

| THE BRAIN: OUR SENSE OF SELF | | |
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| Utah Integrated Science Core Curriculum Standards: Grades 7 & 8 | | |
| Grade 7 | | |
| Lesson | Standard | Objective |
| 3 | 3:1.e | Gather information to report on how the basic functions of organisms are carried out within cells (e.g., extract energy from food, remove waste, produce their own food). |
| 3 | 3:2.a | Order the levels of organization from simple to complex (e.g., cell, tissue, organ, system, organism). |
| 3 | 3:2.b | Match a particular structure to the appropriate level (e.g., heart to organ, cactus to organism, muscle to tissue). |
| 3 | 3:2.c | Relate the structure of an organ to its component parts and the larger system of which it is a part. |
| 4 | 4:2.b | Cite examples of traits that provide an advantage for survival in one environment but not other environments. |
| 4 | 4:2.d | Relate the structure of organs to an organism's ability to survive in a specific environment. |
| Grade 8 | | |
| 2 | 4:4.e | Investigate and describe how engineers have developed devices to help us sense various types of energy (e.g., seismographs, eyeglasses, telescopes, hearing aids). |
| Utah Science Intended Learning Outcomes: Grades 7 & 8 | | |
| Lesson | ILO | Descriptor |
| 1, 2, 3, 4 | 1.a | Observe objects and events for patterns and record both qualitative and quantitative information. |
| 3, 4 | 1.b | Sort and sequence data according to a given criterion. |
| 1, 2, 3 | 1.c | Develop and use categories to classify subjects studied. |
| 4 | 1.d | Select the appropriate instrument; measure, calculate, and record in metric units, length, volume, temperature and mass, to the accuracy of instruments used. |
| 4 | 1.e | When given a problem, plan and conduct experiments in which they: Form research questions, discuss possible outcomes of investigations, identify variables, plan procedures to control independent variable(s), collect data on the dependent variable(s), select appropriate format (e.g., graph, chart, diagram) to summarize data obtained, analyze data and construct reasonable conclusions, and prepare written and oral reports of their investigation. |
| 2, 3, 4 | 1.f | Distinguish between factual statements and inferences. |
| 2, 3, 4 | 2.b | Raise questions about objects, events and processes that can be answered through scientific investigation. |
| 2, 3, 4, 5 | 2.c | Maintain an open and questioning mind toward ideas and alternative points of view. |
| 1, 2, 3, 4 | 2.d | Check reports of observations for accuracy. |
| 2, 3, 4, 5 | 3.a | Know and explain science information specified for their grade level. |

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| 2, 3, 4, 5 | 3.c | Compare concepts and principles based upon scientific criteria. |
| 2, 3, 4 | 3.d | Solve problems appropriate to grade level by applying science principles and procedures. |
| 2, 3, 4 | 4.a | Provide relevant data to support their inferences and conclusions. |
| 2, 3, 4, 5 | 4.b | Use precise scientific language in oral and written communication. |
| 2, 3, 4, 5 | 4.c | Use correct English in oral and written reports. |
| 2, 3, 4, 5 | 4.e | Use mathematical language and reasoning to communicate information. |
| 3 | 4.f | Construct models to describe concepts and principles. |
| 4, 5 | 5.a | Cite examples of how science affects life. |
| 2, 5 | 5.b | Give instances of how technological advances have influenced the progress of science and how science has influenced advances in technology. |
| 4, 5 | 5.c | Understand the cumulative nature of the development of science knowledge. |
| 2, 3, 4 | 6.a | Science is a way of knowing that is used by many people, not just scientists. |
| 2, 3, 4 | 6.b | Understand that science investigations use a variety of methods and do not always use the same set of procedures; understand that there is not just one "scientific method." |
| 2, 3, 4 | 6.c | Science findings are based upon evidence. |
| 2, 4, 5 | 6.d | Understand that science conclusions are tentative and therefore never final. Understandings based upon these conclusions are subject to revision in light of new evidence. |
| 2, 3, 4, 5 | 6.e | Understand that scientific conclusions are based on the assumption that natural laws operate today as they did in the past and that they will continue to do so in the future. |
| 2, 4, 5 | 6.f | Understand that various disciplines of science are interrelated and share common rules of evidence to explain phenomena in the natural world. |

