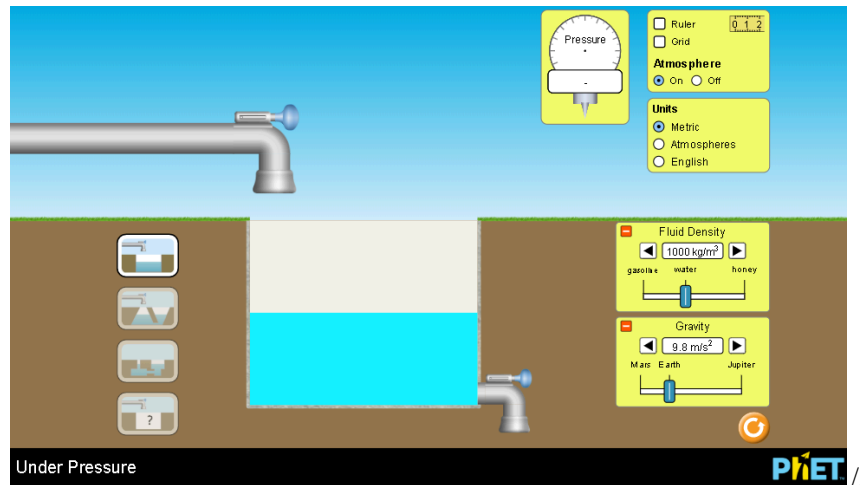


[Under Pressure](#)

This lab uses the [Under Pressure](#) simulation from PhET Interactive Simulations at University of Colorado Boulder, under the CC-BY 4.0 license.

https://phet.colorado.edu/sims/html/under-pressure/latest/under-pressure_en.html

Develop your understanding: Explore the [Under Pressure](#) simulation to find out how pressure varies in air and water.

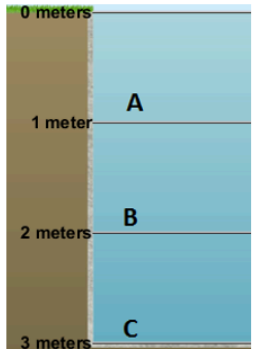


Directions:

1. Explore the simulation to find out how pressure changes in air and water.
 2. Describe your findings and include specific data from your explorations to support your ideas.
 3. Test your ideas by predicting what the air pressure would be 2 meters above sea level and 2 meters under water.
 1. Use the sim to check and then make corrections to your ideas if necessary.
 2. How would your values compare if the pool of water was in Denver (The “Mile High” city)?
 3. How does the shape of the pool affect your values?
-
1. Discover how you can change pressure in the simulation.
 1. Describe your findings and include specific examples.
 2. Check to see how your answers to #3 change as you change the things that affect pressure. Describe qualitatively
 3. Are there things that could affect pressure that were not included in the sim? Cite references for your ideas.

Test your understanding and self check: For each question, predict your answer and support your answer with an explanation. Then use the [Under Pressure](#) simulation to verify and add screen captures to your explanation. You may also discover some ideas that you want to add to your answers given in #1-5.

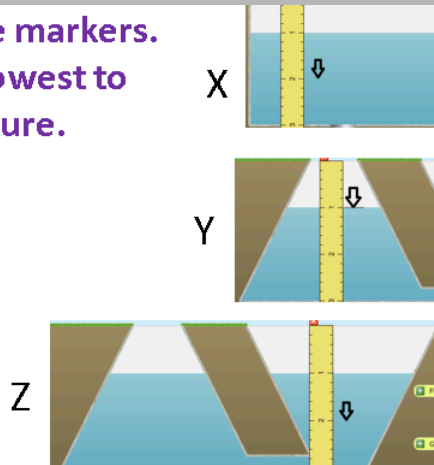
1. Order from lowest to highest pressure.



A. $A < B < C$
 B. $C < B < A$
 C. all are equal

1. Prediction and explanation with support :
 Nathan: A due to pressure being added from the above liquid
 Batu: A

2. Look at the markers. Order from lowest to highest pressure.

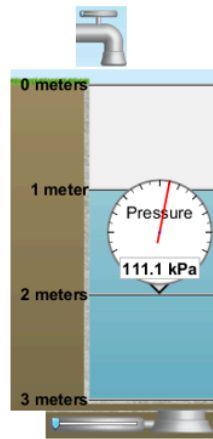


A. $Y < Z < X$
 B. $Y < X < Z$
 C. $Z < X < Y$
 D. $X < Z < Y$
 E. two are equal

2. Prediction and explanation with support
 Batu: E
 Nathan: E

3. What will happen to the pressure if more water is added?

- A. increase
- B. decrease
- C. stay the same



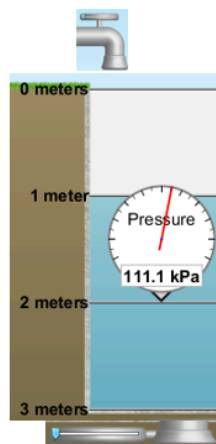
3. Prediction and explanation with support

Batu: A

Nathan: A

4. What will happen to the pressure if more water is added while the same amount is removed?

- A. increase
- B. decrease
- C. stay the same



4. Prediction and explanation with support

Batu: C

Nathan C

Fluid Density 1000 kg/m³

gasoline water honey

5. What will happen to the pressure if the fluid were changed to honey?

A. increase
B. decrease
C. stay the same

5. Prediction and explanation with support
Batu: A Nathan: Increase

250 kg

Pressure 117.5 kPa

250 kg

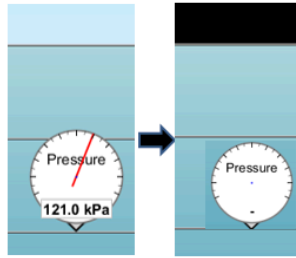
Pressure

6. If the 250 kg mass was put on the water column, what will happen to the pressure?

A. increase
B. decrease
C. stay the same

6. Prediction and explanation with support
Batu: A Nathan: increase

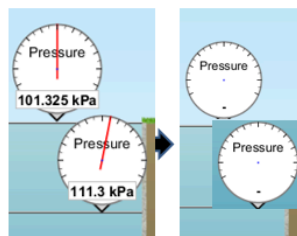
7. If the only change was to remove the air pressure, what will happen to the pressure?



- A. increase by 101.3 kPa
- B. decrease by 101.3 kPa
- C. stay the same
- D. Something else

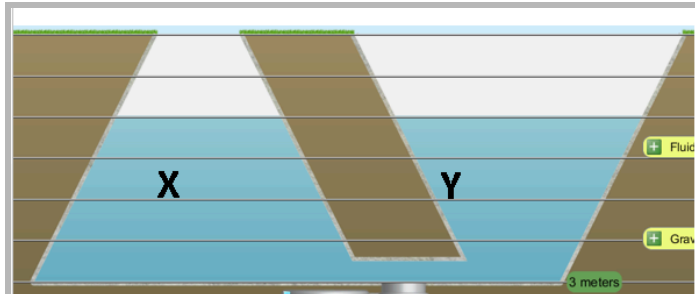
7. Prediction and explanation with support
Batu: B Decrease

8. If the only change was to go to a place where the gravity was doubled, what will happen to the pressure?



- A. Both pressures would double
- B. Only the air pressure would double
- C. The air pressure would double, and the water pressure would increase some
- D. Something else

8. Prediction and explanation with support
Batu: A Nathan: A



9. How do the pressures at the two locations compare?

- A. $X > Y$
- B. $Y > X$
- C. They are the same

9. Prediction and explanation with support

Batu: C

Nathan: stay same