

**Science In A Snapshot**

TEACHER RESOURCE — 2026 EDITION

# Teacher Handbook

Everything you need to bring Science In A Snapshot into  
your K–5 classroom with confidence.

 Grades K–5    16 Sections    Print-ready



## Welcome to Science In A Snapshot

---

**Science In A Snapshot (SIAS)** is a free, NGSS-aligned gallery of 213 science photographs, each paired with complete instructional content for grades K–5. Every photograph is a *phenomenon* — a real-world observation that anchors scientific thinking, launches inquiry, and drives meaningful classroom discourse.

Behind each image you'll find grade-differentiated discussion questions, vocabulary, a full 5E lesson structure, interactive hotspots, downloadable PDFs, a shareable student view, and much more. Whether you have five minutes or a full period, SIAS adapts to your instructional context.

### What Makes SIAS Different

Unlike a stock photo search or a generic image library, every photograph in SIAS was selected because it can anchor a specific NGSS performance expectation. The educational content — written by teachers and science educators — is built in from the ground up, not added as an afterthought. The same photograph serves a kindergartner noticing patterns and a fifth grader constructing evidence-based explanations, because the content is differentiated at six grade levels simultaneously — and available in English or Spanish at the tap of a toggle.

### Who This Handbook Is For

This guide is written for K–5 classroom teachers, science specialists, and instructional coaches who want to use SIAS with confidence from day one. You don't need to be a science content expert — SIAS does the content-differentiation work for you.

### How to Use This Handbook

- **New to SIAS?** Start with Section 02: Quick Start to get your first lesson running in five minutes.
- **Looking for a specific feature?** Use the Table of Contents on the right (or top, on mobile) to jump directly to any section.
- **Want a printed copy?** Click the **Download as PDF** button at the bottom-right corner of the screen and use your browser's print dialog to save as PDF.



#### ALWAYS FREE

All educational content on SIAS — photographs, lesson plans, discussion questions, student views, and PDFs — is free to access. No subscription, no paywall, no per-download fee. Ever.



#### SECTION 02

## Quick Start — Your First 5 Minutes

You can be ready to use SIAS in your next class in under five minutes. No setup, no accounts, no prep. Follow these six steps.

1

**Open the site.** Go to **sciencesnapshot.com** in any web browser — Chrome, Safari, Firefox, or Edge. No login is required to browse or view any educational content.

2

**Set your grade level.** Find the grade selector in the top navigation bar (appears after you scroll past the hero). Click your grade: K, 1st, 2nd, 3rd, 4th, or 5th. All content updates immediately to match that grade.

3

**Browse the gallery.** Scroll through the photo grid. Use the category tabs (Life Science, Earth & Space Science, Physical Science) to narrow the view, or type a keyword into the search bar.

4

**Open a photo.** Click any thumbnail. A modal window opens showing the photo and its Lesson tab automatically.

5

**Explore the content.** Read the phenomenon statement at the top of the Lesson tab, scan the discussion questions, and check the Downloads tab for ready-to-print PDFs.

6

**Share with students.** Click the **Student View** button in the modal tab bar to get a shareable link your students can open on their own devices. No student accounts needed.



#### ZERO-PREP FIRST LESSON

Project any photograph on your board, click **Sentence Stems** above the image, and give students 2 minutes to complete one stem in their science notebooks. This works on Day 1 with no preparation — and students immediately feel the pull of scientific thinking.



## Navigating the Gallery

---

The SIAS home page has three distinct zones: a hero section at the top, a sticky navigation bar, and the gallery grid itself. Here's what lives in each zone.

### Hero Section

The first screen you see when you arrive. It introduces the site and provides four starting points:

**BUTTON**

#### Overview

A short video introducing SIAS. Useful for sharing with colleagues, administrators, or parents at curriculum night.

**BUTTON**

#### Tutorial

An in-app guided walkthrough of every major feature. Highly recommended for your first visit — takes about 4 minutes.

**BUTTON**

#### Phenomena

Downloads a classroom reference guide: *Phenomena in Grades K–5* — a concise overview of anchoring phenomena in science instruction.

**BUTTON**

#### Explore Gallery

Smoothly scrolls past the hero to the gallery grid — the fastest path to the photographs if you've visited before.

### Sticky Navigation Bar

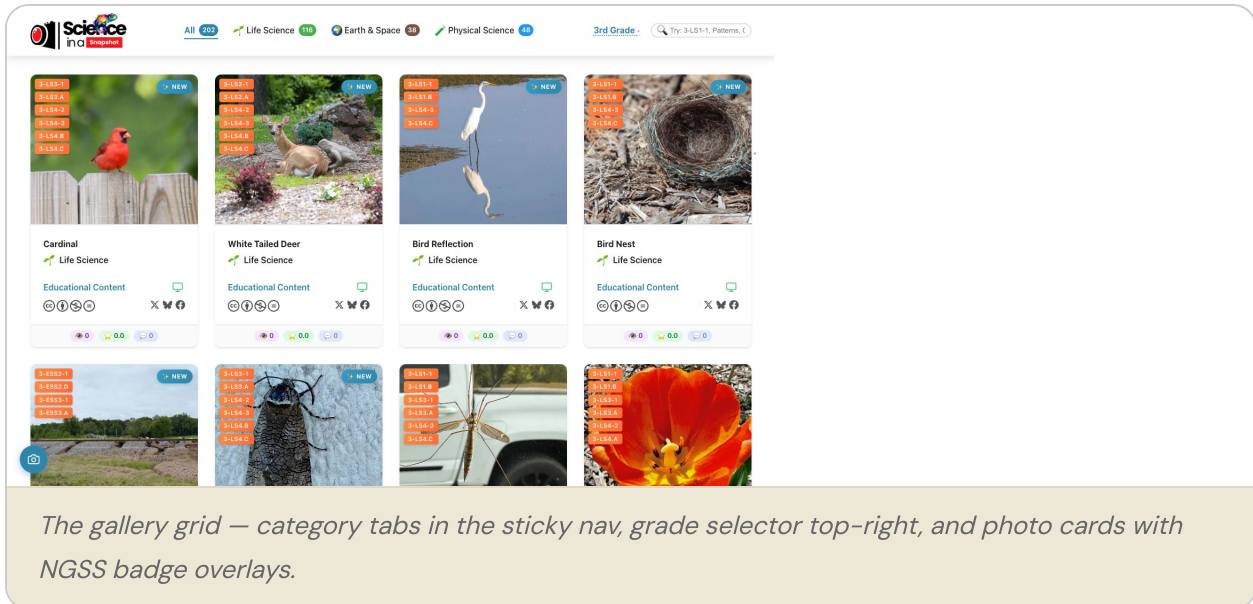
Once you scroll past the hero, a bar sticks to the top of the browser window. Working left to right:

- **SIAS Logo** — click to scroll back to the top of the page.
- **Category Tabs** — All | Life Science | Earth & Space Science | Physical Science. Clicking any tab filters the entire gallery instantly.
- **Grade Selector** — a dropdown showing K through 5th. This sets the grade for all content sitewide — it affects every photo you open until you change it.
- **Search Bar** — real-time search by keyword or NGSS code. Covered in detail in Section 04.

## Gallery Grid

The main gallery displays photographs as cards. Each card shows the thumbnail, the photo's title, and its science category badge. Click any card to open the full educational content in a modal window.

Below the sticky nav, before the gallery, is a second filter row with Collections, Storylines, and SEP/CCC filter buttons. The SEP/CCC filters are covered later in this section; Collections and Storylines are covered in Sections 11–13.



