Science

CORE CURRICULUM

twig SCIENCE

Transitional Kindergarten

Phenomena-Based, Digital-Forward 3-D Learning

imagine learning

“Our district appreciates how unbelievably responsive the Twig Science team has been! We feel we have a true partner in getting the highest quality instructional materials into our young scientists’ hands.”

• • •

Ryan R., TK–5 Instructional Coach, Los Angeles, CA

Let's Make More Aha! Moments

twig SCIENCE TK

"Are you ready to take your senses on a jungle safari?"

Twig Science TK connects the social and emotional development of TK students to the foundations of scientific inquiry, preparing them for the rigors of the California Next Generation Science Standards (CA NGSS).

"Can you build shelters, bridges, and rafts to escape Shipwreck Island?"

Story-led modules challenge students to be creative problem solvers, taking them on enthralling quests that spark curiosity and build knowledge and experience. Students explore phenomena via hands-on investigations, videos, interactives, and songs.

"Where will your imagination take you on Ultimate Games Day?"

The lessons in each module progressively scaffold student learning. Students design solutions and make sense of investigative phenomena that build toward an understanding of module or anchoring phenomenon in a three-step instructional design that is easy to follow.

Program Structure

Twig Science TK lessons follow a simplified 5E instructional model version of the instructional design for Twig Science Elementary lessons:

- **Spark:** Used to kick off the lesson and prepare students for the investigations ahead using videos, games, and interactive songs
- **Investigate:** The main part of the lesson, in which students conduct investigations, model, and explain the scientific discoveries they make
- **Reflect:** Used to summarize and review learning, giving students opportunities to analyze their investigations, with video, discussions, and performance tasks

All of the modules introduced in the next few pages follow this basic structure.

Program Structure

Senses Safari

MODULE 1

Module Phenomenon: How do I sense the world around me?

Welcome to the jungle!

Students learn a song to help them remember each of their five senses. They discover that — just like animals in the jungle — their eyes help keep them safe. Students get their senses working together to make tasks easier, building a tower using their sight, touch, and even hearing!

CA NGSS

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

How to Build a Human

MODULE 2

Module Phenomenon: My body is made of different parts that work together.

Ever wondered what's going on inside your body?

Through games, models, and song, students develop an understanding of the different parts of their bodies. They explore the phenomena of heartbeats, breathing, skeletons, and brains, and they follow food on its roller-coaster journey through the digestive system. Students even build their own life-size human body!

CA NGSS

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

Ultimate Game Day

MODULE 3

Module Phenomenon: What happens when we push and pull objects?

Let the games begin!

Students use hands-on investigations, digital interactives, song, and videos to explore physical forces and what makes things move. They discover fast and slow moving animals, meet one of the strongest animals on Earth, and investigate the phenomenon of gravity. Finally, students design a unique game that uses pushes and pulls.

CA NGSS

K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

Weather Explorers

MODULE 4

Module Phenomenon: How can data help us understand the weather?

Grab your parka — we're heading to the North Pole!

Students become weather reporters, describing different kinds of weather. They choose the best clothing for certain weather before starting their weather data collection, which they return to throughout the module. Using hands-on and video activities, they make predictions based on weather patterns, explore temperature with a blubber glove, and investigate the phenomenon of seasons by observing animal camouflage.

CA NGSS

K-ESS2-1 Use and share observations of local weather conditions to describe patterns over time.

K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface.

Program Structure *continued...*

Shipwreck Island

MODULE 5

Module Phenomenon: Why are objects made of different materials?

Can you use different materials to explore and escape an island?

Students explore the properties of materials — how waterproof they are and whether the float or sink — to help them survive an island adventure. They select the best materials to build a bridge and design and test rafts to escape the island, connecting their rafts' performance to the materials used to build them.

CA NGSS

K–2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

K–2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Life on a Farm

MODULE 6

Module Phenomenon: All living things have needs.

Roll up your sleeves — we've got work to do!

Students distinguish living and non-living things on a farm. They plant cress seeds — witnessing the phenomenon of germination — and care for the seedlings to see what plants need to grow. They explore what all animals need to survive. At the end of the module, students stage their own farm role-play, showing that all living things have the same basic needs.

