Unfield Trip Resources
C.C.S.S. & N.G.S.S.: Fourth Grade
Conections to Amazeum Exhibits

Fourth Grade

Exhibit Areas	Common Core Standards	Next Generation Science Standards
Nickelodeon Play Lab	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics.	✓ **4-PS3-1 –** Use evidence to construct an explanation relating the speed of an object to the energy of that object. ✓ **4-PS3-2 –** Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. ✓ **4-PS3-3 –** Ask questions and predict outcomes about the changes in energy that occur when objects collide. ✓ **4-PS3-4 –** Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. ✓ **4-ESS3-1 –** Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. ✓ **PS3.A:** Definitions of Energy. ✓ **PS3.B:** Conservation of Energy and Energy Transfer. ✓ **PS3.C:** Relationship Between Energy and Forces. ✓ **PS3.D:** Energy in Chemical Processes and Everyday Life. ✓ **ESS3.A:** Natural Resources: Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. ✓ **ETS1.A:** Defining Engineering Problems: Possible solutions to a problem have constraints. The success of a designed solution is determined by considering the desired features of a solution.

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Nature Valley Water Amazements	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-PS4-1 –** Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. ✓ **4-PS4-3 –** Generate and compare multiple solutions that use patterns to transfer information. ✓ **PS4.A:** Wave Properties ✓ **PS4.C:** Information Technologies and Instrumentation ✓ **ETS1.C:** Optimizing the Design Solution ✓ **4-ETS1-1 –** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. ✓ **4-ETS1-2 –** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. ✓ **4-ETS1-3 –** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. ✓ **ETS1.A:** Defining and Delimiting Engineering Problems. ✓ **ETS1.B:** Developing Possible Solutions. ✓ **ETS1.C:** Optimizing the Design Solutions. ✓ ***The same connections for Nickelodeon Play Lab can apply here as well.**

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General Mills Lift, Load, and Haul	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-ETS1-1 –** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. ✓ **4-ETS1-2 –** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. ✓ **4-ETS1-3 –** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. ✓ **ETS1.A:** Defining and Delimiting Engineering Problems: Possible solutions to a problem have constraints. The success of a designed solution is determined by considering the desired features of a solution. ✓ **ETS1.B:** Developing Possible Solutions: Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. ✓ **ETS1.C:** Optimizing the Design Solution: Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. ✓ ***The same connections for Nickelodeon Play Lab apply here as well.**

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Cave & Canopy Climber	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-PS4-2 –** Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. ✓ **4-LS1-1 –** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. ✓ **4-LS1-2 –** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. ✓ **PS4.B:** Electromagnetic Radiation ✓ **LS1.A:** Structure and Function ✓ **LS1.D:** Information Processing ✓ **4-ESS1-1 –** Identify evidence from patterns in rock formations and fossils in rock payers to support an explanation for changes in landscape over time. ✓ **4-ESS2-1 –** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. ✓ **4-ESS2-2 –** Analyze and interpret data from maps to describe patterns of Earth's features. ✓ **4-ESS3-2 –** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. ✓ **ESS1.C:** The History of Planet Earth ✓ **ESS2.A:** Earth Materials and Systems ✓ **ESS2.B:** Plate Tectonics and Large-Scale System Interactions ✓ **ESS2.E:** Biogeology ✓ **ESS3.B:** Natural Hazards ✓ **ETS1.B:** Designing Solutions to Engineering Problems

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The Homestead Cabin & Farm	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-ESS1-1 –** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landscape over time. ✓ **4-ESS2-1 –** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. ✓ **4-ESS2-2 –** Analyze and interpret data from maps to describe patterns of Earth's features. ✓ **4-ESS3-2 –** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. ✓ **ESS1.C:** The History of Planet Earth. ✓ **ESS2.A:** Earth Materials and Systems. ✓ **ESS2.B:** Plate Tectonics and Large-Scale System Interactions. ✓ **ESS2.E:** Biogeology. ✓ **ESS3.B:** Natural Hazards. ✓ **ETS1.B:** Designing Solutions to Engineering Problems. ✓ **4-PS4-2 –** Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. ✓ **4-LS1-1 –** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. ✓ **4-LS1-2 –** Use a model to describe that animals receive different types of information through their sense, process the information in their brain, and respond to the information in different ways. ✓ **PS4.B:** Electromagnetic Radiation. ✓ **LS1.A:** Structure and Function. ✓ **LS1.D:** Information Processing.

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The 3M Tinkering Hub	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-ETS1-1 –** Define a simple design problem reflecting a need or a want that includes specified criteria for a success and constraints on materials, time, or cost. ✓ **4-ETS1-2 –** Generate and compare multiple possible solutions to a problem to a problem based on how well each is likely to meet the criteria and constraints of the problem. ✓ **4-ETS1-3 –** Plan and carry out fair test in which variables are controlled and failure points are considered to identify aspects of a model or prototypes that can be improved. ✓ **ETS1.A:** Defining and Delimiting Engineering Problems: Possible solutions to a problem have constraints. The success of a designed solution is determined by considering the desired features of a solution. ✓ **ETS1.B:** Developing Possible Solutions: Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas and lead to improved designs. Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved. ✓ **ETS1.C:** Optimizing the Design Solution: Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints.

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Outdoor Playscape	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓ **4-PS4-2 –** Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. ✓ **4-LS1-1 –** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. ✓ **4-LS1-2 –** Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. ✓ **PS4.B:** Electromagnetic Radiation. ✓ **LS1.A:** Structure and Function. ✓ **LS1.D:** Information Processing ✓ **4-ETS1-1 –** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, and cost. ✓ **4-ETS1-2 –** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. ✓ **4-ETS1-3 –** Plan and carry out fair test in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. ✓ **ETS1.A:** Defining and Delimiting Engineering Problems. ✓ **ETS1.B:** Developing Possible Solutions. ✓ **ETS1.C:** Optimizing the Design Solution. ✓ **4-ESS1-1 –** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landscape over time. ✓ **4-ESS2-1 –** Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

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Energizer Weather & Nature	✓ **W.4.7 –** Conduct short research projects that build knowledge through investigations of different aspects of a topic. ✓ **W.4.8 –** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. ✓ **MP.2 –** Reason abstractly and quantitatively. ✓ **MP.4 –** Model with mathematics. ✓ **MP.5 –** Use appropriate tools strategically.	✓

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