# Cycles

Duration: 4-6 weeks

Units:

* Water and Carbon Cycles
* Life in water
* Renewable & Nonrenewable Resources

## Essential Questions/Big Ideas

* Describe the water cycle / The carbon cycle
* Understand that all living things need water
* Recognize living things that live in the ocean.
* Recognize bodies of water
* Identify renewable and nonrenewable resources
* What are fossil fuels?

## Standards and Access Points

[SC.912. L.18.12](http://www.cpalms.org/Public/PreviewStandard/Preview/2055) Discuss the special properties of water that contribute to Earth's suitability as an environment for life: cohesive behavior, ability to moderate temperature.

* [SC.912. L.18.In.7](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8413');) Identify that special properties of water, such as the ability to moderate temperature and dissolve substances, help to sustain living things on Earth.
* [SC.912. L.18.Su.6](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8414');) Identify the important role of water in sustaining life of plants and animals.
* [SC.912. L.18.Pa.5](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8415');) Recognize that plants and animals use water to live.

[SC.912.L.17.20](http://www.cpalms.org/Public/PreviewStandard/Preview/2043) Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

* [SC.912.L.17.In.8](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8395');) Describe ways the lifestyles of individuals and groups can help or hurt the environment.
* [SC.912.L.17.Su.8](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8396');) Identify ways individuals can help the environment.
* [SC.912.L.17.Pa.7](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8397');) Recognize a way to help the local environment.

[SC.912.E.7.1](http://www.cpalms.org/Public/PreviewStandard/Preview/1893) Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.

* [SC.912.E.7.In.1](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8233');) Identify cycles that occur on Earth, such as the water and carbon cycles, and the role energy plays in them.
* [SC.912.E.7.Su.1](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8234');) Recognize the phases of the water cycle that occur on Earth and the role energy plays in the water cycle.
* [SC.912.E.7.Pa.1](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8235');) Recognize that clouds release rain (part of the water cycle).

[SC.912.L.17.2](http://www.cpalms.org/Public/PreviewStandard/Preview/2030) Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

* [SC.912.L.17.In.1](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8375');) Recognize that living things in oceans and fresh water are affected by the location, availability of light, depth of the water, and temperature.

[SC.912.L.17.11](http://www.cpalms.org/Public/PreviewStandard/Preview/2039) Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.

* [SC.912.L.17.In.7](javascript:%20parent.pushUrl('/Public/PreviewAccessPoint/Preview/8393');) Identify types of renewable and nonrenewable natural resources and explain the need for conservation.

## Key Vocabulary

| natural resources | atmosphere | evapotranspiration | biosphere | microscopic organisms |
| --- | --- | --- | --- | --- |
| water cycle | carbon cycle | renewable resources | resource | evaporation |
| carbon | condensation | nonrenewable resources | precipitation | carbon dioxide |
| water vapor | nutrient cycle | geosphere | hydrosphere | cloud |
| runoff |  |  |  |  |

# Cycles

## Power Points

* **Cycles Vocabulary** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/1._cycle_aquatics_and_resource_voc.pptx)
* **Cycles websites** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/2._cycle_aquatics_and_resource_websites.pptx)

# Water Cycle

## Power Points

* **Water Cycle** 
  1. **Part 1** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3._the_water_and_carbon_cycles_part_1.pptx)
  2. **Part 2** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3._the_water_and_carbon_cycle_part_2.pptx)

## Worksheets

* Interactive water cycle diagram [click here](http://earthguide.ucsd.edu/earthguide/diagrams/watercycle/)
* Blank water cycle worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/illustrate_the_water_cycle_activity.pdf)
* Water cycle crossword [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/water-cycle-crossword.pdf)
* Water cycle Quiz [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/water_cycle_quiz.pdf)
* Water cycle writing activity [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/writing_activity_for_water_cycle.pdf)
* The water cycle article [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/the_water_cycle_newsela.pdf)
* Condensation activity [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/condensation_experiment.pdf)
* Evaporation activity [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/evaporation_experiment.pdf)
* Water cycle activities [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/water_cycle_teaching_activities.pdf)
* Illustrate the water cycle [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/illustrate_the_water_cycle_activity.pdf)

## Videos and Resources

* Earth’s Water cycle- NASA- [click here](https://pmm.nasa.gov/education/sites/default/files/videos/Earths_Water_Cycle_HQ.mp4)
* Water cycle animation- [click here](https://pmm.nasa.gov/education/sites/default/files/videos/WaterCycleMovie-NoText.mp4)
* Water cycle song- [click here](https://www.youtube.com/watch?v=TWb4KlM2vts)
* Water cycle explained by raindrop video- [click here](https://www.youtube.com/watch?v=s0bS-SBAgJI)
* Water cycle dance video- [click here](https://www.youtube.com/watch?v=KM-59ljA4Bs)
* Water cycle cartoon: [click here](https://www.youtube.com/watch?v=gY9HG8zUgOE)
* Bill Nye: Water Cycle Video: [Click here](https://www.youtube.com/watch?v=hehXEYkDq_Y)
* Bill Nye Water Cycle Rap: [Click here](https://www.youtube.com/watch?v=tF7hywmrwDs)
* Geosphere, biosphere, hydrosphere, atmosphere rap: [Click here](https://www.youtube.com/watch?v=HurK-1rrdb8)
* Summary of the Water Cycle: [Click here](https://water.usgs.gov/edu/watercyclesummary.html)
* Evapotranspiration: [Click here](https://water.usgs.gov/edu/watercyclesummary.html#evapotranspiration)
* Condensation: [Click here](https://water.usgs.gov/edu/watercyclesummary.html#condensation)
* Sublimation: [Click here](Click%20here)
* Infiltration: [Click here](https://water.usgs.gov/edu/watercyclesummary.html#infiltration)
* Carbon cycle video: [Click here](https://www.youtube.com/watch?v=xFE9o-c_pKg)
* Carbon cycle 3D animation: [Click here](https://www.youtube.com/watch?v=d70iDxBtnas)

