

3-D SCIENCE QUEST

JOURNEY INTO THE UNKNOWN

by 'twig' SCIENCE



Welcome to a Science Adventure!

You are tasked with an important mission: evaluating two science programs that promise to guide your young students through the exciting possibilities presented by the PA STEELS, based on the Next Generation Science Standards (NGSS).

Do not read this booklet from start to finish! On every page, you must make a choice and follow the instructions to find out what happens next.

Let's begin!

3-D science standards sound great, encouraging students to think and act like real scientists and engineers, but let's be honest, working out how to approach them can feel like staring at a treasure map.

You know some science, but you're not a science specialist, and the language of three-dimensional learning, crosscutting concepts, disciplinary core ideas, etc., can feel more intimidating than inspiring. The good news? You don't need to be an expert to succeed. All you need is a spirit of adventure and a willingness to explore with your students.

The two curricula you're testing will help you in your journey — you hope!

To take a look at Blah Science, a well-known, pre-existing science program adapted for the PA STEELS, turn to 5.

For an introduction to Twig Science, a dynamic, multimedia program custom-designed for 3-D science standards, turn to 3.

Well done! You've chosen **Twig Science**, a dynamic, multimedia program custom-built for the PA STEELS. From the very first lesson, it's clear that this isn't your typical curriculum. Rather than learning definitions or facts, students tackle big questions and hands-on challenges.

Students act like scientists and engineers, testing ideas, asking questions, and making connections. Videos and interactive simulations help them make sense of the world, while projects like investigating real volcanoes bring phenomena to life.

You notice a change taking place. Your students aren't just engaged; they're invested, approaching each new challenge with curiosity and confidence. And 3-D science standards don't intimidate you when you see how your classroom comes alive.

You've reached the end of your journey in this book, but just like a **Twig Science** investigation, this isn't fiction, it's real! Scan the QR code to find out more about how you really can see these changes take place in your students' lives — and your own.



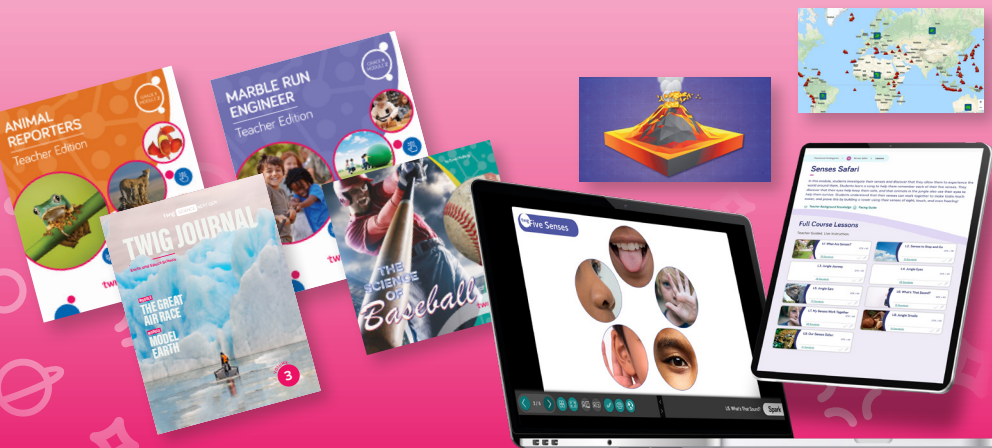
Twig Science materials immediately catch your eye with their vivid, thoughtful design. You've heard about the quality of the videos and multimedia content in **Twig Science**, but it has to be seen to be believed. Incredible real-world phenomena is brought to life through high-quality footage and immersive interactives.

Other learning materials are just as impressive. Teacher Editions are clear and well organized, and student materials are truly a game-changer, packed with colorful graphics and diagrams, interactive activities, and space to record data, observations, and predictions.

You get a sense that with **Twig Science**, you're not just meeting 3-D science standards — you're showing your students how science connects to their lives and the world around them. This could be the adventure they need!

If you want to compare the materials in Blah Science, turn to 5.

Or to jump straight into a grade 3 lesson, turn to 6.