CA NGSS

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

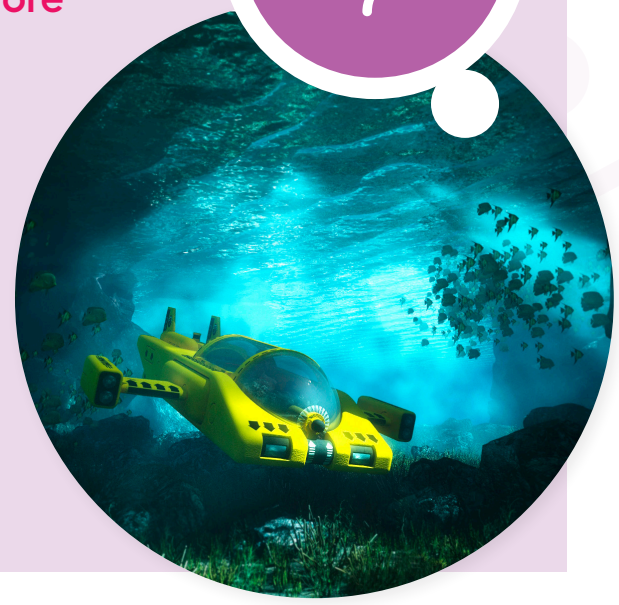
Ocean Deep

MODULE 7

Module Phenomenon: Humans can both harm and help ocean life.

Get your scuba gear — we're going to explore ocean deep!

Students discover ocean habitats and explore the phenomenon of ocean pollution. They investigate how much water there is on Earth, model living and non-living things on a beach, and find out what lives in a coral reef. With the help of read-alouds, interactive games, and hands-on investigations, they come to understand the impact of ocean pollution and design solutions to reduce it.



CA NGSS

K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

Space Adventure

MODULE 8

Module Phenomenon: Planet Earth is part of the Solar System.

Ready for lift off?

Students discover the wonders of space, from the Sun and Moon to the eight planets, and design their own journeys through the Solar System. They explore the phenomenon of the sky changing as night falls, make a model of the Solar System, explore a mystery planet, and compare and contrast the rocky planets and gas giants. Finally, they present their own space mission plans.

CA NGSS

K-PS2-1 Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

Program Components

From captivating hands-on activities and full-color posters to rich videos and interactives, Twig Science TK gives you all the components you need to deliver amazing science lessons to budding student investigators.

PRINT AND DIGITAL

Teacher Edition

An easy-to-use resource with lesson planning, differentiated instruction, built-in language routines, and digital tools.

PRINT AND DIGITAL

Student Interactive Activity Sheets

Engaging graphic organizers, drawings, text, and visuals to explore and explain phenomena.

DIGITAL

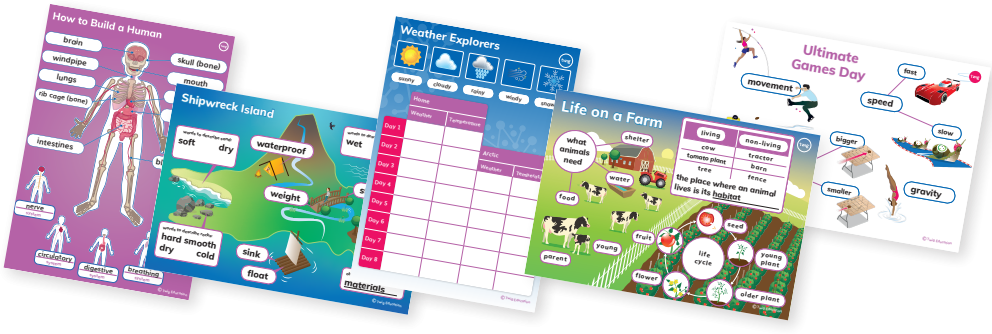
Interactive Read-Alouds

Captivating auditory and narrative experiences help students build background knowledge, make sense of phenomena, think critically, and listen to others.

PRINT

Science Investigation Posters

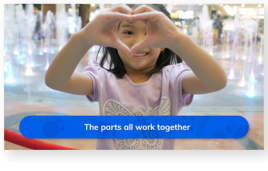
Opportunities for students to use infographics, visuals, and academic vocabulary.



DIGITAL

Music Videos

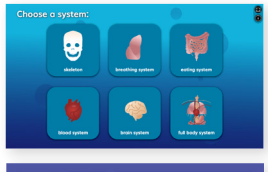
From body systems to material properties, catchy songs with videos include text tracking, vocabulary, and high-quality imagery.



DIGITAL

Interactives and Games

Fun interactives and games for collaboration and independent work range from building a human body to investigating weather and seasons.



