

Grade 7 Pacing Guide  
Quarter 1

| Topic                  | Chapter/Resources | Frameworks  | Lab | Time    |
|------------------------|-------------------|---|-----|---------|
| Life Science           |                   |   |     |         |
| Structure and Function |                   | LS.2.7.1  |     | 9 weeks |
|                        |                   | Illustrate the hierarchical relationships of cells, tissues, organs, and organ systems                      |     |         |
|                        |                   |   |     |         |
|                        |                   | LS.2.7.2  |     |         |
|                        |                   | Analyze how two or more organs work together to perform a function (e.g., mouth and stomach to digest food) |     |         |
|                        |                   |   |     |         |
| Body Systems           |                   | LS.2.7.6  |     |         |
|                        |                   | Identify human body systems:  |     |         |
|                        | LS Ch.22          | skeletal muscular   |     |         |
|                        | LS Ch.23          | circulatory   |     |         |
|                        | LS Ch.23          | respiratory   |     |         |
|                        | LS Ch.24          | excretory   |     |         |
|                        | LS Ch.24          | digestive   |     |         |
|                        | LS Ch.25          | nervous   |     |         |
|                        |                   | endocrine   |     |         |
|                        |                   | integumentary   |     |         |
|                        | LS Ch. 26         | reproductive  |     |         |
|                        |                   |   |     |         |
|                        |                   | LS. 2.7.8   |     |         |
|                        |                   | Investigate functions of human body systems   |     |         |
|                        |                   |   |     |         |
|                        |                   | LS.2.7.9  |     |         |
|                        |                   | Describe interactions between major organ systems   |     |         |
|                        |                   |   |     |         |
|                        |                   |   |     |         |
|                        |                   |   |     |         |

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| Heredity and Reproduction |                   | LS.3.7.1  |     |      |
|                           |                   | Explain that the fertilized egg carries genetic information from each parent and multiples to form a complete organism                            |     |      |
|                           |                   |   |     |      |
|                           |                   | LS.3.7.2  |     |      |
|                           |                   | Distinguish between sperm cells and egg cells   |     |      |
|                           |                   |   |     |      |
|                           |                   | LS.3.7.3  |     |      |
|                           |                   | Compare and contrast the structure and function of the sperm cell and the egg cell in vertebrates and plants in their role in sexual reproduction |     |      |
|                           |                   |   |     |      |
|                           |                   | LS 3.7.4  |     |      |
|                           |                   | Investigate the development of embryos  |     |      |
|                           |                   |   |     |      |
|                           |                   | LS.3.7.5  |     |      |
|                           |                   | Dissect a poultry egg to analyze its structure(e.g., paper, plastic, or clay models, virtual dissection, or specimen dissection                   |     |      |
|                           |                   |   |     |      |
|                           |                   | LS.3.7.7  |     |      |
|                           |                   | Differentiate between sexual and asexual reproduction in vertebrates  |     |      |
|                           |                   |   |     |      |
|                           |                   | LS.3.7.8  |     |      |
|                           |                   | Identify the number and sources of chromosomes in human body cells  |     |      |

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|                                 |                   |  |     |      |
| Heredity and reproduction con't |                   | LS.3.7.9   |     |      |
|                                 |                   | Identify the number and source of chromosomes in human sex cells                   |     |      |
|                                 |                   |  |     |      |
|                                 |                   | LS.3.7.10  |     |      |
|                                 |                   | Explain the role of cell division  |     |      |
|                                 |                   |  |     |      |
|                                 |                   | LS.3.7.12  |     |      |
|                                 |                   | Summarize the interactions between organ systems in the maintenance of homeostasis |     |      |