The gallery grid — category tabs in the sticky nav, grade selector top-right, and photo cards with NGSS badge overlays.



### GRADE-LOCKED BOOKMARK

Select your grade in the nav, then bookmark the page. Your grade selection persists, so every time you open the bookmark you'll be immediately in the right grade view — no clicking required.



### SECTION 04

## Search & Filter

SIAS offers multiple overlapping ways to find the right photograph for your lesson. Use search for speed, filters for precision, and sort to surface the most-used choices from the teacher community.

## Smart Search Bar

The search bar handles two types of input simultaneously:

- **Keywords** — type any word that might appear in a photo's title or content (e.g., *butterfly*, *erosion*, *reflection*, *seed*). Results update as you type.
- **NGSS Standard Codes** — type a performance expectation code (e.g., *1-LS1-1*, *ESS2-1*, *PS4*) and an autocomplete dropdown appears. Select a standard to filter the gallery to every photograph aligned to that expectation.



#### NGSS CODE SEARCH

If you're planning a unit around a specific standard, searching by code is the fastest path to aligned content. Type the DCi abbreviation (e.g., *LS1*, *ESS2*, *PS2*) to browse all photographs touching that Disciplinary Core Idea without memorizing exact codes.

## Science Category Filters



Life Science



Earth & Space Science



Physical Science

The three category tabs in the sticky nav filter the gallery instantly. Combine with search or the filters below for more precise results.

## Crosscutting Concepts (CCC) Filter

In the filter row below the gallery header, click any of the seven NGSS Crosscutting Concepts to show only photographs tagged with that lens:

- Patterns · Cause and Effect · Scale, Proportion, and Quantity
- Systems and System Models · Energy and Matter
- Structure and Function · Stability and Change

## Science & Engineering Practices (SEP) Filter

Similarly, the SEP filter lets you find photographs associated with specific practices — from *Asking Questions and Defining Problems* to *Obtaining, Evaluating, and Communicating Information*. Useful when you want to plan a lesson around a particular practice rather than a content standard.

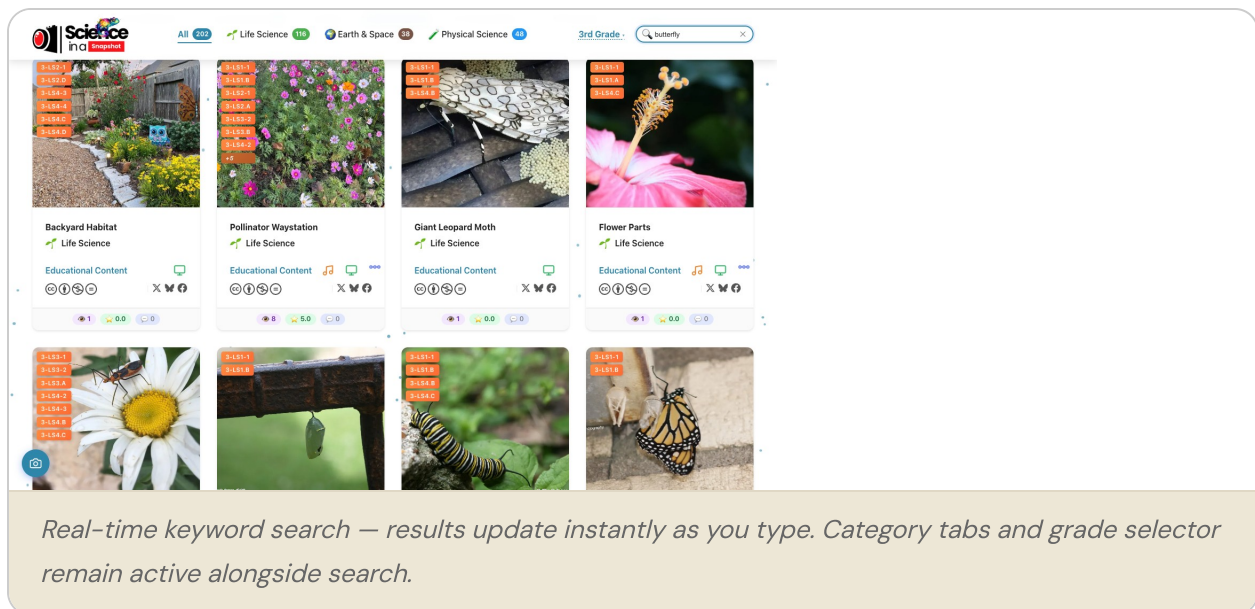
## Sort Options

The Sort dropdown lets you reorder the gallery in six ways:

- **Newest First** — recently added photographs at the top (default view)
- **Oldest First** — reverse chronological, shows the original collection
- **Top Rated** — community star-rating leaders first
- **Most Viewed** — most frequently opened photographs
- **Most Popular** — combined engagement score
- **Has Song** — filters to photographs that include an accompanying song resource

## Active Filter Pills

When a filter is active, a pill appears below the filter row showing exactly what's applied. Click the ✕ on any pill to remove that filter. This makes it easy to layer and then individually peel back filters without losing your place in the gallery.



### SECTION 05

## Grade-Level Differentiation

Every photograph in SIAS carries six complete, distinct sets of educational content — one for each grade K through 5. Switching grades doesn't just simplify language; it fundamentally changes the cognitive demands, question structures, and instructional framing to match developmental readiness at each level.

## Two Ways to Change the Grade

- **Gallery-level selector** (sticky nav dropdown) — sets the grade for all content sitewide. Affects the gallery and every photo you open until changed.
- **Modal-level grade buttons** — appear inside an open photo at the top of the modal. Click any grade button to switch that single photo's content in real time, without closing or reloading the modal.



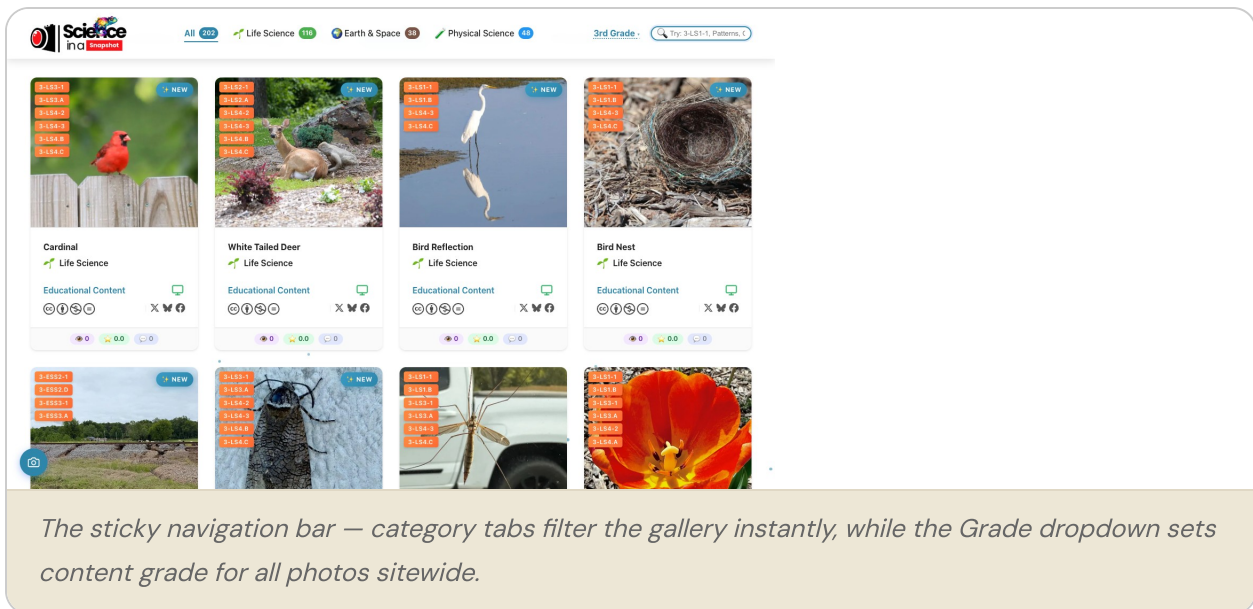
## What Changes By Grade Band

### K–2 BAND

- Phenomenon framed in concrete, observable, sensory terms
- Discussion questions focus on noticing and describing
- Vocabulary limited to 3–4 essential terms with simple definitions
- Engineering challenge uses familiar materials and simple design constraints
- Lesson scaffolds include more teacher-facilitation language
- Vocabulary activities use picture association and matching

