

Legend
 Bio = Biology
 IPC = Integrated Physics & Chemistry

Indiana Academic Standards	Content Connectors	Student Text	Practice Book	Teacher Resource Edition Activities & Projects
Nature of Science				
10.NS.1: Develop explanations based on reproducible data and observations gathered during laboratory investigations.	10.NS.1.a.1: Science involves observation, experimentation, validation, and changing understandings.	IPC 8, 9, 10, 11, 72, 74, 142, 152 Bio 2, 3, 10, 11, 21, 105	IPC 8, 9, 10, 11, 72, 74, 152 Bio 2, 3, 10, 11, 21	IPC 1, 2, 3, 4, 7, 8, 9, 10, 13, 14, 15, 17, 19, 28, 29, 30, 31, 34, 35 Bio 1, 2, 3, 4, 7, 8, 9, 11, 13, 16, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36
10.NS.2: Recognize that their explanations must be based both on their data and other known information from investigations of others.	10.NS.2.a.1: Use multiple sources of information to develop an answer.	IPC 11, 4 Bio 11, 10	Bio 11	IPC 1, 3, 4, 8, 9, 10 Bio 1, 4
10.NS.5: Apply standard techniques in laboratory investigations to measure physical quantities in appropriate units and convert quantities to other units as necessary.	10.NS.5.a.1: Use appropriate tools to measure during investigations.	IPC 18, 75, 93, 118, 120, 150, 152, 153, 154, 155, 159 Bio 3	IPC 50, 75, 118, 120, 124, 150, 152, 153, 154, 155, 156, 159 Bio 3	IPC 1, 2, 4, 9, 10, 12, 17, 18, 19, 23, 24, 28, 29, 30, 31, 32, 35 Bio 1, 2, 3, 4, 7, 8, 9, 11, 13, 16, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36
Standard 1: Cellular Chemistry				
B.1.1: Describe the structure of the major categories of organic compounds that make up living organisms in terms of their building blocks and the small number of chemical elements (i.e., carbon, hydrogen, nitrogen, oxygen, phosphorus and sulfur) from which they are composed.	B.1.1.a.1: All living organisms are made up of chemical elements.	IPC 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88 Bio 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62	IPC 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88 Bio 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62	IPC 1, 2, 4, 9, 10, 11, 13, 16, 17 Bio 2, 3, 4, 5, 6, 7, 8, 10, 11
Standard 2: Cellular Structure				
B.2.1: Describe features common to all cells that are essential for growth and survival. Explain their functions.	B.2.1.a.1: All living things are made of cells.	IPC 22, 55, 56 Bio 12, 13, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 99	IPC 22, 55, 56 Bio 12, 13, 14, 15, 16, 17, 18, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 99	IPC 0 Bio 6, 7, 8, 9, 12, 34
Standard 3: Matter Cycles and Energy Transfer				
B.3.1: Describe how some organisms capture the sun's energy through the process of photosynthesis by converting carbon dioxide and water into high-energy compounds and releasing oxygen.	B.3.1.a.1: Living things must take in substances in order to make energy.	Bio 48, 49, 50, 51, 52, 53, 54, 55, 56, 57	Bio 48, 49, 50, 51, 52, 53, 54, 55, 56, 57	Bio 10, 11
B.3.4: Describe how matter cycles through an ecosystem by way of food chains and food webs and how organisms convert that matter into a variety of organic molecules to be used in part in their own cellular structures.	B.3.4.a.1: Energy changes form as it flows through living things.	IPC 57 Bio 48, 49, 50, 51, 52, 53, 84, 85, 86, 87, 88, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	IPC 57 Bio 48, 49, 50, 51, 52, 53, 84, 85, 86, 87, 88, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124	IPC 0 Bio 10, 20, 24
Standard 4: Interdependence				
B.4.1: Explain that the amount of life environments can support is limited by the available energy, water, oxygen and minerals and by the ability of ecosystems to recycle the remains of dead organisms.	B.4.1.a.1: Life is limited by the amount of available resources.	IPC 176, 177, 182, 183, 184, 185, 186 Bio 110, 111, 112, 113, 114, 115, 116, 117, 118, 119	IPC 176, 177, 182, 183, 184, 185, 186 Bio 110, 111, 112, 113, 114, 115, 116, 117, 118, 119	IPC 34, 35, 36 Bio 22, 23, 24, 25, 26, 27, 28, 29, 30
B.4.2: Describe how human activities and natural phenomena can change the flow of matter and energy in an ecosystem and how those changes impact other species.	B.4.2.a.1: Natural changes and human behavior impact the entire ecosystem.	Bio 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 151, 152, 153, 154, 155	Bio 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 151, 152, 153, 154, 155	Bio 22, 23, 24, 25, 26, 27, 28, 29, 30
Standard 5: Molecular Basis of Heredity				
B.5.2: Describe how hereditary information passed from parents to offspring is encoded in the regions of DNA molecules called genes.	B.5.2.a.1: Genes make living things unique.	Bio 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109	Bio 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109	Bio 13, 14, 16, 18
Standard 6: Cellular Reproduction				
B.6.1: Describe the process of mitosis and explain that this process ordinarily results in daughter cells with a genetic make-up identical to the parent cells.	B.6.1.a.1: Organisms grow by cell division.	Bio 58, 59, 60, 61, 62	Bio 58, 59, 60, 61, 62	Bio 7, 12
Standard 7: Genetics				
B.7.3: Determine the likelihood of the appearance of a specific trait in an offspring given the genetic make-up of the parents.	B.7.3.a.1: Living creatures have physical differences and similarities.	Bio 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109	Bio 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109	Bio 13, 14, 16, 18

Standard 8: Evolution.				
B.8.5: Describe how organisms with beneficial traits are more likely to survive, reproduce, and pass on their genetic information due to genetic variations, environmental forces and reproductive pressures.	B.8.5.a.1: Living things are adapted to survive in a particular environment and pass these adaptations to their offspring.	Bio 105, 106, 107, 108 109	Bio 105, 106, 107, 108 109	Bio 21