



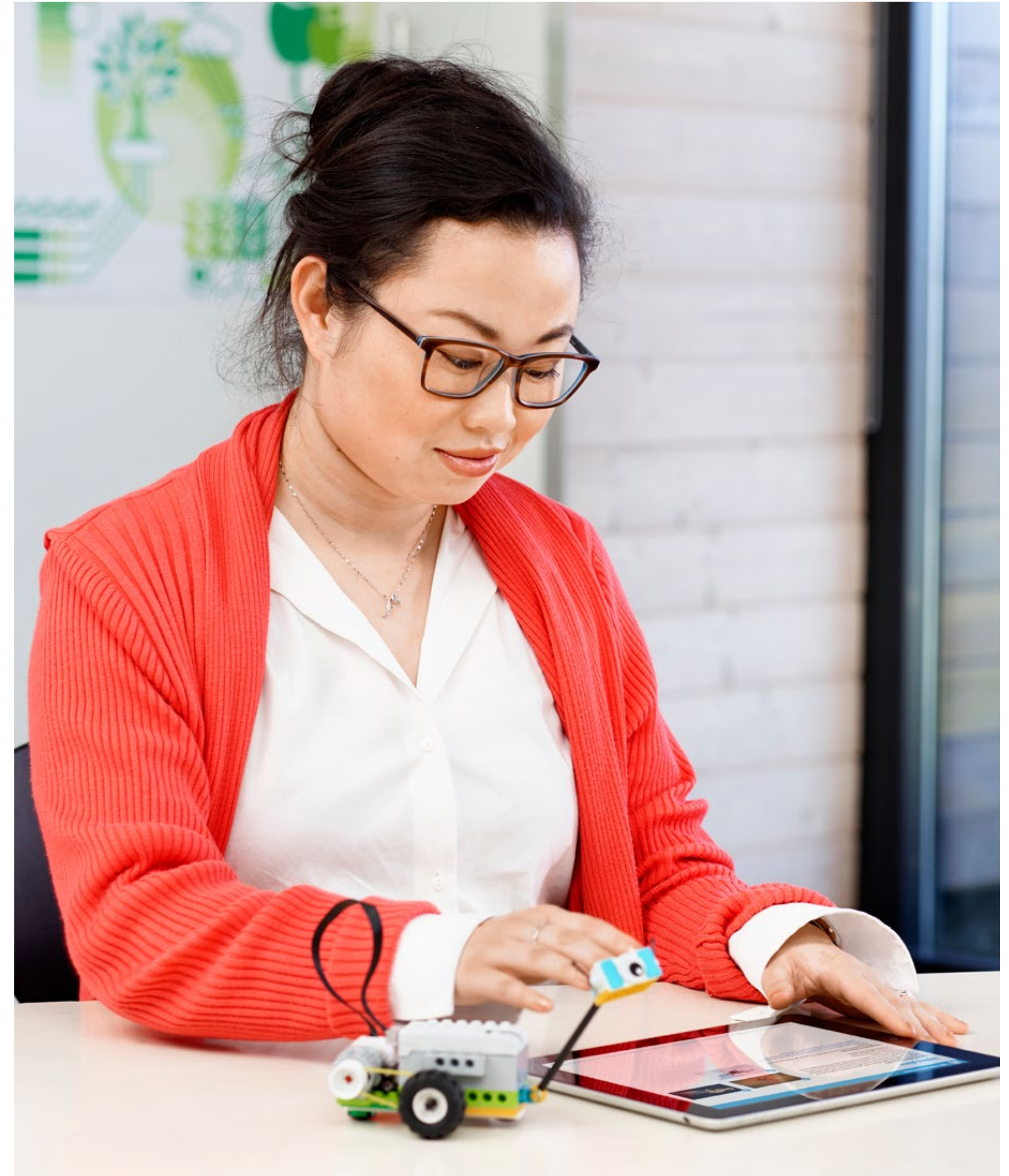
Teacher-led assessment

Developing students' science and engineering practices takes time and feedback. Just as in the design cycle, in which students should know that failure is part of the process, assessment should provide feedback to students in terms of what they did well and where they can improve.

Problem-based learning is not about succeeding or failing. It is about being an active learner and continually building upon and testing ideas.

Anecdotal record grid

The anecdotal record grid lets you record any type of observation you believe is important about each student. Use the template on the next page to provide feedback to students about their learning progress as required.





Anecdotal record grid

Name: _____ Class: _____ Project: _____

| Emerging | Developing | Proficient | Accomplished |
|----------|------------|------------|--------------|
| | | | |

Notes:



Teacher-led assessment

Observation rubrics

An example of rubrics has been provided for every Guided Project. For every student, or every team, you can use the Observation rubrics grid to:

- Evaluate student performance at each step of the process.
- Provide constructive feedback to help the student progress.

Observation rubrics provided in the Guided Projects can be adapted to fit your needs. The rubrics are based on these progressive stages:

1. Emerging

The student is at the beginning stages of development in terms of content knowledge, ability to understand and apply content, and/or demonstration of coherent thoughts about a given topic.

2. Developing

The student is able to present basic knowledge only (vocabulary, for example), and cannot yet apply content knowledge or demonstrate comprehension of concepts being presented.

3. Proficient

The student has concrete levels of comprehension of content and concepts and can demonstrate adequately the topics, content, or concepts being taught. The ability to discuss and apply outside the required assignment is lacking.

4. Accomplished

The student can take concepts and ideas to the next level, apply concepts to other situations, and synthesize, apply, and extend knowledge to discussions that include extensions of ideas.

▶ Suggestion

You can use the observation rubrics grid on the next page to keep track of your students' progress.





Observation rubrics grid

| Class: | | Project | | | | | |
|-----------------|--|---------|--------|-------|---------|--------|-------|
| Students' names | | NGSS | | | ELA | | |
| | | Explore | Create | Share | Explore | Create | Share |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |

To be used with the rubrics description in the “Guided Projects” chapter (1. Emerging, 2. Developing, 3. Proficient, 4. Accomplished).



Student-led assessment

Documentation pages

Each project will ask students to create documents to summarize their work.

To have a complete science report, it is essential that students:

- Document with various types of media.
- Document every step of the process.
- Take the time to organize and complete their document.

It is most likely that the first document your students will complete will not be as good as the next one:

- Allow them time and feedback to see where and how they can improve some parts of it.
- Have your students share the documents with each other. By communicating their scientific findings, students are engaged in the work of scientists.

Self-assessment statements

After each project, students can reflect on the work they have done. Use the following page to encourage reflection and set goals for the next project.





Student self-assessment rubric

Name: _____

Class: _____

Project: _____

| | Explore | Create | Share |
|----------|---|--|--|
| | I documented and used my best reasoning in connection with the question or problem. | I did my best work to solve the problem or question by building and programming my model and making changes when needed. | I documented important ideas and evidence throughout my project and gave my very best when presenting to others. |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

Project reflection

One thing I did really well was:

One thing I want to improve upon for next time is:
