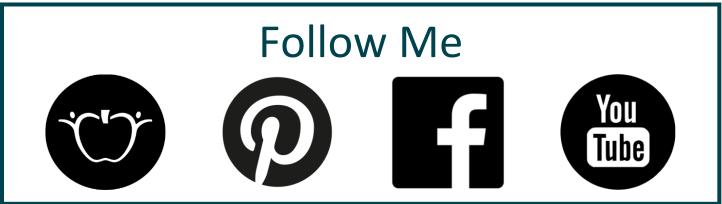


## Thank You!

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Name	Date	Name	Date
Proteins Review Bellringer		Proteins Review Bellring	er
Proteins play many roles in the body, i reactions, contracting muscles, transpersorsesses, providing structure in the efrom illness and disease.	orting molecules, regulating	reactions, contracting m	s in the body, including controlling metabolic uscles, transporting molecules, regulating ucture in the epidermis, and protecting the body
Proteins are made of subunits (monon acids are made of carbon, hydrogen, on There are 20 different amino acids that thousands of different proteins. Dehydrogen, on molecule) synthesis links amino acids I polypeptides. Polypeptides are joined bonds holding amino acids to each other than the synthesis links are joined bonds.	xygen, and nitrogen (CHON). t can be combined to make dration (removal of a water ink together to form chains called and folded to make proteins. The er are known as peptide bonds.	acids are made of carbon There are 20 different and thousands of different p molecule) synthesis links polypeptides. Polypeptic bonds holding amino acid	bunits (monomer) called <b>amino acids</b> . Amino n, hydrogen, oxygen, and nitrogen (CHON). mino acids that can be combined to make roteins. Dehydration (removal of a water s amino acids link together to form chains called des are joined and folded to make <b>proteins</b> . The ids to each other are known as <b>peptide bonds</b> .
1. What are the monomers of protein	ns called?	1. What are the monor	mers of proteins called?
<ul> <li>b</li> <li>c</li> <li>3. Proteins that act as biological cata processes are</li> <li>4. Give 3 examples of proteins:</li> <li>a</li> </ul>	lysts to control metabolic  shape in order to function. This nino acids in the "chain." What	b c 3. Proteins that act as I processes are 4. Give 3 examples of pa b c 5. Proteins must have a shape is related to the	biological catalysts to control metabolic

Date
nger
o fill out the Venn diagram comparing DNA & RNA
Nucleotides Cytosine NH <sub>2</sub>
Guanine G
Deoxyribose (sugar) phosphate backbone  Adenine H <sub>2</sub> N H
Ribose (sugar) phosphate backbone  Nucleotides
RNA DNA Ribonucleic acid Deoxyribonucleic acid  f RNA and DNA molecules. Image modified from Wikimedia, CC BY-SA 3.0.
RNA DNA
i t

Name	Date	
DNA & RNA Bellr	nger	
Use the diagram	to fill out the Venn diagram comparing DNA & RNA	
Cytosine NH <sub>2</sub>	Nucleotides Cytosine NH2	C
Guanine G	Guanine Base pair	G ∼NH <sub>2</sub>
Adenine H <sub>2</sub> N A	Deoxyribose (sugar) phosphate backbone	A
Uracil UNH Nucleotides of RNA	Ribose (sugar) phosphate backbone  Nucleotid of DNA	∎ ∥o es
Comparison	RNA DNA Ribonucleic acid Deoxyribonucleic acid of RNA and DNA molecules. Image modified from Wikimedia, CC BY-SA 3.0.	
	RNA DNA	

Name	Date	Name	Date
Transcription and Translation Label	Sing Bellringer  3  4  5  10	Transcription and Translation Bell	Iringer 3 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Write the number of the correct st	ructure or process below.	Write the number of the correct s	structure or process below.
Transcription	Translation	Transcription	Translation
Nuclear membrane	tRNA	Nuclear membrane	tRNA
Ribosome (rRNA)	Cytoplasm	Ribosome (rRNA)	Cytoplasm
mRNA	DNA	mRNA	DNA
Label the processes	→ ○○○	Label the processes	<b>→</b>

Nar	ne Date	1	Name	Date
Pro	tein Synthesis Bellringer	ı	Protein Synthesis Be	ellringer
1.	What molecule is produced from the DNA code?	:	1. What molecule	is produced from the DNA code?
2.	What process produces mRNA?	1	2. What process p	roduces mRNA?
3.	Where does transcription take place?	3	3. Where does tra	nscription take place?
4.	What are 3 bases on mRNA called?	4	4. What are 3 base	es on mRNA called?
5.	Where does mRNA take DNA's code?	į	5. Where does mR	NA take DNA's code?
6.	What process occurs in the cytoplasm?	(	6. What process of	ccurs in the cytoplasm?
7.	What organelle in the cytoplasm is responsible for putting together	-	7. What organelle	in the cytoplasm is responsible for putting together
	proteins?		proteins?	
8.	What are 3 bases on tRNA called?	8	3. What are 3 base	es on tRNA called?
9.	What monomer does tRNA bring to the ribosome?	9	9. What monomer	does tRNA bring to the ribosome?
10.	What type of RNA makes up the ribosome?		10. What type of RN	NA makes up the ribosome?