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|----------------------------|-------------------|---|-----|-----------|
|                            |                   |   |     | 2 weeks   |
| Plant systems              | LS Ch 12-4        | LS.2.7.3  |     |           |
|                            |                   | Identify organ systems in vertebrates and plants  |     |           |
|                            |                   |   |     |           |
|                            |                   | LS.2.7.4  |     |           |
|                            |                   | Analyze the structure and function of tissues, organs, and organ systems of an angiosperm using models or methods of dissection |     |           |
|                            |                   |   |     |           |
|                            | LS 13-1           | LS.3.7.6  |     |           |
|                            |                   | Dissect a flower to analyze the reproductive system of angiosperms using models or methods of dissection                        |     |           |
|                            |                   |   |     |           |
|                            |                   | LS.3.7.7  |     |           |
|                            |                   | Differentiate between sexual and asexual reproduction in plants   |     |           |
|                            |                   |   |     |           |
| Ecology                    |                   |   |     |           |
| Populations and Ecosystems | LS Ch. 18-1       | LS.4.7.1  |     | 1.5 weeks |
|                            |                   | Explain the role of reproduction in the continuation of species.  |     |           |
|                            | LS Ch. 18-3       |   |     |           |
|                            |                   | Strand 4  |     |           |
|                            |                   | Students shall demonstrate and apply knowledge of populations and ecosystems  |     |           |
|                            |                   |   |     |           |
| Matter                     | PS Ch.1-1         | PS 5.7.1  |     |           |
|                            |                   | Explain how a small number of naturally occurring elements can result in the large variety of substances found in the world.    |     |           |

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|-------|-------------------|---|-----|------|
|       | PS Ch 1-3         | PS 5.7.2  |     |      |
|       |                   | Create models of common compounds   |     |      |
|       |                   | water   |     |      |
|       |                   | carbon dioxide  |     |      |
|       |                   | salt  |     |      |
|       |                   | iron oxide  |     |      |
|       |                   | ammonia   |     |      |
|       |                   | PS.5.7.3  |     |      |
|       |                   | Identify compounds as substances consisting of two or more elements chemically combined |     |      |
|       |                   | PS.5.7.4  |     |      |
|       |                   | Compare and contrast properties of compounds to those elements that compose them:       |     |      |
|       |                   | salt: sodium, chlorine  |     |      |
|       |                   | Water: hydrogen, oxygen   |     |      |
|       |                   | carbon dioxide: carbon, oxygen  |     |      |
|       | PS 6-1            | PS.5.7.5  |     |      |
|       |                   | Demonstrate techniques for forming a separating mixtures:                               |     |      |
|       |                   | mixing  |     |      |
|       |                   | magnetic attraction   |     |      |
|       |                   | evaporation   |     |      |
|       |                   | filtration  |     |      |
|       |                   | chromatography  |     |      |
|       |                   | settling  |     |      |
|       |                   |   |     |      |
|       |                   |   |     |      |
|       |                   |   |     |      |
|       |                   |   |     |      |

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|        |                                    |   |     |      |
|        |                                    | PS.5.7.6  |     |      |
|        |                                    | Classify substances as elements                                   |     |      |
|        |                                    | compounds   |     |      |
|        |                                    | mixtures  |     |      |
|        |                                    |   |     |      |
|        | PS 6-2                             | PS.5.7.7  |     |      |
|        |                                    | Distinguish among solvent, solute, and solution                   |     |      |
|        |                                    |   |     |      |
|        |                                    | PS.5.7.8  |     |      |
|        |                                    | Investigate the effects of variables of solubility rates          |     |      |
|        |                                    |   |     |      |
|        |                                    | PS.5.7.9  |     |      |
|        |                                    | Interpret solubility graphs                                       |     |      |
|        |                                    |   |     |      |
| Motion | PS Ch 10-1 thru 10-3               | PS.6.7.1  |     |      |
|        |                                    | Compare and contrast Newton's three laws of motion                |     |      |
|        |                                    |   |     |      |
|        |                                    | PS.6.7.2  |     |      |
|        | PS Ch 9 to reinforce Newton's Laws | Conduct investigations demonstrating Newton's first law of motion |     |      |
|        |                                    |   |     |      |
|        |                                    | PS.6.7.3  |     |      |
|        |                                    | Demonstrate Newton's second law of motion                         |     |      |
|        |                                    |   |     |      |
|        |                                    | PS.6.7.4  |     |      |
|        |                                    | Conduct investigations of Newton's third law of motion            |     |      |
|        |                                    |   |     |      |
|        |                                    |   |     |      |

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|-------|-------------------|---|-----|------|
|       |                   |   |     |      |
|       | PS Ch 13-1        | PS6.7.5   |     |      |
|       |                   | Explain how Newton's three laws of motion apply to real world situations (e.g., sports, transportation) |     |      |
|       |                   |   |     |      |