Utah Mathematics Core Curriculum Standards: Math 7, Pre-Algebra, and Algebra I

Math 7

| Lesson | Standard | Objective |
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| 4 | 1:1.a | Demonstrate multiple ways to represent whole numbers, decimals, fractions, percents, and integers using models and real-life examples. |
| 4 | 1:5.a | Compute fluently using all four operations with integers and positive fractions and decimals. |
| 4 | 1:5.c | Solve application problems involving rational numbers. |
| 4 | 1:5.d | Determine if an answer is reasonable using estimation. |
| 4 | 3:2.c | Model real-world problems using graphs, tables, equations, manipulatives, and pictures. |
| 4 | 5:2.a | Display data using tables, scatter plots, and circle graphs. |

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| 4 | 5:2.b | Compare two similar sets of data on the same graph. |
| 4 | 5:2.d | Propose and justify inferences and predictions based on data. |
| Pre-Algebra | | |
| Lesson | Standard | Objective |
| 4 | 1:1.a | Compute fluently using all four operations with integers, and explain why the corresponding algorithms work. |
| 4 | 1:3.c | Solve problems involving rational numbers, percents, and proportions. |
| 4 | 3:3.e | Model real-world problems using graphs, tables, equations, manipulatives, and pictures, and identify extraneous information. |
| 4 | 5:2.a | Formulate questions that can be answered through data collection and analysis. |
| 4 | 5:2.e | Use graphical representations and numerical summaries to answer questions and interpret data. |
| Algebra I | | |
| Lesson | Standard | Objective |
| 4 | 1:2.c | Compute solutions to problems, represent answers in exact form, and determine the reasonableness of answers. |
| 4 | 4:1.a | Collect, record, organize, and display a set of data with at least two variables. |
| Utah Mathematics Intended Learning Outcomes: Grades 7 & 8 | | |
| Lesson | ILO | Descriptor |
| 4 | 2 | Become proficient problem-solvers by posing appropriate questions, selecting appropriate methods, employing a variety of strategies, and exploring alternative approaches. |
| 4 | 3 | Think logically, using inductive reasoning to formulate reasonable conjectures and using deductive reasoning for justification, formally and informally. |
| 4 | 4 | Cooperatively and independently explore mathematics, using inquiry and technological skills. |
| 4 | 5 | Make connections between mathematical ideas, between mathematics and other disciplines, and to life. |
| 4 | 6 | Communicate mathematics through verbal, written, and visual representations, using precise mathematical language and symbolic notation. |
| Utah Language Arts Core Curriculum Standards: Grades 7 & 8 | | |
| Grade 7 | | |
| Lesson | Standard | Objective |
| 2, 3, 4, 5 | 1:1.c | Determine word meaning through definition or explanation context clues. |

