

Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
<p>BIO.2 The student will investigate and understand that chemical and biochemical processes are essential for life. Key ideas include</p>	
<p>a) water chemistry has an influence on life processes;</p>	<p>Water (CT)</p> <p>Water > Explore > page 1 > What Are the Properties of Water? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/2225f6bb-6cb9-411d-b24c-51570e87001e/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/bc626d86-5938-4190-bbeb-ba97bb17a8b4</p> <p>Water > Explore > Explore More Resources > Hands-On Lab > Cohesion and Surface Tension of Water > https://app.discoveryeducation.com/learn/player/85dd822e-b575-4dc4-89bf-52d40fb7f17a</p> <p>Teacher's Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_Water_Cohesion_and_Surface_Tension_HOL_TG_rev.pdf</p> <p>Water > Explore > page 1 > What Are the Properties of Water? > Exploration > https://app.discoveryeducation.com/learn/player/76d54dc0-c66d-4578-80ad-cef3b32c4e0a?utm_medium=coreplayer&utm_source=76d54dc0-c66d-4578-80ad-cef3b32c4e0a&utm_campaign=hublinks</p> <p>Teacher's Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/Water_TeacherGuide.pdf</p>
<p>b) macromolecules</p>	<p>The Chemistry of Life (CT)</p>

<p>have roles in maintaining life processes;</p>	<p>The Chemistry of Life > Explore > page 2 > What Are the Characteristics of Carbohydrates, Lipids, Proteins, and Nucleic Acids? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/d3677bf6-287e-4bed-a89b-400b79300db9/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/0169c15f-844c-445a-81de-c818dae8c924</p> <p>The Chemistry of Life > Explore > Explore More Resources > Video > Carbohydrates and Fat: Fueling the Body > https://app.discoveryeducation.com/learn/player/bee5366b-b14f-4a08-b933-f8a2e50e6f4c</p> <p>The Chemistry of Life > Explore > Explore More Resources > Hands-On Lab > Identifying Organic Nutrients > https://app.discoveryeducation.com/learn/player/9709742c-2cfb-4f0b-87d0-ba1f0166dbc4 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_The%20Building%20Blocks%20of%20Life_The%20Chemistry%20of%20Life_TeacherHOL_FINAL_SRM.pdf</p>
<p>c) enzymes have a role in biochemical processes;</p>	<p>The Chemistry of Life (CT)</p> <p>The Chemistry of Life > Explore > page 3 > What Are the Characteristics of Enzymes? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/d3677bf6-287e-4bed-a89b-400b79300db9/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/a9dac013-9fa0-456c-acda-8144636c9211</p> <p>The Chemistry of Life > Explore > page 3 > What Are the Characteristics of Enzymes? > Hands-On Lab: Enzyme Activity in Digestion > https://app.discoveryeducation.com/learn/player/897dcb2c-2d96-43ef-b7a3-6663b9cf5209 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_TX_DigestiveSystem_HOL_Enzymes_final.pdf</p> <p>The Chemistry of Life > Elaborate with STEM > Page 1 > Project: For Lack of an Enzyme > How can biotechnology potentially address enzyme deficiency? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-</p>

	<p>207a2b1ad565/concepts/d3677bf6-287e-4bed-a89b-400b79300db9/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/377F50C8-7AB1-45C6-8BD5-0C541705B68B</p> <p>The Chemistry of Life > Elaborate with STEM > Page 2 > Project: What Stops an Enzyme? > Do potatoes contain an enzyme that neutralizes hydrogen peroxide? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/d3677bf6-287e-4bed-a89b-400b79300db9/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/1e818b3a-3161-47ed-9123-7ad65cdc6d20</p>
<p>d) protein synthesis is the process of forming proteins which influences inheritance and evolution; and</p>	<p>DNA (CT)</p> <p>DNA > Engage > page 1 > Thinking about DNA > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/5a1b6f8b-c6bf-4208-87dd-7b3b66692147</p> <p>Transcription and Translation (CT)</p> <p>Transcription and Translation > Explore > page 1 > What Is Transcription? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/44b47450-05dd-4f74-9717-8787d4fa056d/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/33c04320-cf82-4551-8439-98869ce3ce6d</p> <p>Transcription and Translation > Explore > page 4 > What Is Translation? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/44b47450-05dd-4f74-9717-8787d4fa056d/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/c8fe69f2-9c1a-412a-bf15-5aa7c395cf6e</p> <p>Transcription and Translation > Explore > page 4 > Exploration > Translation > https://app.discoveryeducation.com/learn/player/7c8dda3f-2298-485a-a479-d6b082ec5615 Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/Translation_TeacherGuide.pdf</p>