### 3–5 BAND

- Phenomenon includes mechanisms, cause-effect, and pattern explanation
- Discussion questions demand evidence-based reasoning and explanation
- Vocabulary expands to 5–7 domain-specific terms with scientific definitions
- Engineering challenge includes constraints, criteria, and iteration expectation
- Lessons include CER (Claim-Evidence-Reasoning) structure
- Vocabulary activities include flashcard and matching game modes



### SPLIT-GRADE CLASSROOMS

If you teach a split grade (e.g., 2nd/3rd), open the modal and use the grade buttons to switch between grades during discussion. Both groups engage with the same photograph and phenomenon — but you scaffold the thinking separately using grade-appropriate discussion questions from each view.

## Switching the Language (English / Spanish)

Next to the grade buttons at the top of every open lesson is an **EN / ES toggle**. Tap **ES** and the lesson — photo description, phenomenon, core concepts, discussion questions, and vocabulary — re-renders in Spanish, instantly and in place, at whatever grade level you're viewing. Tap **EN** to switch back. The toggle appears on photo lessons, video lessons, and the Student View, and your choice carries over from one lesson to the next until you change it.

- **Whole-lesson translation** — not just labels. The student-facing science reads naturally in Spanish for the grade level shown.
- **Bilingual vocabulary** — science terms appear in Spanish with the English term in parentheses, e.g. *fotosíntesis* (*photosynthesis*) — building academic language in both languages at once.
- **Standards stay in English** — NGSS codes and performance-expectation text are left untranslated so they match the standards documents teachers reference.
- **Graceful fallback** — if a Spanish version isn't available for a particular lesson, it stays in English rather than showing a gap. New photos and videos are translated automatically as they're added, online and in the offline desktop app.



#### A NOTE ON THE SPANISH

The Spanish translations are AI-generated, like the rest of the lesson content. They read well and preserve the science, but — as with all AI-generated material — give a lesson a quick review before relying on it, especially in a bilingual classroom.



#### SECTION 06

## Photo Viewer & Hotspots

When you click a photograph, a modal window opens. The lower portion of the modal contains the **Photo Viewer** — an interactive image panel with several overlay modes, controlled by a row of toggle buttons above the image.

### Viewer Toggle Buttons

- **Image Only** — displays the photograph with no overlays. Ideal for initial silent observation ("What do you notice?") before introducing any labels or structure.
- **Hotspots** — enables numbered, interactive dots placed directly on significant parts of the photograph. Click any dot to reveal a labeled tooltip with a scientific fact about that feature.
- **Sentence Stems** — overlays four research-backed language scaffolds on the image, designed to lower the barrier to scientific observation and discourse. See below for the four stems.
- **Student View** (also a tab bar button) — toggles a preview of what students see on the Student View page.
- **Content** — opens the educational content panel (the five tabs at the top of the modal).

### Interactive Hotspots

Hotspots are numbered circles placed by science educators on scientifically significant parts of the photograph. They turn a static image into an annotated field diagram. A strategic teaching sequence:

- 1 Show the image in **Image Only** mode. Ask: *"What do you notice? What do you wonder?"*
- 2 Switch to **Hotspots**. Ask students to *predict* what each numbered dot might label before you reveal it.

3

Click a dot to reveal the label and scientific fact tooltip. Connect the vocabulary to the Vocabulary section in the Lesson tab.

4

Ask: *"Did any hotspot surprise you? Which one connects to something you already knew?"*

## Sentence Stems Overlay

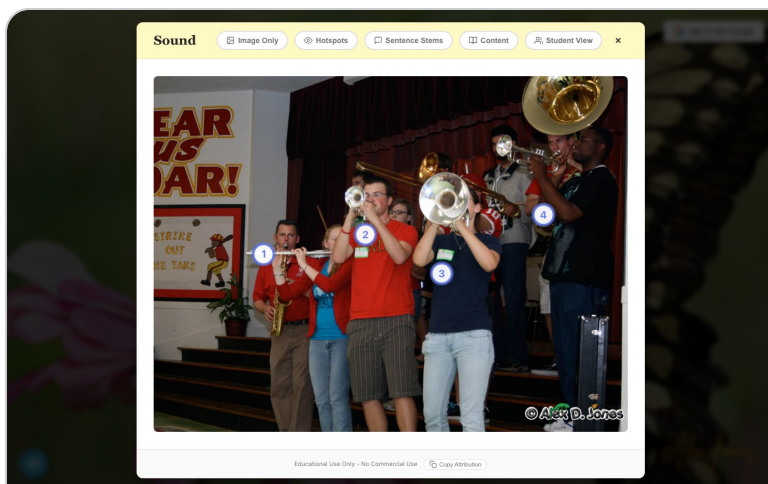
The four stems displayed when you enable this mode are research-validated language scaffolds for scientific observation:

- *"I notice \_\_\_\_\_, and I wonder \_\_\_\_\_."*
- *"This reminds me of \_\_\_\_\_ because \_\_\_\_\_."*
- *"If I could ask this [object] one question, I'd ask \_\_\_\_\_."*
- *"One thing that might be changing here is \_\_\_\_\_."*



### SCIENCE NOTEBOOK ENTRY

Project the photo with Sentence Stems enabled. Ask students to choose one stem and complete it in their science notebooks. Give 2–3 minutes of silent writing, then a pair share. This routine requires zero preparation and works with any photograph in the gallery.



*The Hotspots overlay — numbered dots placed by science educators highlight significant features. Click any dot to reveal a labeled tooltip.*

## Navigating Between Photos

Previous and next arrow buttons inside the modal let you move through the gallery without closing and reopening. Your current tab selection stays active as you navigate — a useful feature when running a Storyline sequence (Section 11) or comparing photographs.



SECTION 07

## The Lesson Tab

Lesson

Discussion

Standards

Downloads

Community

The **Lesson** tab is the default tab when you open any photograph and contains the richest instructional content on the site. It is designed to support a complete class session without requiring any additional materials.

### Start with Wonder (Notice & Wonder)

Every lesson now opens with a **Start with Wonder** band — a short, student-driven inquiry routine. Rather than explaining the science *to* students first, it invites them to observe the phenomenon, generate their *own* questions, and decide what to investigate. Use it in the first five minutes, before any content:

- **Notice** — open-ended observation prompts ("What do you notice about...?") that work at any grade.
- **Wonder** — sentence-started wonderings in the students' voice ("I wonder...") to surface curiosity.
- **Driving Question** — the single anchoring question this photo can launch a lesson around.
- **Questions students might post** — example questions in authentic kid voice, to seed a class Driving Question Board.
- **Investigate next & Figure out** — a concrete next step, plus a closing reflection to capture what was figured out and what new questions remain.

