Biology Release Notes 2016

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Page Count Difference:

This edition of *Biology,* has a 47 page count variation when compared to the last edition. This is attributed to padding changes and updates to the Answer Key.

Errata:

Below is a table containing submitted errata, and the resolutions that OpenStax has provided for this labeled text.

Issue	Resolution	Severity
Chapter 2: Water: In the web section 2-3-3, the first Art Connection question has a problem in the answer. The last sentence of the answer reads "A ball rolling downhill is an exergonic process; enthalpy decreases (energy is released), but there is no change in enthalpy." As you can notice it says enthalpy decreases...but there is no change in enthalpy. I think that the second enthalpy is supposed to be entropy but I may be wrong. ---submitted via ZenDesk. Jeff	Revise the sentence so that it reads "A ball rolling downhill is an exergonic process; enthalpy decreases (energy is released), but there is no change in entropy."	Typo
Chapter 15; The Genetic Code: figure 15.2 the amino acid Histidine is missing a positive charge and a hydrogen on an N in its side chain. (See screen shot for more details.) Though the image shown is a valid version of the histidine structure, you should show the positively charged side chain since you have classified histidine as a positively charged amino acid.	Revise figure from 'N' to 'NH+'	Minor
Chapter 14: DNA Replication in	Error: displaying alt text instead	Minor

Prokaryotes: In 14.4, on page 387 of the online PDF of the book, there appears to be an image file missing, and the alt text displays (at least on the PDF).	of figure for Art Connection Feature in Unit 3 Genetics, DNA Replication in Prokaryotes. Figure has been updated in online version.	
Chapter 4: Cell Structure, Key Terms section: The definition for "cell wall" in the glossary section of chapter 4 is not accurate. It is specific to plant cell walls, not cell walls in general.	Revise definition of cell wall as follows: "cell wall: rigid cell covering made of various molecules that protects the cell, provides structural support, and gives shape to the cell" (previous definition: "cell wall: rigid cell covering made of cellulose that protects the cell, provides structural support, and gives shape to the cell")	Major
PowerPoints: Chapter 2: on the Powerpoint Slides there is an error on figure 2.3 Carbon has an atomic number of six, and two stable isotopes with mass numbers of twelve and thirteen, respectively. Its atomic mass is 12.11. It should read Carbon has an atomic number of six, and two stable isotopes with mass numbers of twelve and thirteen, respectively. Its relative atomic mass is 12.011.	Revise figure caption for Figure 2.3 as follows: "Carbon has an atomic number of six, and two stable isotopes with mass numbers of twelve and thirteen, respectively. Its relative atomic mass is 12.011" (Previous: "Carbon has an atomic number of six, and two stable isotopes with mass numbers of twelve and thirteen, respectively. Its atomic mass is 12.11")	Minor
Chapter 20: Phylogenies and the History of Life, Organizing Life on Earth, first paragraph: On page 528, you have “Phylogeny” in bold type at the beginning of the second sentence. If I understand your convention properly, you are using bold type to highlight definitions. If that is the case, then I would suggest that it is the use of “phylogeny” at the end of the preceding sentence that should be in bold type, for it is that sentence that defines the term. I would further suggest that the defining sentence end with “its phylogeny” rather than simply “phylogeny” and that the second	Mark the first instance of the word phylogeny as a key term. Revise text as shown: "In scientific terms, the evolutionary history and relationship of an organism or group of organisms is called its phylogeny. A phylogeny describes the relationships of an organism, such as from which organisms it is thought to have evolved, to which species it is most closely related, and so forth." (Previous: "In scientific terms, the evolutionary history	Typo

sentence begin with “A phylogeny” rather than simply “Phylogeny,” because you are defining and relating to the phylogeny of “an organism or group” rather than to that of all organisms (a species’ phylogeny rather than just phylogeny in general).	and relationship of an organism or group of organisms is called phylogeny. Phylogeny describes the relationships of an organism, such as from which organisms it is thought to have evolved, to which species it is most closely related, and so forth.")	
Chapter 18: Evolution and the Origin of Species, Processes and Patterns of Evolution, 6th paragraph: "This phenomenon is called convergent evolution, where similar traits evolve independently in species that do not share a recent common ancestry." Recency has nothing to do with convergence, and many of my students picked up the idea of recency mattering. A trait could evolve convergently even in two sister species, if they each evolved the trait after their lineages diverged from their common ancestor.	Revise text as shown: "This phenomenon is called convergent evolution, where similar traits evolve independently in species that do not share a common ancestry." (Previous: "This phenomenon is called convergent evolution, where similar traits evolve independently in species that do not share a recent common ancestry.")	Minor
Chapter 4: Cell Structure, Section: The Endomembrane System and Proteins, Link to Learning: The Link To Learning for the endomembrane system (p.122, goes to http://users.uma.maine.edu/SBaker/nucleus_endo.html) is dead.	Update the Link to Learning in subsection "The Endoplasmic Reticulum" with the following link: https://www.youtube.com/watch?v=Fcxc8Gv7NiU	Minor
Chapter 24: Fungi, Section: Fungal Parasites and Pathogens: The fungus that causes White Nose Syndrome in bats is no longer Geomyces destructans, the new name is Pseudogymnoascus destructans. "Many laboratories and state and federal biologists are investigating the cause of the bat deaths. A newly discovered fungus, Pseudogymnoascus destructans, or pd, (formerly Geomyces destructans), has been demonstrated to cause WNS. Scientists are investigating the dynamics of fungal infection and transmission, and	Update species name for fungus that causes White Nose Syndrome in bats to Pseudogymnoascus destructans, and revise text as follows: Animal and Human Parasites and Pathogens ... It is caused by the cold-loving fungus Pseudogymnoascus destructans, previously known as Geomyces destructans, which disseminates its deadly spores in caves where bats hibernate. Mycologists are	Minor