	<p>Transcription and Translation > Explore > Explore More Resources > Hands-On Lab > Transcription and Translation > https://app.discoveryeducation.com/learn/player/5ea802b8-818d-43fd-b685-cf244b19b67f Teacher's Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_Hereditry_TranscriptionandTranslation_TeacherHOL_final.pdf</p>
<p>e) the processes of photosynthesis and respiration include the capture, storage, transformation, and flow of energy.</p>	<p>Photosynthesis (CT)</p> <p>Photosynthesis > Explore > page 1 > How Are Photosynthesis and Cellular Respiration Related? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/35d90fa2-9bb0-4c06-ad34-03121cd9f7e2/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/c5794512-ea46-40a0-9937-3dd532ddc4e7</p> <p>Photosynthesis > Explore > page 2 > How Does the Process of Photosynthesis Work? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/35d90fa2-9bb0-4c06-ad34-03121cd9f7e2/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/d6e30950-206f-441d-8f14-591db6e00415</p> <p>Photosynthesis > Explore > page 2 > Exploration > Photosynthesis > https://app.discoveryeducation.com/learn/player/b891d48d-e91a-4d81-b578-c262cb97697d?utm_medium=coreplayer&utm_source=b891d48d-e91a-4d81-b578-c262cb97697d&utm_campaign=hublinks Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/Photosynthesis_TeacherGuide.pdf</p> <p>Photosynthesis > Explore > Explore More Resources > Hands-On Lab > Photosynthesis https://app.discoveryeducation.com/learn/player/ad9419f2-fcad-41ef-b9e9-e5b3907c607d Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/BIO_TX_Photosynthesis_HOL_Photosynthesis_rev.pdf</p>

Photosynthesis > Explore > Explore More Resources > Hands-On Lab > Modeling the Carbon Cycle>

<https://app.discoveryeducation.com/learn/player/22729993-8614-480d-b6bd-af8d5e90639d>

Teacher's Guide > <https://gtm->

[media.discoveryeducation.com/videos/DSC/data/HOAs/Bio_Photosynthesis_NGSS_HOA_TG_Explore_FINAL.pdf](https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/Bio_Photosynthesis_NGSS_HOA_TG_Explore_FINAL.pdf)

[Energy for Life \(CT\)](#)

Energy for Life > Explore > page 1 > What Is Energy and How Does It Contribute to Maintaining Life on Earth? > Core

Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988->

[207a2b1ad565/concepts/5b594c6a-64a0-4796-b2c1-13ebccbddac1/tabs/759da9a7-2edf-4cde-9515-7081ca990764](https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/5b594c6a-64a0-4796-b2c1-13ebccbddac1/tabs/759da9a7-2edf-4cde-9515-7081ca990764)

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Text **Virginia Science Experience - Biology**

Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
BIO.3 The student will investigate and understand that cells have structure and function. Key ideas include	
a) the cell theory is supported by evidence;	<p>Cell Structure and Function (CT)</p> <p>Cell Structure and Function > Explore > page 1 > What Are the Three Parts of the Cell Theory? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/8fb4ce3a-6c54-4895-8eae-7733aa3cd015/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/649a8ca8-739a-4d40-ad3a-74f7f362b482</p> <p>Cell Structure and Function > Explore > Reading Passage > Through the Looking Glass: The Cell Theory > https://app.discoveryeducation.com/learn/player/b8de8f45-808d-4f47-aaa8-22be6b04a3ef</p> <p>Cell Structure and Function > Explore > page 3 > What Structures Make Up Cells? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/8fb4ce3a-6c54-4895-8eae-7733aa3cd015/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/c285ba7f-048f-4182-9cc1-efe3ee51eaa3</p> <p>Using Scientific Methods (CT)</p>

	<p>Using Scientific Methods > Explore > Page 8 > What Relationship Exists between Hypotheses, Theories, and Laws? > Scientific Theories > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/ad7d080d-3ea8-44c0-907f-9f1050a283e2/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/d46f3999-c767-4167-bdc8-5ca3de8599ff</p>
<p>b) structures in unicellular and multicellular organisms work interdependently to carry out life processes;</p>	<p>Cell Structure and Function (CT)</p> <p>Cell Structure and Function > Explore > Explore More Resources > Exploration > Cell Structure and Function > https://app.discoveryeducation.com/assessment/science/assessmentGuid/7773c7a1-8f0e-4d2e-bd9f-40b81b907a68?conceptGuid=8fb4ce3a-6c54-4895-8eae-7733aa3cd015&origin=learn Teacher’s Guide: https://docreader.readspeaker.com/docreader/index.php?jsmode=1&cid=brgmy&bp=sptol=0.3&autotag=1&url=https%3A%2F%2Fgtm-media.discoveryeducation.com%2Fvideos%2FTechbookPDFs%2FCell_Structure_and_Function_TeacherGuide.pdf</p> <p>Homeostasis (CT)</p> <p>Homeostasis > Explore > Page 2 > How Do Different Systems in the Body Interact to Maintain Homeostasis? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/b236f2a9-0900-4124-a670-ca69113107fa/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/e4b28f3a-5554-4722-8b92-e932729c4070</p> <p>Homeostasis > Explore > Page 2 > How Do Different Systems in the Body Interact to Maintain Homeostasis? > Exploration.> Homeostasis > https://app.discoveryeducation.com/learn/player/5900418E-F2B0-4E67-85B5-FA7A25098F54?utm_medium=coreplayer&utm_source=5900418E-F2B0-4E67-85B5-FA7A25098F54&utm_campaign=hublinks Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/Homeostasis_TeacherGuide.pdf</p>

