

# VisibleGeology

A free web application for teaching and exploring geological concepts

[www.visiblegeology.com](http://www.visiblegeology.com)

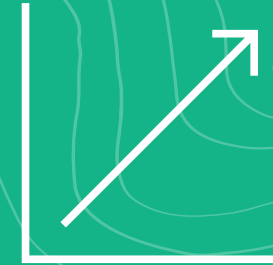
# Need for Geoscientists: Projected Shortage

## Increasing Demand

Demand for geoscientists is expected to increase by 25% over the next decade due to growing sectors.

## Projected Shortage of Geoscientists

There is a projected shortage of skilled geoscientists, which poses a challenge for the industry. The American Geosciences Institute predicts a shortfall of 130,000 geoscientists in the US by 2029.



# We need to ignite a passion for earth science in our young people



*“Urgent action needed to stem **slump in geoscience graduates**”*

Press Release 2023

Australian Geoscience Council  
Inc.



unesco

*“A better understanding of the Earth is essential for the diversity of life and future of human society”*

International Geoscience  
Programme (ICP)

nature

*“Geoscience on the chopping block”*

Sept 2021

Nature Reviews Earth &  
Environment



*“Geoscience workforce deficit will be ~130,000 full time geoscientists by 2029”*

October 2020

American Geosciences Institute



*“low-carbon future will be very mineral intensive”*

Minerals for Climate Action 2020

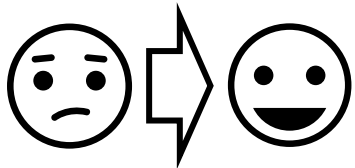
The World Bank Body

# Some key concepts in training the next generation

## FRAMES OF REFERENCE

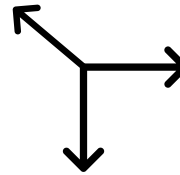
### INTEREST

- Accessibility
- Discovery, intuitive design
- Impact



### SPATIAL SKILLS

#### ORIENTATION



#### LOCATION



#### SCALE



### CRITICAL THINKING

- Validity of inputs
- Response to change



# Seequent initiative: Creation of Visible Geology

## Addressing Geoscientist Shortage

Seequent's initiative aims to tackle the shortage of geoscientists through innovative educational tools and resources.