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| Topic         | Chapter/Resources    | Frameworks   | Lab | Time |
|---------------|----------------------|--|-----|------|
| Earth Systems |                      |  |     |      |
| Energy        | ES Ch. 5-1 and 5-2   | P.S.7.7.1  |     |      |
|               |                      | Identify natural resources used to supply energy needs                   |     |      |
|               | ES Ch. 5-3           | P.S.7.7.2 and P.S. 7.7.4   |     |      |
|               |                      | Describe the alternatives to the use of fossil fuels:                    |     |      |
|               |                      | solar energy   |     |      |
|               |                      | geothermal energy  |     |      |
|               |                      | wind   |     |      |
|               |                      | hydroelectric power  |     |      |
|               |                      | nuclear energy   |     |      |
|               |                      | biomass  |     |      |
|               |                      | P.S. 7.7.3   |     |      |
|               |                      | Conduct investigations to identify types of potential and kinetic energy |     |      |
| Atmosphere    | ES Ch. 15-1 and 15-2 | ESS.8.7.1  |     |      |
|               |                      | Describe the composition and physical characteristics of the atmosphere  |     |      |
|               |                      | ESS.8.7.16   |     |      |
|               |                      | Conduct investigations demonstrating the water cycle                     |     |      |
|               |                      | ESS.8.7.17   |     |      |
|               |                      | Explain the relationship between the water cycle and ground water        |     |      |
|               |                      |  |     |      |
|               |                      |  |     |      |
|               |                      |  |     |      |

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|---------|------------------------|--|-----|------|
|         |                        | ESS.8.7.2  |     |      |
|         |                        | Conduct investigations demonstrating the effects of solar energy on the atmosphere |     |      |
|         |                        |  |     |      |
|         | ES Ch. 15 -3           | ESS.8.7.3  |     |      |
|         |                        | Investigate the influence of global patterns on local weather:                     |     |      |
|         |                        | movement of air masses   |     |      |
|         |                        | coriolis effect  |     |      |
|         |                        | jet stream   |     |      |
|         |                        | global wind belts  |     |      |
|         |                        |  |     |      |
|         | ES. Ch 13 pgs 335-336  | ESS.8.7.4  |     |      |
|         | ES Ch. 14 pgs. 370-371 | Investigate the effects that oceans have on climate                                |     |      |
|         |                        |  |     |      |
|         |                        |  |     |      |
| Weather | ES Ch. 16 Sec 1-4      | ESS.8.7.5  |     |      |
|         |                        | Identify the elements of weather:  |     |      |
|         |                        | temperature  |     |      |
|         |                        | air pressure   |     |      |
|         |                        | wind speed   |     |      |
|         |                        | wind direction   |     |      |
|         |                        | humidity   |     |      |
|         |                        |  |     |      |
|         | ES Ch. 16 Sec 1        | ES.8.7.6   |     |      |
|         |                        | Conduct investigations using weather measurement devices:                          |     |      |
|         |                        | anemometers  |     |      |
|         |                        | barometers   |     |      |
|         |                        | sling psychrometer   |     |      |
|         |                        | thermometers   |     |      |
|         |                        | weather charts   |     |      |
|         |                        |  |     |      |
|         |                        |  |     |      |

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|-------|-----------------------|--|-----|------|
|       | ES Ch. 16 Sec 2 and 4 | ESS.8.7.7.   |     |      |
|       |                       | Predict weather conditions using the following   |     |      |
|       |                       | temperature  |     |      |
|       |                       | air pressure, highs, lows, fronts  |     |      |
|       |                       | clouds   |     |      |
|       |                       | wind speed   |     |      |
|       |                       | wind direction   |     |      |
|       |                       | humidity   |     |      |
|       |                       | ESS.8.7.18   |     |      |
|       |                       | Investigate cloud formation  |     |      |
|       | ES Ch. 16 Sec 3       | ES.8.7.8   |     |      |
|       |                       | Identify the causes and effects of weather related phenomena:  |     |      |
|       |                       | thunderstorms  |     |      |
|       |                       | tornadoes/hurricanes/cyclones/typhoons   |     |      |
|       |                       | drought  |     |      |
|       |                       | acid precipitation   |     |      |
|       |                       | ESS.8.7.9  |     |      |
|       |                       | Explain tornado belt weather patterns using a map of the United States   |     |      |
|       |                       | ESS.8.7.10   |     |      |
|       |                       | Describe ways that human beings protect themselves, others, and their property from adverse weather conditions |     |      |
|       |                       |  |     |      |
|       |                       |  |     |      |
|       |                       |  |     |      |