	<p>Homeostasis > Explore > Page 2 > How Do Different Systems in the Body Interact to Maintain Homeostasis? > Hands-On Activity > Homeostasis and Heart Rate > https://app.discoveryeducation.com/learn/player/b12ed6a6-b698-409f-8c08-ce46d2ea1425 Teacher's Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/HS_BIO_Homeostasis_HOL_TG_DM2_FINAL_SE_FINAL.pdf</p> <p>Homeostasis > Elaborate with STEM > STEM Project Starters > Homeostasis During Exercise > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/b236f2a9-0900-4124-a670-ca69113107fa/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/9A56733C-DDED-43C3-8D5A-FE935BCB91D4</p>
<p>c) cell structures and processes are involved in cell growth and division;</p>	<p>Cell Division (CT)</p> <p>Cell Division > Explore > Page 2 > What Are the Processes Involved in Cellular Division? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/a0ef4097-e03b-4dc6-98f6-9324b2422199/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/da612580-9408-4293-a17c-5691fc597ffd</p> <p>Cell Division > Explore > Page 4 > What Is the Cell Cycle? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/a0ef4097-e03b-4dc6-98f6-9324b2422199/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/8a3b3e99-2df0-4e1b-8ab7-9a7a4584bbe3</p> <p>Cell Division > Explore > Explore More Resources > Hands-On Lab > Observing Mitosis > https://app.discoveryeducation.com/learn/player/bfd36fc5-8470-46e4-bf69-c5507e804332 Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_Cells_CellDivision_TeacherHOL_FLAT_FINAL2_SE.pdf</p> <p>DNA (CT)</p> <p>DNA > Explore > Page 3 > How Do Cells Make Copies of DNA? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-</p>

	<p>e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/c6cb657c-3a9d-4980-9cdc-8c917b07d1d0</p>
<p>d) the structure and function of the cell membrane support cell transport; and</p>	<p>Cell Transport (CT)</p> <p>Cell Transport > Engage > Page 1 > Exploring Cell Transport > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/bf5780db-6bed-4941-8442-cfed3f7adc1/tabs/5a1b6f8b-c6bf-4208-87dd-7b3b66692147</p> <p>Cell Transport > Explore > Page 1 > Hands-On Lab > Passive and Active Transport Maintain Homeostasis > https://app.discoveryeducation.com/learn/player/7bb6a16c-3869-455f-9b8c-7ff34e064e82 Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/Bio_CellTransport_HOL_PassActTransport_TG_IC.pdf</p> <p>Cell Transport > Explore > Page 1 > Exploration > Cell Transport > https://app.discoveryeducation.com/learn/player/f919e639-020e-4d16-b605-1e27ac474a83?utm_medium=coreplayer&utm_source=f919e639-020e-4d16-b605-1e27ac474a83&utm_campaign=hublinks Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/Cell_Transport_TeacherGuide.pdf</p> <p>Cell Transport > Explore > Explore More Resources > Hands-On Lab > Cell Membranes and Diffusion > https://app.discoveryeducation.com/learn/player/151722d6-3830-4b9b-8262-d116196ba039</p>

<p>e) specialization leads to the development of different types of cells.</p>	<p>Cell Division (CT)</p> <p>Cell Division > Explore > Page 3 > What Are the Differences Between Cell Division Among Prokaryotes and Eukaryotes? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/a0ef4097-e03b-4dc6-98f6-9324b2422199/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/ab444d9b-7e2a-46d8-a6d8-2857933ea135</p> <p>Cell Division > Explore > Page 3 > Exploration > Cell Division > https://app.discoveryeducation.com/learn/player/D470B916-3729-4F84-BC54-5CF85EB5E305?utm_medium=coreplayer&utm_source=D470B916-3729-4F84-BC54-5CF85EB5E305&utm_campaign=hublinks</p> <p>Teacher’s Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/Cell_Division_TeacherGuide.pdf</p> <p>Cell Division > Explore > Explore More Resources > Reading Passage > How Cells Differentiate > https://app.discoveryeducation.com/learn/player/9ccfef49-7545-4f93-b80b-107031d4505a</p> <p>Cell Structure and Function (CT)</p> <p>Cell Structure and Function > Explore > page 3 > What Structures Make Up Cells? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/8fb4ce3a-6c54-4895-8eae-7733aa3cd015/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/c285ba7f-048f-4182-9cc1-efe3ee51eaa3</p> <p>Cell Structure and Function > Explain > Explaining Cell Structure and Function > https://app.discoveryeducation.com/learn/techbook/units/9f780dc0-07e0-4f13-9dd7-b28a6aa5ff61/concepts/8fb4ce3a-6c54-4895-8eae-7733aa3cd015/tabs/0df56444-5400-41eb-a6ce-de52b7efb950</p>
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Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
BIO.4 The student will investigate and understand that bacteria and viruses have an effect on living systems. Key ideas include	
a) viruses depend on a host for metabolic processes;	<p>Viruses (CT)</p> <p>Viruses > Explore > Page 1 > What Are the Living and Nonliving Characteristics of Viruses? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Viruses > Explore > Page 1 > Exploration > Build a Virus/Viruses > https://app.discoveryeducation.com/learn/player/ec1c91e1-1895-4752-8c12-fd40c99ede56?utm_medium=coreplayer&utm_source=ec1c91e1-1895-4752-8c12-fd40c99ede56&utm_campaign=hublinks</p>
b) the modes of reproduction/replication can be compared;	<p>Viruses (CT)</p>