## Collaboration with Experts

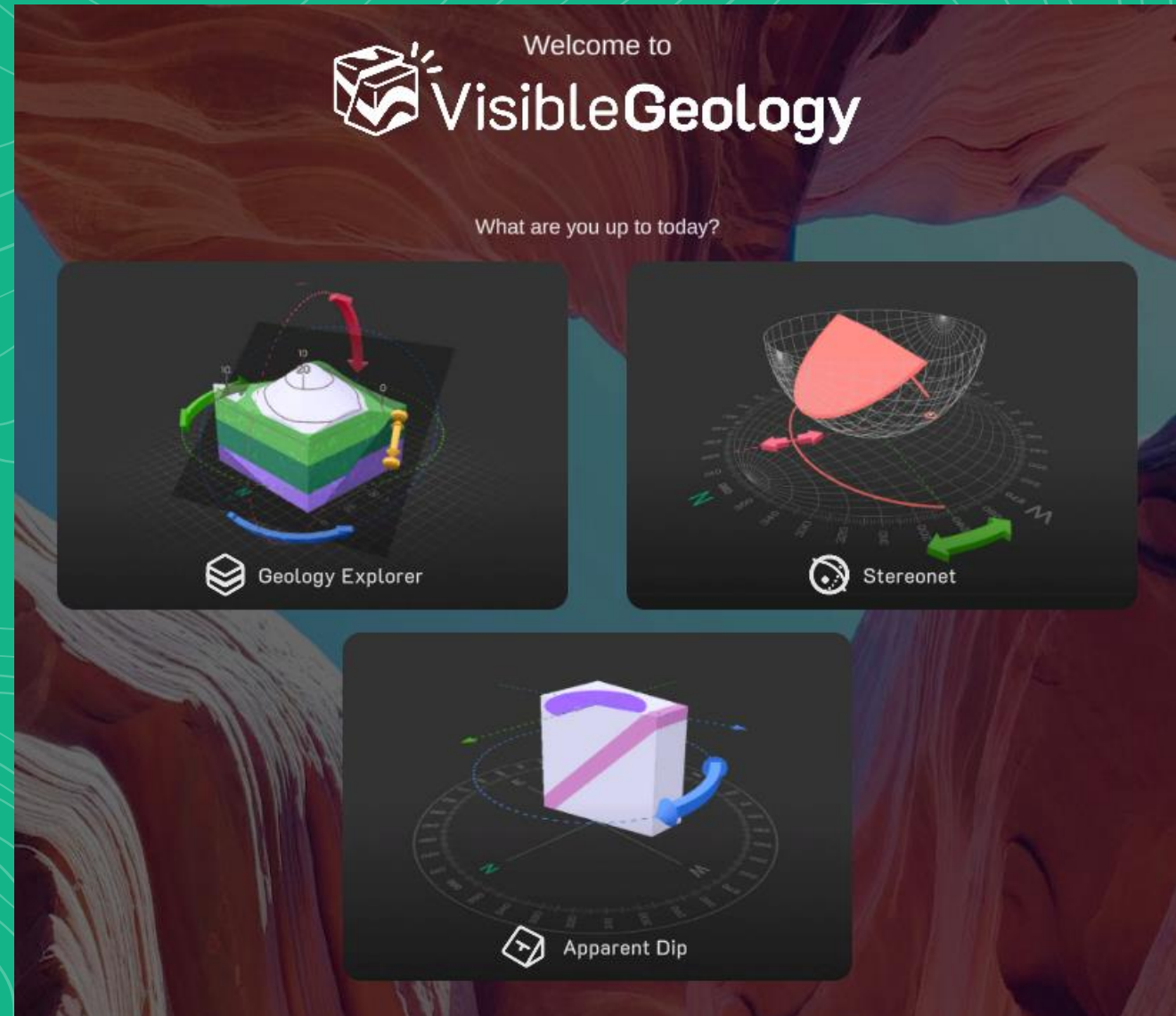
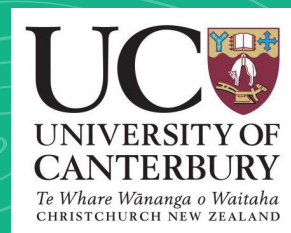
The project involved collaboration with local Christchurch experts to enhance the accuracy and relevance of the application.

## Free Web Application

A free web application was developed to simplify the teaching of earth sciences and make it accessible to everyone.



CerebralFix



How do we get the next generation interested in learning key geoscience concepts? A (local) collaboration



CerebralFix



### Some key spatial skills are declining in the general population

Technology can be a double-edged sword with respect to learning and understanding. Consider how much we cognitively outsource to new navigation and transport technologies

### Spatial skills are crucial to geoscience training

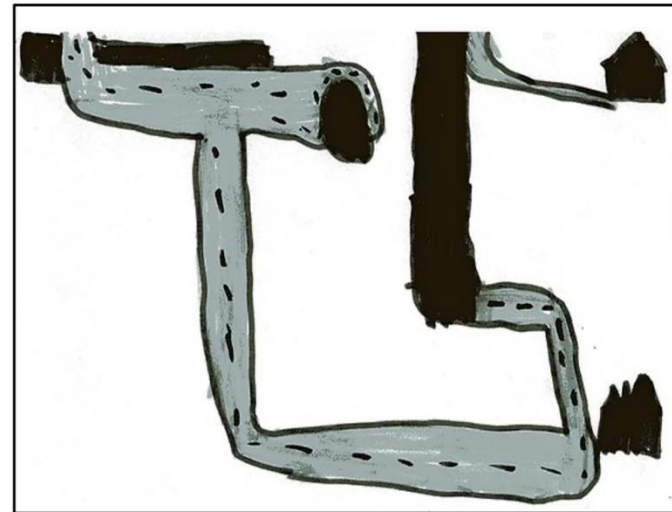
Spatial skills are strongly related to success in STEM fields, especially geoscience

