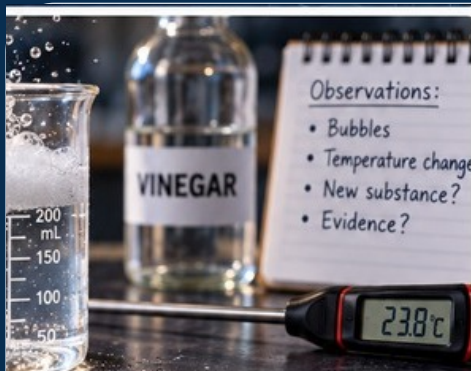


SCIENCE DECISION CASES

SCHOOL & INSTRUCTIONAL LEADER OVERVIEW

31 evidence-driven Grades 6-8 cases across Physical Science, Life Science, Earth & Space Science, and Engineering



Teach the science content. Make students use it.

A repeatable lesson structure for evidence, reasoning, revision, and defended conclusions - usually within one class period.

WHY DECISION CASES

FROM CONTENT COVERAGE TO CONTENT USE

A practical bridge between standards-aligned science content and the reasoning students are expected to perform.

Students can recognize vocabulary or recall a concept and still need structured opportunities to **analyze evidence, build models, explain, compare solutions, revise ideas, and defend conclusions**. Decision Cases make those moves part of the science lesson itself.



CONTENT + REASONING

Students work with science content while performing disciplinary reasoning - not after the content is “finished.”



SHORT, USABLE FORMAT

Most cases are designed for approximately 25-50 minutes, helping teachers add depth without turning every lesson into a multi-day project.



REVISION BUILT IN

A Challenge Reveal introduces new evidence so students must reconsider an initial claim rather than simply defend their first answer.



VISIBLE STUDENT THINKING

Decision Records, models, explanations, evaluations, and final defenses give teachers concrete evidence of how students are reasoning.

FOR SCHOOL AND INSTRUCTIONAL LEADERS

The collection is designed to give teachers a **consistent reasoning routine** across many science topics while preserving the content demands of each case. That makes the format useful not only as a classroom resource, but also as a possible common language for coaching, PLC discussion, enrichment, and department-level planning.

HOW A DECISION CASE WORKS

Students encounter a problem, commit to an idea, respond to new evidence, and revise their reasoning.

1 ENCOUNTER

A real-world-style phenomenon, problem, or decision creates an immediate reason to think.

2 EXAMINE EVIDENCE

Students work with multiple evidence sources: data, visuals, models, texts, or technical information.

3 INITIAL DECISION

Students make an initial claim, explanation, recommendation, or design choice and justify it.

4 CHALLENGE REVEAL

New evidence changes the situation, exposes a limitation, or challenges the initial reasoning.

5 REVISE

Students reassess the evidence and revise the claim, model, explanation, or recommendation.

6 DEFEND REASONING

Students defend the final conclusion using evidence, science ideas, and explicit reasoning.

WHY THE CHALLENGE REVEAL MATTERS

The structure deliberately makes **revision** part of the task. Students are rewarded for improving an idea when the evidence changes - a habit that supports scientific reasoning, productive academic discussion, and Claim-Evidence-Reasoning (CER) work.

31 CASES ACROSS MIDDLE SCHOOL NGSS SCIENCE

A broad library teachers can search by standard, topic, domain, or the kind of student work they want to emphasize.

31 SCIENCE CASES

Grades 6-8

28 DIRECT

At least one PE is performed in the core case.

3 SUPPORTING-ONLY

Strong instructional support; does not complete the full PE.

PHYSICAL SCIENCE + ENGINEERING

- Chemical reactions
- Forces & motion
- Energy
- Waves & information
- Engineering design

LIFE SCIENCE

- Cells & body systems
- Ecosystems
- Heredity
- Natural selection
- Biodiversity

EARTH + SPACE SCIENCE

- Earth-Sun-Moon
- Plate tectonics
- Weather & hazards
- Coastal change
- Geologic time

EXAMPLE ENTRY POINTS

REACTION OR NOT?