	<p>Viruses > Explore > Page 1 > What Are the Living and Nonliving Characteristics of Viruses? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Viruses > Explore > Page 1 > What Are the Living and Nonliving Characteristics of Viruses? > Exploration > Viruses > https://app.discoveryeducation.com/learn/player/ec1c91e1-1895-4752-8c12-fd40c99ede56?utm_medium=coreplayer&utm_source=ec1c91e1-1895-4752-8c12-fd40c99ede56&utm_campaign=hublinks</p> <p>Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/Viruses_TeacherGuide.pdf</p> <p>Asexual and Sexual Reproduction (CT)</p> <p>Asexual and Sexual Reproduction > Explore > Page 1> What Are the Differences between Asexual and Sexual Reproduction? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/f961acb6-eedb-4a97-8a26-77f5754dfe09/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p>
<p>c) the structures and functions can be compared;</p>	<p>Viruses (CT)</p>

	<p>Viruses > Explore > Page 1 > What Are the Living and Nonliving Characteristics of Viruses? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Viruses > Explore > Page 2 > What Are the Different Types of Viruses and Their Characteristics? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/eb275c94-700b-4964-a72b-c6396e2fb040</p>
<p>d) bacteria and viruses have a role in other organisms and the environment; and</p>	<p>Classification (CT)</p> <p>Classification> Explore > Page 2 > What Are the Similarities and Difference between the Three Domains of Life? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/7c5cf84d-8e03-441a-8d06-8838e817170c</p> <p>Classification> Elaborate with STEM > STEM in Action > Applying Classification > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f</p> <p>Viruses (CT)</p> <p>Viruses > Explore > Page 3 > What Effect Do Viruses Have on Humans? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/f7aceb16-a831-4463-96c1-a58263dd022f</p>

<p>e) the germ theory of infectious disease is supported by evidence.</p>	<p>Using Scientific Methods (CT)</p> <p>Using Scientific Methods > Explore > Page 8 > What Relationship Exists between Hypotheses, Theories, and Laws? > Scientific Theories > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/002ca7f0-ce70-4b18-a988-207a2b1ad565/concepts/ad7d080d-3ea8-44c0-907f-9f1050a283e2/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/d46f3999-c767-4167-bdc8-5ca3de8599ff</p> <p>Viruses (CT)</p> <p>Viruses > Explore > Page 3 > What Effect Do Viruses Have on Humans? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/f7aceb16-a831-4463-96c1-a58263dd022f</p> <p>Viruses > Explore > Explore More Resources > Reading Passage: Chemistry in History Biographies: Pasteur, Louis (1822–1895) > https://app.discoveryeducation.com/learn/player/fa01a889-4c02-4567-b671-59beb434a993</p> <p>Viruses > Elaborate with STEM > STEM in Action > Applying Viruses > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f</p> <p>Viruses > Elaborate with STEM > STEM Project Starter > Page 3 > Project: Vaccine Creator > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/09144de4-9a33-4d09-880c-1c7e10e0d3b4/concepts/d6ffc21a-42b7-4891-8cdb-2a4c1482e710/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/bc8eac5a-68dd-4901-88f7-b218fe40fade</p>
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Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
BIO.5 The student will investigate and understand that there are common mechanisms for inheritance. Key ideas include	
a) DNA has structure and is the foundation for protein synthesis;	<p>DNA (CT)</p> <p>DNA > Engage > Thinking about DNA > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06</p> <p>DNA > Explore > Page 1 > What Are the Components of DNA and RNA? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>DNA > Explore > Page 2 > How Are the Structures of DNA and RNA Related to Their Functions? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/74a241c9-bbb9-4d11-9995-a2c8895b9c05</p> <p>DNA > Explore > Page 3 > Hands-On Lab > Modeling DNA > https://app.discoveryeducation.com/learn/player/101fde8c-df25-4d8d-b2f0-8c38f8e92595 Teacher's Guide > https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/BIO_AL_Heridity_DNA_HOA_Modeling_FINAL.pdf</p>

	<p>DNA > Elaborate with STEM> STEM Project Starters > Page 1 > Project: The “Other” Race for the Double Helix > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/9852C07B-7D7A-45A7-82A6-930781407A20</p>
<p>b) the structural model of DNA has developed over time;</p>	<p>DNA (CT)</p> <p>DNA > Engage > Thinking about DNA > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06</p> <p>DNA > Elaborate with STEM > STEM Project Starters > Page 1 > Project: The “Other” Race for the Double Helix > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/9852C07B-7D7A-45A7-82A6-930781407A20</p> <p>DNA > Explore > Explore More Resources > Reading Passage > Unlocking the Door to the Spiral Staircase (and More Problems) https://app.discoveryeducation.com/learn/player/f7ed72e8-51c1-48d3-81b4-7dee1aca7315</p> <p>DNA > Explore > Explore More Resources > Reading Passage > Milestones in DNA Research > https://app.discoveryeducation.com/learn/player/e431a3ca-c5ad-4b88-96a3-e01eeb9a1db5</p> <p>DNA > Elaborate with STEM > STEM in Action > Applying DNA > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/bbc25049-845f-4474-a211-fa18a69d2f06/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f</p>