The band is **grade-banded**: it re-tunes automatically as you change the grade selector — concrete, everyday language for **K–2**, and science vocabulary with cause-and-effect reasoning for **3–5**. A one-click link prints a blank **Notice & Wonder T-chart** so students can record their own observations and questions.

## Phenomenon Statement

Each photo opens with a grade-level phenomenon statement — a brief, compelling description of what is happening in the photograph, written from a student's perspective and at the appropriate reading level. This is your discussion launch point. Consider displaying it on your board before showing the image, as a hook: *"Let me read you something interesting before I show you the photo..."*

## 5E Lesson Structure

Every photograph comes with a full 5E instructional framework. Each phase includes specific, photo-grounded activities — not generic instructions:

- **Engage** — hooks, phenomenon-based prompts, and prior knowledge activators
- **Explore** — hands-on or observation-based activities tied directly to the photograph and phenomenon
- **Explain** — teacher-facilitated sense-making, vocabulary instruction, and conceptual connection
- **Elaborate** — extension activities, real-world application, and cross-curricular connections
- **Evaluate** — assessment prompts, exit ticket questions, and reflection activities

## Discussion Questions

Questions are labeled with **Bloom's Taxonomy levels** so you can intentionally scaffold cognitive demand during a class period — beginning with Remember/Understand to surface prior knowledge, then moving into Analyze, Evaluate, and Create for deeper discourse. Discussion questions are also available in their own dedicated tab (Section 08).

## Teaching Tips

Specific, photograph-level guidance from science educators — common student misconceptions to address, productive struggle points to anticipate, and instructional moves that have worked especially well with that particular image.

## UDL Strategies

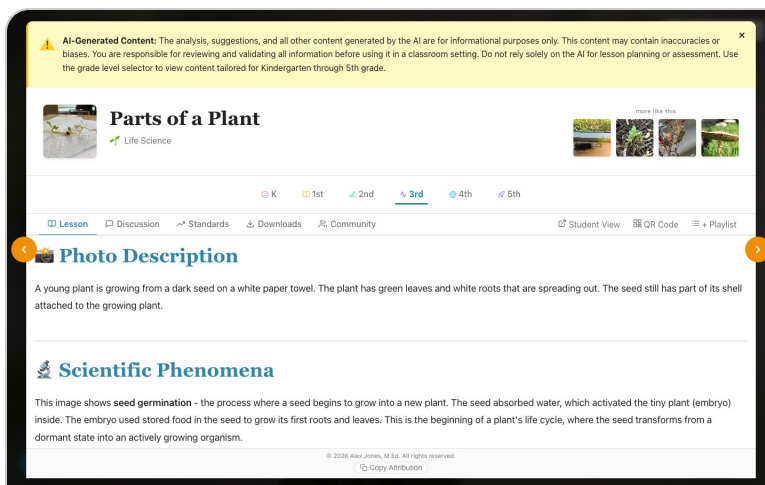
Each lesson includes Universal Design for Learning (UDL) strategies addressing multiple means of representation, expression, and engagement. These allow you to reach learners with diverse needs without a separate modified lesson plan.

## Cross-Curricular & STEM Career Connections

Every lesson ends with explicit connections to **ELA** (writing prompts, reading tie-ins), **mathematics** (measurement, data interpretation, patterns), and at least one **STEM career** that relates to the phenomenon — grounding the lesson in real-world professional relevance for students.

## Vocabulary Routine

The **Vocabulary** section carries a reminder to introduce terms *after* students describe the idea in their own words (rather than front-loading definitions), and to post them on a class **Word Wall**. Terms that recur across many lessons are tagged with a small "**builds over time**" badge, so you can flag the cross-cutting academic vocabulary students will keep meeting from Kindergarten through 5th grade.



*The photo modal — grade buttons at top, five main tabs, and full lesson content including phenomenon statement, 5E structure, discussion questions, and teaching tips.*



### FULL-PERIOD LESSON

The Lesson tab alone can support a complete 45–60 minute science period: phenomenon intro → 5E explore activity → discussion questions → vocabulary → evaluate exit ticket. No additional planning resources required.



## Discussion Tab

Lesson

**Discussion**

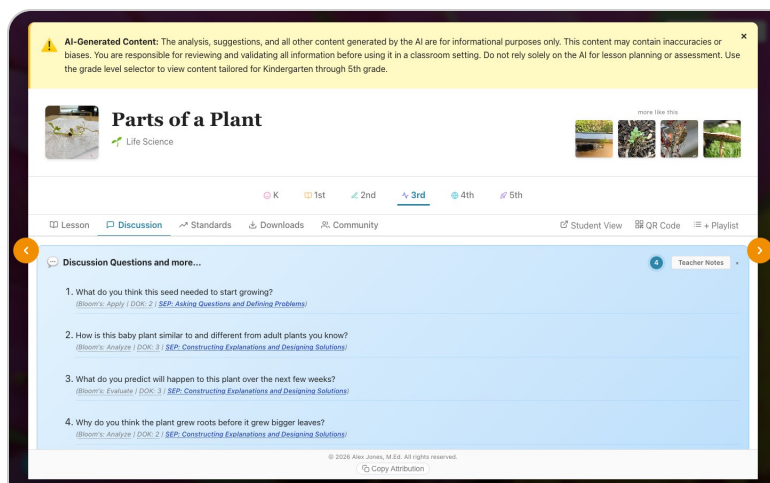
Standards

Downloads

Community

The Discussion tab surfaces the full grade-level set of discussion prompts with **Depth of Knowledge (DOK)** and **Bloom's Taxonomy** classifications labeled on each question. Use this tab when you want to deliberately select questions at a target cognitive level, or to compare how the same phenomenon is interrogated differently across DOK levels 1 through 4.

These prompts are ideal for structured Science Talk routines: whole-class discussions, small-group discourse, or partner think-pair-shares. The DOK labels help you scaffold a progression within a single class period.



*The Discussion tab — every question carries its Bloom's level, DOK level, and the SEP it calls for, so you can pick prompts at a deliberate cognitive level.*

## Standards Tab

Lesson

Discussion

**Standards**

Downloads

Community

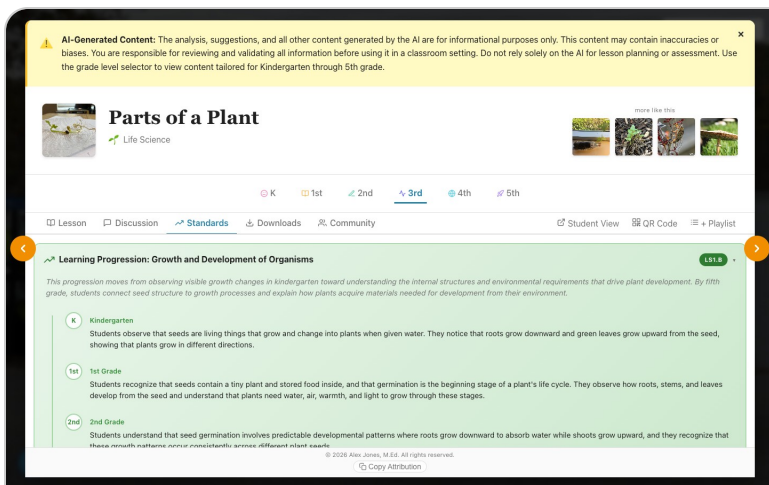
The Standards tab displays the complete NGSS alignment for the photograph, organized by:

- **Performance Expectations (PE)** — what students should be able to do as a result of engaging with this phenomenon
- **Disciplinary Core Ideas (DCI)** — the science content knowledge anchored by this image

- **Crosscutting Concepts (CCC)** — the thinking framework most applicable to reasoning about this photograph

Each standard is a clickable link opening the official NGSS website entry for that expectation — useful for lesson plan documentation, administrator walkthroughs, and IEP/504 alignment documentation.

