



America's Greatest History Attraction

CURRICULUM CONNECTIONS

Space Junk 3D IMAX Film

Michigan Science Grade Level & High School Content Expectations

Grade 2

S.RS.02.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

Grade 3

S.RS.03.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.03.17 Identify current problems that may be solved through the use of technology.

S.RS.03.17 Identify current problems that may be solved through the use of technology.

S.RS.03.18 Describe the effect humans and other organisms have on the balance of the natural world.

Grade 4

S.RS.04.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.04.16 Identify technology used in everyday life.

S.RS.04.17 Identify current problems that may be solved through the use of technology.

S.RS.04.18 Describe the effect humans and other organisms have on the balance of the natural world.

Grade 5

S.RS.05.15 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.05.17 Describe the effect humans and other organisms have on the balance in the natural world.

Grade 6

S.RS.06.15 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.06.17 Describe the effect humans and other organisms have on the balance of the natural world.

Grade 7

S.RS.07.15 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

S.RS.07.17 Describe the effect humans and other organisms have on the balance of the natural world.

Grades 9-12 Physics

P3.4D Identify the force(s) acting on objects moving with uniform circular motion (e.g., a car on a circular track, satellites in orbit).

Grades 9-12 Earth Science

E5.p1A Describe the motions of various celestial bodies and some effects of those motions.

Michigan Social Studies Grade Level & High School Content Expectations

Grade 6

G4.2.1 List and describe the advantages and disadvantages of different technologies used to move people, products, and ideas throughout the world.

Grades 9-12 World History & Geography

CG2 **Resources** *Explain the changes over the past 50 years in the use, distribution, and importance of natural resources (including land, water, energy, food, renewable, non-renewable, and flow resources) on human life, settlement, and interactions by describing and evaluating*

- change in spatial distribution and use of natural resources
- the differences in ways societies have been using and distributing natural resources
- social, political, economic, and environmental consequences of the development, distribution, and use of natural resources
- major changes in networks for the production, distribution, and consumption of natural resources including growth of multinational corporations, and governmental and non-governmental organizations
- the impact of humans on the global environment

Space Junk Educator's Guide

(<http://www.thehenryford.org/education/erb/SpaceJunkEdGuide.pdf>)

Educator guide to the IMAX film, *Space Junk*.

Michigan Science Grade Level & High School Content Expectations

Grade 2

S.IP.02.11 Make purposeful observation of the natural world using the appropriate senses.

S.IP.02.13 Plan and conduct simple investigations.

S.IP.02.14 Manipulate simple tools (ruler, meter stick, measuring cups, hand lens, thermometer, balance) that aid observation and data collection.

- S.IP.02.15** Make accurate measurements with appropriate units (meter, centimeter) for the measurement tool.
- S.IA.02.12** Share ideas about science through purposeful conversation.
- S.RS.02.11** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

Grade 3

- S.IP.03.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.13** Plan and conduct simple and fair investigations.
- S.IP.03.14** Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer).
- S.IP.03.15** Make accurate measurements with appropriate units (centimeters, meters, Celsius, grams, seconds, minutes) for the measurement tool.
- S.IA.03.12** Share ideas about science through purposeful conversation in collaborative groups.
- S.RS.03.11** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.03.17** Identify current problems that may be solved through the use of technology.
- S.RS.03.18** Describe the effect humans and other organisms have on the balance of the natural world.

Grade 4

- S.IP.04.11** Make purposeful observation of the natural world using the appropriate senses.
- S.IP.04.13** Plan and conduct simple and fair investigations.
- S.IP.04.14** Manipulate simple tools that aid observation and data collection (for example: hand lens, balance, ruler, meter stick, measuring cup, thermometer, spring scale, stop watch/timer, graduated cylinder/beaker).
- S.IP.04.15** Make accurate measurements with appropriate units (millimeters, centimeters, meters, milliliters, liters, Celsius, grams, seconds, minutes) for the measurement tool.
- S.IA.04.12** Share ideas about science through purposeful conversation in collaborative groups.
- S.RS.04.11** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.04.16** Identify technology used in everyday life.
- S.RS.04.17** Identify current problems that may be solved through the use of technology.
- S.RS.04.18** Describe the effect humans and other organisms have on the balance of the natural world.

Grade 5

- S.IP.05.12** Design and conduct scientific investigations.

- S.IP.05.13** Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens) appropriate to scientific investigations.
- S.IP.05.14** Use metric measurement devices in an investigation.
- S.RS.05.15** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.05.16** Design solutions to problems using technology.
- S.RS.05.17** Describe the effect humans and other organisms have on the balance in the natural world.
- S.RS.05.19** Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.

Grade 6

- S.IP.06.12** Design and conduct scientific investigations.
- S.IP.06.13** Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, models, sieves, microscopes) appropriate to scientific investigations.
- S.IP.06.14** Use metric measurement devices in an investigation.
- S.RS.06.15** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.06.16** Design solutions to problems using technology.
- S.RS.06.17** Describe the effect humans and other organisms have on the balance of the natural world.

Grade 7

- S.IP.07.12** Design and conduct scientific investigations.
- S.IP.07.13** Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, models, sieves, microscopes, hot plates, pH meters) appropriate to scientific investigations.
- S.IP.07.14** Use metric measurement devices in an investigation.
- S.RS.07.15** Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.07.16** Design solutions to problems using technology.
- S.RS.07.17** Describe the effect humans and other organisms have on the balance of the natural world.

Grades 9-12

Physics

- P1.1C** Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity—length, volume, weight, time interval, temperature—with the appropriate level of precision).
- P1.2E** Evaluate the future career and occupational prospects of science fields.
- P1.2f** Critique solutions to problems, given criteria and scientific constraints.
- P1.2g** Identify scientific tradeoffs in design decisions and choose among alternative solutions.

P3.4D Identify the force(s) acting on objects moving with uniform circular motion (e.g., a car on a circular track, satellites in orbit).

Earth Science

E1.1C Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the desired quantity—length, volume, weight, time interval, temperature—with the appropriate level of precision).

E1.2E Evaluate the future career and occupational prospects of science fields.

E1.2f Critique solutions to problems, given criteria and scientific constraints.

E1.2g Identify scientific tradeoffs in design decisions and choose among alternative solutions.

E5.p1A Describe the motions of various celestial bodies and some effects of those motions.