PRINT AND DIGITAL

Vocabulary Cards

Bilingual (English and Spanish) vocabulary cards help students develop their use of scientific language and practice social and literacy skills — with suggested games and activities.

PRINT AND DIGITAL

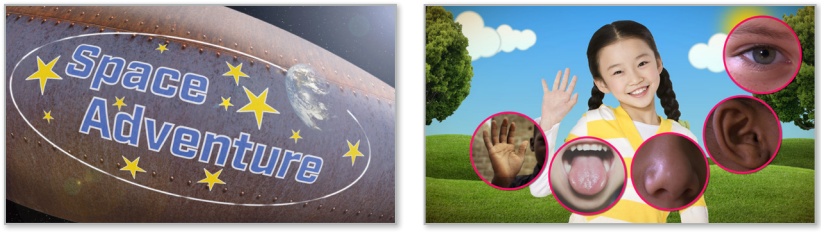
3-D Assessment Suite

Performance tasks and formative and summative assessments measure students' progress in science skills, content knowledge, and speaking, listening, reading, and writing.

DIGITAL

Real-World, Engaging Videos

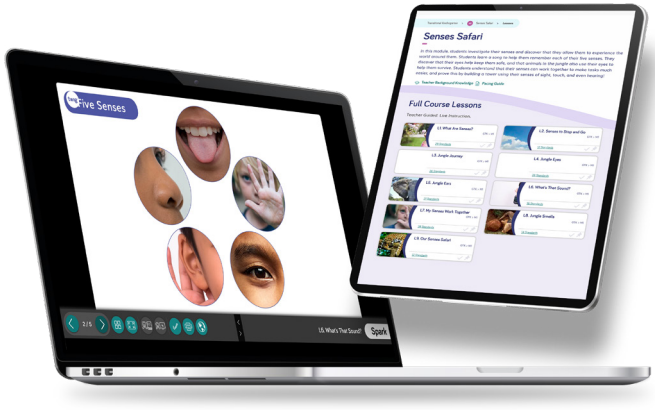
High-quality, colorful videos with narration, music, graphics, and captioning give students with access to real-world phenomena in the classroom.



DIGITAL

Digital Platform

Students and teachers have 24-7 access to an intuitive and collaborative online platform. Lessons combine print materials with digital tools optimized for whiteboard presentation. Professional development for educators include background refreshers on key science concepts and model lesson videos.

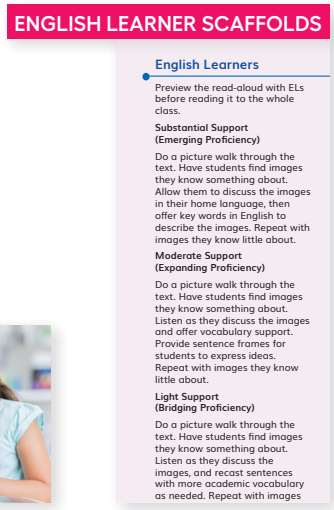


Supporting All Learners!

Twig Science TK ensures that all young learners, regardless of background or ability, receive robust support in developing essential social, emotional, and academic practices and behaviors to seamlessly transition to Kindergarten.

Literacy and Language Development

- Support for all learners in oral language and academic vocabulary development
- English Learner scaffolds for Emerging, Bridging, and Expanding levels of proficiency
- Stanford SCALE language routines
- Interactive read-alouds that promote discussion and language acquisition.



Social and Emotional Development

Twig Science TK has been designed to nurture early growth and development while building age-appropriate skills and knowledge in readiness for the CA NGSS. Aligned to cross-curricular disciplines through the Head Start program, Twig Science gives students opportunities to prepare and practice skills they'll need for the next step.

Cross-Curricular Connections

Applications to ELA, ELD, Math, History–Social Science, and Arts maximize instructional time and opportunities to apply science in different contexts.

"The content is perfect for TK! I love that there are many cross-curricular connections so that I am teaching more than science. This is important when I only have my students for four hours a day."

Heidi W., TK Teacher, San Diego, CA

CA NGSS Foundations

Young learners develop a strong foundation in the CA NGSS, learning through three-dimensional performance of thinking, doing, and knowing of science and engineering.

Family Outreach

Letters support school-to-home connections to extend science learning beyond the classroom.

You've never seen **core** like this before

twig SCIENCE

Imagine Learning is with you every step of the way.

To learn more or to connect with your local account executive, go to www.imaginelearning.com/contact-us

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