

The Water and Carbon Cycle

Cycling of Matter 5E Lesson

- ✓ Complete 5E Lesson Bundle
- ✓ Hands-On & Digital Activities
- ✓ Google Classroom Ready
- ✓ Engaging Science Content



Cycling of Matter: The Water and Carbon Cycles

5E Lesson

The 5E model is a scientifically proven method to improve student engagement and learning in your classroom

- ✓ Engagement
- ✓ Exploration
- ✓ Explanation
- ✓ Elaborate
- ✓ Evaluate



Complete Teacher Instructions

Cycling of Matter: The Water and Carbon Cycles 5E Lesson

Grades 7-10	Cycling of Matter: The Water and Carbon Cycles
Essential Questions:	
Lesson Objectives:	
- Students will be able to describe what occurs during the water and carbon cycles. - Students will gain an understanding of the impact human development, pollution and global warming has on the environment. - Students will create a visual representation of both cycles. - Students will gain valuable hands-on experiences and knowledge outside the classroom.	
Possible Student Misconceptions:	
- Carbon and water molecules are constantly being created and destroyed. - Humans don't impact the water or carbon cycles in any way.	
Materials:	
1 device (smartphone, chromebook, laptop, tablet, or desktop computer) - A means of projecting a PowerPoint presentation - Internet access 8"x14" and 11"x14" blank white paper - Pencil crayons, crayons, and/or markers	
Teacher Notes:	
All videos can be accessed directly from the PowerPoint icon while in slideshow mode and it will automatically open for you.	

students on the last slide - All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you - I have also enclosed a .PDF version of both the teacher and student versions	Goals - Students develop understanding of the content - Observations and experiences are discussed and critiqued - Students develop vocabulary - Students are able to connect the content presented to previous experiences
Elaborate Phase Water and Carbon Cycles Scavenger Hunt Activity The scavenger hunt activity will require your students to move beyond what was covered directly in the lesson and allow them to demonstrate how the water and carbon cycles can be applied to the real world. Students will work in groups of two or three and will require a single device (smartphone, tablet, chromebook, laptop, etc.) per group.	Duration: 1 hour Teacher Role – Facilitate learning and keep students focused Goal Students use their newly obtained knowledge to propose solutions and extend their learning to new situations
Evaluate Phase Water and Carbon Cycle Diagram Activity Teacher Notes: - There is a separate activity for the water cycle as well as the carbon cycle. In the past, I have used the water cycle as a "rough copy" to get the students used to the format. I usually give them class time to do this and don't require it to be coloured. I then give them the carbon cycle as the main assessment item that they mainly complete at home. You can follow this format, flip them around or give them both. Whichever best suits your classroom - I have supplied two rubrics for the carbon cycle depending on the depth you want to mark them as well as an exemplar for both cycles - It's sometimes best to have the students peer evaluate. Peer evaluation is not needed, only suggested when appropriate - Placing students in small groups and having them exchange papers to mark will accomplish two things. - Provide immediate feedback on the assessment - Significantly reduce your marking time Note: I typically have them peer assess the water cycle only**	Duration: 1-2 hours plus time at home Teacher Role – Distribute and collect evaluation Goal Students are given the opportunity to demonstrate their understanding and evaluate their own progress

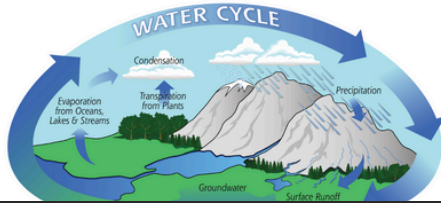
Cycling of Matter: The Water and Carbon Cycles - 5E Lesson

