twig Science | NEXT GEN

6-8

THREE-DIMENSIONAL, PHENOMENA-BASED NGSS EXPERIENCES

WITH STANFORD SCALE ASSESSMENTS



Contents

Welcome to Twig Science Next Gen	3
What You Get with Twig Science Next Gen	4
Twig Science Next Gen Instructional Design	6
Thinking Like Scientists, Designing Like Engineers	7
5 Modalities to Engage Students With Phenomena	8
Developing Scientific Literacy	9
Easy-To-Use Digital Platform	10
Bonus Content	11
Culturally Responsive and Accessible Instruction	12
Three-Dimensional Performance and Assessment	13
Guiding Teachers, Supporting Students	15
Stanford Scale Advance Training Courses	15
Framework Alignment	16

WELCOME TO twig Science | NEXT GEN

Twig Science Next Gen is an investigation-based science program developed for the NGSS. It gives every teacher and student access to the best available knowledge, science practices, and cognitive tools to help them make sense of real-world phenomena and solve demanding engineering challenges.

We know that every student has a different way of learning. We built Twig Science Next Gen to bring the wonders of this amazing world and beyond directly into every student's life, showing them that science actually affects them, why it is important, and the difference these experiences can make to their futures, no matter who they are.

ABOUT THE AUTHORS

Meet the Twig Science Next Gen Collaborative Think Tank

SCALE
Stanford Center for Assessment, Learning, & Equity

SCALE's mission is to improve instruction and learning through the design and development of innovative, educative, state-of-the-art performance assessments to promote equitable outcomes for students and teachers.

Cathy Zozakiewicz provides technical consulting and support through SCALE and develops 3-D performance assessments for Twig Science Next Gen.

Imperial College London

Imperial College London is one of the world's leading universities, expanding the frontiers of knowledge in science, medicine, engineering and business and translating its discoveries into benefits for our society.

Alan Spivey, professor of chemistry at Imperial College London, leads the Twig Science Next Gen scientific review team, reinforcing the program's scientific foundations and bringing connections to real-world science.

twig EDUCATION

Program Authors

The Twig Science Next Gen authorship team is led by Natasha Stillwell, a broadcast-science journalist who hosted and produced Discovery Channel's award-winning science and technology show Daily Planet.

Rebecca Pitkin—Lead Scientist

A former nuclear astrophysicist and middle school teacher, Rebecca has developed phenomena-based STEM curricula for the past 17 years.

Will Dennis—Creative Consultant

Will has dedicated his career both in EdTech and as a documentary maker at the BBC to creating magical learning experiences for students. He passionately believes that for students to be successful they must see themselves and each other in their curriculum.

twig EDUCATION

Equality and Inclusion Commitment

In creating Twig Science Next Gen, which adapts 3-D learning standards as immersive story-based investigations, we considered not just the type of STEAM instruction that is needed in the 21st century but also who it should be designed for.

We have worked hard to make the program content reflective of all students. We know that students get excited about science careers when they understand that scientists are regular people just like them. Throughout the imagery used in Twig Science Next Gen, we've included representations of all genders, races, and abilities. We've also included historical and contemporary examples of a wide range of STEAM professionals from all backgrounds to inspire students.



WHAT YOU GET WITH TWIG SCIENCE NEXT GEN

PRINT AND DIGITAL

Teacher Editions

Twig Science Next Gen Teacher Editions are available in print and digital, offering middle school teachers versatile instruction in any setting. Phenomena-driven STEAM lessons, resources, and suggested pacing combine to aid both experienced and new teachers as they implement 3-D NGSS instructional shifts.



PRINT AND DIGITAL

Twig Journals

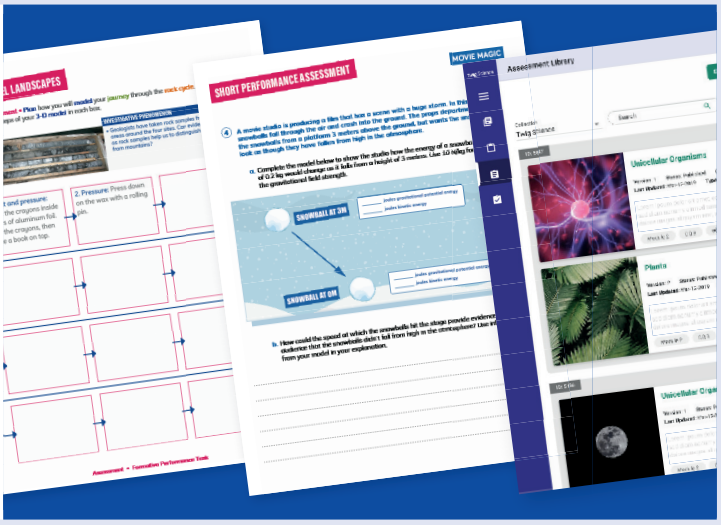
Designed for Generation Z, consumable, full-color journals record students' investigative journeys as they figure out phenomena-driven Driving Questions. Structured around "I Will" learning objectives and 3-D performance tasks, Twig Journals encourage students to use a variety of formats, including Claim-Evidence-Reasoning charts to develop analytical thinking, graphic organizers, labs, pre-assessments, datasets, academic vocabulary, and informational texts. Included in the program are Twig Journals with example answers for teacher reference.



PRINT AND DIGITAL

3-D Assessment Suite

Developed with the Stanford Center for Assessment, Learning and Equity (SCALE), Twig Science Next Gen's assessment suite includes a variety of informal, formative, and summative measures to assess students' ability to meet NGSS Performance Expectations. Student and teacher rubrics provide clear guidance and proficiency levels, while assessment formats prepare students for standardized state tests.



Hands-On Consumable and Nonconsumable Lab Kits

Twig Science Next Gen kits make it easier and quicker for teachers to prepare and carry out hands-on activities. They're clearly labeled, simply organized, and available for each module, ensuring you have all you need to deliver amazing hands-on investigations.



Digital Platform —Teacher and Student Versions

The innovative, easy-to-use Twig Science Next Gen digital platform can be used as a stand-alone environment or with print, and it includes presenter tools, automatic rostering, single sign-on, and accessibility tools along with hundreds of award-winning videos providing access to real-world phenomena for every student. Engaging lessons, activities, stunning digital labs, and real-world data captivate Generation Z students as they investigate problems and design solutions to engineering challenges.



On-Demand Professional Learning

In-person, virtual, or on-demand training is available to take care of your Twig Science Next Gen implementation and professional learning needs. Background refreshers, onboarding courses, digital NGSS guides, and instructional shift videos are available whenever you need them. Our science and digital specialist team provides support for technical, implementation, and ongoing trainings.