Chemical reactions

MS-PS1-2

THE COASTER TEST THEY STOPPED™

Kinetic energy

MS-PS3-1

THE PREDATOR THAT DISAPPEARED™

Ecosystems

MS-LS2-4

THE \$50,000 STRAWBERRY™

Heredity

MS-LS3-2

THE VOLCANO WARNING™

Natural hazards

MS-ESS3-2

THE ROCK LAYER THAT BROKE THE TIMELINE™

Geologic time

MS-ESS1-4 + MS-LS4-1

WHAT TEACHERS RECEIVE

Teacher-ready materials designed to support classroom use without requiring teachers to invent the reasoning structure themselves.

STUDENT CASE

Phenomenon, driving question, directions, and student-facing case materials.

EVIDENCE FILES

Multiple sources such as data, graphs, visuals, models, technical information, and texts.

DECISION RECORD

Structured space for initial claims, evidence, reasoning, revision, and final defense.

CHALLENGE REVEAL

A new piece of evidence or constraint that disrupts the initial conclusion.

TEACHER GUIDE + ANSWER SUPPORT

Learning goals, facilitation guidance, discussion prompts, sample/expected responses, and answer support.

STANDARDS + FACILITATION SUPPORT

NGSS alignment, timing, implementation notes, low-floor supports, and extensions where applicable.

IMPLEMENTATION PROFILE

25-50 MIN

Typical case range

LOW PREP

Print / project / facilitate

CER-CONNECTED

Claim, evidence, reasoning

FLEXIBLE USE

Core lesson, enrichment, intervention, PLC sample

PLANNING SUPPORT

FROM QUICK FIND TO FULL NAVIGATOR

Teachers can start with a free 2-page map, while bundle users receive the full 38-page Decision Case Navigator.

FREE QUICK-FIND MAP

MIDDLE SCHOOL NGSS DECISION CASE QUICK-FIND MAP™
PAGE 1 • FIND BY STANDARD OR DOMAIN

FREE TEACHER RESOURCE

START WITH: STANDARD TOPIC DOMAIN STUDENT WORK DIRECT SUPPORTING (See legend)

PHYSICAL SCIENCE + ENGINEERING PS1 + PS2 + PS3 + PS4 + PS5

PS1	PS2	PS3	PS4	PS5
PS1-1: Matter is made of particles	PS2-1: Motion and forces interact	PS3-1: Evidence of chemical reactions	PS4-1: Waves provide information about the world	PS5-1: Systems of energy and matter interact
PS1-2: Matter is conserved	PS2-2: Forces and motion are related	PS3-2: Chemical reactions can be observed	PS4-2: Waves transfer energy and information	PS5-2: Systems of energy and matter interact
PS1-3: Matter can be classified	PS2-3: Forces and motion are related	PS3-3: Chemical reactions can be observed	PS4-3: Waves transfer energy and information	PS5-3: Systems of energy and matter interact

LIFE SCIENCE LS1 + LS2 + LS3 + LS4

LS1	LS2	LS3	LS4
LS1-1: Organisms and systems of organisms interact	LS2-1: Ecosystems and the flow of energy and matter	LS3-1: Biological systems and the flow of information	LS4-1: Biological systems and the flow of information
LS1-2: Organisms and systems of organisms interact	LS2-2: Ecosystems and the flow of energy and matter	LS3-2: Biological systems and the flow of information	LS4-2: Biological systems and the flow of information
LS1-3: Organisms and systems of organisms interact	LS2-3: Ecosystems and the flow of energy and matter	LS3-3: Biological systems and the flow of information	LS4-3: Biological systems and the flow of information

EARTH + SPACE SCIENCE ESS1 + ESS2 + ESS3

ESS1	ESS2	ESS3
ESS1-1: Earth and space systems interact	ESS2-1: Earth and space systems interact	ESS3-1: Earth and space systems interact
ESS1-2: Earth and space systems interact	ESS2-2: Earth and space systems interact	ESS3-2: Earth and space systems interact
ESS1-3: Earth and space systems interact	ESS2-3: Earth and space systems interact	ESS3-3: Earth and space systems interact

