Carolina's Certified Version of

OpenSciEd High School Chemistry



Unit Enhancement Sheets



OpenSciEd | CAROLINA CERTIFIED VERSION

Unit C.1 | Thermodynamics in Earth's Systems

Carolina provides enhanced carbon dioxide investigation materials and prep instructions, interactive digital resources, as well as various optional demonstration videos. -

LESSON	CAROLINA MODIFICATION
1	Enhanced digital includes an interactive resource, Particle Theory Review, that teachers can utilize for remediation purposes as well as easily assess student progress.
2	Carolina added an optional simulation, PhET States of Matter: Basics, that focuses on the relationship between temperature, states of matter, and particle movement. Teachers can use this simulation as a review tool and/or for remediation purposes.
3	Carolina updated the carbon dioxide investigation materials and procedures to allow for easier setup and more consistent results. Carolina created an optional video demonstration of the carbon dioxide investigation. This video can be utilized for remediation purposes as well as assigning to students who may have been absent during the investigation. 
3-4	Kit contains one-hole rubber stoppers which allows for easier lab setup and more accurate results.
4	Carolina added an optional demo video of the Land Ice vs. Sea Ice Investigation. This video may be used for remediation purposes as well as assigning to students who may have been absent during the investigation.
6	Carolina added an optional demo video of the Light Investigation. This video may be used for remediation purposes as well as assigning to students who may have been absent during the investigation.
10	Carolina added an optional demo video of the Liquid-Liquid Investigation. This video may be used for remediation purposes as well as assigning to students who may have been absent during the investigation.
11	Carolina added an optional demo video of the Water-Ice Investigation. This video may be used for remediation purposes as well as assigning to students who may have been absent during the investigation.
1-11	Carolina includes mini whiteboards and dry erase markers that students can use in lessons throughout the entire unit.

EQUIPMENT & MATERIALS

- Kits built to support the OER versions
- Provide enough materials for 8 lab groups
- Improved quality of photos and graphics on card sets and student handouts
- Teacher Interactive Board – Digital
- Editable 3D Test Banks – Coming Soon!

See Carolina Certified Materials List for more detailed information.

CAROLINA CERTIFIED VERSIONS

All modifications and enhancements to materials and/or lessons are approved by the OpenSciEd Curriculum Team to preserve the integrity of the storyline and instructional model for each unit.

- Redesigned print Teacher and Student Editions
- Digital versions of teacher and student resources
- Equipment kits with high-quality materials configured for 8 lab groups



OpenSciEd | CAROLINA CERTIFIED VERSION

Unit C.2 | Structures & Properties of Matter

Carolina provides materials for a simplified design of the water dropper apparatus, 8 digital multimeters to save teacher prep time of building them from scratch, as well as D-cell batteries and battery holders to ensure the most reliable setup.

LESSON	CAROLINA MODIFICATION
2	Carolina simplified the design and construction of the water dropper to reduce the number of materials and significantly decrease the prep time for the teacher. 
3	Carolina updated the lesson to clarify how the water dropper investigations could be conducted in groups or as a class demonstration. Demonstration videos of the various stations using the Carolina water dropper setup are provided to increase opportunities for student sensemaking. The videos can also be assigned to students who may have been absent during the investigation.
4	Kit includes precut acrylic sheets to save the teacher prep time. Carolina provides wool instead of PTFE which yields better results.
7	Kit includes precut acrylic sheets and foam sheets to save the teacher prep time. Carolina provides wool instead of PTFE which yields better results.
12	Kit contains preprinted Lighting Data Stations card sets on durable cardstock. This saves the teacher prep time of printing card sets for each station.
13	Carolina includes 8 digital multimeters in the kit. This saves teachers the prep time of building 8 ammeters by hand. Kit includes D-cell batteries and battery holders rather than 9-volt batteries for easier, more reliable setup.

EQUIPMENT & MATERIALS

- Kits built to support the OER versions
- Provide enough materials for 8 lab groups
- Improved quality of photos and graphics on card sets and student handouts
- Teacher Interactive Board – Digital
- Editable 3D Test Banks – Coming Soon!