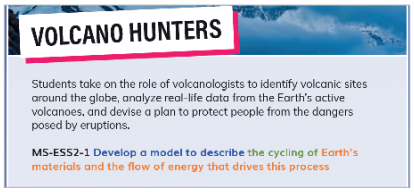




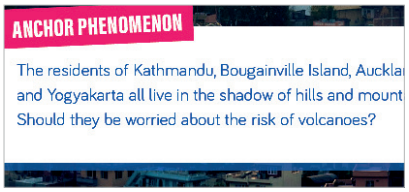
TWIG SCIENCE NEXT GEN INSTRUCTIONAL DESIGN

MODULES *include...*

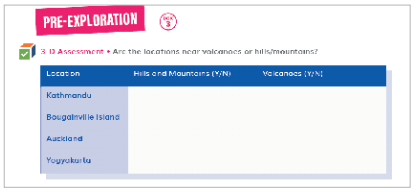
STEAM Storyline



Anchor Phenomenon / Engineering Design Challenge



Diagnostic Pre-Assessments



LESSONS *include...*

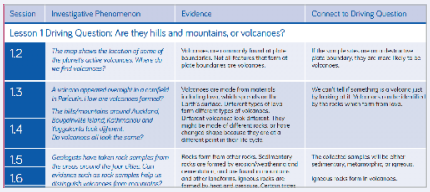
Driving Questions



5E Lesson Structure



Phenomena Tracker

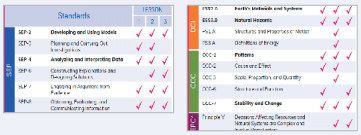


Investigative Phenomena

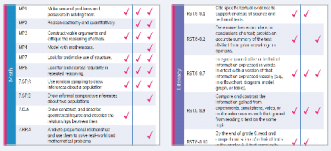
Magma is erupted from volcanoes as lava. How does lava behave?

Lava has different viscosities. Thick lava flows slowly and can erupt explosively. Runny lava flows quickly and usually erupts effusively. Debris makes lava flow more slowly. The steeper the slope of the volcano, the quicker the lava flows.

Unpacking NGSS Standards



Cross-Curricular Applications



Interdisciplinary Connections

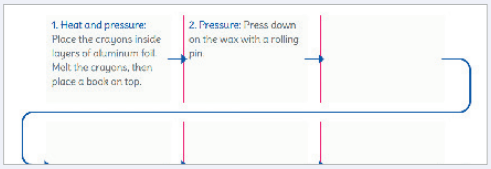
Observe models of explosive and effusive volcanoes and ask questions about explosivity.

SEP-1 | SEP-2 | ESS2.A | PS1.A

PERFORMANCE TASK

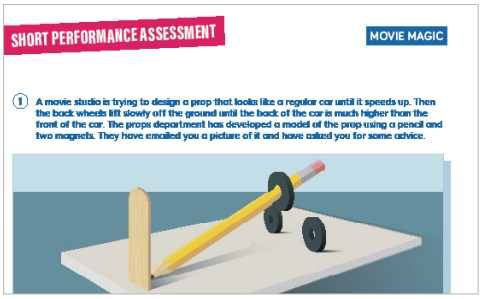
concludes every lesson

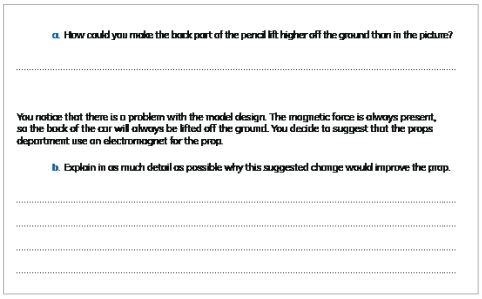




SUMMATIVE BENCHMARK ASSESSMENT

concludes every module





THINKING LIKE SCIENTISTS, DESIGNING LIKE ENGINEERS

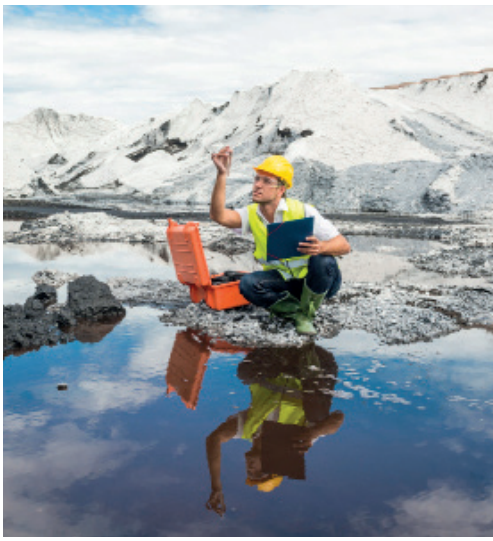
Why Twig Science Next Gen Works

Students develop a passion for science through the thrill of experiencing their own aha! moments.

Students using Twig Science Next Gen engage with genuine STEAM research projects developed with working scientists around the world. They collaborate with scientists on expeditions, use analysis skills to make sense of phenomena, and work with engineers to solve problems using cutting-edge technologies. Twig Science Next Gen students take on the role of volcanologists to identify volcanic sites around the globe. They dive into the chemistry of recycled materials to find solutions that will stem the plastic tide suffocating our oceans. And as air traffic controllers, they navigate the skies in a bid to win the Great Air Race... without heading straight into a storm!



> *"People don't choose a career they've never heard of."*
>
> **Helen Quinn,** Chair of the National Research Council committee that developed the NGSS



Challenges from Real STEAM Careers

Students experience firsthand how people from all backgrounds achieve success in STEAM careers.

Every step of the way, Twig Science Next Gen embeds science challenges in real-life situations that show why science matters and how it makes a difference. Students experience dozens of aspirational STEAM careers through videos, texts, blogs, case studies, digital interactives, and virtual field trips.



Mastering Instructional Shifts

Through this real-world, phenomena-based approach, Twig Science Next Gen embodies the instructional shifts required to realize the potential of the NGSS:

- Instead of having teachers present models to them, students **develop their own models** and use them to **explain phenomena** and **solve problems**.
- Students aren't taught a collection of facts—they learn science as an **iterative, dynamic, creative, and collaborative process**, just like real scientists and engineers.
- Students **investigate and problem-solve using critical thinking**, rather than following step-by-step instructions.
- Science content and science practice are **integrated**—not taught in isolation.

5 MODALITIES TO ENGAGE STUDENTS WITH PHENOMENA

1 Hands-On Labs

- Learn through inquiry-based investigations
- Experience a range of STEAM roles
- Develop higher-order thinking skills
- Apply SEPs, CCCs, and DCIs
- Solve problems and design solutions



2 Digital Labs

- Explore engaging digital interactive labs
- Access real-world phenomena and authentic data
- Enjoy gamification with rewards
- Take on challenges to test and reinforce learning
- Experience stunning visuals



3 Real-World Virtual Field Trips

- Shadow scientists and engineers around the world
- Witness STEAM roles in action through text and video
- Explore local, national, global, and extraterrestrial phenomena right in the classroom
- Deepen understanding of scientific concepts



4 Scientific Text Investigations

- Experience a variety of scientific text types: informational, narrative, descriptive, and argumentative
- Use Claim-Evidence-Reasoning to improve writing skills
- Develop observational skills
- Use graphic organizers, infographics, and datasets



5 Video Investigations

- Experience high-quality, engaging video content
- Access high-impact phenomena
- Identify prior knowledge and misconceptions
- Develop vocabulary through contextual cues
- Improve higher-order thinking

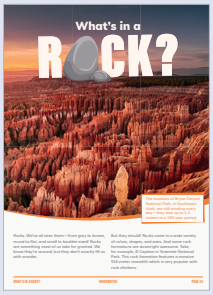


DEVELOPING 21ST CENTURY SCIENTIFIC LITERACY

Improving students' scientific reasoning skills with phenomena-based activities that reflect shifts in modern investigational science practices.