Name		_ Date _		Name		Date _	
Transcription and	Translation Coding	g Bellringer		Transcription and	Translation Codin	g Bellringer	
Use your codon c	hart to transcribe a	and translate the Co	oding DNA Strand.	Use your codon c	hart to transcribe	and translate the C	oding DNA Strand
Transcript Complementary	•	in cell nuc	leus)	Complementary D	•	s in cell nuc	cleus)
Coding DNA Stran	nd			Coding DNA Stran	d		
TAC	GGG	AGG	ATA	TAC	GGG	AGG	ATA
mRNA Codons				mRNA Codons			
Translation the RIBOS Amino Acid Chain	OME)	n the cytop	olasm at	Translation the RIBOS	OME)	n the cytop	olasm at

Name		_ Date		Name Date			2	
Mutations Bellring Use your codon ch change in the sequ Original DNA Stran	art to fill in the an Ience. Try to label		es. Then, circle the tion.	Mutations Bellring Use your codon che change in the sequence Original DNA Stran	nart to fill in the ar uence. Try to labe		es. Then, circle the tion.	
TAC	ATG	CAT	GTC	TAC	ATG	CAT	GTC	
Amino Acid Chain				Amino Acid Chain				
Mutated DNA Stra	nd #1	Type:		Mutated DNA Stra	nd #1	Type:		
TAC	ATG	CAA	GTC	TAC	ATG	CAA	GTC	
Amino Acid Chain				Amino Acid Chain				
Mutated DNA Stra	nd #2	Type:		Mutated DNA Stra	nd #2	Type:		
TAC	ATT	GCA	TGT C	TAC	ATT	GCA	TGT C	
Amino Acid Chain				Amino Acid Chain				
Mutations #2 DNA	Strand	Туре:		Mutations #2 DNA	Strand	Туре:		
TAC	ATC	ATG	TC	TAC	ATC	ATG	TC	
Amino Acid Chain				Amino Acid Chain				

Nar	me			Da	nte
Voc	cabulary Bellr	inger			
Ma	tch the follow	ving words	to the correct defini	itior	٦.
a.	codon	b.	mutation	c.	amino acids
d.	transcription	n e.	anticodon	f.	frameshift
•	mRNA	h.	translation	i.	tRNA
-	point		trait	I.	silent
m.	rRNA	n.	polypeptide		
1.		Character	istic of an organism		
			_		
2.					
3.		process of	converting mRNA st	tran	d into an amino acid
	sequence				
4.		type of m	utation that inserts o	or de	eletes bases and shifts
	the "reading	g frame"			
5.		monomer	of a protein, carried	by	tRNA
6.	type of RNA that carries the code from the nucleus to				
	the ribosom	e in the cy	toplasm		
7.		type of RN	NA that makes up the	rib	osome
8.		3 bases or	n mRNA		
9.		process of	f copying the DNA in	to a	strand of mRNA
10.		any chang	ge in the DNA sequen	ice	
11.		mutation	that does not result	in a	change in the amino
	acid sequen	ce			
12.		type of RN	NA that brings the am	nino	acids to the ribosome
13.		type of m	utation that only cha	nge	es at a single base by
	substituting	one for an	other		
14.		chain of a	mino acids; another	nan	ne for a protein

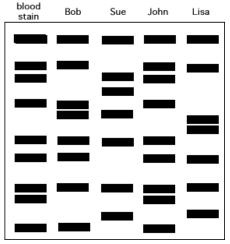
Name		Date			
Vocabulary Bellringer					
Match the following v	words to the correct d	efinition.			
a. codon	b. mutation				
d. transcription					
g. mRNA		i. tRNA			
j. point	k. trait	l. silent			
m. rRNA	n. polypeptide				
1. Char	racteristic of an organi	sm			
23 bas					
		NA strand into an amino acid			
•	ess of converting min	VY Strana into an animo acia			
sequence					
4type	of mutation that inse	rts or deletes bases and shifts			
the "reading fram	ne"				
5 mon	monomer of a protein, carried by tRNA				
6type	type of RNA that carries the code from the nucleus to				
the ribosome in t	he cytoplasm				
7type	of RNA that makes up	the ribosome			
83 bas	ses on mRNA				
9 proc	ess of copying the DN	A into a strand of mRNA			
10 any o	change in the DNA sec	quence			
11 muta	ation that does not res	sult in a change in the amino			
acid sequence					
12 type	of RNA that brings the	e amino acids to the ribosome			
13 type	of mutation that only	changes at a single base by			
substituting one f	for another				
14. chair	n of amino acids; anot	her name for a protein			

Name	Date	

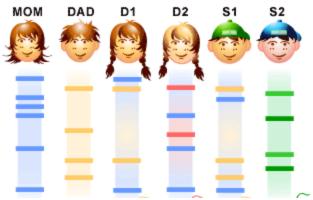
**DNA Fingerprinting Bellringer** 

Sam and Dean are investigating a murder scene. The suspect left blood at the crime scene. Circle the perpetrator of this crime so they can be

charged!



Mom and Dad have four children total. Two are their children together. One is from a previous relationship and 1 is adopted. Using the picture, determine which child is which.

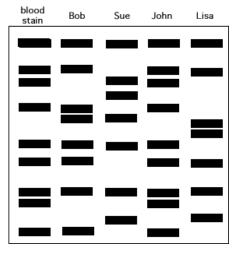


Picture credit: The Science Creative Quarterly, <a href="scq.ubc.ca">scq.ubc.ca</a>, Jane Wang

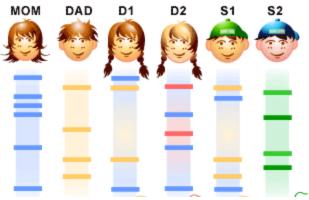
Name	Date	

DNA Fingerprinting Bellringer

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