

# Cognitive Architecture

rethinking thinking



Introduction to

## COGNITIVE ACCELERATION

Thinking Science is a Cognitive Acceleration program for students in year 7 and year 8. Grounded in Piagetian and Vygotskian psychology, Thinking Science has been shown to dramatically improve learners' general thinking ability which in turn leads to improved educational outcomes. Support packages are tailored to your school's requirements.



METACOGNITION



TRAINING



MICRO-COACHING



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[www.cognitivearchitecture.com.au](http://www.cognitivearchitecture.com.au)

## THINKING SCIENCE

The aim of this one-day course is to provide you with everything you need to plan the implementation of Thinking Science within the junior secondary science curriculum.

Thinking Science (or CASE, Cognitive Acceleration through Science Education) is a program of thirty lessons designed to enhance students' thinking ability. The program has a strong evidence base and its Piagetian and Vygotskian foundations have won the praises of leading educational academics such as John Hattie and Dylan Wiliam. The PL event will inform you of the theory and methodology behind Thinking Science, introduce you to the lessons and give you the resources you need to assess the program's feasibility in your school.

By the end of the course you will:

- ◆ have reviewed the evidence base for Thinking Science;
- ◆ have a better understanding of Cognitive Acceleration and its foundations in Piagetian and Vygotskian psychology.
- ◆ understand the role of cognitive conflict, social construction and metacognition as they relate to Thinking Science;
- ◆ have the tools to trial and evaluate the program in your school.

**This course is for:** secondary science teachers, junior secondary science co-ordinators, heads of science, school leaders.



Facilitator: **Tim Smith**

Tim began teaching in the UK before moving to Australia in 2008. He has held positions of leadership in schools and has advised on policy and curriculum reform in science education.

Immediately prior to moving to Australia, Tim worked as the Director of Specialist Science Status at Nonsuch High School for Girls where he collaborated with the National Science Learning Centre to develop regional centres of excellence in teacher professional development. In 2005, Tim was awarded the prestigious Einstein Year Bursary for his work on 'Girls into Physics'.

A physics graduate from Swansea University, Tim also holds postgraduate qualifications from Cambridge University and the Institute of Education in London. He has presented at conferences in the UK, Australia and the USA and is the co-ordinator of Thinking Science in Queensland.

**Register Now**

1 day (6 hour) training event on:

**Friday 22 October 2021 (Co.Habitat, Townsville, QLD)**

\$349+GST per person

**REGISTER ONLINE or Complete form below**



# INTRODUCTION TO THINKING SCIENCE

## Professional Learning Registration Form (or Online)

I / we would like to register for **INTRODUCTION TO THINKING SCIENCE**

I / we will be attending the professional learning event in **Townsville, QLD** at:

**Co. Habitat, Townsville, QLD, on Friday 22 October 2021, 9am—3pm**

*Registration closes: 18 October 2021*


I / we enclose payment of \$349 +GST per delegate **or** please send me/us a Tax Invoice. (A confirmation and receipt will be issued when payment is received.)


Please complete the registration details and email this form to **admin@cognitivearchitecture.com.au**

Name of attendee	Mobile	Email Address

School:	
Address:	
Phone:	
Accounts department contact:	
Purchase order number (If needed):	

Return to:


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# Thinking Science Professional Learning Series

## ESSENTIALS Day 1

### Learning Goals



#### Session 1 – The Thinking Revolution

By the end of this session participants will be able to:

- relate to some of the topical tensions and dichotomies in Teaching and Learning today;
- visualise how Cognitive Acceleration programmes can inform planning for the Australian Curriculum;
- challenge their own thinking about how best to improve learner outcomes;
- question the notions of **academic resilience** (grit), **academic adaptability** (invent) and **academic joy** (love of learning).

#### Session 2 – What is Thinking Science?

By the end of this session participants will be able to:

- describe the Thinking Science programme and explain how it is underpinned by Piagetian and Vygotskian theory;
- differentiate Piaget's stages of cognitive development and know roughly when each occurs;
- identify the five pillars of Thinking Science as **Concrete Preparation**, **Cognitive Conflict**, **Social Construction**, **Metacognition** and **Bridging**;
- dissect Thinking Science lessons to show how the pillars give opportunity for cognitive acceleration;
- categorise Thinking Science lessons by their **schema** (or reasoning pattern).

#### Session 3 – The Science Reasoning Task

By the end of this session participants will be able to:

- apply and deliver the science reasoning task to judge thinking ability in their school;
- advise colleagues on the benefit of using the science reasoning task;
- analyse data obtained by the science reasoning task to assign groups that promote **social construction**.

#### Session 4 – A Thinking Science lesson – and a closer look at the schemata

By the end of this session participants will be able to:

- analyse the lesson plans and describe how **notesheets** and **workcards** can be used in lessons;
- deliver a lesson using cognitive acceleration techniques;
- synthesise the first two lessons of Thinking Science;
- integrate Thinking Science lessons into the general science curriculum.

Day one (50% of the **ESSENTIALS** course) should be delivered over 7 hours (incl. breaks). The balance of theory to practical on day one is about 60:40.