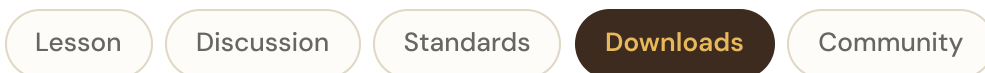
The tab also includes **3-Dimensional Learning Goals** — one or two goals that *braid* a Science & Engineering Practice (SEP), a Crosscutting Concept (CCC), and a Disciplinary Core Idea (DCI) into a single "students will..." statement, each paired with a short "**Look & listen for**" list of observable evidence to watch for during instruction. This gives you a three-dimensional formative-assessment target for the lesson at a glance.



The screenshot shows a digital interface for a lesson titled "Parts of a Plant" under the "Life Science" category. At the top, there is a yellow banner with a warning icon and text: "AI-Generated Content: The analysis, suggestions, and all other content generated by the AI are for informational purposes only. This content may contain inaccuracies or biases. You are responsible for reviewing and validating all information before using it in a classroom setting. Do not rely solely on the AI for lesson planning or assessment. Use the grade level selector to view content tailored for Kindergarten through 5th grade." Below this, the page title "Parts of a Plant" is displayed next to a small image of a plant. To the right of the title are four small thumbnail images labeled "more like this". Below the title is a navigation bar with tabs for "Lesson", "Discussion", "Standards", "Downloads", and "Community". The "Standards" tab is currently selected. Below the navigation bar, the "Learning Progression: Growth and Development of Organisms" is shown. It includes a description: "This progression moves from observing visible growth changes in kindergarten toward understanding the internal structures and environmental requirements that drive plant development. By 5th grade, students connect seed structure to growth processes and explain how plants acquire materials needed for development from their environment." Below this description are three grade-level boxes: "Kindergarten", "1st Grade", and "2nd Grade", each with a brief description of student learning goals. At the bottom of the page, there is a copyright notice: "© 2025 Alex Jones, M.Ed. All rights reserved." and a "Copy Attribution" link.

*The Standards tab also carries the learning progression — the same core idea traced across grade levels, so you can see what students bring to the lesson and where it leads next.*

## Downloads Tab



Every photograph includes a set of ready-to-print PDFs, available with no login required:

- **Lesson Guide** — the complete 5E lesson as a formatted, printable teacher document
- **Discussion Question Cards** — individual prompts formatted for display or student card sets
- **Vocabulary Flashcards** — term + definition + grade-level sentence, print-and-cut ready
- **5E Lesson Plan (Extended)** — full version with facilitation notes and materials list
- **Engineering Design Problem (EDP)** — the engineering challenge as a student-facing handout with space for design sketches and written response. Each EDP now includes a **Safety**

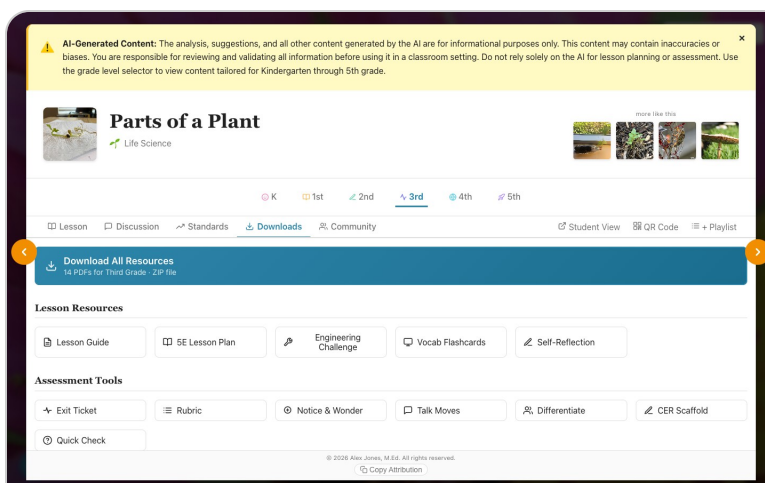
section with task-specific reminders (adult supervision, eye protection, safe handling of tools/small parts) alongside the suggested materials.

- **Writing Packet** (*grades 3–5*) — a student packet aligned to the Common Core writing standards, built on the photograph. Three prompts are offered so you can choose the mode that fits your unit: informative/explanatory (W.2), opinion (W.1), and narrative (W.3). Each names a real audience and format — a field-guide entry, a letter to a park ranger — because writing for someone is what the standard actually asks for. The packet includes a planning organizer, sentence starters, the linking words that grade’s standard names, an open drafting page, a self-check list, and the full scoring rubric. Grades 4 and 5 also get a short leveled source text, since W.4.9 and W.5.9 require drawing evidence from a text and a photograph alone doesn’t satisfy that.
- **Writing Teacher Guide** (*grades 3–5*) — the same three prompts with their standards codes, suggested three-session pacing (plan, draft, revise), a level 4 anchor paper for each prompt to calibrate your scoring, common pitfalls specific to that photo’s science, and the analytic rubric.



#### ASSIGN ONE, NOT THREE

The student packet shows all three writing prompts with a checkbox beside each — mark the one you’re assigning before you copy. Students and you score from the same rubric: it’s on the last page of the student packet and in the teacher guide, so a student can see exactly what separates a 3 from a 4 while they’re still revising.



*The Downloads tab — one click to grab all PDFs as a ZIP, or download individual resources. All print-ready, no login required.*



#### PAPERLESS OPTION

All PDFs are also accessible as direct download links you can post in Google Classroom or any LMS. Students can open them on-device as digital documents — no printing required.



#### SECTION 09

## Student View

**Student View** is a simplified, student-facing version of the photograph experience. It presents the core interactive experience — hotspots, discussion questions, vocabulary activities, engineering challenge, and more — in a clean, age-appropriate interface, without the teacher-only content (full 5E lesson, teaching tips, UDL notes, standards).

Students need no account, no download, and no login — just a URL or a QR code.

### How Teachers Access Student View

- 1 Open any photograph's modal.
- 2 Click the **Student View** button in the tab bar (it has an external-link icon beside it).
- 3 A preview modal opens inside the page, showing exactly what students will see.
- 4 Click **Open in New Tab** to see the full experience, or **Copy Link** to get the shareable URL.

