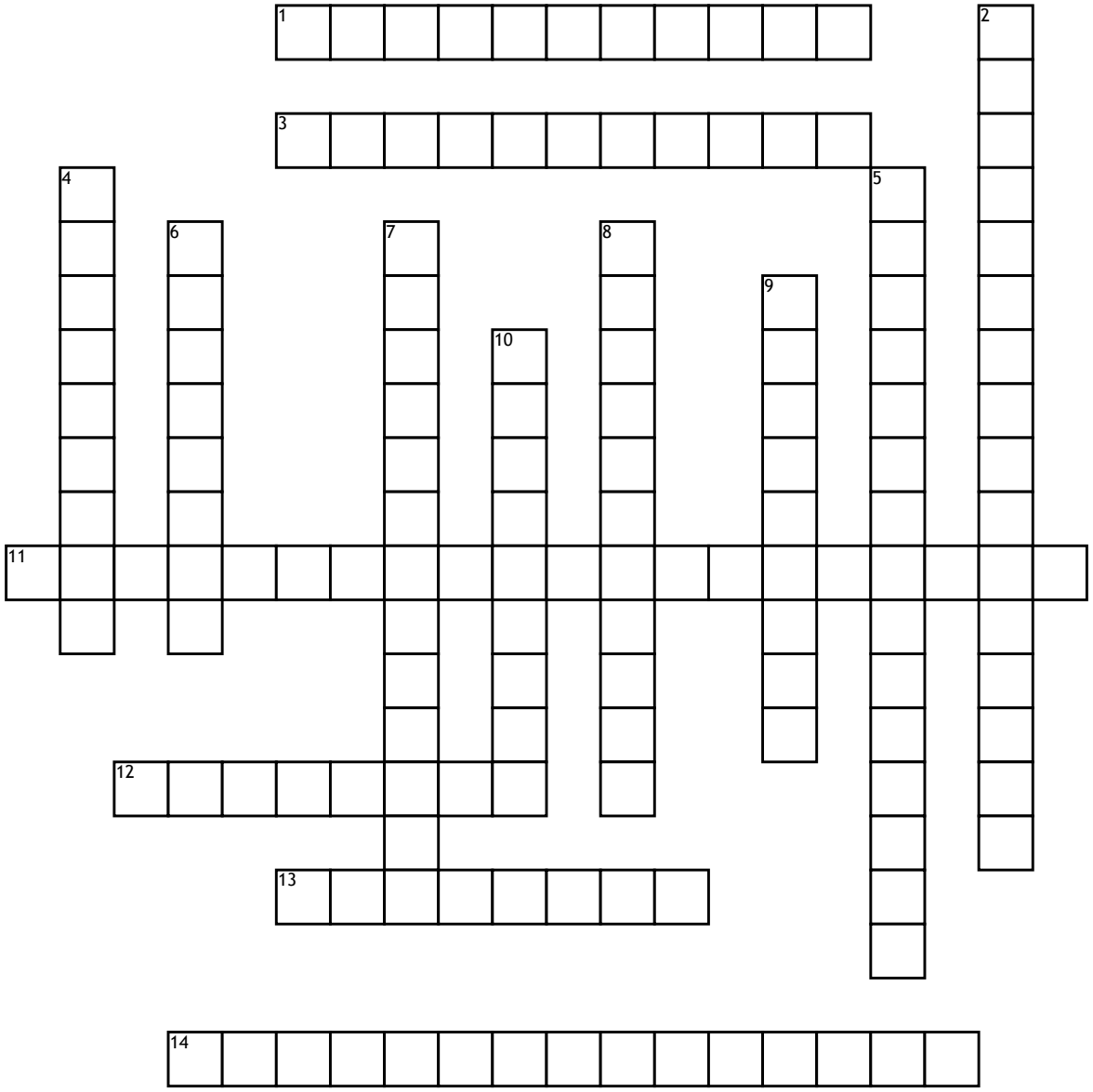
Name: _____ Date: _____ Period: _____

Gene Regulation Crossword Puzzle



Across

1. a reaction that loosens the chromatin structure after acetyl groups are attached to lysines in histone tails; allows transcription initiation

3. a process that condenses chromatin after methyl groups are added to DNA or RNA; reduces transcription; occurs in most plants, animals and fungi

11. after responding to a signal, these regulatory proteins bind to a specific DNA sequence near a gene; they allow RNA polymerase III to attach to the promoter

12. lipid; enters the nucleus and then indicates to other cells

13. differentiating cells experience gene elimination, whether it is total or some deletion of the gene; unable to produce mRNA

14. a reaction that loosens the chromatin structure after phosphate groups are added (needs to be next to a methylated amino acid)

Down

2. due to these barriers, protein synthesis cannot proceed

4. the more distal control elements that may be thousands of nucleotides upstream or downstream of a gene (far away) but is still associated with that one specific gene

5. the time for a protein to digest a cell, reducing a chemical compound to one less complex

6. different mRNA molecules are made from the same primary transcript; introns are removed from primary and exons are ligated together

7. occurs when enzyme cascades intensify the cell's regulation to a sign; with each increase in range, the amount of activated products increases

8. also known as "jumping genes", these small pieces of DNA are able to move within the genome from one area to another

9. when bound to DNA, these proteins turn genes on; they also make it easier for RNA polymerase to bind to the promoter.

10. errors in gene replication that proceed when there is a change of a DNA sequence within gene or chromosome; leads to genetic diversity

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