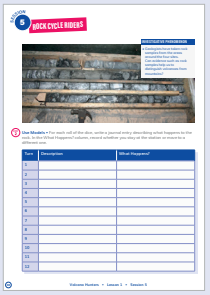
Critical Reading

Authentic informational texts motivate students to read with purpose and develop skills in gathering, reading, and synthesizing information.



Defining Design Solutions

Integrated engineering tasks that build in complexity scaffold student mastery of the Engineering Design Process. Students ask questions, define problems, and design solutions.



Oral and Written Argumentation

Students use evidence they have gathered from hands-on, digital, video, and text-based investigations to justify claims and support scientific arguments.



Cross-Curricular Connections

Activities align to the CCSS for Literacy, supporting students to cite textual evidence to support analysis, while alignment with CCSS Math standards helps develop fluency in critical math skills.



SEPs and CCCs

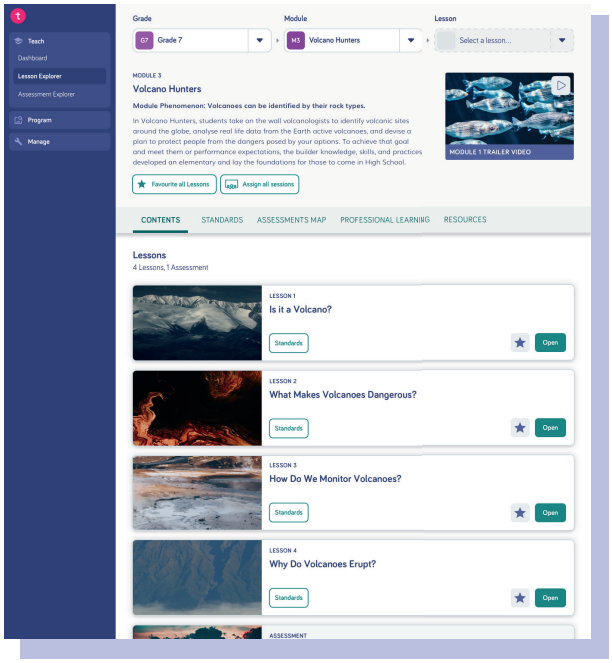
Science and Engineering Practices (SEPs) and Crosscutting Concepts (CCCs) are fully embedded in Twig Science Next Gen and clearly signposted in the program materials.



EASY-TO-USE DIGITAL PLATFORM

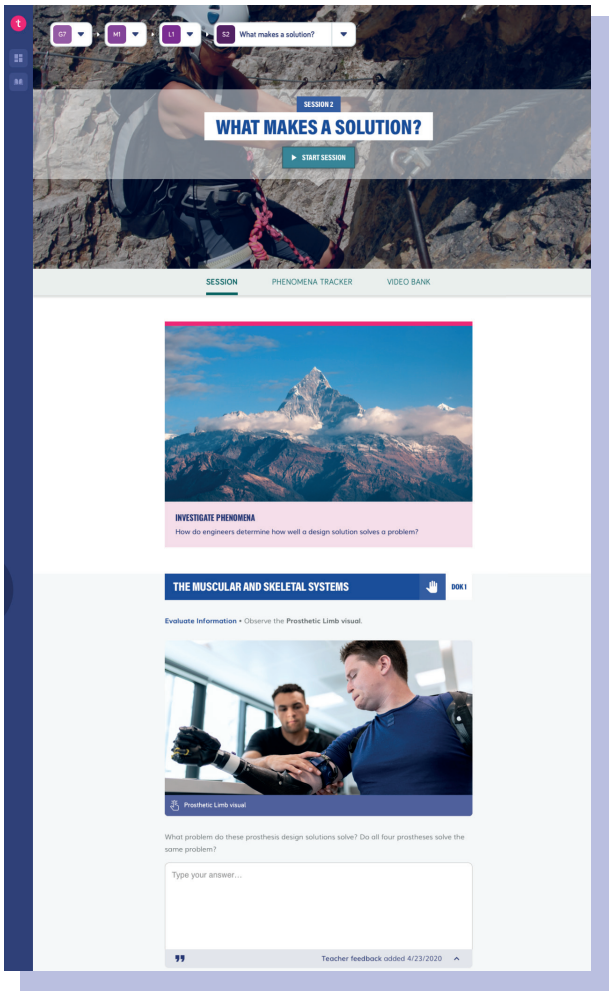
A platform built around Teachers

- Fast navigation structure
- Slides view for displaying rich-media assets in class
- Use as-is or share content to Google Classroom or your LMS
- Pin lessons to your dashboard for quick access during your teaching sessions
- Clear mapping to curriculum standards
- Access to Teacher Background Knowledge content



Assignable Student Lessons

- Assign lessons to students using the digital version of their Twig Journals
- Interactivity includes read, highlight, investigate, annotate, model, draw/design, explain, and reflect functions
- Students can upload pictures, drawings, visual observations, and snapshots to build up a digital portfolio
- Digital interactives and simulations bring phenomena to life
- Teachers provide feedback directly in each student's digital Twig Journal



Equitable Access to Phenomena

- Point-of-use scaffolds with cultural connections and differentiation for special education students
- English Learner differentiation for Emerging, Bridging, and Expanding levels of language acquisition
- Clear signposting of labs and 3-D Assessment
- Accessibility options include full customization of the display, with built-in epilepsy-safe, visually impaired, cognitive disability, and ADHD-friendly profiles

Secure and Safe Learning Environment

- Device-agnostic platform
- Built using modern technologies and fully HTML5 compliant
- Automated rostering and single sign-on integrations available for seamless user provisioning and access
- Clever Integration
- Classlink Integration
- Rostering via CSV, with configurable password policy options
- Meets latest security and accessibility requirements
- Prompt product and technical support

BONUS CONTENT

twig Science | REPORTER

Research and Evidence Sources

Twig Science Reporter brings the latest topical science news from around the world, building connections between textbook topics and real-world wonder.

- Inquire about current, relevant news stories
- Explore real-life causes and effects
- Explain, demonstrate, and understand the importance of science in everyday life

Answer curious questions and meet crazy creatures in engaging, thought-provoking videos!



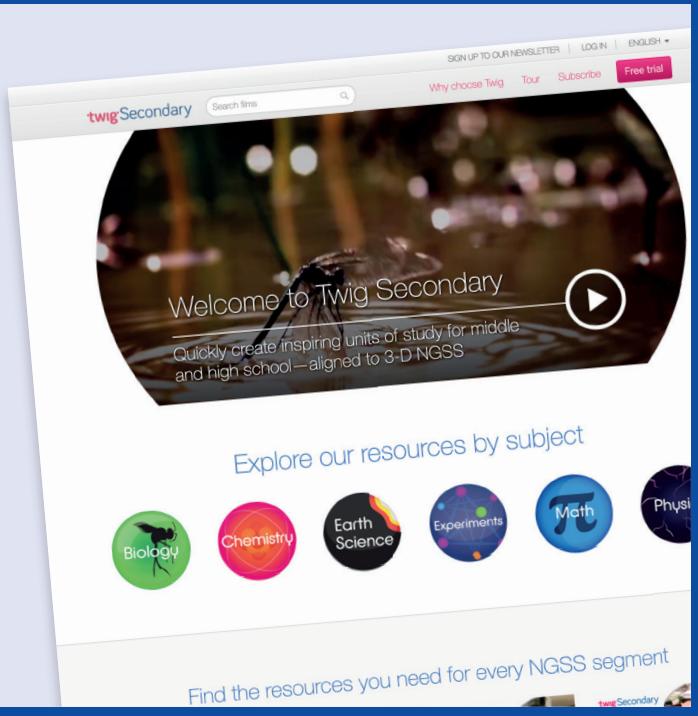
twig Secondary

NGSS-Aligned Resources for Grades 6–12

Twig Secondary strengthens your range of options for Grade 6–12 students.