<p>c) the variety of traits in an organism are the result of the expression of various combinations of alleles;</p>	<p>Genetics (CT)</p> <p>Genetics > Explore > Page 1 > What Are Mendel’s Laws of Inheritance? > Core Interactive Text https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/73dc8306-4604-4a7d-b430-ed7ad20140bd/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/e8775e7d-8fa6-43fc-a10d-2074f69962db</p> <p>Genetics > Explore > Page 3 > What Are the Definitions of Homozygous, Heterozygous, Genotype, and Phenotype? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/73dc8306-4604-4a7d-b430-ed7ad20140bd/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/ce271cf5-3b6f-4ed0-ae1c-c42ad18e45a6</p> <p>Genetics > Explore > Page 4 > What Are Mendel’s Laws of Inheritance? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/73dc8306-4604-4a7d-b430-ed7ad20140bd/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/e8775e7d-8fa6-43fc-a10d-2074f69962db</p> <p>Genetics > Explore > Page 5 > How Are the Results of Monohybrid and Dihybrid Crosses Diagrammed? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/73dc8306-4604-4a7d-b430-ed7ad20140bd/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/b636767d-55e3-4af2-a543-3fe761d30101</p> <p>Genetics > Explore > Page 6 > What Are the Effects of Multiple Alleles, Codominance, and Incomplete Dominance on Phenotype? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/8ff106ad-5d75-4a2f-a580-e525656111e7/concepts/73dc8306-4604-4a7d-b430-ed7ad20140bd/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/b6ed6799-6287-4fcd-ad52-77b9be4fe9e3</p> <p>Genetics > Explore > Explore More Resources > Problem Set Activity > Non-Mendelian Genetics > https://app.discoveryeducation.com/learn/player/72164d05-57ce-4016-9693-141b3b4bbd3d</p>
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	<p>Asexual and Sexual Reproduction (CT)</p> <p>Asexual and Sexual Reproduction > Explore > Page 1 > What Are the Differences between Asexual and Sexual Reproduction? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/f961acb6-eedb-4a97-8a26-77f5754dfe09/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/a9e5453b-ead0-4fb7-aa26-754a7fbd2cb8</p> <p>Asexual and Sexual Reproduction > Explore > Explore More Resources > Hands-On Lab: Variation and Distribution of Expressed Traits > https://app.discoveryeducation.com/learn/player/3a00703f-215e-4f67-a74b-78149946369c Teacher’s Guide: https://gtm-media-3.discoveryeducation.com/v3.4/DSC/data/Bio TranscriptTranslate NGSS HOL TG Explore FINAL 19 RH.pdf</p>
<p>d) meiosis has a role in genetic variation between generations; and</p>	<p>Asexual and Sexual Reproduction (CT)</p> <p>Asexual and Sexual Reproduction > Explore > Page 3 > What Is the Function of Each Stage of Meiosis? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/f961acb6-eedb-4a97-8a26-77f5754dfe09/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/60c916f8-91b9-4280-8eb8-a23982853155</p> <p>Asexual and Sexual Reproduction > Explore > Page 3 > What Is the Function of Each Stage of Meiosis? > Exploration > Asexual and Sexual Reproduction > https://app.discoveryeducation.com/learn/player/5d590c8c-9b3d-4236-9e29-a3efa0dbfa60</p> <p>Asexual and Sexual Reproduction > Explore > Page 4 > What Are the Differences between Mitosis and Meiosis? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/f961acb6-eedb-4a97-8a26-77f5754dfe09/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/b4c1f510-b7a8-45e5-b468-b1cdfb319f4</p>

<p>e) synthetic biology has biological and ethical implications.</p>	<p>Asexual and Sexual Reproduction (CT)</p> <p>Asexual and Sexual Reproduction > Elaborate with STEM > STEM Project Starters > Page 1 > Project: Ethics of Cloning > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/f961acb6-eedb-4a97-8a26-77f5754dfe09/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/E51A5A32-90C1-42EC-BF5E-3EE8D3D2416D</p> <p>Genetic Engineering (CT)</p> <p>Genetic Engineering > Engage > Thinking about Genetic Engineering > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/17a6611b-cd4c-4902-9023-b8fc5fa51eea</p> <p>Genetic Engineering > Explore > Page 1 > What Are Some Examples of Genetic Engineering? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/17a6611b-cd4c-4902-9023-b8fc5fa51eea/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Genetic Engineering > Explore > Page 1 > What Are Some Examples of Genetic Engineering? > Exploration > Genetic Engineering > https://app.discoveryeducation.com/learn/player/b31214e7-6d37-4b6f-98f0-25d14c25217c</p> <p>Genetic Engineering > Explore > Explore More Resources > Hands-On Lab > Transformation of E. coli Bacteria > https://app.discoveryeducation.com/learn/player/352a2756-3b9b-40c5-bbf5-6ce5cd31a249</p> <p>Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/BIO_TX_Heredit_y_GeneticDisordersandTechnology_HOL_Transformation.pdf</p> <p>Genetic Engineering > Elaborate with STEM > STEM in Action > Applying Genetic Engineering > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/66fb7076-d013-47f6-b825-82d1518407a4/concepts/17a6611b-cd4c-4902-9023-b8fc5fa51eea/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f</p>
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Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
BIO.6 The student will investigate and understand that modern classification systems can be used as organizational tools for scientists in the study of organisms. Key ideas include	
a) organisms have structural and biochemical similarities and differences;	<p>Classification (CT)</p> <p>Classification > Explore > Page 1 > Why and How Do Scientists Classify Organisms? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Classification > Explore > Page 1 > Exploration > Classification > https://app.discoveryeducation.com/learn/player/35af1f57-4dd9-47b5-8db3-988b5a54e05c</p> <p>Classification > Elaborate with STEM > STEM Project Starters > Page 2 > Project: Classifying Unknown Organisms > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/d020f3dd-e901-4bd1-8335-96de17b6f6fe</p>
b) fossil record interpretation can be used to	<p>Evolution (CT)</p>

