

Appendix 1: Science D—Subjects & Skills

Week	Subjects	Skills
1	How plants and animals eat; Plant and animal traits; Engineering	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
2	How plants and animals move; Plant and animal traits; Leonardo da Vinci	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
3	How plants and animals protect themselves; Plant and animal traits; Problem solving	Developing and Using Models; Engaging in Argument from Evidence
4	How plants and animals disguise themselves; Plant and animal traits; Materials	Asking Questions and Defining Problems; Developing and Using Models
5	Symbiotic relationships found in nature; Machines	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
6	Intro to ecosystems; Animal communication; Cars	Developing and Using Models; Engaging in Argument from Evidence
7	Plant and animal reproduction; Intro to the life cycle; Power	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
8	Parasitic relationships; Animal homes; Robots	Constructing Explanations and Designing Solutions; Obtaining, Evaluating, and Communicating Information
9	How plants and animals survive in harsh climates; Plant and animal traits; Engineers	Asking Questions and Defining Problems; Engaging in Argument from Evidence
10	Plant traits; Reptiles; Amphibians; Mammals; Birds; Animal traits; Animal sight; Animal survival tactics; Extreme machines	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
11	Introduction to computer coding; Roller coasters	Constructing Explanations and Designing Solutions; Planning and Carrying Out Investigations
12	Introduction to computer coding; Earth's place in the solar system; Flying machines	Developing and Using Models; Engaging in Argument from Evidence
13	Seasons; Heat from the Sun; Earth's layers; Different rocks on the Earth's crust; The Wright brothers	Developing and Using Models; Analyzing and Interpreting Data
14	Fossil fuels found in the Earth's crust; Introduction to volcanoes; Jet engines	Developing and Using Models; Obtaining, Evaluating, and Communicating Information
15	Introduction to earthquakes; The atmosphere around the Earth; Nanotechnology	Asking Questions and Defining Problems; Developing and Using Models
16	Atmosphere to support life; Climates; Space engineers	Asking Questions and Defining Problems; Developing and Using Models
17	Tropical desert climate; Mediterranean climate; Temperate zones; Frigid zones; The affect of mountains on climate; Chemical engineers	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
18	Introduction to weather; Tunnels, canals, and bridges	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
19	How to measure and predict weather; How plants and animals eat; Intro to ecosystems; Underground engineering	Constructing Explanations and Designing Solutions; Developing and Using Models
20	Population growth; Food production; Weathering; Eiffel Tower	Constructing Explanations and Designing Solutions; Developing and Using Models
21	The affects of water on the formation of Earth and the lives of plant and animals; Skyscrapers	Developing and Using Models; Analyzing and Interpreting Data
22	The affects of the ocean on land; Introduction to oceans; What makes up a living organism; Bridges	Planning and Carrying Out Investigations; Developing and Using Models

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23	Parts of a plant; Different types of animals; Parts of an animal; Engineering experts	Developing and Using Models; Engaging in Argument from Evidence
24	Animal movement; Animal senses; How and what animals eat; Digestion and healthy eating; Circulatory system; Bioengineering	Developing and Using Models; Engaging in Argument from Evidence
25	Eating and exercising for health; Reproduction; Life cycle; Micro-organisms; Food chain; Ecosystems; Green engineering	Asking Questions and Defining Problems; Analyzing and Interpreting Data
26	Introduction to materials; Characteristics of materials; Uses for materials; Future of engineering	Developing and Using Models; Obtaining, Evaluating, and Communicating Information
27	States of matter; Materials and electricity; Materials and water; Earth's atmosphere; Mixing and separating matter; Changing matter; Steps of engineering	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
28	Introduction to forces; Gravity; Friction; Pressure; Magnetic forces; Elasticity; Buoyancy and density; Aerospace engineering	Asking Questions and Defining Problems; Engaging in Argument from Evidence
29	Simple machines; Types of energy; Kinetic and potential energy; Temperature as energy; Biomedical engineering	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
30	Thermal energy moving; Used energy; Fires; Practical energy uses; Fossil fuels; Energy in the human body; Chemical engineering	Constructing Explanations and Designing Solutions; Asking Questions and Defining Problems
31	Energy and the human body; The sun and the energy that it produces; How energy is made and used; Mechanical engineering	Planning and Carrying Out Investigations; Engaging in Argument from Evidence
32	Nuclear energy; Solar energy; Geothermal energy; Wind and water energy; Biomass energy; Electricity; Electrical Engineering	Planning and Carrying Out Investigations; Analyzing and Interpreting Data
33	Power plants; Fuels; Utilities; Electricity; Civil engineering	Asking Questions and Defining Problems; Engaging in Argument from Evidence
34	Introduction to light; Heat as energy; Introduction to sound; Introduction to waves; Geomatics	Planning and Carrying Out Investigations; Asking Questions and Defining Problems
35	Types and characteristics of waves; Computer engineering	Engaging in Argument from Evidence; Analyzing and Interpreting Data
36	More characteristics of waves; Inventions using waves; Hedy Lamarr; Famous scientists; Environmental engineering	Asking Questions and Defining Problems; Analyzing and Interpreting Data

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