- 1,000+ award-winning videos in English, Spanish, Arabic, Chinese, and Portuguese
- Topic backgrounds, diagrams, quizzes, news reports, and more
- An easy-to-use Assignments feature to set up remote student investigations

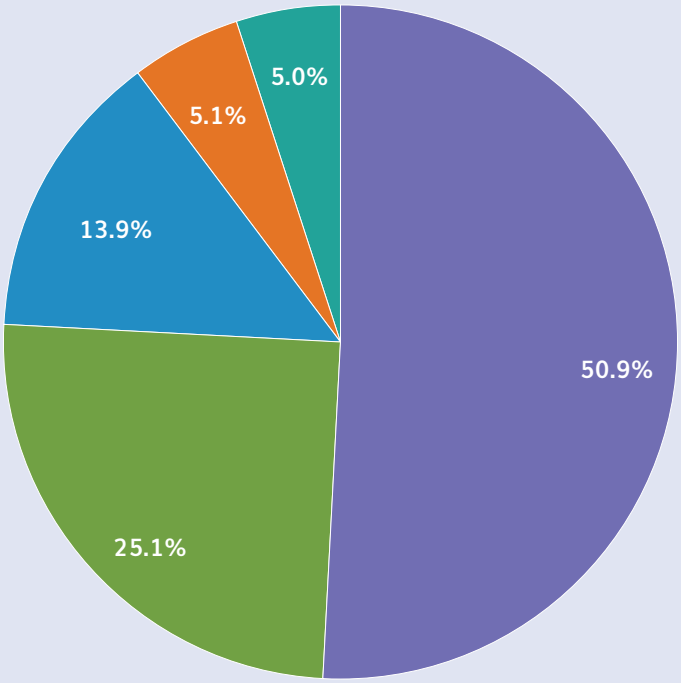
Incredible distance learning resources to give you maximum flexibility!



CULTURALLY RESPONSIVE AND ACCESSIBLE INSTRUCTION

Twig Science Next Gen promotes equitable, inclusive, and accessible learning environments for Generation Z.

The program is designed to be inclusive of all students, regardless of race, gender, (dis)ability, language ability, socioeconomic background, or national origin.



National School Student Demographics 2019/20

- *White 50.9%*
- *Hispanic 25.1%*
- *Black 13.9%*
- *Asian 5.1%*
- *Other 5.0%*

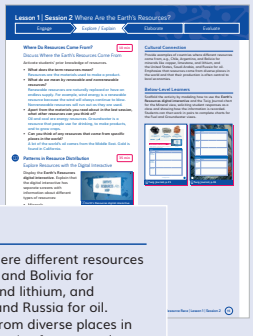
Source: https://www.census.gov/library/visualizations/2018/comm/classroom-diversity.html





Cultural Connections

Students' unique cultural strengths are identified and nurtured to promote student achievement.

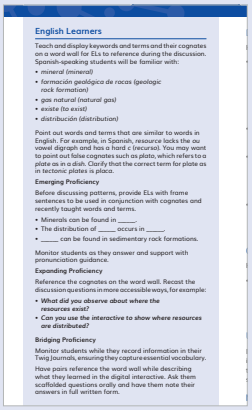


Cultural Connection

Provide examples of countries where different resources come from, e.g., Chile, Argentina, and Bolivia for minerals like copper, limestone, and lithium, and the United States, Saudi Arabia, and Russia for oil. Emphasize that resources come from diverse places in the world and that their production is often central to local economies.

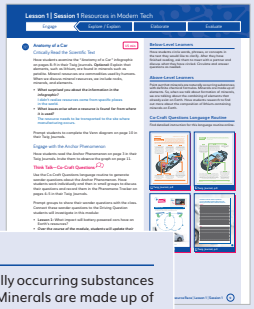
English Learner and Language Development

- English Learner scaffolds for Emerging, Bridging, and Expanding proficiency
- Speaking, listening, reading, and writing language domains
- Linguistic frames, tiered vocabulary support, and Stanford UL-SCALE language routines



Honors and Advanced Extension

Additional instructional opportunities to challenge above-level learners.

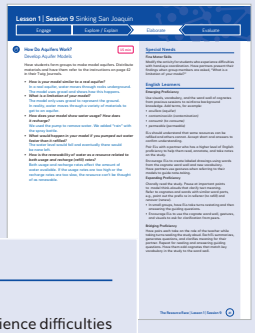


Above-Level Learners

Point out that minerals are naturally occurring substances with definite chemical formulas. Minerals are made up of elements. So, when we talk about formation of minerals, we are talking about the combining of elements that already exist on Earth. Have students research to find out more about the composition of lithium-containing minerals on Earth.

Special Needs

Strategies to assist in accommodating the learning of students with light to moderate disabilities.



Special Needs

Fine Motor Skills

Modify the activity for students who experience difficulties with hand-eye coordination. Have partners present their findings when group members are asked, "What is a limitation of your model?"

Cross-Curricular Applications

Helpful links to ELA, Math, History–Social Science, and Arts, increasing the impact and understanding of science in different contexts.

Language Routines

Science language routines, developed by Stanford University's UL-SCALE team, capture everyday language in Tiers 1 and 2 that students use as a bridge to developing Tier 3 language for scientific discourse.



THREE-DIMENSIONAL PERFORMANCE AND ASSESSMENT

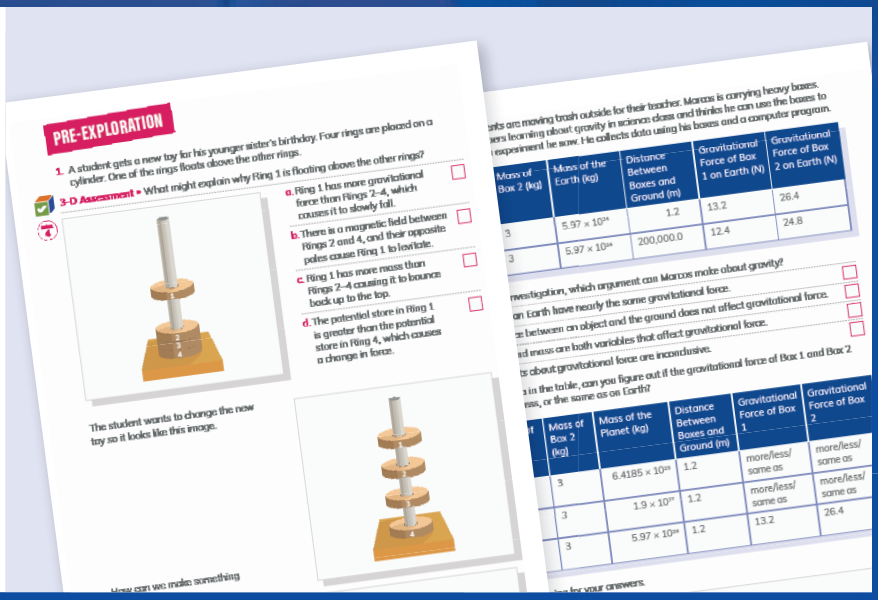
Developed in Partnership with Stanford University's SCALE Team

The Twig Science Next Gen assessment system evaluates student attainment of 3-D NGSS Performance Expectations.