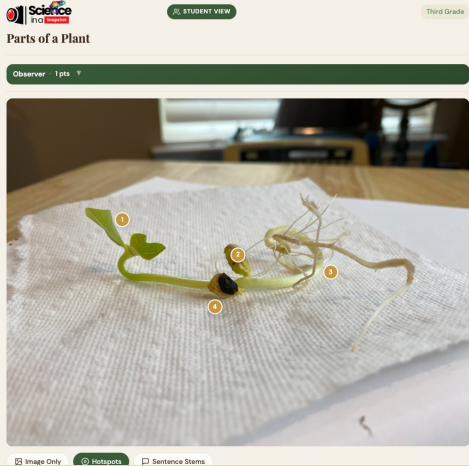
### What Students See

- **The photograph** — full size, with optional hotspot dots and sentence stems overlay
- **Discussion questions** — grade-differentiated, numbered prompts
- **Vocabulary section** with two interactive modes:
  - *Flashcard Mode* — flip through term + definition cards one at a time
  - *Match Game* — drag vocabulary terms to match their definitions
- **"Did You Know?"** — grade-appropriate fun facts about the phenomenon
- **Engineering Design Challenge** — the grade-appropriate design problem as a student prompt

- **Related photographs** — a small grid of similar photographs to explore independently
- **EN / ES language toggle** — students can read the phenomenon, discussion questions, and vocabulary in English or Spanish

## How to Share With Students

- **Google Classroom / LMS** — paste the Student View URL as an assignment link. Students click it from the Classwork page.
- **QR Code** — generate a QR code (Section 10) and display it on your board or print it for stations.
- **Projector** — open Student View full screen on your board while students follow along on their own devices.
- **Email or SMS** — send the link directly to students or families for home use.



*Student View — a clean, student-facing page with the photo, interactive hotspots, discussion questions, and vocabulary activities. No login required.*



### SAFE FOR HOME USE

Student View is appropriate to send home. It contains no social features, no user accounts, no data collection from students, no external links, and no advertising. It is a clean, single-purpose science experience on any device.



Every photograph in SIAS can generate a QR code that links directly to its Student View at the currently selected grade level. QR codes bridge the gap between your physical classroom environment and digital content — no typing required from students.

### Generating a QR Code

- 1 Open any photograph's modal.
- 2 Click the **QR Code** button in the tab bar (next to Student View).
- 3 A QR code appears linking to this photo's Student View at the current grade.
- 4 Screenshot it (Cmd+Shift+4 on Mac, Windows+Shift+S on PC) or use your browser's print function to print just the modal content.

### Classroom Uses for QR Codes

- **Station Rotation** — print a QR code card at each science station. Students scan with their device at each stop to access the photograph and questions independently.
- **Choice Boards** — create a 3×3 choice board with QR codes linking to different phenomenon photographs for student-directed inquiry exploration.
- **Science Notebook** — attach a QR code to the inside cover of student notebooks linking to the current unit's anchor phenomenon.
- **Parent Communication** — include a QR code in your weekly newsletter so families can explore the current phenomenon together at home.
- **Slides** — embed a QR code in your Google Slides presentation so students who need to revisit content can self-direct independently.
- **Field Trip Prep** — print QR codes linking to phenomenon photographs that preview what students will see on an upcoming visit.



#### NO APP NEEDED

Modern smartphones, iPads, and Android tablets scan QR codes natively through the camera app — no additional QR scanner app required.

Chromebooks with cameras also support QR scanning through the camera app.



#### SECTION 11

## Storylines & Six-Week Units

A **Storyline** is a curated sequence of 3–7 photographs that together tell a connected science story — building conceptual understanding of a specific NGSS performance expectation across multiple phenomena. SIAS currently includes 18 pre-built Storylines, with more added throughout the year.

Storylines are ideal for **unit anchoring**: use one across 1–2 weeks, returning to a new photograph each day or each class session, with the sequence driving the conceptual arc from initial noticing to evidence-based explanation.

### Accessing Storylines

- 1 Click the **Storylines** button in the filter row beneath the gallery header. A badge on the button shows the current count of available Storylines.
- 2 A dropdown appears listing all available Storylines, each showing its title and the number of photographs in the sequence.
- 3 Click **View Guide** to download the *Storyline Teacher Guide PDF* — a complete unit planning document with sequencing rationale and inter-photo discussion connectors.
- 4 Click **Start** to open the first photograph in the sequence and begin the guided journey.

### What's in a Storyline Teacher Guide

- The sequence rationale — why these photographs are ordered this way and what conceptual arc they build
- Driving questions that span the full sequence and return to each photograph
- Discussion connectors between photographs ("Yesterday we saw X... today's photo shows Y... what's similar? what's different? what new questions do you have?")

- Unit-level vocabulary progression — which terms are introduced when and how they build on each other
- Suggested pacing and grade-band adaptation notes

Find Storylines in the filter row beneath the gallery — click the Storylines button to open a dropdown listing all curated sequences.



## UNIT PLANNING WITH STORYLINES

Download the Storyline Teacher Guide before starting the sequence. It shows you how each photograph builds on the previous one conceptually — transforming a daily warm-up routine into a coherent unit arc, without requiring additional unit planning from you.

## Six-Week Units

Where a Storyline spans a week or two around a single performance expectation, a **Six-Week Unit** is a complete, ready-to-teach arc for a full grade-level topic. Each unit assembles the relevant Storylines, individual photographs, and video phenomena into one coherent six-week sequence — anchoring phenomenon, guided investigations, an engineering or design task, and a culminating application — so the conceptual through-line is planned for you.

The units are organized by grade band, Kindergarten through Grade 5. Each opens to a dedicated page with its driving question, a week-by-week pacing map, the sequenced lessons, and a downloadable unit-planning guide.

You may notice a photograph you recognize from another unit. That is deliberate: a photograph that teaches two sciences can anchor a lesson in each — the same image doing energy work in one unit and wave work in another, with a different lesson behind it each time. Within a single

unit, though, a photograph appears only once, so a six-week sequence never repeats a picture on you.



#### STANDARDS FOUNDATION

The Six-Week Units are built on the Arkansas K–5 Science Standards, which are closely aligned to the Next Generation Science Standards (NGSS). Because the two frameworks share the same three-dimensional architecture — disciplinary core ideas, science and engineering practices, and crosscutting concepts — the performance expectations and instructional sequences transfer directly for educators in NGSS and NGSS-adopting states.

## Accessing the Units

- 1 Click the **Units** button in the site header, or visit the Units index (</units/>).
- 2 Choose a grade band to see its available units, each showing its title, discipline, and the phenomena it covers.
- 3 Open a unit to view its driving question, six-week pacing map, and sequenced lessons — then download the printable unit-planning guide.

— Back **UNIT 1.3** SCIENCE IN A SNAPSHOT — GRADE 1

## See It, Hear It

*Light, Sound & Signals*

**DRIVING QUESTION**

A drum buzzes your hand, you can't find your shoes in a dark closet, a signal light flashes across the yard — how do we see and hear the world, and how can we send a message across a distance?

|                    |                     |                   |                      |          |
|--------------------|---------------------|-------------------|----------------------|----------|
| GRADE              | DURATION            | REPORTING PER     | EMBEDDED             | RIGOR    |
| 1-Physical Science | 6 weeks - 7 lessons | 1-PS4-1-2, -3, -4 | K-2-ETSI engineering | DOK1 → 2 |

**01. UNIT SUMMARY**

**We hear with sound and see with light — and both can carry a message across a distance.**

Pluck a rubber band and it buzzes; press it and the buzzing stops. In a pitch-dark closet you can't see a thing until you crack the door. A signal light flashes a message clear across a yard. Under all of it are two big first-grade ideas: **sound comes from things that vibrate, and light lets us see** — objects are visible only when light reaches them — and both **light and sound can be used to communicate**.