UGEDU | FREE QUICK-FIND MAP

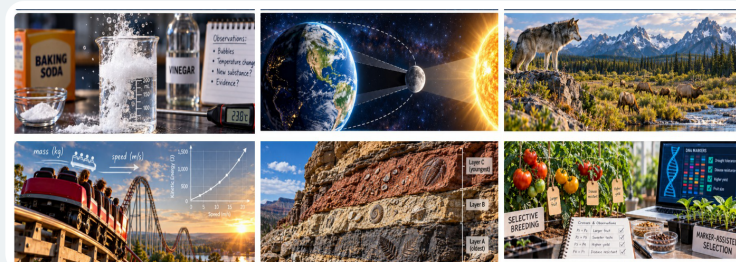
FULL 38-PAGE NAVIGATOR

Included with the 31-Case Bundle

MIDDLE SCHOOL NGSS DECISION CASE NAVIGATOR™

31 Science Decision Cases | Grades 6-8

Find the standard. Find the case. Teach the reasoning.



STANDARD

TOPIC

DOMAIN

STUDENT WORK

LOCATE > BROWSE > CHOOSE

UGEDU

MIDDLE SCHOOL NGSS DECISION CASE QUICK-FIND MAP™
PAGE 2 • FIND BY TOPIC OR BY WHAT STUDENTS DO

FREE TEACHER RESOURCE

KNOW MY TOPIC KNOW WHAT I WANT STUDENTS TO DO

KNOW MY TOPIC	KNOW WHAT I WANT STUDENTS TO DO
Earth & Space Science ESS1-1: Earth and space systems interact ESS1-2: Earth and space systems interact ESS1-3: Earth and space systems interact ESS2-1: Earth and space systems interact ESS2-2: Earth and space systems interact ESS2-3: Earth and space systems interact ESS3-1: Earth and space systems interact ESS3-2: Earth and space systems interact ESS3-3: Earth and space systems interact	Model MS-PS1-1: Matter is made of particles MS-PS1-2: Matter is conserved MS-PS1-3: Matter can be classified MS-PS2-1: Motion and forces interact MS-PS2-2: Forces and motion are related MS-PS2-3: Forces and motion are related MS-PS3-1: Evidence of chemical reactions MS-PS3-2: Chemical reactions can be observed MS-PS3-3: Chemical reactions can be observed MS-PS4-1: Waves provide information about the world MS-PS4-2: Waves transfer energy and information MS-PS4-3: Waves transfer energy and information MS-PS5-1: Systems of energy and matter interact MS-PS5-2: Systems of energy and matter interact MS-PS5-3: Systems of energy and matter interact

READY TO TEACH ONE OF THESE CASES?
Explore the complete 31-case bundle + full 38-page Navigator on TpT. Click here →

UGEDU | FREE NGSS DECISION CASE QUICK-FIND MAP

STANDARD

Find by NGSS PE

TOPIC

Find by science concept

DOMAIN

Browse curriculum area

STUDENT WORK

Choose by the thinking students do

HOW SCHOOLS CAN USE THE COLLECTION

Review the format, try a small pilot, and decide whether the reasoning routine supports local instructional priorities.

POSSIBLE SCHOOL / DEPARTMENT USES

- **COMMON REASONING ROUTINE**
Use the same Encounter -> Evidence -> Challenge -> Revise structure across science topics.
- **PLC / COACHING CONVERSATIONS**
Compare evidence use, misconceptions, revision quality, and facilitation moves.
- **ENRICHMENT OR INTERVENTION**
Use short cases by topic or student-work demand without adopting a full-year curriculum.
- **FORMATIVE EVIDENCE**
Use Decision Records and final defenses to see how students apply content, not just recall it.
- **CROSS-CLASSROOM PILOT**
Try the same case in multiple classes and compare teacher/student experience before broader use.

A SIMPLE REVIEW / PILOT

- 1 START FREE**
Use the 2-page Quick-Find Map to identify 2-3 cases relevant to current units.
- 2 TRY A SMALL SET**
Use cases in different domains or classrooms and gather feedback.
- 3 REVIEW THE EVIDENCE**
Discuss engagement, rigor, reasoning quality, pacing, and facilitation demands.
- 4 DECIDE THE SCALE**
Choose individual cases, department licenses, or the full 31-case collection.

EXPLORE



FREE QUICK-FIND MAP

Start with the free 2-page map.

OPEN ON TPT



31-CASE BUNDLE

31 cases + full 38-page Navigator.

OPEN ON TPT



TEACHER WAUGH STORE

Browse individual UGEDU resources.

OPEN ON TPT