Engagement Phase We're all made from dinosaur spit While watching the linked video have your students' answer the questions. The video link as well as the questions can be found in the file – Engagement - We're all made from dinosaur spit. The file is located in your folder.	Duration 20-40 min. Teacher Role – Facilitate learning and guide student understanding Goals - Connect student's experiences - Create interest - Ask questions - Understand the objectives of the lesson
Exploration Phase The Carbon and Water Cycles Lab Station Activity - In groups of 2-3, have your students complete the Carbon and Water Cycles Lab Station Activity. Once they're done, they will submit their passport to you. Teacher Notes: - The complete instructions for my Lab Station activity can be found in the START HERE – Lab Station Activity file.	Duration: 55-60 min. Teacher Role – Facilitate learning and guide student understanding Goals - Students receive real experience with the topic - Students use and develop creative thinking skills - Students make observations, record results, and make connections
Explanation Phase Cycling of Matter – The Water and Carbon Cycles Lesson - Review the Cycling of Matter: The Water and Carbon Cycles lesson. There are many opportunities to engage your students and show how the content is relevant to their lives. Teacher Notes: - Students should have some knowledge of the three main phases of matter (solid, liquid, and gas) - Review the terms lithosphere, atmosphere, hydrosphere, and biosphere prior to presenting - Familiarity with the equation for photosynthesis will assist	Duration: 40-60 minutes Teacher Role – Explain the concepts by presenting the material found in the presentation.

Complete Lesson

The Water (Hydrologic) Cycle

- Fallen water moves around Earth's surface as lakes, rivers and oceans
- Water is taken up by plants and is released via transpiration or consumed by animals



Play Video

The Water (Hydrologic) Cycle

- Fallen water moves around Earth's surface as lakes, rivers and oceans
- Water is taken up by plants and is released via transpiration or consumed by animals

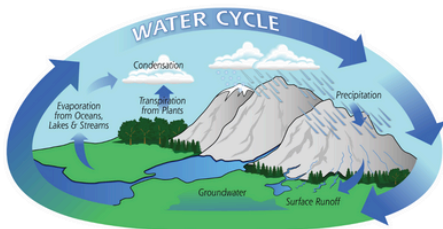


Play Video

The Water Cycle Rap

The Water (Hydrologic) Cycle

- Fallen water moves around Earth's surface as lakes, rivers and oceans
- _____



Play Video

The Water Cycle Rap

Videos embedded directly into your slides. One-click access.

Student and Teacher versions of your lesson

An interactive Lab Station Activity, Scavenger Hunt Activity, and Creative Assessment

Device-Based Scavenger Hunt Cycling of Matter in Ecosystems

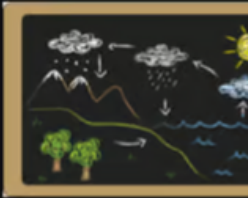


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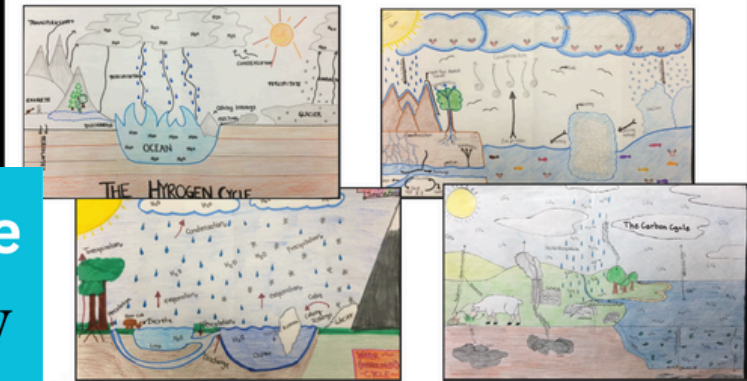
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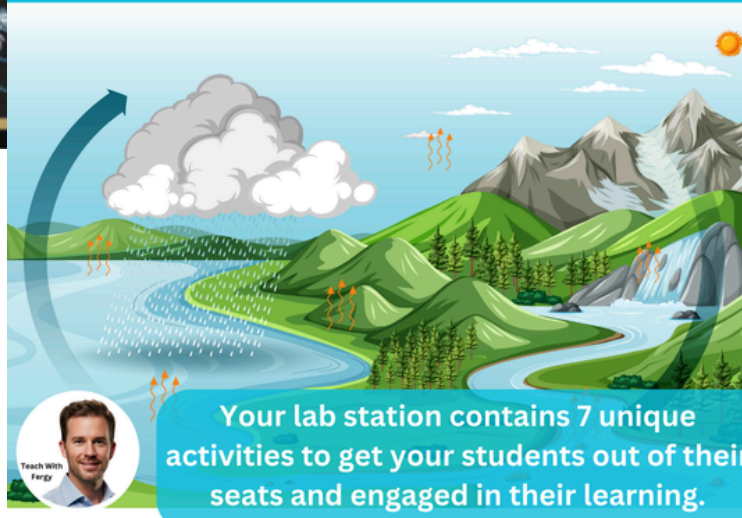