Each lesson is an existing Science In A Snapshot photo-lesson — students look closely at a real photograph and then run a matching hands-on investigation: feeling a speaker or drum vibrate, hunting for objects in a dark box, shining a flashlight through clear, cloudy, and solid materials, bouncing light off a mirror, and designing a way to send a signal across the room. Across six weeks they build and defend

*A Six-Week Unit page — the driving question up top, then duration, the performance expectations it reports on, and the unit summary. Scroll on for the week-by-week pacing map and the sequenced lessons.*



## Custom Playlists

Beyond the pre-built Storylines, you can build your own custom photo sequences — called **Playlists** — and share them with students or colleagues. Playlists are useful for differentiating a unit, creating themed explorations for specific grade levels, or curating photographs for a special event like a science fair or family science night.

### Building a Playlist

- 1 Open any photograph's modal and click the **+ Playlist** button in the tab bar. The photo is added to your playlist tray.
- 2 A tray appears at the bottom of the screen showing the photos you've added and a count badge. Close the modal.
- 3 Browse the gallery and add additional photographs to the tray using the same button in each modal.
- 4 When ready, click **Build & Share** in the playlist tray to open the Playlist Builder.

### In the Playlist Builder

- **Drag to reorder** — arrange photographs into your intended instructional sequence
- **Name your playlist** — give it a meaningful title that students will recognize
- **Add teacher notes** — attach a short note to each individual photograph with context, instructions, or a specific question to focus on
- **Publish** — generates a shareable link and QR code for the complete sequence



#### GRADE-LEVEL TEAM PLANNING

Playlists are excellent for collaborative unit planning. One teacher builds the playlist, publishes it, and shares the link in your team's shared planning document. All teachers on the team can then deploy the same sequence simultaneously — no extra work required from each person.



## Collections & Favorites

The **Collections** button in the filter row opens a dropdown with four curated galleries alongside the main photo pool.

### YOUR COLLECTION

#### My Collection

Photographs you've marked as favorites. Requires a free Google sign-in. Persists across sessions and devices.

### CURATED BY SIAS

#### Featured Collection

Hand-picked sequences from the SIAS editorial team, often themed around a season, unit, or teaching moment. Updated regularly.

### COMMUNITY

#### User Submitted

Science photographs submitted by teachers and approved through moderation. A growing community library of real classroom science moments.

### MEDIA

#### Video Snippets

Short science video clips with the same complete educational content structure as photographs.

## Saving to Favorites

Click the heart icon on any photo card in the gallery or inside the modal to add a photograph to your **My Collection**. You must be signed in with your Google account for favorites to persist across sessions. Signing in is always free and always optional — all educational content remains accessible without an account.



### ACCOUNT NOTE

A free account unlocks three things: saving favorites, submitting photos, and posting community comments. It never unlocks content that isn't already available — SIAS is, and will remain, fully free for all educational content without any account.



## Community Features

Lesson

Discussion

Standards

Downloads

**Community**

The **Community** tab — the fifth tab in any photo modal — connects you with other teachers who are using the same photograph. It contains ratings, comments, engagement stats, and attribution tools.

### Star Ratings

Rate any photograph using the 5-star system in the Community tab. Ratings are aggregated across all users and displayed on photo cards in the gallery. Use the **Top Rated** sort option to surface the community's most-loved photographs for your grade and content area.

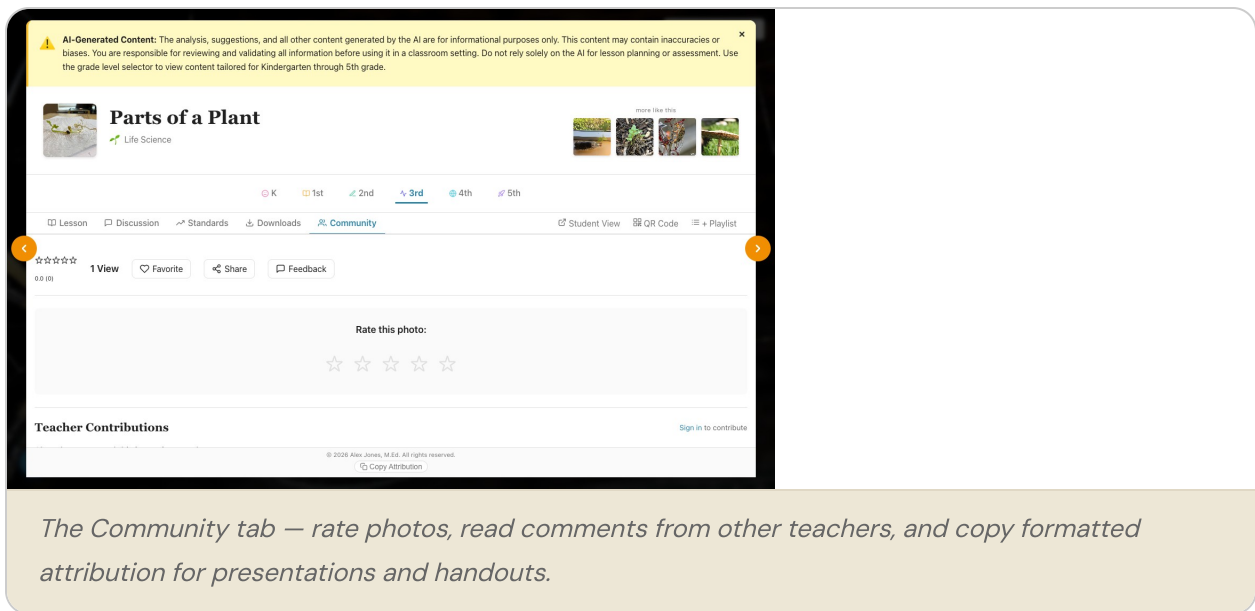
### Teacher Comments

Leave a brief note about how you used the photograph in your classroom: your grade, what worked, how students responded, what surprised you. These community notes are often more practically useful than any editorial content — because they come from teachers in real classrooms like yours.

### Copy Attribution

Every photograph includes properly formatted attribution information. Click **Copy Attribution** (in the modal footer) to copy a formatted citation to your clipboard. Use it in:

- Student handouts and worksheets
- Slide presentations and visual displays
- Parent newsletters that feature the photograph
- Lesson plan documentation for your records or administrator sharing



## Submitting a Photograph

If you've captured a science photograph that you think would serve other teachers well, use the **Submit Photo** button in the filter row (or the floating button at the bottom-left of the screen) to submit it for review. Accepted photographs are added to the User Submitted collection with full educational content developed by the SIAS team.



### SECTION 15

## Classroom Strategy Guide

Here are proven protocols for integrating SIAS into different classroom contexts — from a 5-minute warm-up to a full station rotation. Each protocol is designed to work within real constraints: limited devices, limited prep time, and the full complexity of a K–5 classroom.

## ■ The 5-Minute Phenomenon Warm-Up

The lowest-prep, highest-impact use of SIAS. Requires only a projector and one class device. No printing, no accounts, no preparation beyond choosing a photograph.

- 1 Open a photograph and enable the **Sentence Stems** overlay. Project on the board.
- 2 Give students 2 minutes of silent observation and writing time — one sentence stem completed in their science notebooks or on a sticky note.
- 3 Partner share for 1 minute.
- 4 Click **Hotspots** to reveal labeled features. Bridge student observations to scientific vocabulary: *"Several of you noticed this part. Scientists call this..."*

## ■ Station Rotation (Chromebooks or Tablets)

Great for days when you want students independently engaging with phenomena while you pull small groups.