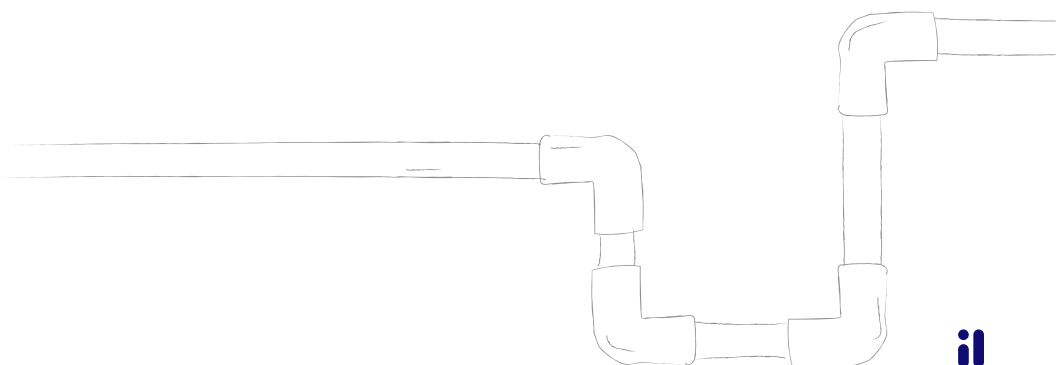



Why is there a mysterious brown substance in the tap water of Rivertown? In this Blah Science activity, students step into the role of young chemists to solve a problem with a fictional town's water supply. They test samples from the water system, including the brown substance itself, residue from the town's ageing copper pipes, and chemical runoff from nearby farmland. Using their findings, students piece together how these substances interacted to form the contaminant.

The investigation offers solid practice with basic scientific processes, but you can't help feeling that something is missing. Because the scenarios are entirely fictional, the stakes feel low, and the sense of urgency that comes with solving a real-world problem just isn't there. Student engagement wavers, and while they enjoy parts of the activity, it doesn't inspire the level of curiosity and connection that true real-world investigations can spark.

To compare a Twig Science real-world investigation, turn to 8.

Or to continue planning your instruction, turn to 10.





As you glance through the Blah Science materials, one thing's clear: there's a mountain of text-heavy content. While it includes some hands-on activities, they're limited, straightforward, and don't offer much excitement for students — or you!

A lot of the printed material consists of basic blackline masters (BLMs), designed to be copied for students to fill out. There's little colour, and the materials don't spark much enthusiasm, even as you try to picture how they'll work in your classroom.

The focus is on delivering the standards, but without much attention to making the lessons feel engaging or meaningful. It's clear that this program was retrofitted to meet the PA STEELS standards. It hits the standards, but it lacks the vibrancy and creativity to bring 3-D learning to life.

If you want to compare the materials in Twig Science, turn to 3.

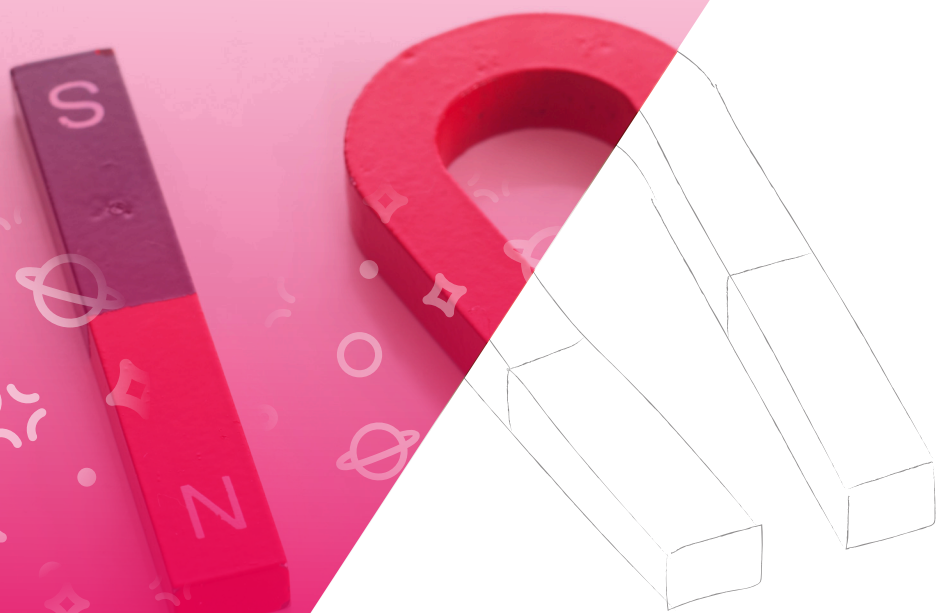
Or to jump straight into a grade 3 lesson, turn to 6.