Water and Carbon Cycle Activity



- ✓ Hands-On Water & Carbon Cycle Models
- ✓ Grading Made Easy
- ✓ Perfect for Multiple Grades
- ✓ Real Student Examples Included

Carbon and Water Cycle Lab Station Activity



Your lab station contains 7 unique activities to get your students out of their seats and engaged in their learning.

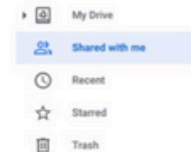


Buyer Comments

- **"This was a great resource to use as a whole lesson. It was easy to chunk for kids that needed that extra help."**
- **"I am so glad I purchased this! The activities were organized and engaging and pushed my students' thinking. Everything was ready to go! Loved it!"**
- **"Love your bundles!"**
- **"a great lesson already done. double bonus, the kids liked it"**
- **"Great resource, easy way to review cycles!"**

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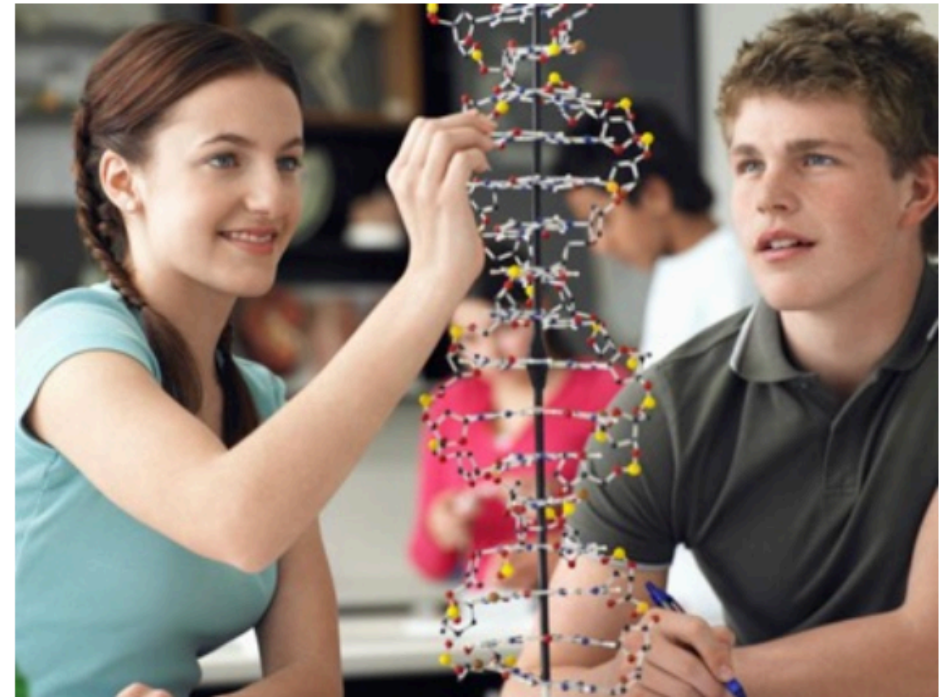
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