searching for a way to control it." Above quote from the whitenose.org, the multiagency site for info and news related to the disease. Minnis and Lindner renamed/classified the fungus in a 2013 article. A link to the article can be found on the whitenose.org site.	researching the transmission, mechanism, and control of P. destructans to stop its spread.	
Chapter 16: Gene Expression, Chapter Summary: In the summary, you have the following comment: "Gene expression in prokaryotes is regulated only at the transcriptional level...". This is incorrect. Bacteria have epigenetic regulation and post-translational modification.	Revise section "Regulation of Gene Expression" as follows: ...Gene expression in prokaryotes is mostly regulated at the transcriptional level (some epigenetic and post-translational regulation is also present), whereas in eukaryotic cells, gene expression is regulated at the epigenetic, transcriptional, post-transcriptional, translational, and post-translational levels. (Previous: ...Gene expression in prokaryotes is regulated only at the transcriptional level, whereas in eukaryotic cells, gene expression is regulated at the epigenetic, transcriptional, post-transcriptional, translational, and post-translational levels.)	Major
Chapter 34: Animal Nutrition and the Digestive System, Section: Digestive System Regulation, Subsection: Neural Responses to Food, 1st paragraph: there is an error in this sentence: "In reaction to the smell, sight, or thought of food, like that shown in Figure 34.20, the first hormonal response is that of salivation." Salivation is not a hormonal response to food.	Revise the first paragraph in subsection "Neural Responses to Food" as follows: "In reaction to the smell, sight, or thought of food, like that shown in Figure 34.20, the first response is that of salivation. The salivary glands secrete more saliva in response to stimulation by the autonomic nervous system triggered by food in preparation for digestion." (Previous: In reaction to the smell, sight, or thought of food,	Minor

	like that shown in Figure 34.20, the first hormonal response is that of salivation. The salivary glands secrete more saliva in response to the stimulus presented by food in preparation for digestion.)	
Chapter 21: Viruses, Section: Virus Infections and Hosts, Subsection: Egress, Link to Learning: Broken Link: Manage (http://openstaxcollege.org/staff/links/262) viruses viruseshttp://www.microbiologybytes.com/tutorials/balti/balti.html I think the website www.microbiologybytes.com does not exist anymore. Web browser can't find the server.	Replace the Link to Learning with the following: https://www.khanacademy.org/science/biology/her/tree-of-life/v/viruses Revise text as follows: "Watch a video on viruses, identifying structures, modes of transmission, replication, and more."	Typo
Chapter 15: Genes and Protein, Section: The Genetic Code & Section: Prokaryotic Transcription: Figures 15.3 (p. 401) and 15.8 (p. 406), the pink RNA strand contains Ts that should be Us. Figure 15.3 has 2 Ts in the RNA that should be changed to Us. Figure 15.8 has 3 Ts in the RNA that should be changed to Us. RNA contains U instead of T. It is one of the defining characteristics of RNA.	Revise the first and third figures in subsection "The Central Dogma: DNA Encodes RNA; RNA Encodes Protein" to have Us, not Ts, for RNA. Revise the first figure in subsection "Elongation and Termination in Prokaryotes" to have Us, not Ts, for RNA.	Typo
Chapter 12: Mendel's Experiments and Heredity, Section: Characteristics and Traits, Subsection: Alternatives to Dominance and Recessiveness: The Figure explanation for Figure 8 says this: "In Drosophila, the gene for eye color is located on the X chromosome. Clockwise from top left are brown, cinnabar, sepia, vermilion, white, and red. Red eye color is wild-type and is dominant to white eye color." There are multiple gene loci in Drosophila that affect eye color, including two from the above list that are on the X chromosome at different loci: white and vermilion. The other mutations listed -- brown, sepia, cinnabar -- are located on	Revise the caption for first figure in subsection "X-Linked Traits" as follows: "In Drosophila, several genes determine eye color. The genes for white and vermilion eye colors are located on the X chromosome. Others are located on the autosomes. Clockwise from top left are brown, cinnabar, sepia, vermilion, white, and red. Red eye color is wild-type and is dominant to white eye color." (Previous: In Drosophila, the gene for eye color is located on	Typo

two different autosomes.	the X chromosome...)	
TChapter 27: Introduction to Animal Diversity, Section: Features Used to Classify Animals, Subsection: Animal Characterization Based on Features of Embryological Development: here is an labelling error in Figure 5 of chapter 27.2. In the part of the figure representing a pseudocoelomate, the same layer is labelled both ectoderm and mesoderm, and I think the mesoderm is labelled endoderm. The endoderm is unlabelled.	Revise the first figure in subsection "Presence or Absence of a Coelom" so that the endoderm and mesoderm are correctly labeled.	Typo