

Engaging Students with Readings and the Questions, Connections, Questions Reading Strategy Educator Resource

Carbon TIME includes readings to support students in figuring out the focal phenomena of each unit and applying that understanding to new phenomena. This resource:

- Explains the types of readings in *Carbon TIME* units and how they support students in acting as questioners, investigators, and explainers.
- Explains a strategy—Questions, Connections, Questions—for helping students engage the readings meaningfully.
- Suggests flexible approaches to supporting students’ sense-making with readings.
- Suggests differentiation strategies for students who need additional support with reading.

Engaging Students with *Carbon TIME* Readings

Science readings are distinct from readings in other disciplines, which can make them challenging even for strong readers. For that reason, we believe that it is important that you engage your students in collective sense-making around the readings in the units. We have developed a reading strategy called Questions, Connections, Questions to support students in such sense-making and in making connections between the text and other components of the unit, as well as, other things they have experience and read. This reading strategy is a tool you may choose to use with your students that has been developed with the features of science texts in mind.

We recommend that you have your students read each text with a partner. You may have students take turns reading aloud with their partner then discuss or read silently and then discuss with their partner. Afterwards, have a whole class discussion where students share the ideas from their partner discussions. It is important that your students engage with the text themselves, instead of you reading it aloud to them, so that they develop the skills to make sense of texts.

The Questions, Connections, Questions Reading Strategy involves partners reading a section of the text and then discussing the questions that are part of the strategy. Students may not discuss all questions for each section, but by the end of the text should have discussed all of the questions in relation to the text.

Types of Readings in *Carbon TIME*

There are three types of readings in each of the units. They are storyline readings, science practice readings, and content readings.

The storyline readings serve to engage students in thinking about the roles (i.e., questioner, investigator, and explainer) that they will play during the units. The storyline reading also supports students in understanding how a scientist has acted in these roles and how they can act in these roles as a citizen. These readings are part of the Expressing Ideas activity of each unit.

The science practice readings support students in understanding and participating in the science practices, such as using models and constructing explanations. These readings provide an overview of the practice and information about how students can engage in that practice. These readings are primarily found in the Systems and Scale Unit.

The content readings resemble traditional science readings for the classroom. They provide information on the content, such as additional examples, to summarize what students have figured out and help students apply what they have figured out to new phenomena.

The first Questions section of the Questions, Connections, Questions Reading Strategy engages students in thinking about what they do not understand in the text. They should ask questions both about individual words and about concepts they do not understand. By discussing their questions with a partner, they can begin to make sense of what they do not understand by sharing possible interpretations, rereading the text, or potentially consulting resources, such as a dictionary.

Flexible approaches to supporting students' sense-making

Aside from partner reading and the Questions, Connections, Questions Reading Strategy, you may decide to engage your students with the texts in the following ways:

- Individual reading using the written version of the Questions, Connections, Questions Reading Strategy, followed by small group discussion and then whole group discussion.
- Students who are comfortable take turns reading sections of the text aloud to the whole class, while all students use the written version of the Questions, Connections, Questions Reading Strategy, followed by whole group discussion.
- Students may annotate the text by writing questions and ideas in the margins.
- Students read in small groups or with a partner alternating between reading aloud and summarizing the text
- Use an alternative reading strategy that allows for collective sense-making.

The Connections section of the Questions, Connections, Questions Reading Strategy engages students in making connections between the text and other things. Specifically, students should think about how the text connects with what they have been doing in class, things they have seen in the world, and things they have read or heard.

The second Questions section of the Questions, Connections, Questions Reading Strategy engages students in asking new questions based on the text. These questions may not be readily answerable, but each text should make students wonder and interested in learning more.

The next two pages contain two versions of the Questions, Connections, Questions Reading Strategy. On page 3 is a version of the strategy that is based on discussion only. Your students can keep the small bookmark-like versions and use them each time there is a reading. On page 4 is a version of the strategy that is based on discussion and writing. Your students can record the ideas of their partner discussion on this sheet. You may choose to collect it to see what each pair discussed or let students keep it as a record of their sensemaking of the reading. Make copies of the version that you decide to use with your students.

Differentiation Ideas

For students who may need additional support with reading, you may choose to:

- Use text to speech on a digital device to allow the student to listen to the text being read aloud.
- Use the Word document versions of the readings to provide students with a version of the reading with larger font and/or margins.
- Provide a graphic organizer for students to record their ideas about the reading on.
- Preview challenging vocabulary in the reading prior to having students read.
- Provide students with a highlighter to mark key ideas and vocabulary words.