### Spatial skills require practice

Regularly studying spatial skills results in measurable improvements. Accessibility is a key consideration. Traditional methods of teaching spatial skills takes significant time

<https://www.sequent.com/enhancing-geology-students-3d-spatial-skills-using-visible-geology/>

### Children's drawing of their trip to school



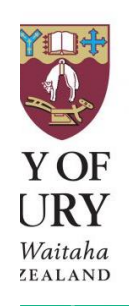
DRIVEN TO SCHOOL



WALKING TO SCHOOL

(from study by Prof. Dr. Margrit Stamm:  
<https://margitstamm.ch/>

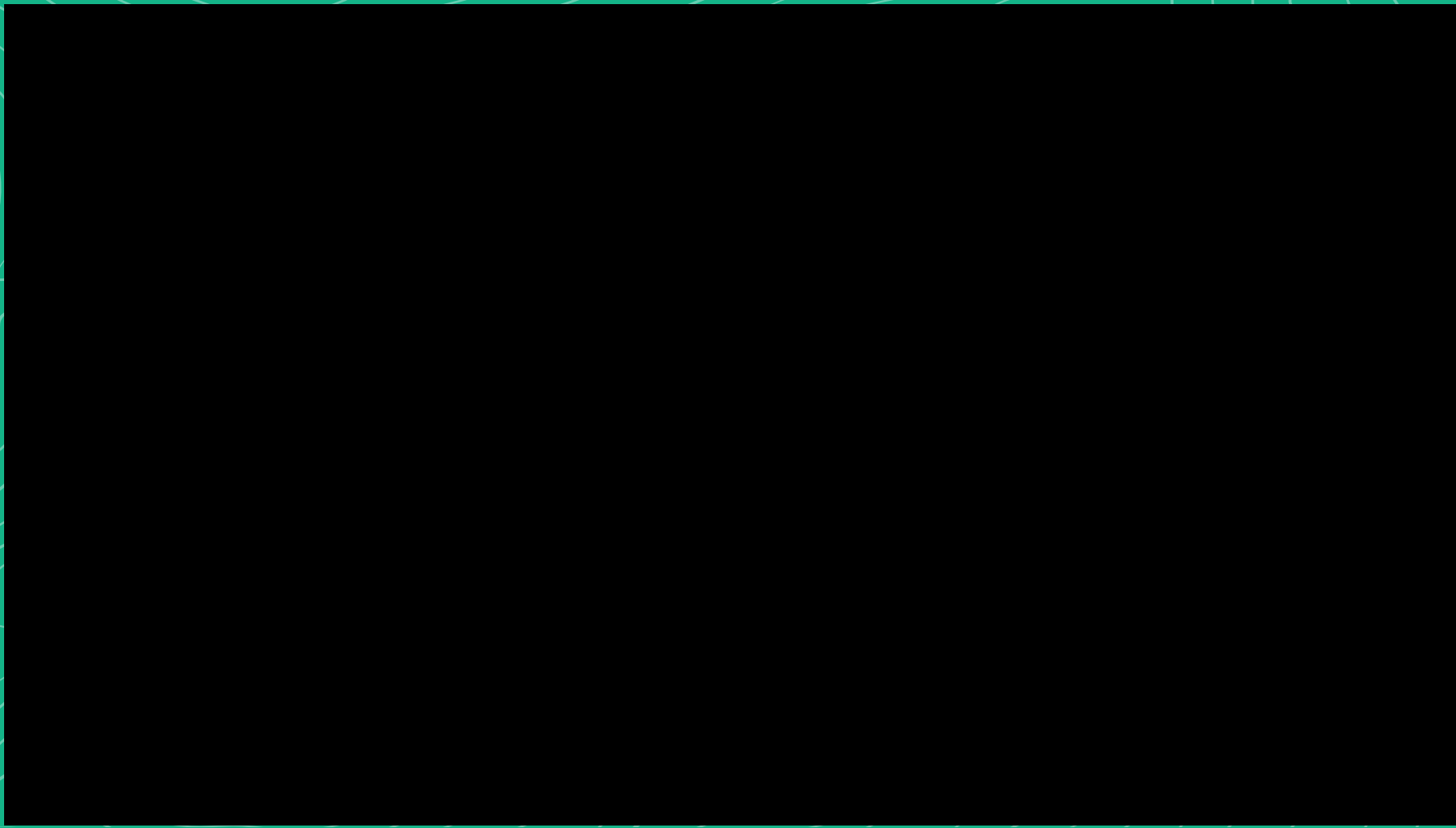
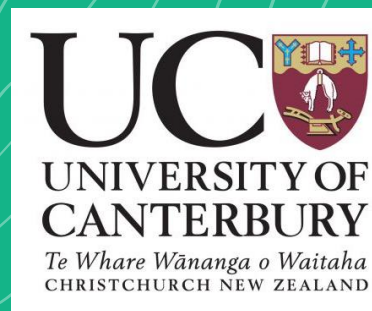
How do we get the next generation of geoscientists? A (C)