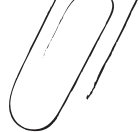
In grade 3 in the PA STEELS, students learn about forces and interactions, including magnetism. Magnetism is the fascinating force of nature behind everything from compasses to high-tech gadgets, and it's a perfect way to introduce kids to the invisible forces that shape our world.

Teaching students about magnetism sparks curiosity, encourages hands-on discovery, and builds a foundation for understanding the science behind everyday technology.

To let your students explore magnetism by testing which objects stick to a magnet in Blah Science, turn to 7.

Or to use Twig Science to get students harnessing magnetic forces by designing their own Dragon Rides in the Ultimate Playground, turn to 11.



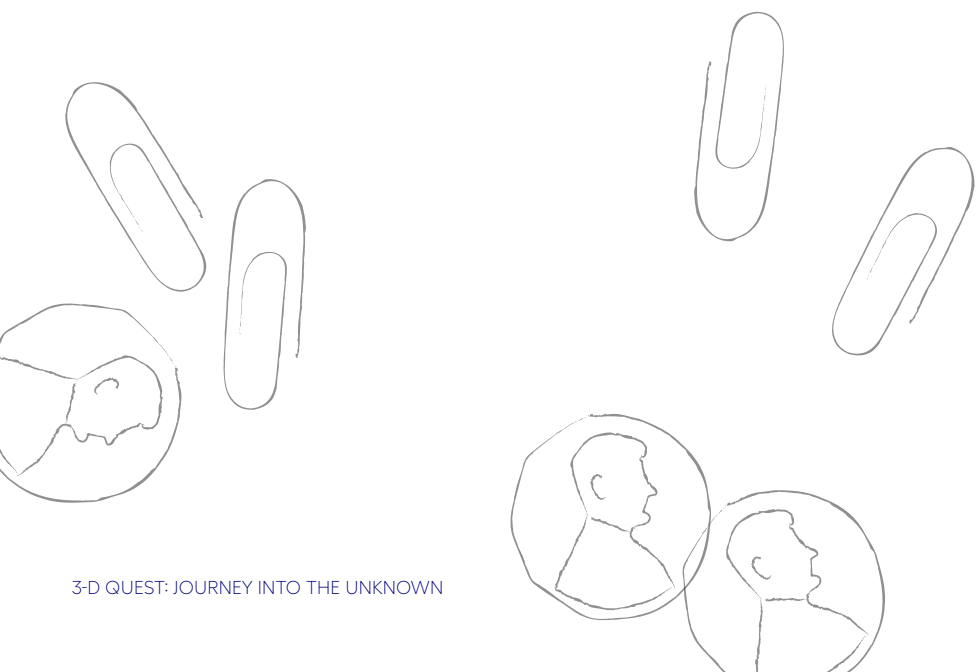


In a Blah Science magnetism activity, you gather a variety of objects — such as aluminum foil, a craft stick, a penny, a nickel, and a paperclip — and let your students predict which ones will stick.

It's an engaging way to start off looking at magnetism, although in practice the results are a little underwhelming! Only the paperclip sticks, leaving little room for deeper insight into the science behind magnetism.

While this activity introduces the concept of magnetic attraction, it doesn't stretch students' understanding of why some materials are magnetic or the broader implications of this invisible force in the world around them.

Turn to 14 to start planning your next lesson.



In **Twig Science's** Volcano Hunters module, students step into the shoes of real volcanologists. They delve into the science of volcanoes, exploring what makes them erupt and the challenges of predicting their behaviour.

Through visual media, datasets, maps, and hands-on exploration, students investigate real-life data from active volcanoes in Kathmandu, Bougainville Island, Auckland, and Yogyakarta. They analyze patterns in eruptions, assess threat levels, and create plans to protect people living in these regions. What conditions make an eruption more likely? How can scientists predict volcanic activity? What should communities do to prepare?

Real-world contexts transform this investigation into an unforgettable experience, creating a real sense of urgency and relevance. Students are inspired to think critically about how science can save lives and mitigate disasters.

To continue planning your instruction, turn to 10.



You've chosen to go with Blah Science, a well-known program that's clearly been adapted from older materials to fit the PA STEELS framework. It's familiar, straightforward, and the activities hit the standards.

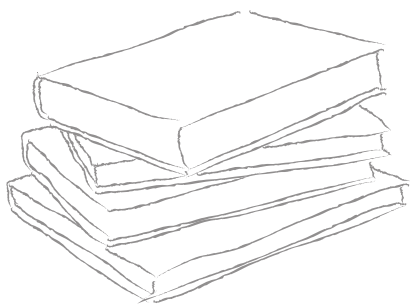


The problem is, while the program gets the job done, it feels more like checking boxes than sparking discovery. The activities introduce the ideas behind three-dimensional learning, but they don't fully embrace its potential. Students follow directions and arrive at the correct answers, but they're rarely challenged to truly think like scientists or engineers.