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| 2, 3, 4, 5 | 1:2.c | Retell, paraphrase and summarize from informational text. |
| 2, 3, 4, 5 | 1:2.d | Distinguish main idea and supporting details in text. |
| 2, 3, 4, 5 | 2:1.a | Retell significant events in sequence. |
| 2, 3, 4, 5 | 2:1.b | Summarize essential information from literary or informational text. |
| 2, 3, 4, 5 | 2:1.c | Connect text to self. |
| 2, 3, 4, 5 | 3:1.a | Establish a purpose for inquiry. |
| 2, 3, 4, 5 | 3:1.b | Gather relevant information to answer questions. |
| 2, 3, 4, 5 | 3:1.c | Validate the accuracy and relevance of information, discriminating between fact and opinion. |
| 2, 3, 4, 5 | 3:2.a | Select an appropriate format to report information. |
| All lessons | 3:2.b | Gather information on an idea or concept. |
| 2, 3, 4, 5 | 3:2.c | Report information using summarization. |
| 2, 3, 4, 5 | 3:3.a | Determine the purpose for communication (e.g., to respond to writing, to obtain a result, to convey ideas or information, to seek validation). |
| All lessons | 3:3.b | Use appropriate protocol for asking questions (e.g., turn taking, staying on topic, projecting adequately). |
| All lessons | 3:3.c | Use appropriate protocol for responding to questions (e.g., respecting others' contributions, staying on topic, projecting adequately). |
| All lessons | 3:3.d | Contribute constructively in classroom settings. |
| Grade 8 | | |
| 2, 3, 4, 5 | 1:1.c | Determine word meaning through definition or explanation context clues. |
| 2, 3, 4, 5 | 1:2.c | Infer meaning from explicit information in text. |
| 2, 3, 4, 5 | 1:2.d | Distinguish fact from opinion. |
| 2, 3, 4, 5 | 2:1.a | Organize events and ideas in order of importance. |
| 2, 3, 4, 5 | 2:1.b | Focus written facts or events around a clearly stated, unifying idea. |
| 2, 3, 4, 5 | 2:1.c | Connect text to self, text to world and text to text. |
| 2, 3, 4, 5 | 3:1.a | Formulate text-supported, open-ended questions for inquiry (i.e., literal, interpretive inferential, evaluative). |
| 2, 3, 4, 5 | 3:1.b | Choose information that best supports the focus of inquiry. |
| 2, 3, 4, 5 | 3:1.c | Distinguish between reliable and unreliable sources of information. |
| 2, 3, 4, 5 | 3:2.a | Select an appropriate format to demonstrate understanding. |
| 2, 3, 4, 5 | 3:2.c | Report information by paraphrasing, summarizing, and/or quoting from sources. |
| All lessons | 3:3.a | Determine the purpose for small group learning activities (e.g., to respond to writing, to acquire information, to present ideas, to clarify understanding). |
| All lessons | 3:3.b | Identify and assume responsibility for specific group tasks, including asking relevant questions. |

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| All lessons | 3:3.c | Respond appropriately to group members' questions and contributions. |
| 2, 3, 4, 5 | 3:3.d | Present group reports. |
| Utah Language Arts Intended Learning Outcomes: Grades 7 & 8 | | |
| Lesson | ILO | Descriptor |
| All lessons | 2.c | Develop thinking and language acquisition together through interactive learning. |
| All lessons | 4.a | Give and seek information in conversations, in group discussions, and in oral presentations. |
| All lessons | 4.b | Use questioning techniques to gain information. |
| All lessons | 4.c | Participate in and report on small group learning activities. |
| All lessons | 5.b | Access background knowledge to prepare to read and enjoy texts. |
| All lessons | 5.c | Use meta-cognition strategies during reading to monitor comprehension. |
| All lessons | 5.d | Improve comprehension by using strategies when meaning breaks down. |
| All lessons | 5.e | Retain information from and respond to text after reading. |
| All lessons | 6.e | Develop collaborative writing skills to prepare for workplace writing. |
| All lessons | 6.f | Understand that writing is a tool for thinking: solving problems, exploring issues, constructing questions, addressing inquiry. |
| All lessons | 6.g | Understand that reading and writing are interrelated: writers approach new reading experiences with enhanced appreciation for the text. |
| Utah Health Education Core Curriculum Standards: Grades 7 & 8 | | |
| 5 | 1:3.a | Describe factors that contribute to mental/emotional health; e.g., self-efficacy, resiliency, developmental assets, values, dreams, goals, positive risk-taking, sense of purpose. |
| 5 | 1:3.b | Describe factors that interfere with mental/emotional health; e.g., phobias, depression, chemical imbalance, unhealthy use of defense mechanisms, intolerance. |
| 5 | 2:1.b | Analyze the role of drugs in our society; e.g., treatment for mental or physical disorders, mood altering, escape. |
| 4 | 6:1.f | Describe the benefits of physical fitness. |
| 4, 5 | 7:2.a | Identify health issues that affect individuals and/or families. |