The assessment strategies measure students' knowledge and practical skills. They consist of performance tasks—not rote memorization—and include a rich variety of measures, including written assignments, collaborative engineering challenges, and oral presentations. There are many informal ways to quickly evaluate student progress built in throughout each module, and teachers can refer to a Twig Journal with example answers to help assess student work.

Pre-Exploration (Diagnostic Pre-Assessement)

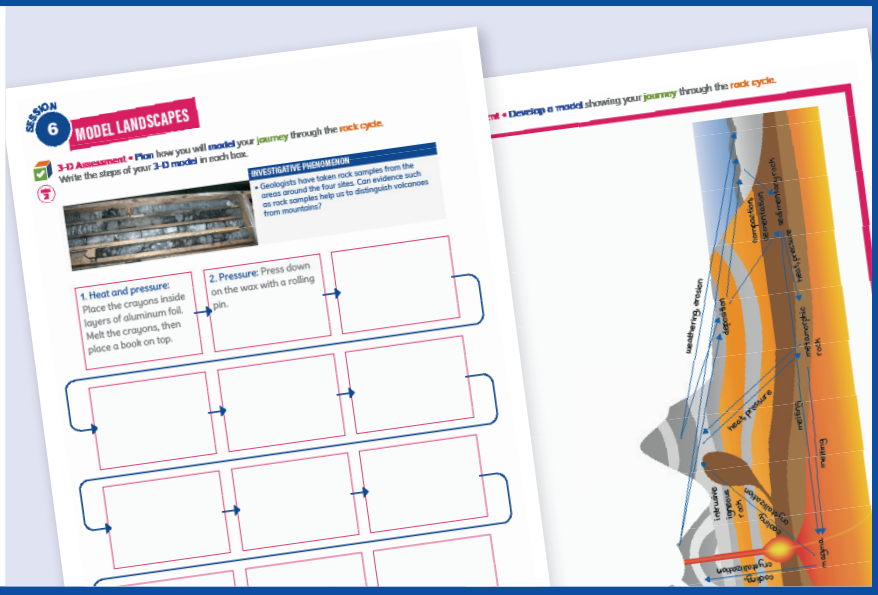
In the first session of a module, students complete a Pre-Exploration (Pre-Assessment). The multiple choice questions establish a baseline of understanding from which to measure student growth or learning. The reasoning questions provide valuable information about students' prior knowledge and abilities.

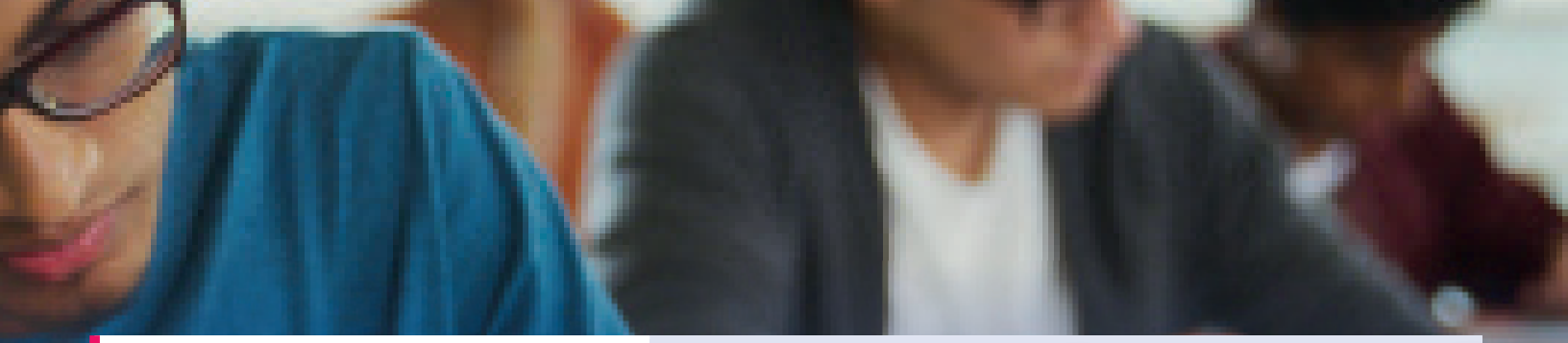


Formative Assessment

Ongoing Formative Assessments are woven into each lesson, offering quick ways to gauge student understanding and allowing teachers to tailor their instruction accordingly. Formative Assessments include class discussions, constructed responses (written and drawn), hands-on activities, self and peer assessment, and teacher observations.

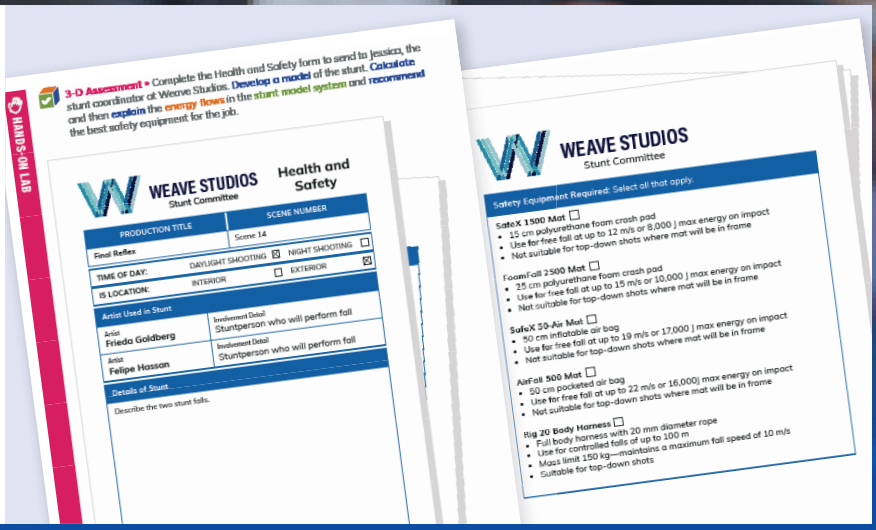
Optional exit tickets provide flexible assessment opportunities and can be completed orally, on scratch paper, or in the digital Twig Journal.





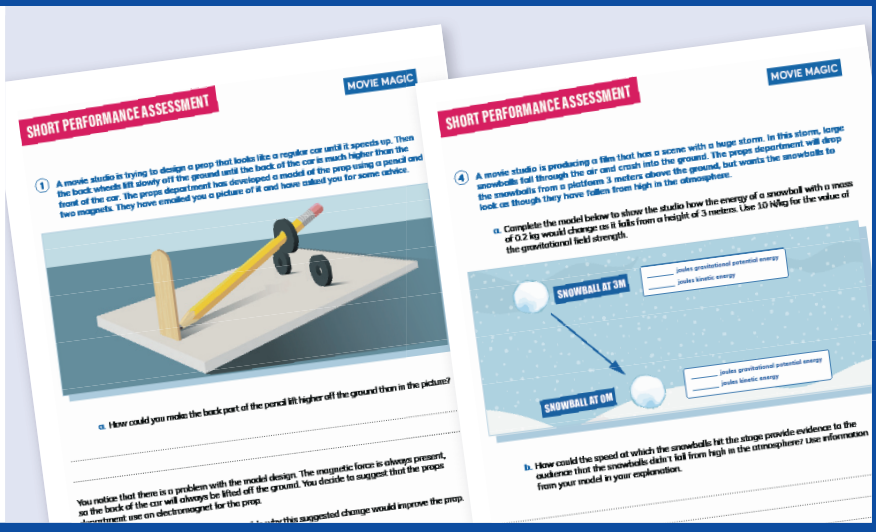
Summative Performance Tasks

Summative performance tasks are rich and highly engaging activities designed to motivate students to demonstrate their mastery of the expected grade-level proficiency for the Performance Expectations. Leveled rubrics are provided to support teachers to grade the attainment levels of students of all abilities (Emerging, Developing, Proficient, and Advanced), and student versions of the rubrics give students a clear understanding of what success looks like.