You're technically covering the standards, but you can't shake the feeling that something is missing. The students are learning science — but are they really experiencing it?

If you want to keep using Blah Science, your adventure ends here. You can close this book now and enjoy the rest of the curriculum.

If you want to make a last-minute switch to Twig Science, however, turn to 2.



Flexibility is key when it comes to a PA STEELS curriculum.

At elementary and middle school levels, science learning often competes with other priorities, from literacy and maths to extracurricular demands. For busy teachers, a curriculum that adapts to the realities of the classroom is essential.

That's why giving teachers opportunities to incorporate resources in their own lesson plans or offering options like a fast track is so important — these streamlined pathways allow teachers to meet the standards without feeling overwhelmed.

Turn to 13 to explore flexible options in Blah Science.

Or turn to 12 to see what Twig Science has to offer to under-pressure teachers.



You choose to dive deeper into magnetism by taking your students on an unforgettable adventure.

They explore real-world applications like maglev trains, designing a tabletop game with magnets, and create a model for a Dragon Ride in the Ultimate Playground! Amazing!

These activities involve creativity and problem-solving, transforming abstract concepts into hands-on discovery. Your students are thinking critically about real-world implications, i.e. you're not just teaching them magnetism — you're challenging students to connect science to the world around them and imagine future possibilities.

Great job! Turn to 14 to start planning your next lesson.

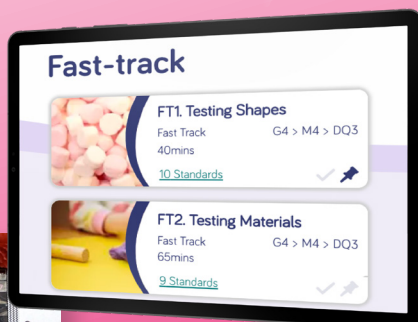


At elementary level, **Twig Science** Fast Track offers a streamlined approach to 3-D science learning, covering PA STEELS/NGSS standards with the same compelling phenomena and STEM-role narratives as the full course — while saving 25% of the instructional time.

Twig Science leverages a user-friendly digital platform and innovative tools to maximize flexibility and accessibility for teachers and students alike. On-demand, bite-sized Twig Coach video lessons bring high-quality, studio-produced instruction directly into the classroom or remote learning environment.

With hundreds of award-winning videos and other resources ready to be seamlessly incorporated into custom lesson structures, **Twig Science** empowers teachers to deliver engaging, effective science instruction that fits the needs of diverse classrooms.

Turn to 15 to make your final choice of curriculum.



Blah Science offers little flexibility for teachers, with no fast track options available, and there's no guidance for teachers who may wish to streamline lessons.

The result is a curriculum that feels stifling and restrictive, particularly at lower grades, where the lessons lack variation and opportunities for exploration. Many units rely heavily on fidelity of instruction — sticking rigidly to the prescribed structure — for the activities to make sense, leaving little room for creativity or adaptation to different classroom needs.

To compare the teacher experience in Twig Science, turn to 12.

Or turn to 15 to make your final choice of curriculum.



Science isn't just something that happens in a lab — it's a set of tools we use to solve real-world problems.

Framing science investigations around real-life challenges brings learning to life. Whether it's designing a way to reduce pollution, building better buildings, or exploring new environments, these investigations connect classroom learning to the world beyond school.

When students see how science impacts the issues they care about, their engagement deepens, and their curiosity grows.

Now let's try a middle school investigation!

To solve problems with the tap water in a fictional town in Blah Science, turn to 4.

Or to assess threat level from real-life volcanoes in Kathmandu, Bougainville Island, Auckland, and Yogyakarta, turn to 8 to start a Twig Science virtual field trip.



Now it's decision time! You've had a chance to evaluate both science programs, and while there's no doubt that they each offer comprehensive coverage of PA STEELS/NGSS standards, they feature noticeably different approaches.

Which one do you prefer? Will your students benefit most from a Blah Science, a traditional, text-heavy program with some hands-on activities and limited flexibility?

Or do you think the high-engagement **Twig Science**, with its dynamic, customizable curriculum and real-world multimedia investigations, has more to offer them?

To choose Blah Science, turn to 9.

Or to choose Twig Science, turn to 2.

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