See Carolina Certified Materials List for more detailed information.

CAROLINA CERTIFIED VERSIONS

All modifications and enhancements to materials and/or lessons are approved by the OpenSciEd Curriculum Team to preserve the integrity of the storyline and instructional model for each unit.

- Redesigned print Teacher and Student Editions
- Digital versions of teacher and student resources
- Equipment kits with high-quality materials configured for 8 lab groups



OpenSciEd | CAROLINA CERTIFIED VERSION

Unit C.3 | Molecular Processes in Earth Systems

Carolina provides durable card sets to save teacher expense and time of printing/cutting individual card sets. Absorption Spectroscopy Demonstration includes simplified materials/instructions with enough diffraction grading for each student.

LESSON	CAROLINA MODIFICATION
1	Carolina provides Space Mission Deck on durable card stock. This saves the teacher prep time of printing and cutting up to 140 individual copies.
2	Kits include rubbing alcohol and vegetable oil to prevent teachers from needing to source these items locally. Carolina eliminated the need for acetone from this lesson (pre-approved by OSE) to ensure safety for students who may be sensitive to the odor/vapors.
3	Carolina provides Satellite Sets A & B Card Set on durable cardstock. This saves the teacher prep time of printing and cutting up to 40 cards. Carolina provides Moon and Mars Images Card Set on durable cardstock. This saves the teacher prep time of printing 20 individual sheets.
4	Carolina eliminated the need for acetone from this lesson (pre-approved by OSE) to ensure safety for students who may be sensitive to the odor/vapors. Carolina provides Molecule Cutouts Card Set on durable cardstock. This saves the teacher prep time of printing and cutting up to 400 cards.
5	Kits includes simplified materials/instructions for the Absorption Spectroscopy Demonstration. Carolina provides enough materials so that the teacher has the option to conduct a hands-on version of part 1 of the lab. Carolina kits include a diffraction grating for each student.
6	Carolina provides Compound Representatives sheets on durable cardstock. This saves the teacher prep time of printing 10 sheets.
6 and 7	Carolina provides Element Cards on durable cardstock. This saves the teacher prep time of printing and cutting up to 180 cards. Kit includes small sticky notes that students can affix to the dotted line box on the element cards, students will then write on these sticky notes eliminating the need for laminating or bulky sheet protectors.
8 and 9	Carolina supplies alligator clips rather than clothespins, which eliminates the need for hot glue.

10	Carolina provides Water Cleanup Cards on durable cardstock. This saves the teacher prep time of printing and cutting up to 360 cards.
11	Carolina provides Balancing Equations Molecule Cards on durable cardstock. This saves the teacher prep time of printing and cutting up to 900 cards.

EQUIPMENT & MATERIALS

- Kits built to support the OER versions
- Provide enough materials for 8 lab groups
- Improved quality of photos and graphics on card sets and student handouts
- Teacher Interactive Board – Digital
- Editable 3D Test Banks – Coming Soon!

See Carolina Certified Materials List for more detailed information.

CAROLINA CERTIFIED VERSIONS

All modifications and enhancements to materials and/or lessons are approved by the OpenSciEd Curriculum Team to preserve the integrity of the storyline and instructional model for each unit.

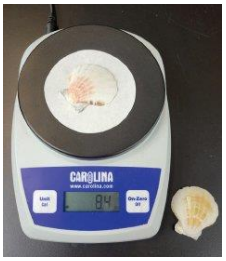
- Redesigned print Teacher and Student Editions
- Digital versions of teacher and student resources
- Equipment kits with high-quality materials configured for 8 lab groups



| CAROLINA CERTIFIED VERSION

Unit C.4 | Chemical Reactions in Our World

Carolina provides bottles of pre-prepared 1M and 0.1M solutions to reduce teacher prep time as well as enhance safety. Seashells are provided for more reliable results. Various card sets are included to save the teacher expense and time of printing/cutting individual card sets.