How do we get the next generation interested in learning key geoscience concepts? A (local) collaboration



CerebralFix





Layer



Events



History



Topography



xSection



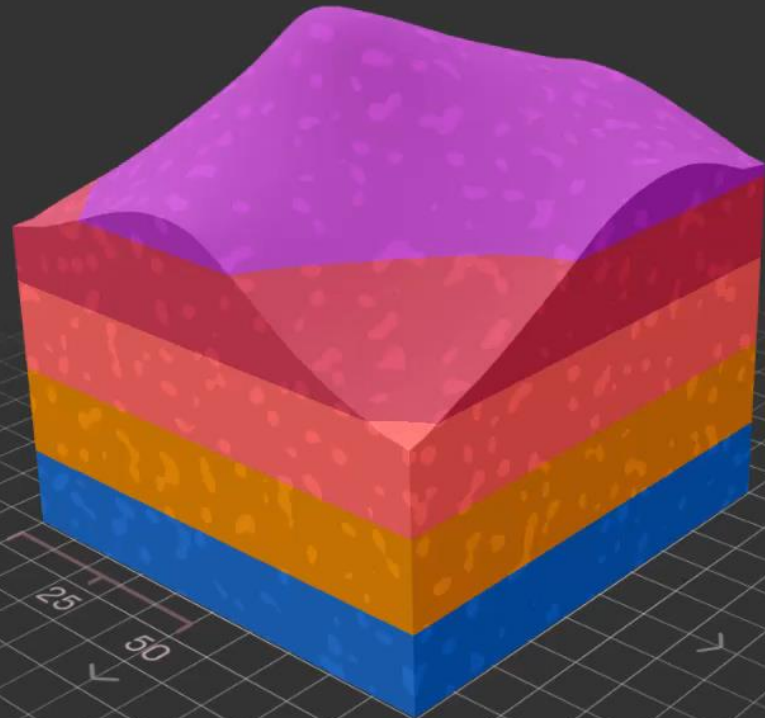
Core



Decals

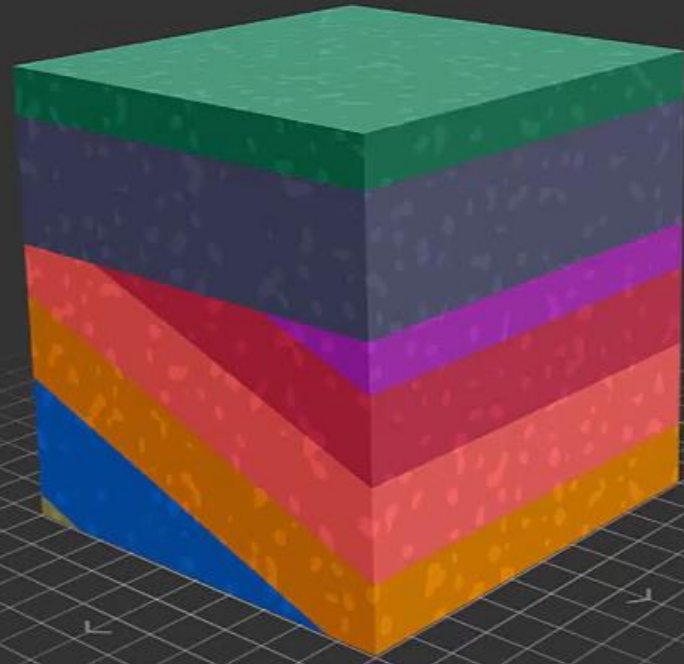


Menu



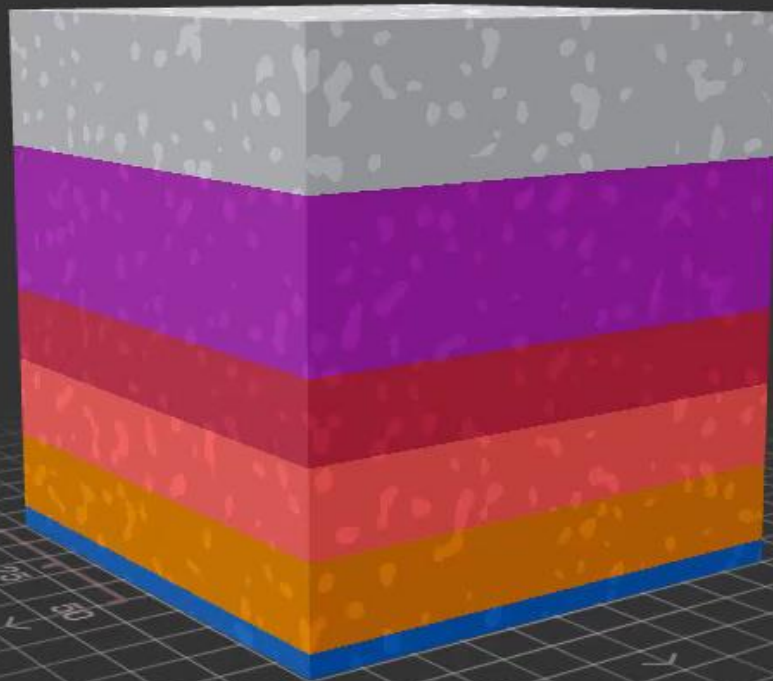


-  Layers
-  Events
-  History
-  Topography
-  xSection
-  Core
-  Decals
-  Menu





-  Layers
- 
-  History
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-  Core
-  Decals
-  Menu



# Launch and User Statistics

## Launch Date

The platform was officially launched in June 2024, marking a significant milestone in its development.

## User Growth

Since its launch, the platform has attracted over 95,000 users, showcasing substantial growth and interest.

## Global Reach

The platform connects users from 117 countries, with participants speaking 53 different languages.



# Educational Partnerships

## Collaboration Overview

Educational partnerships enhance learning by combining resources from multiple organizations to support geology education effectively.

## American Geoscience Institute

The American Geoscience Institute develops lesson plans aimed at high school educators to improve geoscience education.

## University of Canterbury Courses

The lesson plans are utilized in multiple undergraduate geology courses at the University of Canterbury, enriching the curriculum.



# Feedback from Educators and Students

## Visual Learning Benefits

Educators emphasize the importance of visual learning tools, which help students better understand complex concepts.

## Engaging Hands-On Experience

Students value hands-on experiences that allow them to apply theoretical knowledge in practical settings.

## Customisation in Learning

The ability to customize learning experiences enhances students' understanding and retention of knowledge.



## Importance of Visible Geology

Visible Geology plays a crucial role in advancing geoscience by providing clear insights into geological processes.



## Integration of Technology

The integration of technology enhances our understanding of geological data and improves analysis capabilities.



## Collaboration in Geoscience

Collaboration among scientists, researchers, and institutions is essential for progress and innovation in geoscience.

