Impact Science

INTEGRATED Middle School Program for CA NGSS   Chart of Units

Grade 6 Unit	Anchor Phenomenon, Engineering Design Project/Inquiry Project	Performance Expectations covered (PEs)	# Lessons	# Days
1. Intro to Gr 6 Science	**Anchor:** What is dry ice? **IP:** Ice and dry ice investigations	(setting norms, practicing teamwork and SEPs)	13	17
2. Thermal Energy	**Anchor:** Can you really use energy from the Sun to cook food? **EDP:** Design a better solar cooker	MS-PS3-3, MS-PS3-4, MS-PS3-5, MS-ETS1-1, 1-2, 1-3, 1-4	14	26
3. Weather	**Anchor:** What causes different kinds of weather? **EDP:** Design or improve a weather instrument **IP:** What causes extreme weather phenomena?	MS-ESS2-4, MS-ESS2-5, MS-ETS1-1	16	23
4. Climate	**Anchor:** Why do places have such different climates? **EDP:** Design an ecotourism resort	MS-ESS2-6	12	16
5. Climate Change	**Anchor:** Can we do anything about climate change? **EDP:** Design a program as a class to lower carbon footprint, gather data to measure its effectiveness	MS-ESS3-3, MS-ESS3-5, MS-ETS1-1, 1-2, 1-3, 1-4	13	19
6. Cells	**Anchor:** What makes us sick? **EDP:** Design a magnifying device; Make a microbe-based food (optional) **IP:** Cancer	MS-LS1-1,1-2, 1-3 (start) MS-LS3-2 (start) MS-ETS1-1	25	33
7. Body Systems	**Anchor:** How does your body work? **EDP:** Design an organ donation and delivery system	MS-LS1-3 (cont.), MS-LS1-8 MS-ETS1-1	18	26
8. Traits and Survival	**Anchor:** Why are some species endangered? **IP:** Endangered species research project	MS-LS1-4, MS-LS1-5, MS-LS3-2 (cont.)	13	20

Anchor = Anchor Phenomenon   **IP** = Inquiry Project   **EDP** = Engineering Design Project

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Total: 180 days

Grade 7 Unit	Anchor Phenomenon, Engineering Design Project/Inquiry Project	Performance Expectations covered (PEs)	# Lessons	# Days
1. Intro to Gr 7 Science	**Anchor:** Who can be a scientist or engineer? **EDP:** Paper tower challenge	MS-ETS1-1, 1-2	11	13
2. Earth Systems	**Anchor:** How did the Grand Canyon form? **EDP:** Design a building for earthquakes	MS-ESS2-1, 2-2, 2-3, 3-2, MS-ETS1-1, 1-2, 1-3, 1-4	18	30
3. Properties of Matter	**Anchor:** What killed Blinky the fish? **EDP:** Design a density toy	MS-PS1-4, 1-2 (start) MS-ETS1-1	17	24
4. Elements and Compounds	**Anchor:** What is it made of? **EDP:** Design a crystal growing kit with package and instructions	MS-PS1-1, MS-PS1-3(start), MS-ETS1-1, 1-2	14	27
5. Physical and Chemical Changes	**Anchor:** How do hot/cold packs work? **EDP:** Design a hot or cold pack accessory	MS-PS1-2 (cont.) MS-PS1-5, 1-6, MS-ETS1-1, 1-2, 1-3, 1-4	16	19
6. Respiration and Photosynthesis	**Anchor:** What would you need for a Mars habitat? **IP:** Design an experiment to measure rate of photosynthesis or respiration. **EDP:** Design a sustainable Mars colony	MS-LS1-6, MS-LS1-7 MS-ETS1-1	14	20
7. Ecology	**Anchor:** How can we protect/restore ecosystems? **IP:** Ecosystem study, ecosystem restoration solutions	MS-LS2-1, 2-2, 2-3, 2-4, 2-5	19	28
8. Natural Resources	**Anchor:** How do we stop plastics pollution? **IP:** Recommend a solution to the plastics problem	MS-ESS3-1, MS-PS1-3(cont.)	10	19

Total: 180 days

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Grade 8 Unit	Anchor Phenomenon, Engineering Design Project/Inquiry Project	Performance Expectations (PEs)	# Lesson	# Days
1. Intro to Gr 8 Science	**Anchor:** How can we observe things that happen too slowly or quickly? **EDP:** Make a slow-motion or time lapse video	MS-ETS1-1	10	10
2. Motion and Forces	**Anchor:** How do we get astronauts safely to space and back? **EDP:** Design a capsule for safe landing	MS-PS2-1(start), 2-2, MS-ETS1-1, 1-2, 1-3, 1-4	29	32
3. Kinetic and Potential Energy	**Anchor:** How do we prevent concussions? **EDP:** Design and analyze safety equipment	MS-PS2-1(cont.), 3-1, 3-2, 3-5 (cont. from Th.Energy) MS-ETS1-1, 1-2, 1-3, 1-4	12	21
4. Electricity and Magnetism	**Anchor:** What is causing the Earth's magnetic field? **EDP:** Design an electrical system for a toy house	MS-PS2-3, 2-5, 3-2 MS-ETS1-1	17	22
5. Waves	**Anchor:** What are sound and light? What are they used for? **IP:** What makes a better cup phone? **EDP:** Design an art installation involving sound and light	MS-PS4-1, 4-2, 4-3	15	23
6. Earth's Place in the Universe	**Anchor:** Where are we in space? How do we know? **EDP:** Design an interactive model	MS-ESS1-1, 1-2, 1-3, MS-PS2-4	12	16
7. Geologic Time Scale	**Anchor:** Why did the dinosaurs go extinct? **IP:** Design a presentation on Earth's timeline, cite evidence	MS-ESS1-4	13	20
8. Evolution	**Anchor:** What causes these unusual traits? **IP:** Should genetic engineering be allowed?	MS-LS3-1, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6	17	22
9. Human Impact	**Anchor:** How do our choices affect our planet? **EDP:** Recommend a solution and present it to decision makers.	MS-ESS3-4	10	14

Total: 180 days

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