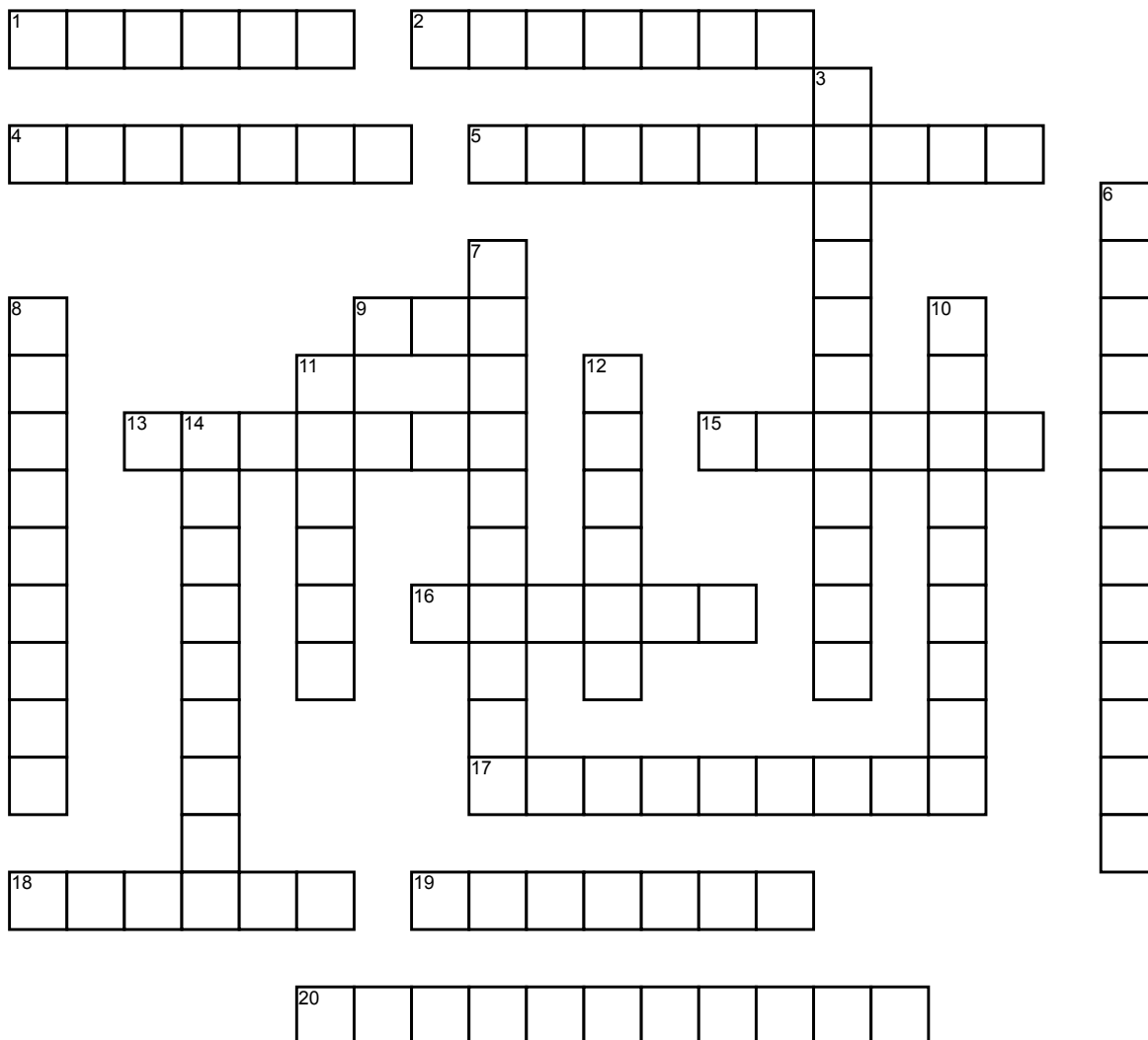


Name: _____

Date: _____

Paper



Across

1. Yellow and red mildew stains on paper created by microorganisms due to acidic waste.

2. A pre-paper invention by the Egyptians, also the word "paper" is derived from.

4. Cellulose is a linear polymer of _____ units linked by β -1,4 glycosidic linkages.

5. Nitrogen dioxide in the air can increase the acidity of the paper by forming both nitric and _____ acids.

9. Used in the Kraft process of chemical pulping with the addition of sodium sulphide.

13. The black liquor waste of the Kraft process contains sodium sulphide, lignin, and _____.

15. The screen that catches and strains the suspension of broken down plant fibres

16. Used to decrease the absorbency of paper.

17. _____ is used in the recycling of the black ash product of the Kraft process, it is converted to lime then slaked to produce calcium hydroxide.

18. A high _____ content will result in a lesser quality paper that is more light sensitive and susceptible to yellowing.

19. Emissions that are produced from the recycling of kraft by products which lead to bad air quality around the mill.

20. _____ alum, $Al_2(SO_4)_3 \cdot 18H_2O$

Down

3. The property that dictates that paper will swell with humidity.

6. A pulping process that utilizes both chemical and mechanical properties.

7. The process of pulping wood with physical force to gradually break the wood fibres.

8. A writing surface predating paper made from splitting sheep or goatskin.

10. Chemical pulping removes all parts of the wood that are not _____.

11. Along with the United States, this country is the largest producer of paper, pulp, and paper products.

12. _____ acid, a weak acid that is a component in human sweat that can transfer to paper in handling.

14. A deterioration of paper that is often initiated by light, will discolour the paper and can affect both cellulose and lignin.