# Advice to principal/supervisor

Dear colleague,

As a requirement of ‘Teaching with the Science and Technology K-6 Syllabus’ e-learning course a participant from your school has completed a series of tasks and recorded their responses in the participant journal.

The activities completed in this journal are based on these topics:

1. time allocation for science and technology
2. syllabus rationale
3. skills continuum
4. inquiry based learning
5. implications for teaching and learning.

To receive the registered hours for this course the participant now needs the tasks in the journal verified as completed. The table below may be used as a guide to some key ideas that the participant has included in their reflections.

Once you have reviewed the answers please verify the participant’s completion on MyPL. For further instructions on this process please see the MyPL support package for Principals or their delegates [marking course deliverables](https://schoolsequella.det.nsw.edu.au/file/c9473f7b-152a-4f19-8ac6-4a6650f88ad1/1/Marking%20Other%20Learning%20Participant%20Submission.pdf).

## Suggested responses for the participant journal

### Task 1 – Time allocation for science and technology

Review of weekly timetable, time allocated to teaching science and technology. Responses will vary but should be indicative of average time allocated to science and technology.

Does this meet the requirement (1.5-2.5 hours per week)? Yes/No

If so, how has this been achieved? Which strategies have proven successful? Responses may include:

* Whole school scope and sequence for science and technology
* Developing and sharing units of work
* Explicit science teaching in classroom
* RFF science teaching
* Embedding digital technologies into core teaching
* Integrating across key learning areas
* STEM projects
* Project-based learning
* Team teaching
* Stage/grade projects
* Timetabling.

If not, what will you do to meet this requirement?

* Discuss options with colleagues and executive
* Develop a whole school scope and sequence for science and technology
* Develop and share units of work
* Embed science and technology implementation into the whole school plan
* Review opportunities to integrate science and technology across KLAs
* Connect with School Services staff to support the development of science and technology at your school.

### Task 2 – Syllabus rationale review

Five key ideas recorded. Responses may include:

* Opportunities for integration
* Develop active global citizens who succeed in a rapidly changing world
* Links between science and technology to promote student learning opportunities
* Apply thinking skills and processes to solve problems
* Make meaningful connections between key learning areas
* Curiosity
* Authentic, relevant, contextualised learning opportunities
* Skill development.

Evidence of comparison of ideas with suggested list. Any that matched or were a surprise?

### Task 3 – Continuum of skills reflection

What terminology will you need to unpack with your students to support their learning? Responses may include:

* The language of programming - branching, iteration, algorithm
* Language of testing
* Collaboration
* Efficacy of scientific investigations
* Sustainability
* Designed solutions
* Fair testing.

Which key skills will you need to unpack with your students?

* How to work scientifically
* Understanding design and production processes
* Conducting an investigation
* Conduct a fair test using criteria
* Communicating ideas using scientific representations
* Evaluating products and processes in design and production
* Identify data to formulate algorithms
* Follow a sequence of steps and decisions to solve a problem
* Define an information system
* Different formats of data representations
* Research skills.

What pedagogical practices will you employ to ensure development of these skills?

* Moving from ‘demonstration based science’ to investigative and exploratory science
* Investigating questions that students form, rather than demonstrating science facts through traditional 'experiment
* Designing authentic learning activities for Design and Production
* Embracing new technologies to investigate inquiry questions
* Inclusion of strategic roles within group work
* The teacher doesn’t have to know it all. Build on what students know and can already do.

Evidence of comparison of ideas with suggested list. Any that matched or were a surprise?

### Task 4a – Inquiry learning in science and technology

Evidence of a personal reflection to the following questions.

* What is inquiry learning?
* How does inquiry learning differ from project-based or problem-based learning?

### Task 4b – Inquiry readings

Record a new idea gained from the prerequisite readings that could be actioned in the school to improve learning and teaching in science and technology. Responses will vary but could include:

* Revisiting pedagogy to include inquiry learning
* Reviewing focus questions
* Explicitly teaching collaboration, critical thinking, problem-solving
* Auditing science and technology programs for evidence of inquiry
* Learning
* Careful planning to ensure effective implementation
* Triggering curiosity through inquiry – modelling own curiosity
* Develop a culture of dialogue
* Have deep knowledge of the subject matter
* Model, scaffold and guide students’ thinking around scientific inquiry
* Gradually transfer the responsibility for scientific inquiry to the students
* Ensure inquiry questions are planned to guide further questioning. What does inquiry look like in 1.5 hours of science and technology per week?

### Task 5 – Implications for learning and teaching

Evidence of reflection on the following questions.

* Why is it important to understand the syllabus rationale?
* In supporting student learning, why is it important to understand the structure of the syllabus?
* How does inquiry and the skills of working scientifically improve learning in science and technology?
* What are 3 things you will do as a result of participating in this eLearning course to improve the implementation of science and technology in your classroom/school/context?

## Optional guiding questions

These questions and statements may be used as a guide to frame discussions with the participant as they complete the eLearning course.

* How are things going?
* How can I help you?
* Plan together
* What are you most proud of?
* Allow the teacher to reflect
* Identify successes and challenges
* What are your challenges and concerns?
* Help the teacher to think through alternative challenges
* Pick one area to focus on
* Reflect together
* Asking open-ended questions provides a way to identify and discuss issues and helps develop critical thinking skills.
* What was one of your successes as a teacher in the past week?
* What do you see as your next steps?
* What evidence do you have to support that?
* It will be interesting to see which of your ideas
* I’d be interested in hearing more about...