Biology – Science Answer Key

Item Number	Item Type	TEKS	Maximum Number of Points	Correct Answer(s)	Reporting Category	Readiness and Supporting
1	Multiple Choice	5.B.12.B	1	D	5	Supporting
2	Multiple Choice	4.B.9.B	1	A	4	Supporting
3	Short Constructed Response	5.B.12.C	2	See Appendix 1.1	5	Readiness
4	Multiple Choice	1.B.5.B	1	B	1	Supporting
5	Multiple Choice	2.B.6.E	1	D	2	Readiness
6	Multipart	5.B.11.B	2	A, C	5	Readiness
7	Drag and Drop	1.B.4.C	2	Utilize a capsid structure, Contain genetic material, Have active metabolism, Replicate independently See Appendix 1.2	1	Readiness
8	Multiple Choice	5.B.12.E	1	C	5	Readiness
9	Multiple Choice	1.B.4.B	1	B	1	Readiness
10	Text Entry	2.B.6.F	1	100 See Appendix 1.3	2	Readiness
11	Drag and Drop	1.B.4.A	2	Prokaryotic cells, Eukaryotic cells, Eukaryotic cells, Eukaryotic cells See Appendix 1.4	1	Supporting

12	Multiple Choice	3.B.8.C	1	D	3	Supporting
13	Drag and Drop	4.B.10.A	2	endocrine, circulatory See Appendix 1.5	4	Readiness
14	Multiple Choice	5.B.11.A	1	D	5	Supporting
15	Multiple Choice	3.B.8.B	1	B	3	Readiness
16	Multiple Choice	4.B.9.A	1	C	4	Readiness
17	Multiple Choice	1.B.5.A	1	A	1	Readiness
18	Multiple Choice	4.B.10.B	1	C	4	Readiness
19	Short Constructed Response	2.B.6.E	2	See Appendix 1.6	2	Readiness
20	Multiple Choice	3.B.7.E	1	B	3	Readiness
21	Multiple Choice	4.B.10.A	1	D	4	Readiness
22	Multiple Choice	1.B.4.B	1	C	1	Readiness
23	Multiple Choice	2.B.6.B	1	B	2	Supporting
24	Multiple Choice	1.B.4.C	1	B	1	Readiness
25	Multiple Choice	5.B.12.D	1	A	5	Supporting

26	Multiple Choice	2.B.6.G	1	C	2	Supporting
27	Multiple Choice	3.B.7.B	1	C	3	Supporting
28	Multiple Choice	4.B.9.C	1	B	4	Supporting
29	Multiple Choice	2.B.6.C	1	C	2	Supporting
30	Multiple Choice	5.B.12.A	1	D	5	Readiness
31	Multiple Choice	1.B.5.C	1	A	1	Supporting
32	Multiple Choice	2.B.6.A	1	C	2	Readiness
33	Multiple Choice	5.B.11.B	1	C	5	Readiness
34	Multiple Choice	3.B.8.A	1	B	3	Supporting
35	Multiple Choice	4.B.10.C	1	A	4	Supporting
36	Multiple Choice	3.B.7.A	1	C	3	Readiness
37	Multiple Choice	1.B.5.A	1	C	1	Readiness
38	Multiple Choice	3.B.7.D	1	C	3	Supporting
39	Multipart	4.B.10.B	2	D, B	4	Readiness

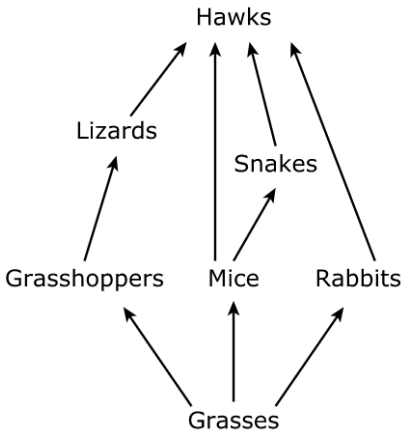
40	Multiple Choice	3.B.7.F	1	A	3	Supporting
41	Multiple Choice	2.B.6.D	1	B	2	Supporting
42	Multiple Choice	4.B.9.A	1	D	4	Readiness
43	Multiple Select	3.B.8.B	2	A, C See Appendix 1.7	3	Readiness
44	Multiple Choice	5.B.12.C	1	D	5	Readiness
45	Multiple Choice	2.B.6.A	1	C	2	Readiness

Biology – Science

Appendix

1.1

A food web is shown.



Identify and explain **ONE** effect that the removal of mice would have on the food web.

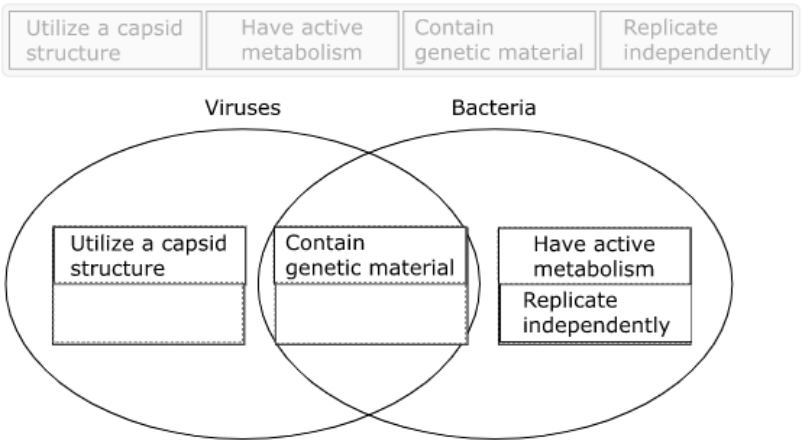
Review the food web carefully. Then enter your answer and your explanation in the box provided.

