



Become a Secondary STEM Leader

A Professional Learning
Pathway to Innovation

COOL
.ORG

The Sequence

This STEM professional learning pathway will guide you through four stages of Professional Learning Courses. The pathway builds on an adapted Zones of Learning model and everyone's favourite, Bloom's Taxonomy, to create a structured, year-long professional development plan for STEM educators to become STEM Innovators. By progressively building on each stage, you can enhance your STEM teaching skills and develop critical thinking, creativity, and problem-solving abilities in your students while also addressing your own individual learning needs and goals, ensuring continuous growth.



Stage 1

The **Foundation Zone** is where you establish your basic understanding and knowledge of STEM principles. It focuses on building a solid groundwork in essential STEM concepts and practices. It reflects a base level of knowledge, forming a strong foundation for further learning.



Stage 2

The **Proficiency Zone** is where you apply your foundational knowledge of STEM to real-world situations. It highlights the development of practical skills in STEM and the ability to break down information and apply it effectively. This zone emphasises the practical application and analysis of skills.



Stage 3

The **Mastery Zone** signifies advanced competence in STEM, where you deepen your expertise and critically evaluate processes and outcomes. This zone focuses on advanced understanding, the ability to make informed judgments, and the refinement of practices and methodologies.



Stage 4

The **Innovation Zone** indicates the highest level of proficiency in STEM, where the creation of new and original work demonstrates expert understanding and capability. At this pinnacle of the Zones of Learning, you leverage your comprehensive knowledge and skills to foster creativity and innovation in STEM teaching and learning, creating new and original ideas or solutions.

Establishing Your Learning Goals

Establishing your learning goals before you start the sequence helps to direct your learning throughout the pathway. Considering the information you have read and your personal knowledge use the space below to think about your goals for undertaking this pathway to STEM Innovation.

Why is being an innovative STEM educator important to you?

What are your current priorities in teaching STEM?

What skills do you currently have to help you in addressing these priorities?

What skills do you need to develop to help you address these priorities?

Thinking about your priorities and skills what goals do you have for yourself?

- 1.
- 2.
- 3.

Choosing Your Secondary Pathway

1. Foundation

[Introduction to Secondary STEM](#)

[Practical Steps for STEM Inquiry](#)

[How to Teach Science More Effectively](#)

Choice 1:

Choice 2:

2. Proficiency

[Digital Tech for STEM](#)

[How to Teach Creative Thinking](#)

[How to Teach Critical Thinking - Secondary](#)

Choice 1:

Choice 2:

3. Mastery

[Advocating for STEM](#)

[Save the World with STEM](#)

Advocating for STEM

Save the World with STEM

4. Innovation

[Integrating STEM through Project-Based Learning](#)

[How to Teach Sustainability with Hope](#)

Integrating STEM through Project-Based Learning

How to Teach Sustainability with Hope

Course Reflections



Stage 1. Foundation

Course 1:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course 2:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course Reflections



Stage 2. Proficiency

Course 3:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course 4:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course Reflections



Stage 3. Mastery

Course 5:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course 6:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course Reflections



Stage 4. Innovation

Course 7:

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Course 8

1. What were the main ideas of this course?
2. How can you use this learning to impact your students?
3. How did these learnings change your thinking?
4. How did the information in this course help you to progress towards your goal/s?

Final Reflections

Reflecting on your STEM learning journey, what are the most important learnings you had?

What concepts or skills were reinforced throughout the sequence?

What changes have you made/would like to make to your STEM teaching practice?

What progress towards your learning goals did you make?

What questions do you still have and where will you go from here?

**If you have any enquiries regarding this
professional learning sequence contact us
at**

info@cool.org

**COOL
.ORG**