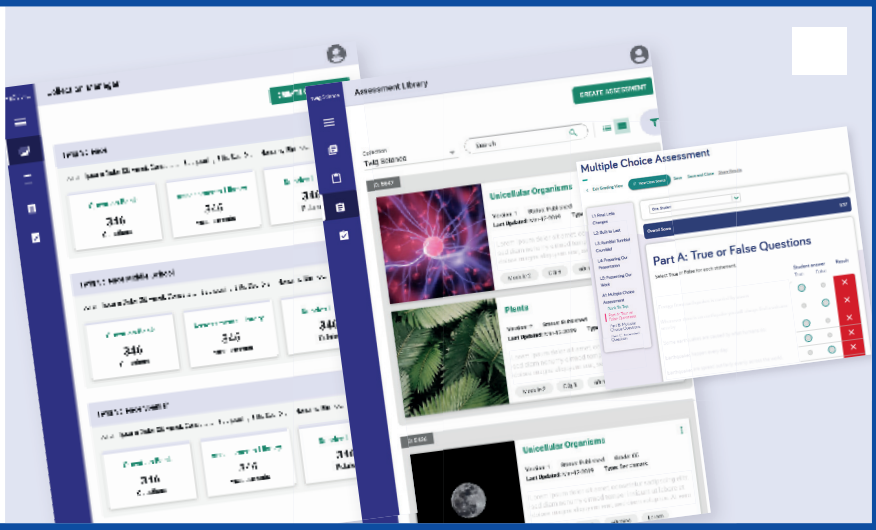
Summative Benchmark Assessments

Benchmark Assessments assess students' ability to apply the knowledge and skills gained throughout the module to new contexts. This gives students exposure to the types of assessments they'll face in the state test, both stand-alone questions and performance tasks. Leveled rubrics support easy grading, with sample student answers provided in the form of "Look Fors." Student versions of these rubrics are available without "Look Fors."



Assessment Platform

Comprehensive tools for planning, assigning, grading, and analyzing student assessments, with rubric-based scoring and reporting.



GUIDING TEACHERS, SUPPORTING STUDENTS

Each module in Twig Science Next Gen is focused on an **Anchor Phenomenon** or **Engineering Design Challenge** that students make sense of as they proceed through a series of **Driving Questions**.

Driving Questions
Students' investigation of the module's Anchor Phenomenon or Engineering Design Challenge is scaffolded through a series of Driving Questions framed around real-world problems that students discuss and investigate.

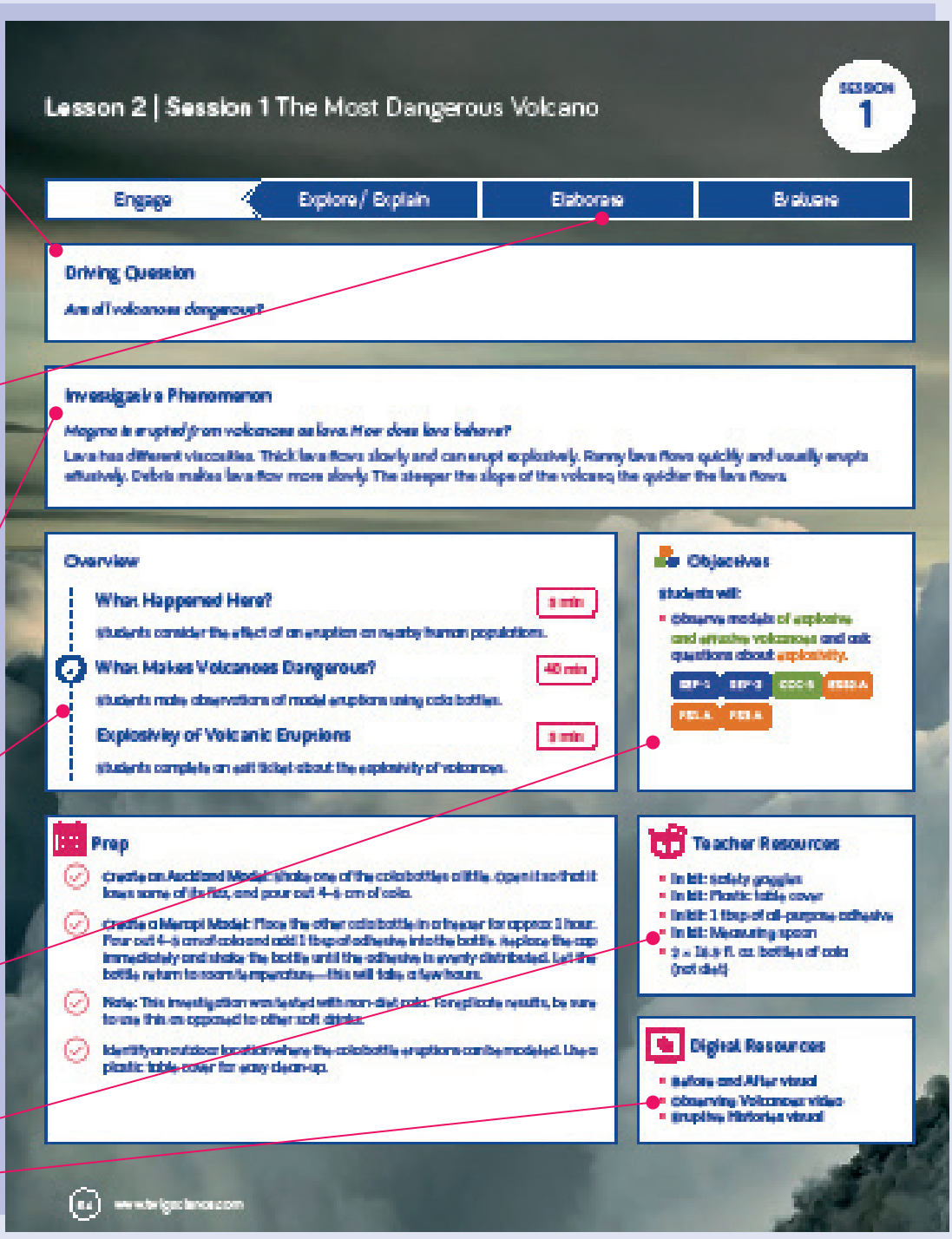
5Es Lesson Model
Places students at the center of 3-D investigational shifts.