<p>classify organisms;</p>	<p>Evolution > Explore > Page 4 > How Are Fossils, Comparative Morphology, Patterns of Development, and Molecular Sequences Used as Evidence of Evolution? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4a3ae412-1d56-4ba9-9d03-f511aa3cf2b1</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Comparing Ancestors > https://app.discoveryeducation.com/learn/player/41028bf8-8c30-4812-be96-6dcb89bd83a9 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_TX_Evolution_HOL_ComapringAncestors_final.pdf</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Piecing Together the Fossil Record > https://app.discoveryeducation.com/learn/player/f1e08b89-1dd4-4483-8362-83bd2564b765</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Recognizing Common Ancestors > https://app.discoveryeducation.com/learn/player/b991b2c6-b384-438e-a61b-c4fd97dfac7e Teacher’s Guide: https://gtm-media-3.discoveryeducation.com/v3.4/DSC/data/BIO_TX_Evolution_HOL_Ancestry_final_REV.pdf</p>
<p>c) developmental stages in different organisms can be used to classify organisms;</p>	<p>Evolution (CT)</p> <p>Evolution > Explore > Page 4 > How Are Fossils, Comparative Morphology, Patterns of Development, and Molecular Sequences Used as Evidence of Evolution? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4a3ae412-1d56-4ba9-9d03-f511aa3cf2b1</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Recognizing Common Ancestors > https://app.discoveryeducation.com/learn/player/b991b2c6-b384-438e-a61b-c4fd97dfac7e Teacher’s Guide: https://gtm-media-3.discoveryeducation.com/v3.4/DSC/data/BIO_TX_Evolution_HOL_Ancestry_final_REV.pdf</p>

<p>d) Archaea, Bacteria, and Eukarya are domains based on characteristics of organisms;</p>	<p>Classification (CT)</p> <p>Classification > Explore > Page 1 > Why and How Do Scientists Classify Organisms? > Exploration > Classification > https://app.discoveryeducation.com/learn/player/35af1f57-4dd9-47b5-8db3-988b5a54e05c</p> <p>Classification > Explore > Page 2 > What Are the Similarities and Difference between the Three Domains of Life? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/7c5cf84d-8e03-441a-8d06-8838e817170c</p> <p>Classification > Explore > Explore More Resources > Reading Passage: The History of Taxonomy > https://app.discoveryeducation.com/learn/player/de26a75f-b402-4ed2-b576-c01a785fa44f</p>
<p>e) the functions and processes of protists, fungi, plants, and animals allow for comparisons and differentiation within the Eukarya kingdoms; and</p>	<p>Classification (CT)</p> <p>Classification > Explore > Page 3 > What Are the Characteristics of the Different Kingdoms in Domain Eukarya? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/97dc1fce-a9ef-4b67-9a92-476dec712445</p> <p>Classification > Elaborate with STEM > STEM Project Starters > Page 1 > Project: Plant Classification > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/28A3FB4D-1315-4B52-BE62-919688EA27AC</p>

	<p>Classification > Elaborate with STEM > STEM Project Starters > Page 1 > Project: Comparing Kingdoms and Domains > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/81A34B8E-216D-44A6-B80A-5DCB825A8105</p> <p>Classification > Explore > Explore More Resources > Reading Passage > The Development of Penicillin > https://app.discoveryeducation.com/learn/player/4d89bd52-dca1-4e3c-826b-1673811c92ee</p>
<p>f) systems of classification are adaptable to new scientific discoveries.</p>	<p>Classification (CT)</p> <p>Classification > Explore > Page 5 > What Are the Characteristics of the Phyla of the Animal Kingdom? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/fa3ebab9-b719-4364-8d42-761031ca9fec</p> <p>Classification > Elaborate with STEM > STEM Project Starters > Page 2 > Project: Classifying Unknown Organisms > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/d020f3dd-e901-4bd1-8335-96de17b6f6fe</p>

Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
BIO.7	The student will investigate and understand that populations change through time. Key ideas include
a) evidence is found in fossil records and through DNA analysis;	<p><u>Classification (CT)</u></p> <p>Classification > Explore > Page 5 > What Are the Characteristics of the Phyla of the Animal Kingdom? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/fa3ebab9-b719-4364-8d42-761031ca9fec</p> <p>Classification > Elaborate with STEM > STEM Project Starters > Page 2 > Project: Classifying Unknown Organisms > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/1e8ea114-8e4d-45d0-ae10-acf7e122c6e1/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/d020f3dd-e901-4bd1-8335-96de17b6f6fe</p> <p><u>Evolution (CT)</u></p> <p>Evolution > Explore > Page 4 > How Are Fossils, Comparative Morphology, Patterns of Development, and Molecular Sequences Used as Evidence of Evolution? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4a3ae412-1d56-4ba9-9d03-f511aa3cf2b1</p>