The student describes and explains **one** of the following: increase in grasses (because mice consume grasses), decrease in snakes (because snakes consume mice), decrease in rabbits (because hawks would prey upon more rabbits in the absence of mice as a food source), decrease in lizards (because hawks would prey upon more lizards in the absence of mice as a food source), decrease in hawks (because hawks consume mice as a food source), or increase in grasshoppers (because grasshoppers compete with mice for the grasses as a food source).

1.2

A Venn diagram comparing viruses to bacteria is shown. Which traits apply to each section of the diagram?

Move the answers to the correct boxes.



1.3

Achondroplasia is an inherited condition that affects the formation of bone in humans. The allele for achondroplasia (*A*) is dominant to the unaffected allele (*a*).

If a person who is homozygous dominant has children with a person who is homozygous recessive, what percentage of their children will likely have achondroplasia?

Enter your answer in the box. Your answer must be a whole number.

100 %

1.4

Scientists observe the traits of cells on four microscope slides and record their observations in a table. Based on the scientists' observations, identify the cell type for each microscope slide in the table.

Move the correct answer to each box. Each answer may be used more than once.

Eukaryotic cells Prokaryotic cells

Slide 1	Slide 2	Slide 3	Slide 4
Prokaryotic cells	**Eukaryotic cells**	**Eukaryotic cells**	**Eukaryotic cells**
Are single-celled	Reproduce through mitosis	Have a membrane-bound nucleus	Have mitochondria
Have no nucleus	Have linear DNA	Have membrane-bound organelles	Are larger than 10 micrometers
Have flagella	Have endoplasmic reticulum	Are multicellular	Have complex structure

1.5

The body sometimes needs to send messages long distances by releasing hormones into the bloodstream. The hormones are then carried to the target location.

Which body systems are involved in this interaction?

Move the correct answer to each box. Not all answers will be used.

digestive | circulatory | respiratory | nervous | endocrine | immune

The endocrine system releases hormones into the bloodstream, and the circulatory system carries them to the target location.

1.6

Two mutations of a genetic sequence are shown. A DNA codon chart is also shown.

Original Sequence:

3′-TAC CCG **ATA** GGC CAC-5′

Mutation 1:

3′-TAC CCG **AAA** GGC CAC-5′

Mutation 2:

3′-TAC CCG **AA** GGC CAC-5′

First Base	Second Base: U	Second Base: C	Second Base: A	Second Base: G	Third Base
U	Phenylalanine	Serine	Tyrosine	Cysteine	U
	Phenylalanine	Serine	Tyrosine	Cysteine	C
	Leucine	Serine	Stop	Stop	A
	Leucine	Serine	Stop	Tryptophan	G
C	Leucine	Proline	Histidine	Arginine	U
	Leucine	Proline	Histidine	Arginine	C
	Leucine	Proline	Glutamine	Arginine	A
	Leucine	Proline	Glutamine	Arginine	G
A	Isoleucine	Threonine	Asparagine	Serine	U
	Isoleucine	Threonine	Asparagine	Serine	C
	Isoleucine	Threonine	Lysine	Arginine	A
	Methionine	Threonine	Lysine	Arginine	G
G	Valine	Alanine	Asparatic acid	Glycine	U
	Valine	Alanine	Asparatic acid	Glycine	C
	Valine	Alanine	Glutamic acid	Glycine	A
	Valine	Alanine	Glutamic acid	Glycine	G

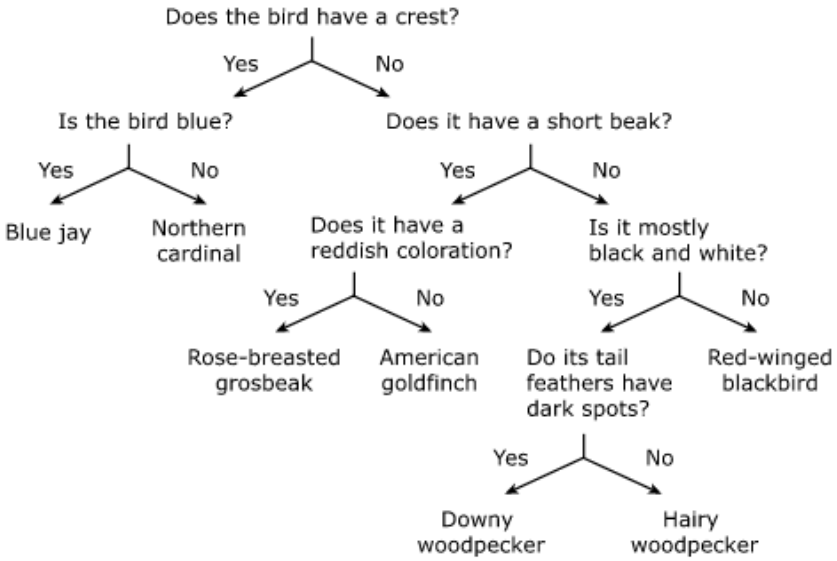
- Which mutation would have the **MOST** significant impact on the gene product?
- Why would the impact be so significant?

Review the diagram carefully. Then enter your answer and your explanation in the box provided.

The student identifies that **Mutation 2** will have the most significant impact because it would cause a frameshift.

1.7

A student creates a dichotomous key to identify birds.



Based on the key, which characteristics are shared by the red-winged blackbird and the hairy woodpecker?

Select **TWO** correct answers.

- [x] Does not have a crest
- [ ] Is not blue
- [x] Does not have a short beak
- [ ] Does not have reddish coloration
- [ ] Is not mostly black and white
- [ ] Does not have tail feathers with dark spots