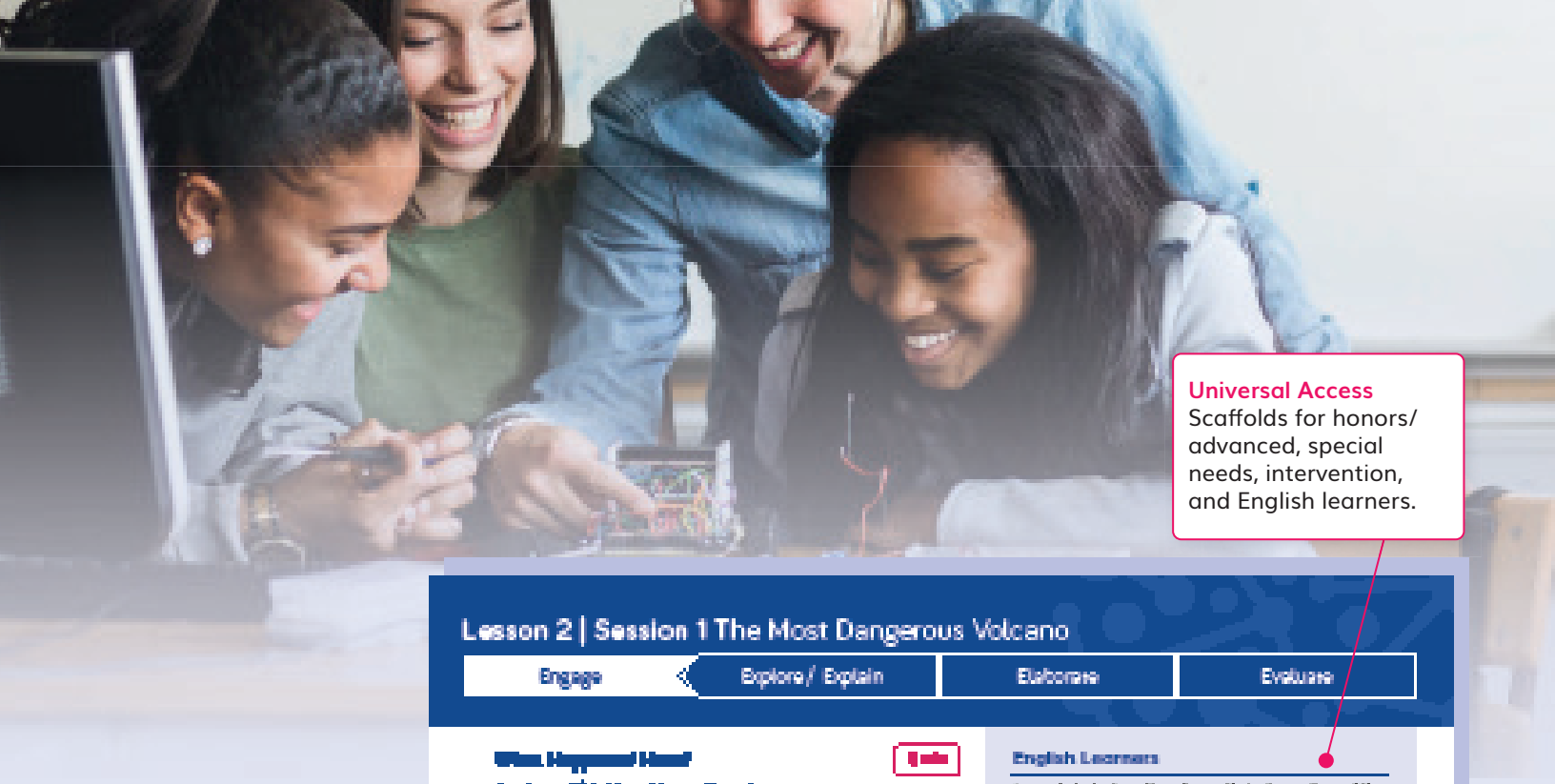
Investigative Phenomena/Problems
Questions that link to each other and build to answer the Driving Questions.

Session Breakdown
Clear overview of structure and timings for easy planning.

3-D Objectives and Standards
Color-coded text indicates which NGSS standards each session addresses.

Resource Lists
Digital and teacher resources listed for every session.





Universal Access
Scaffolds for honors/ advanced, special needs, intervention, and English learners.

Lesson 2 | Session 1 The Most Dangerous Volcano

Engage | Explore/ Explain | Elaborate | Evaluate

What Happened Here?

Active Thinking About Explore



- [illegible]
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TEACHER SUPPORT AND PROFESSIONAL LEARNING

Our professional learning materials include support and training, teacher background information for every module, built-in "Look fors," and a digital guide to the Science and Engineering Practices and Crosscutting Concepts.

As a result of our work with the Stanford SCALE team on 3-D assessment, we also offer a series of accredited workshops consisting of a series of Advanced Training Courses on topics integral to 3-D instruction.



LESSON 1

Driving Question:
Are they hills and mountains, or volcanoes?

glossary

What is a volcano?

A volcano is a point on the Earth's surface through which **magma** (molten rock from within the Earth) erupts as **lava**. Lava is extremely hot when it erupts, with temperatures typically ranging from 700–1,200°C, but eventually cools and solidifies into volcanic rock.

The features that can be seen above the surface of the Earth are only part of the system of a volcano. Magma from the Earth's mantle collects in chambers below the surface. Since the magma is less dense than the surrounding rocks, it tends to rise upward. The magma is under tremendous pressure, and eventually it escapes to the surface through **vents** and fractures. Magma exits the volcano, becoming lava.

A common misconception that students might have is that the mantle is completely liquid and that the tectonic plates are floating on a sea of magma. This is not the case. The mantle is a solid that can behave plastically. It is not liquid but still able to move around very slowly. The movement and flows of the mantle are theorized to be the main driver of plate tectonics. Rock melts to form magma and appears on the surface as lava only under certain conditions.

magma
molten rock beneath the Earth's surface

lava
molten rock that has erupted from a volcano

vent
an opening above a magma chamber through which magma travels to the surface

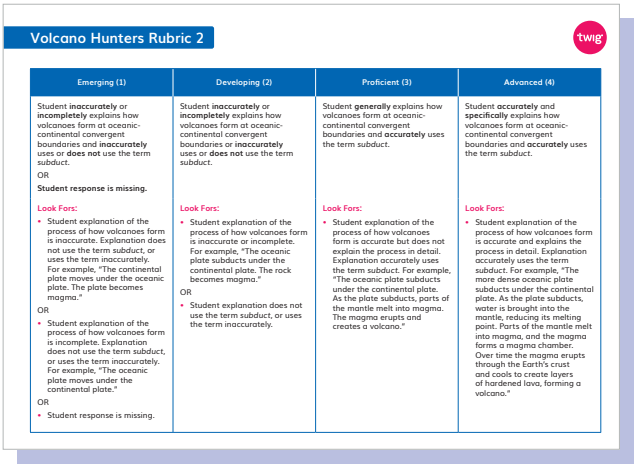
The Earth's Structure

The Earth is made up of four layers:

- A solid inner core
- A liquid outer core
- A viscous layer known as the mantle
- A solid outer crust

The crust and upper part of the mantle are divided into segments called **tectonic plates**, which move very slowly. The place where two tectonic plates meet is called a **plate boundary fault line.**

