

EDUCATIONAL STANDARDS FRAMEWORK

Space Experiments — Competitive Coverage Heat Map

Investigation & data — science process at maximum intensity.

LESSON 08 · SPACE EXPERIMENTS

FRAMEWORKS TOUCHED 8 / 8 Full multi-disciplinary reach	STANDARDS ALIGNED 24 Discrete benchmarks scored	COMPOSITE COVERAGE 87% Weighted intensity, all standards	DOMINANT STRAND CCSS.ELA · NGSS Science Top two framework averages
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COVERAGE INTENSITY

- 0 · None
- 1 · Light
- 2 · Moderate
- 3 · Strong
- 4 · Very Strong
- 5 · Core / Dominant

Coverage by Framework

Average heat score per category (0–5)



Standard-by-Standard Heat Map

Each row = one benchmark · color & bar = relevance to this lesson

FRAMEWORK	STANDARD	HEAT	INTENSITY
NGSS Next Gen Science	Engineering Design 3-5-ETS1-2 Generate and compare multiple solutions to space-travel and space experiments engineering challenges.	4	80% · Strongly covered
	Physical Science 4-PS3-2 Evidence that energy can be transferred and transformed (e.g., experimental energy and matter transformations).	5	100% · Core / dominant
	Waves & Information 4-PS4-3 Integrate visual and sound-based data during space experiments and space experiments simulations.	5	100% · Core / dominant
ISTE EdTech Standards	Knowledge Constructor ISTE 3 Curate space-science info and prototype digital/physical models like experimental apparatus.	5	100% · Core / dominant
	Creative Communicator ISTE 6 Use multimedia tools to explain mission concepts and space experiments results.	5	100% · Core / dominant
	Global Collaborator ISTE 7 Collaborate digitally to simulate missions and share space experiments findings.	4	80% · Strongly covered
CSTA Computer Science	Programming 1B-AP-15 Test and debug Micro:bit programs to align space experiments behavior with mission goals.	4	80% · Strongly covered
	Variables in Programming 1B-AP-10 Use sensor data (light, motion) to control space experiments outputs.	5	100% · Core / dominant
	Program Development 2-AP-14 Develop programs iteratively: plan, code, test, revise, reflect.	5	100% · Core / dominant
CCSS.MATH Mathematics	Measurement 5.MD.A.1 Convert measurement units during space experiments planning and trajectory calculations.	5	100% · Core / dominant
	Geometry 5.G.B.3 Use shapes and spatial reasoning to plan space experiments layout or surface simulations.	3	60% · Moderately covered
	Geometry — Angles 4.G.A.1 Define angles, lines, segments while designing space experiments components.	3	60% · Moderately covered
CCSS.ELA Language Arts	Informational Text RI.4.3 Explain space-travel processes and purposes through research and observation.	5	100% · Core / dominant
	Writing W.5.2 Write mission reports, design explanations, or reflection journals.	5	100% · Core / dominant
	Speaking & Listening SL.5.5 Present space experiments findings using graphics, recordings, or digital media.	5	100% · Core / dominant
	Responding		

FRAMEWORK	STANDARD	HEAT	INTENSITY
NCAS National Core Arts	— Anchor Interpret design aesthetics and context of space experiments, habitats, and terrain simulations.	3	60% · Moderately covered
	Connecting — Anchor Apply personal insights to enrich mission simulations and space experiments design tasks.	3	60% · Moderately covered
	Creating — Anchor Design and refine space-themed visuals or models from peer feedback.	3	60% · Moderately covered
P21 21st-Century Skills	Critical Thinking — 4Cs Solve space experiments design and mission challenges through evidence-based reasoning.	5	100% · Core / dominant
	Creativity & Innovation — 4Cs Brainstorm and prototype unique solutions to space experiments scenarios.	4	80% · Strongly covered
	Collaboration — 4Cs Work in groups to plan, build, and evaluate space experiments tasks.	5	100% · Core / dominant
SEL Social-Emotional	Self-Management — CASEL Manage frustration during coding/debugging and stay focused.	4	80% · Strongly covered
	Social Awareness — CASEL Show empathy and appreciation for teammates' ideas during projects.	4	80% · Strongly covered
	Responsible Decision-Making — CASEL Make ethical, environmentally conscious decisions in space-tech design.	5	100% · Core / dominant

Strategic Read

Where the lesson dominates · where it leaves headroom

HOT ZONES

The strongest literacy lesson by far: **ELA Informational Text, Writing, and Speaking** all peak at 5/5. **NGSS Physical Science & Waves** max out, **ISTE Creative Communicator** hits 5, and **SEL Responsible Decision-Making** peaks at 5 thanks to ethical experimental practice.

COOL ZONES

NCAS sits flat at 3/3/3 — opportunity to layer in scientific-illustration as artistic responding. **5.G.B.3 Geometry** is the lowest math score (3/5).