	<p>Evolution > Explore > Explore More Resources > Hands-On Lab: Biostratigraphy > https://app.discoveryeducation.com/learn/player/a15ca2ca-200f-4cd1-9c37-8a36112442fb Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/ESS_TX_GeologicTimeScale_HOL_Biostratigraphy.pdf</p> <p>Evolution > Elaborate with STEM > STEM Project Starters > Page 3 > Project: Evidence for Evolution – Half-Life > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/91a8e3a1-578e-4207-8915-7000c3e299d8</p>
<p>b) genetic variation, reproductive strategies, and environmental pressures affect the survival of populations;</p>	<p>Evolution (CT)</p> <p>Evolution > Explore > Page 2 > What Are the Differences between Artificial and Natural Selection? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/840b1780-0175-43ba-a8cf-6cedc365ba14</p> <p>Evolution > Explore > Page 5> What Role Do Mutation, Bottleneck Effect, Founder Effect, and Sexual Selection Play in Evolution? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/f9e277ce-74e6-4143-9f04-4b91d5f3831d</p> <p>Evolution > Explore > Page 6 > What Role Do Mutation, Recombination, Genetic Drift, Bottleneck Effect, Founder Effect, and Sexual Selection Play in Evolution? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4f4adb1c-5eb1-4f83-9a97-203691366a67</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Investigating the Effect of Environmental Change on Species > https://app.discoveryeducation.com/learn/player/38d729e2-1218-4a90-b6ab-25582b8cc636 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HS_Evolution_NGSS_HOL2_TG_FINAL.pdf</p>

	<p>Evolution > Explain > Scientific Explanation > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/0df56444-5400-41eb-a6ce-de52b7efb950</p>
<p>c) natural selection is a mechanism that leads to adaptations and may lead to the emergence of new species; and</p>	<p>Evolution (CT)</p> <p>Evolution > Explore > Page 3 > What Is the Relationship between Natural Selection and Adaptation, and to the Development of Diversity in Species? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/3959cbe0-24b2-4567-adc3-5379edf00c85</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Explaining Evolutionary Processes > https://app.discoveryeducation.com/learn/player/c86109b7-a4f8-4dfd-b5e8-f16a8197757f Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/HS_Evolution_NGSS_HOA1_TG_FINAL.pdf</p> <p>Evolution > Explore > Explore More Resources > Hands-On Lab > Bean Selection > https://app.discoveryeducation.com/learn/player/a41f195d-3d93-4a40-a37b-b3e7b4da6c16 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/BIO_TX_Evolution_HOA_BeanSelection.pdf</p>
<p>d) biological evolution has scientific evidence and explanations.</p>	<p>Evolution (CT)</p>

Evolution > Explore > Page 4 > How Are Fossils, Comparative Morphology, Patterns of Development, and Molecular Sequences Used as Evidence of Evolution? > Core Interactive Text >

<https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4a3ae412-1d56-4ba9-9d03-f511aa3cf2b1>

Evolution > Explore > Page 10 > What Are the Differences between Sympatric, Parapatric, and Allopatric Speciation? What Is the Relationship of Natural Selection to the Development of Diversity Among Species?

> Core Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/ccf6b3c7-1e59-41f2-a9a4-df42312723f6>

Evolution > Elaborate with STEM > STEM in Action > Applying Evolution > Core Interactive Text >

<https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f>

Evolution > Explain > Explaining Evolution > <https://app.discoveryeducation.com/learn/techbook/units/cf49265d-d202-48b0-96cb-186a3677ca83/concepts/cbc0ec75-8a5d-46c3-a964-6a52848dd57c/tabs/0df56444-5400-41eb-a6ce-de52b7efb950>

Evolution > Explore > Explore More Resources > Hands-On Lab > Explaining Evolutionary Processes >

<https://app.discoveryeducation.com/learn/player/c86109b7-a4f8-4dfd-b5e8-f16a8197757f> Teacher's Guide:
https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/HS_Evolution_NGSS_HOA1_TG_FINAL.pdf

Biology Standards of Learning	
STANDARD	Correlation: Must address both the standards and the curriculum framework. Use page number and ATE for Annotated Teacher Edition or CT for Core Technology. (Identify no more than 8 correlations.)
<p>BIO.8 The student will investigate and understand that there are dynamic equilibria within populations, communities, and ecosystems. Key ideas include</p>	
<p>a) interactions within and among populations include carrying capacities, limiting factors, and growth curves;</p>	<p>Describing Populations (CT)</p> <p>Describing Populations > Explore > Page 1 > What Are the Factors of Population Demographics? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/7717541e-ad0e-452e-801e-5c8d13ef09f5/tabs/759da9a7-2edf-4cde-9515-7081ca990764</p> <p>Describing Populations > Explore > Page 2 > What Is the Difference between Density-Dependent and Density-Independent Factors? Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/7717541e-ad0e-452e-801e-5c8d13ef09f5/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/32644c7b-2d72-4c89-9717-61dc0131295f</p> <p>Describing Populations > Explore > Page 3 > What Are the Differences between Exponential and Logistical Growth? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/7717541e-ad0e-452e-801e-5c8d13ef09f5/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/eac6b356-a02c-4d19-beb3-bfa97525dd2f</p>

	<p>Describing Populations > Explore > Page 4> How Is Population Growth Affected by Carrying Capacity? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/7717541e-ad0e-452e-801e-5c8d13ef09f5/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/4cd865c0-1887-4745-85a7-9e647e149147</p> <p>Describing Populations > Explore > Page 4 > Exploration > Describing Populations > https://app.discoveryeducation.com/learn/player/1703a6ab-f99b-4a29-a222-645f6f20ae32</p> <p>Describing Populations > Explore > Page 4 > Hands-On Activity: Carrying Capacity > https://app.discoveryeducation.com/learn/player/488101ca-5bf3-46c3-ae9c-14598fb37f10 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/Bio_Populations_NGSS_HOA_TG_Explore_FINAL.pdf</p> <p>Ecosystems (CT)</p> <p>Ecosystems > Explore > Page 1 > What Are the Characteristics of a Population, a Community, and an Ecosystem? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/8d691a14-a62f-4573-92f3-b0696389a502</p> <p>Ecosystems > Explore > Page 2 > How Do Organisms Interact within a Community? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/3fada13a-1ba8-47b2-b97f-aec90cd63a8a</p>
<p>b) nutrients cycle with energy flow through ecosystems;</p>	<p>Nutrient Cycles (CT)</p>

