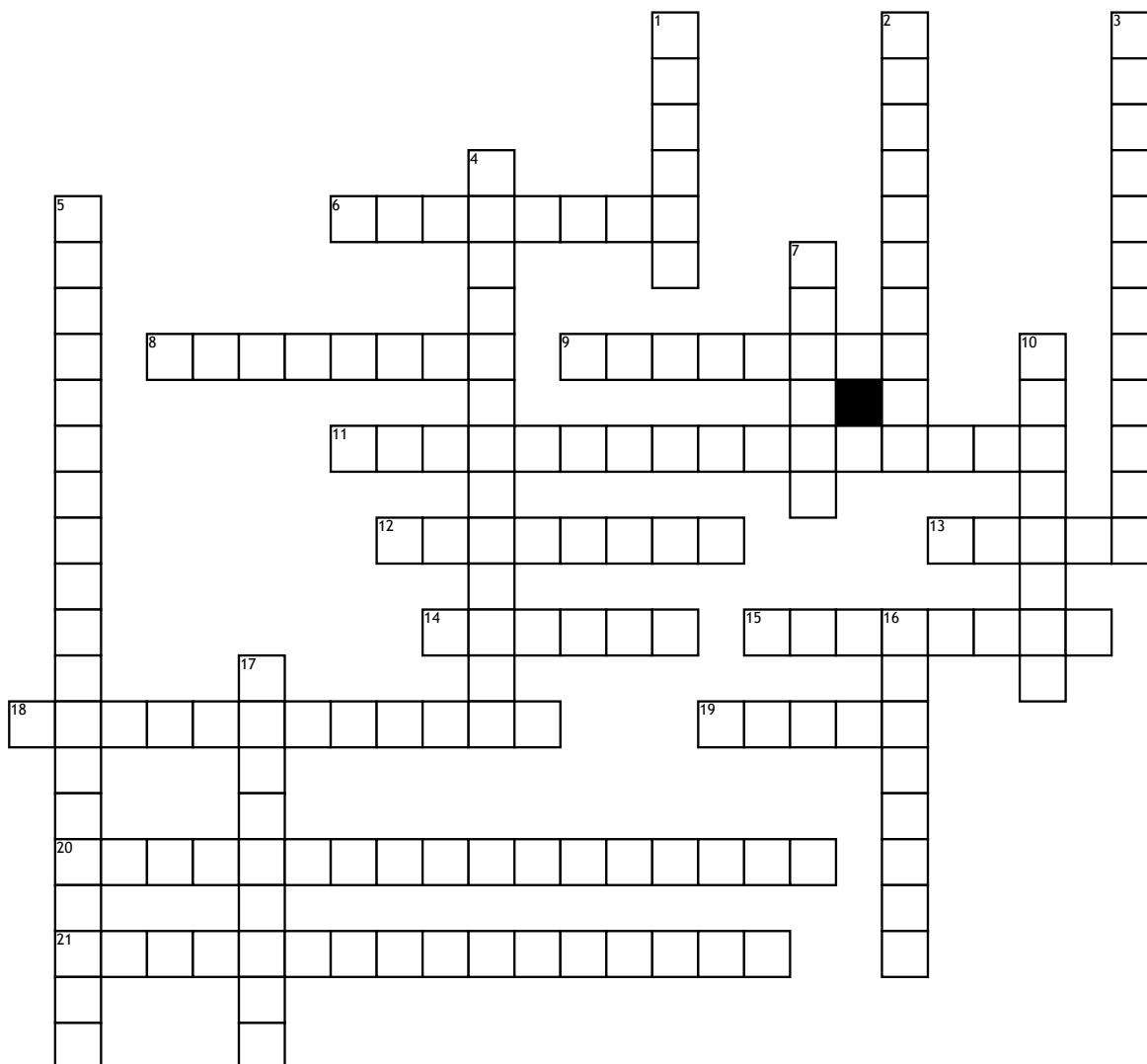


Oxygen



Across

6. Solid and liquid oxygen are this color
8. The atomic mass of oxygen
9. Oxygen is the third most abundant element in the _____
11. This is lower in elements going down and to the left of oxygen, but higher in the elements going to the right and above (this is because elements further to the right have nearly filled valence shells and elements near the top have a smaller atomic radius and therefore an increased nuclear attraction, all of which makes it harder to take electrons away)
12. There are 11 of these, 3 of which are stable including O-16, O-17, and O-18. The most common is O-16 which has a relative abundance of 99.757%
13. Oxygen is a non-metal with an ionic charge of -2 that _____ electrons
14. Oxygen can turn into this state at -183°C
15. Highly reactive, non-metal, high electronegativity and a strong oxidizing agent are some of these properties of oxygen
18. The meaning of the Greek word "oxygenes" which is where oxygen got its name from

Down

19. Oxygen's atomic number
20. This is lower in elements going down and to the left of oxygen, but higher in the elements going to the right and above (this is because it is easier to gain electrons with a fuller valence shell and also when the atomic radius is smaller)
21. The name of the French chemist who later named the element oxygen
- Down**
1. The element with the atomic symbol of O
2. Oxygen is all around and make up 21% of Earth's _____
3. Oxygen has a smaller one compared to the elements to its left and below, but a larger one compared to the elements to its right and above (this is because to the left and down the periodic table nuclear attraction on the outer electrons decreases due to the number of protons and an increase in shells)
4. The substance that Joseph Priestly heated up to first isolate oxygen in 1774
5. The name that Joseph Priestly gave to the gas which he found could cause a flame to burn and keep a mouse alive and thriving

7. Each succeeding ionization energy is _____ than the preceding energy because the positive charge increases with each electron taken away and the nuclear attraction on the electrons increases. Oxygen's ionization energies are as follows: 1-1313.94 kJ/mol, 2-3388.67 kJ/mol, 3-5300.47 kJ/mol, 4-7469.27 kJ/mol, 5-10989.6 kJ/mol, 6-13326.4 kJ/mol, 7-71334.2 kJ/mol, 8-84078.3 kJ/mol
10. Colorless, odorless, and a gas are some of these properties of oxygen
16. Oxygen is less of this compared to the elements to its left and below, but more of this compared to the elements to its right and above (this is because metals lose electrons and electrons are more easily lost going to the left and down the periodic table)
17. The action that humans and animals take to use oxygen in order to stay alive. Other common uses of oxygen include sustaining a flame, steel production, sewage treatment and water-purification