Grade 6: Mission Possible (Understanding Earth and Space Systems)

Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 1: Making Models – *Philae* Comet Lander **2.2** use technological problem-solving skills to design, build and test devices (e.g., a sundial, a model of the earth's rotation around the sun) for investigating the motions of different bodies in the solar system **2.3** use scientific inquiry/research skills to investigate scientific and technological advances that allow humans to adapt to life in space **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids*, in oral and written communication **3.4** identify the technological tools and devices needed for space exploration (e.g., telescopes, spectroscopes, spacecraft, life-support systems)	

Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 2: Representing Mathematical Thinking **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space)	**Lesson 2: Representing Mathematical Thinking** **Number Sense and Numeration** - use estimation when solving problems involving the addition and subtraction of whole number and decimals, to help judge the reasonableness of a solution - determine and explain, through investigation using concrete materials, drawings and calculators, the relationship among fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50 and 100), decimal numbers, and percents (e.g., use a 10 x 10 grid to show that 1/4 = 0.25 or 25%) - represent ratios found in real life contexts, using concrete materials, drawings, and standard fractional notation

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Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 3: Comparing Parts of the Whole **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space)	**Lesson 3: Comparing Parts of the Whole** **Number Sense and Numeration** - use estimation when solving problems involving the addition and subtraction of whole number and decimals, to help judge the reasonableness of a solution - determine and explain, through investigation using concrete materials, drawings and calculators, the relationship among fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50 and 100), decimal numbers, and percents (e.g., use a 10 x 10 grid to show that 1/4 = 0.25 or 25%) - represent ratios found in real life contexts, using concrete materials, drawings, and standard fractional notation

Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 4: Making Connections – Fractions, Decimals, and Percents **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids* in oral and written communication **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space)	**Lesson 4: Making Connections – Fractions, Decimals, and Percents** **Number Sense and Numeration** - represent, compare and order fractional amounts with unlike denominators, including proper and improper fractions and mixed numbers, using a variety of tools (e.g., fraction circles, Cuisenaire rods, drawings, number lines, calculators) and using standard fractional notation - use estimation when solving problems involving the addition and subtraction of whole number and decimals, to help judge the reasonableness of a solution - determine and explain, through investigation using concrete materials, drawings and calculators, the relationship among fractions (i.e., with denominators of 2, 4, 5, 10, 20, 25, 50 and 100), decimal numbers, and percents (e.g., use a 10 x 10 grid to show that 1/4 = 0.25 or 25%) **Data Management and Probability** - read, interpret, and draw conclusions from primary data and from secondary data presented in charts, tables and graphs - compare, through investigation, different graphical representations of the same data

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Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 5: The Mission Launch **2.3** use scientific inquiry/research skills to investigate scientific and technological advances that allow humans to adapt to life in space **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids*, in oral and written communication **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space) **3.1** identify components of the solar system, including the sun, the earth, and other planets, natural satellites, comets, asteroids, and meteoroids, and describe their physical characteristics in qualitative terms (e.g., The earth's surface is very young; much of it is covered with water. The moon is the earth's only natural satellite. Comets are the largest objects in our solar system; their centres contain rock particles trapped in frozen liquid; their tails are made up of gas and dust.) **3.3** explain how humans meet their basic biological needs in space (e.g., obtaining air, water, and food and managing bodily functions) **3.4** identify the technological tools and devices needed for space exploration (e.g., telescopes, spectroscopes, spacecraft, life-support systems	**Lesson 5: The Mission Launch** **Data Management and Probability** - collect and organize discrete or continuous primary data and secondary data (e.g., electronic data from websites such as E-Stat or Census At Schools) and display the data in charts, tables, and graphs (including continuous line graphs) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales (e.g., with appropriate increments) that suit the range and distribution of the data, using a variety of tools (e.g., graph paper, spreadsheets, dynamic statistical software) - read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., sports data in the newspaper, data from the Internet about movies), presented in charts, tables, and graphs (including continuous line graphs)

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Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 6: Specialist Research **2.3** use scientific inquiry/research skills to investigate scientific and technological advances that allow humans to adapt to life in space **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids*, in oral and written communication **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space) **3.1** identify components of the solar system, including the sun, the earth, and other planets, natural satellites, comets, asteroids, and meteoroids, and describe their physical characteristics in qualitative terms (e.g., The earth's surface is very young; much of it is covered with water. The moon is the earth's only natural satellite. Comets are the largest objects in our solar system; their centres contain rock particles trapped in frozen liquid; their tails are made up of gas and dust.) **3.3** explain how humans meet their basic biological needs in space (e.g., obtaining air, water, and food and managing bodily functions) **3.4** identify the technological tools and devices needed for space exploration (e.g., telescopes, spectroscopes, spacecraft, life-support systems	**Lesson 6: Specialist Research** **Data Management and Probability** - collect and organize discrete or continuous primary data and secondary data (e.g., electronic data from websites such as E-Stat or Census At Schools) and display the data in charts, tables, and graphs (including continuous line graphs) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales (e.g., with appropriate increments) that suit the range and distribution of the data, using a variety of tools (e.g., graph paper, spreadsheets, dynamic statistical software) - read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., sports data in the newspaper, data from the Internet about movies), presented in charts, tables, and graphs (including continuous line graphs)

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Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 7: Home Group Connections **2.3** use scientific inquiry/research skills to investigate scientific and technological advances that allow humans to adapt to life in space **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids*, in oral and written communication **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space) **3.1** identify components of the solar system, including the sun, the earth, and other planets, natural satellites, comets, asteroids, and meteoroids, and describe their physical characteristics in qualitative terms (e.g., The earth's surface is very young; much of it is covered with water. The moon is the earth's only natural satellite. Comets are the largest objects in our solar system; their centres contain rock particles trapped in frozen liquid; their tails are made up of gas and dust.) **3.3** explain how humans meet their basic biological needs in space (e.g., obtaining air, water, and food and managing bodily functions) **3.4** identify the technological tools and devices needed for space exploration (e.g. telescopes, spectroscopes, spacecraft, life-support systems	**Lesson 7: Home Group Connections** **Data Management and Probability** - collect and organize discrete or continuous primary data and secondary data (e.g., electronic data from websites such as E-Stat or Census At Schools) and display the data in charts, tables, and graphs (including continuous line graphs) that have appropriate titles, labels (e.g., appropriate units marked on the axes), and scales (e.g., with appropriate increments) that suit the range and distribution of the data, using a variety of tools (e.g., graph paper, spreadsheets, dynamic statistical software) - read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data (e.g., sports data in the newspaper, data from the Internet about movies), presented in charts, tables, and graphs (including continuous line graphs)

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Science and Technology Curriculum Connections	Mathematics Curriculum Connections
Lesson 8: The Mission Plan **2.4** use appropriate science and technology vocabulary, including *axis, tilt, rotation, revolution, planets, moons, comets,* and *asteroids*, in oral and written communication **2.5** use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., use a graphic organizer to identify and order main ideas and supporting details for a report about how science and technology can help humans adapt to life in space)	