- 1 Select 4–6 photographs from the same Storyline or category. Generate a QR code for each (Section 10).
- 2 Print or display one QR code at each station, with a brief written prompt (e.g., *"Scan, then write 2 observations and 1 question"*).
- 3 Students rotate through stations, scanning each code and working in Student View.
- 4 Close with a whole-class debrief: *"Which photograph surprised you most? What patterns did you notice across all the stations?"*

## ■ Storyline Unit Arc (1–2 Weeks)

Turn a Storyline into the backbone of a science unit with minimal additional planning.

- 1 Download the Storyline Teacher Guide for your chosen sequence (Section 11).
- 2 Open Photo 1 of the Storyline. Use it as the anchor phenomenon for Day 1 — introduce the driving question that spans the sequence.
- 3 Each subsequent class, open the next photograph in sequence. Use the Teacher Guide's "discussion connectors" to explicitly link it to the previous photograph.
- 4 At the unit's end, return to the first photograph. Ask: *"How has your explanation of this image changed since Day 1? What evidence do you now have?"*

## English Language Learner Supports

- Use the **EN / ES language toggle** (next to the grade buttons on any lesson) to give Spanish-speaking students and families the full lesson in Spanish. Science vocabulary is presented bilingually — the Spanish term with the English term in parentheses — so students build academic language in both languages from the same phenomenon.
- Enable **Sentence Stems** for all students — the visual anchor and pre-formed language structure lower the barrier to participation for EL students without singling them out.
- The **Vocabulary** section in Student View provides definitions and interactive flashcard practice, supporting independent EL work with grade-appropriate academic language.
- Visit [/ell \(/ell\)](#) for a dedicated English Language Learner Strategies guide, including photograph-discussion structures designed specifically for EL instruction.
- Photograph-based phenomena inherently reduce text-load barriers and allow EL students to participate in observation and discourse from the same evidence base as all peers — visual literacy is a genuine equalizer.

## Cross-Curricular Integration

- **ELA** — Use the phenomenon as a science writing prompt. Use the EDP (from the Downloads tab) as a structured writing frame for engineering reports.
- **Mathematics** — STEM career connections in the Lesson tab frequently include quantitative contexts. Many photographs involve scale, measurement, data, and patterns that connect

directly to math standards.

- **Visual Art** — Each photograph supports visual literacy discussion: composition, perspective, light, color, and negative space. Ask students to sketch the phenomenon from a different angle or create a scientific illustration.
- **Social Studies** — Earth & Space Science photographs frequently carry geographic context for habitat, climate, and human impact connections.

## Projector & Whole-Class Display Tips

- Start always with **Image Only** mode — let students observe and speculate before any labels or overlays appear.
- Layer intentionally: Image Only → Hotspots → Discussion Questions → Sentence Stems. Choose one overlay per instructional moment rather than showing everything at once.
- Keep the grade selector visible in your browser so students and observers can see you're using grade-appropriate content.
- Use **Previous / Next** navigation to move through a Storyline sequence mid-class without closing and reopening — keeps momentum and student attention.



### HIGH-ENGAGEMENT ROUTINE

Teachers consistently report the highest student engagement when they display the photograph *before* naming what it shows — letting students construct understanding before confirmation. The phenomenon statement in the Lesson tab, revealed *after* 5 minutes of student thinking, becomes a satisfying "reveal" that validates student reasoning rather than short-circuiting it.



## Frequently Asked Questions

---

### Is the content available in Spanish?

Yes. Every lesson has an **EN / ES toggle** next to the grade buttons. Switching to ES re-renders the photo description, phenomenon, discussion questions, and vocabulary in Spanish, at whatever grade level you're viewing. It works on photo lessons, video lessons, and the Student View, and new photos and videos are translated automatically as they're added. Science terms are shown bilingually (Spanish with the English in parentheses). NGSS codes and standards text stay in English so they match your standards documents. The translations are AI-generated, so a quick review before relying on a lesson is wise.

---

### I've seen this photograph before — why is it here again under a different science?

Because some photographs genuinely teach two sciences, and each one gets its own lesson. A pond is a habitat if you're looking at what lives in it, and it's fresh water sitting on the Earth's surface if you're looking at where water goes. Rather than bolt a second set of standards onto one lesson, SIAS builds a second lesson: **different discussion questions, different standards, different worksheets and PDFs**, written for that discipline. Look for the **"Also taught as..."** link near the photo's title — it moves you between the two. If you've already taught the photo one way, the other version is usually worth opening: your students will recognize the picture instantly, which makes it a good bridge into a topic that would otherwise start cold.

---

### Do students need accounts to use SIAS?

No. Student View is completely anonymous — no login, no email address, no account of any kind. Students just need the URL or a QR code. Nothing they do on the student page is tracked or stored with any personally identifiable information.

---

## Do teachers need accounts?

No. All educational content is freely accessible without an account. Creating a free account via Google sign-in unlocks three additional features: saving favorites to My Collection, submitting photographs, and leaving community comments. It never unlocks content that isn't available to all users.

---

## What devices are supported?

Any device with a modern web browser — Chromebooks, iPads, Android tablets, Windows laptops, and Mac computers. Student View is fully responsive for smartphone screens as well. No app download is ever required.

---

## Can I use SIAS offline?

Two ways. On the website, recently viewed pages are cached by the site's service worker and may load without a connection for a limited time after your last visit — a reliable internet connection is still recommended, particularly the first time you open any photograph. For true offline use, the **SIAS desktop app** (Mac and Windows) bundles the full gallery and every lesson resource, works with no internet connection at all, and refreshes its content automatically whenever it is back online.

---

## How do I find photos for a specific NGSS standard?

Type the standard code into the search bar (e.g., *1-LS1-1*, *ESS2-1*, *3-PS2*). An autocomplete dropdown surfaces matching standards — select one to filter the gallery to every aligned photograph. You can also type just the DCI abbreviation (e.g., *LS1*, *ESS2*) to browse all photographs touching that core idea.

---

## How often is new content added?

New photographs, Storylines, and features are added throughout the year — both through editorial additions by the SIAS team and through teacher-submitted photographs that pass content review. Check the Blog (accessible from the filter row) for announcements of new content.

---

## Is SIAS aligned to my state's science standards?

All content aligns to Next Generation Science Standards (NGSS). If your state has adopted NGSS or an NGSS-informed framework (the majority of U.S. states have), alignment is direct. Check the Standards tab on any photograph to see specific DCI, CCC, and PE codes, and cross-reference with your state's published framework document as needed.

---

## Can students do vocabulary activities in Student View?

Yes. The Vocabulary section in Student View includes both a Flashcard Mode (flip through term + definition cards) and a Match Game (drag terms to match definitions). Both modes use the same grade-level vocabulary that appears in the Lesson tab's vocabulary section.

---

## Can I share SIAS photographs with families?

Yes — Student View links are appropriate to share with families for home exploration. Use the Copy Attribution button to include proper source credit if you're incorporating photographs into a newsletter or take-home packet.

---

## What if I encounter a technical problem?

Use the Contact link in the site footer to reach the SIAS team. For quick troubleshooting, try refreshing the page, clearing your browser cache (Ctrl+Shift+R or Cmd+Shift+R), or opening in a different browser. Most issues resolve within seconds of a hard refresh.

---

Science In A Snapshot © 2026 Alex Jones, M.Ed.

Updated 08/03/2026 02:46 AM

[Gallery \(/\)](#) · [ELL Strategies \(/ell\)](#) · [Phenomena Guide \(/phenomena\)](#) · [sciencesnapshot.com \(/\)](#)