LESSON	CAROLINA MODIFICATION
3	Carolina replaced weighing paper with aluminum weigh boats to ensure ease of use and prevent messes.
4	Carolina replaced weighing paper with aluminum weigh boats to ensure ease of use and prevent messes. Kit includes 500-mL bottles of 1M and 0.1M solutions of Sodium chloride, Sodium hydroxide, Potassium hydroxide, Hydrochloric acid, Sulfuric acid, Acetic acid, and Ammonium hydroxide to save the teacher prep time of preparing each solution and also to enhance safety. Carolina provides Molecule Deck card set on durable card stock. This saves the teacher prep time of printing and cutting up to 350 individual cards.
7	Kit includes 500-mL bottles of 0.5M Hydrochloric acid and Oxalic acid to save the teacher prep time of preparing each solution and to enhance safety.
8	Carolina provides Balancing Equations Card Set on durable card stock. This saves the teacher prep time of printing and cutting up to 480 individual cards.
10	Carolina replaced marble chips with seashells to provide more reliable results. 
11	Carolina provides Reactions Cards card set on durable card stock. This saves the teacher prep time of printing and cutting up to 450 individual cards.

EQUIPMENT & MATERIALS

- Kits built to support the OER versions
- Provide enough materials for 8 lab groups

- Improved quality of photos and graphics on card sets and student handouts
- Teacher Interactive Board – Digital
- Editable 3D Test Banks – Coming Soon!

See Carolina Certified Materials List for more detailed information.

CAROLINA CERTIFIED VERSIONS

All modifications and enhancements to materials and/or lessons are approved by the OpenSciEd Curriculum Team to preserve the integrity of the storyline and instructional model for each unit.

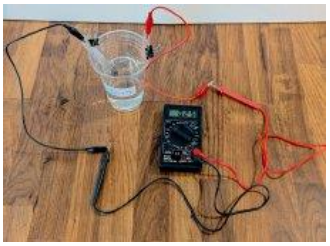
- Redesigned print Teacher and Student Editions
- Digital versions of teacher and student resources
- Equipment kits with high-quality materials configured for 8 lab groups



OpenSciEd | CAROLINA CERTIFIED VERSION

Unit C.5 | Energy from Chemical & Nuclear Reactions

Carolina provides digital multimeters, weak and strong magnetic marbles, as well as materials to build a track on the ruler. Various card sets are included to save the teacher expense and time of printing/cutting individual card sets.

LESSON	CAROLINA MODIFICATION
1	Carolina provides 10 sets of Fuel Data Cards on durable card stock. This saves the teacher prep time of printing up 170 cards.
4-7	Carolina provides magnet marbles in weak and strong versions to save teachers the prep time of making their own strong versions of magnets. Kit includes materials to build a track on the ruler. These enhanced materials help to ensure that marbles do not fall off the sides during the investigation.
7	Carolina provides 10 sets of Bond Energy Cards on durable card stock. This saves the teacher prep time of printing and cutting up to 280 cards.
9	Carolina provides digital multimeters to save teachers the prep time of having to build their own voltmeters.  Kit includes 2 electrode sets that have iron, zinc, aluminum, and copper electrodes to save teachers the prep time of having to make their own copper and aluminum electrodes.
10	Carolina provides 20 sets of Hydrogen Fuel Cell Cards on durable card stock. This saves the teacher prep time of printing 20 color copies of this sheet. Carolina provides 20 sets of Atmosphere Gas Data Cards on durable card stock. This saves the teacher prep time of printing 40 color copies of these sheets.
14	Carolina provides 20 sets of Transportation Option Cards on durable card stock. This saves the teacher prep time of printing and cutting up to 320 cards.

EQUIPMENT & MATERIALS

- Kits built to support the OER versions
- Provide enough materials for 8 lab groups
- Improved quality of photos and graphics on card sets and student handouts

- Teacher Interactive Board – Digital
- Editable 3D Test Banks – Coming Soon!

See Carolina Certified Materials List for more detailed information.

CAROLINA CERTIFIED VERSIONS

All modifications and enhancements to materials and/or lessons are approved by the OpenSciEd Curriculum Team to preserve the integrity of the storyline and instructional model for each unit.

- Redesigned print Teacher and Student Editions
- Digital versions of teacher and student resources
- Equipment kits with high-quality materials configured for 8 lab groups