1



Volcano Hunters Rubric 2

twig

Emerging (1)	Developing (2)	Proficient (3)	Advanced (4)
Student **inaccurately** or **incompletely** explains how volcanoes form at oceanic-continental convergent boundaries and **inaccurately** uses or **does not** use the term *subduct*. OR **Student response is missing.** **Look Fors:** • Student explanation of the process of how volcanoes form is inaccurate. Explanation does not use the term subduct, or uses the term inaccurately. For example, "The continental plate moves under the oceanic plate. The plate becomes magma." OR • Student explanation of the process of how volcanoes form is incomplete. Explanation does not use the term subduct, or uses the term inaccurately. For example, "The oceanic plate moves under the continental plate." OR • Student response is missing.	Student **inaccurately** or **incompletely** explains how volcanoes form at oceanic-continental convergent boundaries or **inaccurately** uses or **does not** use the term *subduct*. **Look Fors:** • Student explanation of the process of how volcanoes form is inaccurate or incomplete. For example, "The oceanic plate subducts under the continental plate. The rock becomes magma." OR • Student explanation does not use the term subduct, or uses the term inaccurately.	Student **generally** explains how volcanoes form at oceanic-continental convergent boundaries and **accurately** uses the term subduct. **Look Fors:** • Student explanation of the process of how volcanoes form is accurate but does not explain the process in detail. Explanation accurately uses the term subduct. For example, "The more dense oceanic plate subducts under the continental plate. As the plate subducts, parts of the mantle melt into magma. The magma erupts and creates a volcano."	Student **accurately** and **specifically** explains how volcanoes form at oceanic-continental convergent boundaries and **accurately** uses the term subduct. **Look Fors:** • Student explanation of the process of how volcanoes form is accurate and explains the process in detail. Explanation accurately uses the term subduct. For example, "The more dense oceanic plate subducts under the continental plate. As the plate subducts, water is brought into the mantle, reducing its melting point. Parts of the mantle melt into magma, and the magma forms a magma chamber. Over time the magma erupts through the Earth's crust and cools to create layers of hardened lava, forming a volcano."

STANFORD SCALE ADVANCED TRAINING COURSES

Deep Dive into Instructional Shifts

- Examine how shifts in standards lead to instructional shifts
- Describing and categorizing classroom-based Science and Engineering Practices
- Analyzing learning progressions for Disciplinary Core Ideas
- Identifying scientific examples in relation to Crosscutting Concepts
- Consider how phenomena are used as a vehicle for sense-making in Twig Science Next Gen
- Reflect on how to use Twig Science Next Gen to shift your science instruction toward 3-D learning
- Learn how to teach a Twig Science Next Gen lesson using the Digital Platform

Equitable Instruction

- Examine research on achievement and opportunity gaps to review why equitable instruction is important in the science classroom
- Examine the equity goals of NGSS
- Explore strategies to create more equitable, student-centered classrooms, including:
  - Creating identity-safe learning environments that develop the whole child
  - Using culturally responsive and equity-minded teaching in the science classroom
  - Differentiating NGSS instruction
  - Applying an Equity and Assets-based Perspective
  - Leveraging group work to transfer responsibility to students
- Consider how to make your classroom and instructional practices more equitable

3-D Classroom Science Language and Literacy

- Explore importance of developing scientific literacy in the NGSS classroom
- Examine research on impact of science talk on learning
- Review and practice strategies for supporting language development in the NGSS classroom.
- Consider how to use science language routine for formative assessment purposes
- Align Science and Engineering Practice to language development
- Plan how to use Twig Language Routines and additional strategies to increase and capture science talk in your classroom

twig Science Framework Alignment

GRADE	VOLUME	NGSS PERFORMANCE EXPECTATIONS			INTEGRATED 3-D CHALLENGE	MODULES
6	1	MS-LS1-1 MS-LS1-2 MS-LS1-3	MS-ETS1-1 MS-ETS1-2	MS-ETS1-3 MS-ETS1-4	How to Mend a Broken Heart	Under the Microscope
						CreATe Network
	2	MS-ESS2-4 MS-ESS2-5 MS-ESS2-6 MS-PS3-3 MS-PS3-4	MS-PS3-5 MS-PS1-4* MS-PS4-2* MS-LS1-7*	MS-ETS1-1* MS-ETS1-2* MS-ETS1-3* MS-ETS1-4*	Polar Survival	The Great Air Race
						Model Earth
						Life Through a Lens
	3	MS-LS1-4 MS-LS1-5 MS-LS1-8	MS-LS3-2 MS-PS4-3* MS-ESS2-4*	MS-ETS1-4*	Killer Plants	North Island Rescue
						Landscape of Fear
	4	MS-ETS1-1 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4	MS-ESS3-3 MS-ESS3-5 MS-LS2-4* MS-ESS3-2*		A Connection to Home	The Heat Is On
						Emergency Hydration
7	5	MS-PS1-1 MS-PS1-3 MS-PS1-4 MS-PS1-6*	MS-ESS3-1 MS-ESS1-4* MS-ESS2-1* MS-ESS3-4*	MS-LS2-3* MS-LS2-4* MS-ETS1-1* MS-ETS1-2*	Cell Phones: Unboxed	The Resource Race
						The Plastic Tide
	6	MS-ESS2-1 MS-ESS2-2 MS-ESS2-3	MS-ESS3-2 MS-ESS1-4*	MS-PS1-2* MS-PS3-1*	Supereruptions	Volcano Hunters
						Dinosaur Trail
	7	MS-ETS1-1 MS-ETS1-3 MS-ETS1-4	MS-PS1-2 MS-PS1-5 MS-PS1-6	MS-PS1-1* MS-PS1-4* MS-ETS1-2*	A Natural Glow	Science on the Main Stage
						Turtle SOS
	8	MS-LS1-6 MS-LS1-7 MS-LS2-1 MS-LS2-2 MS-LS2-3 MS-LS2-4	MS-LS2-5 MS-LS1-2* MS-ETS1-1 MS-ETS1-2 MS-ETS1-3*	MS-ETS1-4* MS-ESS3-3* MS-ESS3-5* MS-PS1-5* MS-PS1-2*	Stop the Rot	Future Food
						A Place Called Home
						The Green Monster
8	9	MS-ESS1-1 MS-ESS1-2 MS-ESS1-3 MS-ESS1-4	MS-PS2-2 MS-PS3-1 MS-PS2-4* MS-PS2-5*	MS-ETS1-1* MS-ETS1-2* MS-ETS1-3* MS-ETS1-4*	SOS from Space	Ocean Powered
						Asteroid Alert!
	10	MS-ETS1-1 MS-ETS1-2	MS-PS2-1 MS-PS2-3 MS-PS2-4 MS-PS2-5 MS-PS3-2	MS-LS1-3* MS-ESS1-2* MS-ESS1-3* MS-ETS1-3* MS-ETS1-4*	Mission to Mars	Collision Course
						Movie Magic
	11	MS-LS3-1 MS-LS4-1 MS-LS4-2 MS-LS4-3 MS-LS4-4	MS-LS4-5 MS-LS4-6 MS-LS1-1* MS-LS1-5*	MS-LS3-2* MS-ESS1-4* MS-ETS1-1*	Relative Giants	Are They Among Us?
						Survival Stories
	12	MS-ESS3-4 MS-PS4-1 MS-PS4-2 MS-PS4-3	MS-ETS1-1 MS-ETS1-3 MS-ETS1-2* MS-ETS1-4* MS-ESS3-3*	MS-LS1-4* MS-LS2-1* MS-LS2-4* MS-LS4-4*	A Vision of the Future	Amazon of the Oceans
						Into the Abyss
						Animal Tracks
						The Bees' Needs

*Supporting PEs

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