Nutrient Cycles > Engage > Thinking about Nutrient Cycles > Core Interactive Text >
<https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/606ace30-779b-4ccd-b606-a5f619033742>

Nutrient Cycles > Explore > Page 2 > What Are the Processes and Features of the Carbon Cycle?
> Core Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/606ace30-779b-4ccd-b606-a5f619033742/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/10389887-5b1c-4186-9178-789a9359ef95>

Nutrient Cycles > Explore > Page 3> What Are the Processes and Features of the Nitrogen Cycle?
> Core Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/606ace30-779b-4ccd-b606-a5f619033742/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/66b90301-c37f-4b6d-983a-a41c48f5534d>

Nutrient Cycles > Explore > Page 4 > Exploration: Nutrient Cycles >
<https://app.discoveryeducation.com/learn/player/5316a77b-9000-41d6-8fad-7a9be3175465>

[Ecosystems \(CT\)](#)

Ecosystems > Explore > Page 1 > What Are the Characteristics of a Population, a Community, and an Ecosystem? >
Core Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/8d691a14-a62f-4573-92f3-b0696389a502>

Ecosystems > Explore > Page 1 > How Do Organisms Interact within a Community? > Core Interactive Text >
<https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/3fada13a-1ba8-47b2-b97f-aec90cd63a8a>

Ecosystems > Elaborate with STEM > STEM Project Starters > Page 2 > Project: Tertiary or Secondary Consumer? > Core
Interactive Text > <https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f->

	<p>5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/1BB2F48D-E66F-4254-9260-EC48E942A79D</p> <p>Ecosystems > Explore > Explore More Resources > Hands-On Activity > Food Webs and Trophic Levels > https://app.discoveryeducation.com/learn/player/9682fde2-b576-4ce7-bfa9-bd9ff5280201 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/Hands_On_Activity_Food_Webs_and_Trophic_Levels_TG.pdf</p>
<p>c) ecosystems have succession patterns; and</p>	<p>Ecosystems (CT)</p> <p>Ecosystems > Explore > Page 3 > How Is an Ecosystem Established? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/34664ff6-149d-468a-83f6-8802cf9d1c24</p> <p>Ecosystems > Explore > Page 5 > What External Factors Influence Ecosystems? How Do Species, Populations, Communities, and Entire Ecosystems Respond to These External Factors? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/8fe839b2-659f-4c90-9749-84590ebf537c</p> <p>Ecosystems > Explore > Explore More Resources > Reading Passage > Factors Affecting Virginia’s Ecosystems > https://app.discoveryeducation.com/learn/player/a0f33f28-87ad-445e-a3ca-1323c0497a75</p>
<p>d) natural events and human activities influence</p>	<p>Ecosystems (CT)</p>

<p>local and global ecosystems and may affect the flora and fauna of Virginia.</p>	<p>Ecosystems > Explore > Page 3 > How Is an Ecosystem Established? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/34664ff6-149d-468a-83f6-8802cf9d1c24</p> <p>Ecosystems > Explore > Page 5 > What External Factors Influence Ecosystems? How Do Species, Populations, Communities, and Entire Ecosystems Respond to These External Factors? > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/759da9a7-2edf-4cde-9515-7081ca990764/pages/8fe839b2-659f-4c90-9749-84590ebf537c</p> <p>Ecosystems > Elaborate with STEM > STEM Project Starters > Page 3 > Project: Red Squirrel Population Changes > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/BDBB42EC-2D8E-4E01-97F4-E78653AEDA79</p> <p>Ecosystems > Elaborate with STEM > STEM Project Starters > Page 4 > Project: Watershed Solutions > Core Interactive Text > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/054d49d8-d8f5-4203-b276-19e25b56cc5f/pages/F60943D4-CAC7-41F8-97B2-DDF78F0FAE2C</p> <p>Ecosystems > Explore > Explore More Resources > Reading Passage > Factors Affecting Virginia’s Ecosystems > https://app.discoveryeducation.com/learn/player/a0f33f28-87ad-445e-a3ca-1323c0497a75</p> <p>Ecosystems > Explore > Explore More Resources > Hands-On Activity > Investigating Adverse Impacts of Human Activity on Biodiversity > https://app.discoveryeducation.com/learn/player/afc1125f-0950-4071-b491-4322fa821ae3 Teacher’s Guide: https://gtm-media.discoveryeducation.com/videos/DSC/data/HOAs/HS_Evolution_NGSS_HOA3_TG_FINAL.pdf</p>
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	Ecosystems > Explain > Explaining Ecosystems > https://app.discoveryeducation.com/learn/techbook/units/c609b5ff-282a-4e70-b29f-5eac52438261/concepts/d9b8d0e2-aa99-4d7d-9ce0-901e4d186394/tabs/0df56444-5400-41eb-a6ce-de52b7efb950
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