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|---------|-----------------------|--|-----|------|
| Climate | ES Ch. 17 Sec 1 and 2 | ESS.8.7.11   |     |      |
|         |                       | Describe and map climates of major Earth regions                                 |     |      |
|         |                       |  |     |      |
|         |                       | ESS.8.7.12   |     |      |
|         |                       | Analyze the effect of the shape of Earth and the tilt of Earth's axis on climate |     |      |
|         |                       |  |     |      |
|         | ES Ch. 17 Sec 3       | ESS.8.7.13   |     |      |
|         |                       | Identify and explain the effects that humans have on weather and atmosphere      |     |      |
|         |                       |  |     |      |
|         |                       | ESS.8.7.14   |     |      |
|         |                       | Describe causes and effects of acid precipitation                                |     |      |
|         |                       |  |     |      |
|         |                       | ESS.8.7.19   |     |      |
|         |                       | Conduct investigations demonstrating the greenhouse effect                       |     |      |
|         |                       |  |     |      |
|         |                       | ESS.8.7.20   |     |      |
|         |                       | Research how humans contribute to global warming                                 |     |      |
|         |                       |  |     |      |
|         |                       | ESS8.7.21  |     |      |
|         |                       | Explain examples of actual events that cause temporary climate changes:          |     |      |
|         |                       | volcanic dust  |     |      |
|         |                       | drought  |     |      |
|         |                       | meteor impact  |     |      |
|         |                       |  |     |      |
|         |                       |  |     |      |

7th Grade Pacing Guide  
Quarter 4

| Topic           | Chapter/Resources    | Frameworks   | Lab | Time |
|-----------------|----------------------|--|-----|------|
| Space           | ES Ch 19-2 and 19-2  | ESS.10.7.1   |     |      |
|                 |                      | Identify and model the causes of night and day   |     |      |
|                 |                      |  |     |      |
|                 | ES Ch 20-1 thru 20-3 | ESS 1.7.2  |     |      |
|                 |                      | Compare and contrast Earth's day to those of other planets in our solar system                   |     |      |
|                 |                      |  |     |      |
|                 |                      | ESS 10.7.3   |     |      |
|                 |                      | Identify and model the cause of planetary years  |     |      |
|                 |                      |  |     |      |
|                 |                      | ESS 10.7.4   |     |      |
|                 |                      | Compare and contrast Earth's years to those of other planets in our solar system                 |     |      |
|                 |                      |  |     |      |
|                 |                      | ESS 10.7.5   |     |      |
|                 |                      | Identify and model the causes of seasons   |     |      |
|                 |                      |  |     |      |
| Earth's History |                      |  |     |      |
|                 | ES Ch 6-4            | ESS.9.7.1  |     |      |
|                 |                      | Analyze to infer past atmospheric conditions based on the organisms found in the fossil record   |     |      |
|                 |                      |  |     |      |
|                 | ES Ch 2-1            | ESS.9.7.2  |     |      |
|                 |                      | Demonstrate that the Earth has a magnetic field that is detectable at the surface with a compass |     |      |
|                 |                      |  |     |      |
|                 |                      |  |     |      |
|                 |                      |  |     |      |

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| Topic | Chapter/Resources | Frameworks   | Lab | Time |
|-------|-------------------|--|-----|------|
|       |                   | ESS.9.7.3  |     |      |
|       |                   | Compare and contrast Earth's magnetic field to those of natural or human made magnets with |     |      |
|       |                   | North and South poles  |     |      |
|       |                   | lines of force   |     |      |
|       |                   |  |     |      |
|       |                   | ESS.9.7.5  |     |      |
|       |                   | Research ways in which people have used compasses  |     |      |
|       |                   |  |     |      |
|       | ES Ch 7-1         | Analyze the evidence of sea floor spreading  |     |      |
|       |                   | magnetic reversals   |     |      |
|       |                   | molten materials   |     |      |
|       |                   | drilling samples   |     |      |
|       |                   |  |     |      |