# Life in Water

## Power Points

* **Life in water** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/4._bodies_of_water_powerpoint.pptx)

## Worksheets, Videos and Resources

* Vocab matching WS [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/cycle_aquatics_and_resources_matching_ws.docx)
  + Answer sheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/cycle_aquatics_and_resources_answers.docx)
* Vocab word search [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/word_search.docx)
* Water Storage in the Ocean [Click here](https://water.usgs.gov/edu/watercyclesummary.html#oceans)
* Springs [Click here](https://water.usgs.gov/edu/watercyclesummary.html#springs)
* Global Water Distribution [Click here](https://water.usgs.gov/edu/watercyclesummary.html#global)
* Ground Water Storage [Click here](https://water.usgs.gov/edu/watercyclesummary.html#gwstorage)
* Water Storage in the Atmosphere [Click here](https://water.usgs.gov/edu/watercyclesummary.html#atmosphere)
* Why is the Ocean Important? [Click here](https://climatekids.nasa.gov/ocean/)
* Gallery of Oceans [Click here](https://climatekids.nasa.gov/ocean-gallery/)
* "Toxic Lake: The Untold Story of Lake Okeechobee" featuring Kait Parker of Weather.com [Click here](https://www.youtube.com/watch?v=Y70I_kADGQY)
* Bodies of water video [Click here](https://www.youtube.com/watch?v=13bvILz1P7g)
* The most dangerous bodies of water- [Click here](https://www.youtube.com/watch?v=4lc9SiFeRvQ)
* The most dangerous water in the world- [Click here](https://www.youtube.com/watch?v=-4NVL03JdNk)
* Ocean animal games-[Click here](https://www.learninggamesforkids.com/ocean-animal-games-videos.html)
* Pond 2: Life in a Drop of Pond Water [Click here](http://sciencenetlinks.com/lessons/pond-2-life-in-a-drop-of-pond-water/)
* Water is water- 3 experiments[Click here](https://www.playfullearning.net/resource/water-is-water-3-experiments-for-kids/)
* Animals of the Sea- [Click here](https://owlcation.com/stem/sea-animals-list)

# Renewable, Nonrenewable & Fossil Fuels

## Power Points

* **Renewable, Nonrenewable Resources & Fossil Fuels**
  1. **Part 1** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/5._renewable_nonrenewable_resources_and_fossil_fuels_part_1.pptx)
  2. **Part 2** [**Click here**](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/5._renewable_nonrenewable_resources_and_fossil_fuels_part_2.pptx)

## Worksheets, Videos and Resources

* Renewable and nonrenewable worksheet [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/non_renewable_lesson_article.docx)
  1. [Click here](https://www.state.nj.us/dep/seeds/hthtr/renew.pdf)
* Fossil fuels WS [Click here](https://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/lib-fossil-fuels-article_and_quiz.pdf)
* Renewable energy jobs- [Click here](https://www.green360careercatalyst.net/)
* The fossil fuels we can't touch [Click here](https://www.thenakedscientists.com/articles/interviews/fossil-fuels-we-cant-touch)
* California to ban straws-
  1. [Click here](https://www.refinery29.com/en-us/2018/09/210667/plastic-straw-ban-california)
  2. [Click here](https://www.nationalgeographic.com/environment/2018/07/news-how-plastic-straw-bans-work/)
* Renewable or nonrenewable activity-
  1. [Click here](https://www.plt.org/family-activity/renewable-or-not/)
  2. [Click here](https://newsela.com/read/Yellowstone-supervolcano-energy-source/id/45335)
* Additional lesson ideas at
  1. [Click here](http://www.dnrec.state.de.us/DNREC2000/Divisions/AWM/aqm/education/airqualityLesson6.pdf)
  2. [Click here](http://www.need.org/files/curriculum/guides/FossilFuelsToProducts.pdf)
* Renewable Resources Game Show – BRAIN ZAPPED | Science for Kids! | Battery POP [Click here](https://www.youtube.com/watch?v=6_adfcO8clo)
* Resources from Floridastudents.org, 4th grade level [Click here](http://www.floridastudents.org/PreviewResource/StudentResource/163734)
* Activities related to energy resources [Click here](https://www.eia.gov/kids/)
* What you need to know about energy [Click here](http://needtoknow.nas.edu/energy/?utm_medium=etmail&utm_source=National%20Academies%20Press&utm_campaign=NAP+mail+CB+02.25.10+-+energy&utm_content=Downloader&utm_term)
* Renewable vs non-renewable video [Click here](https://www.youtube.com/watch?v=pBTnVoEIb98)
* Statistics on energy use in America
  1. [Click here](https://www.eia.gov/energyexplained/?page=us_energy_home)
  2. [Click here](https://www.fpl.com/community/education.html)
  3. [Click here](https://accel.peoplesgasdelivery.com/company/educators.aspx)
  4. [Click here](http://www.need.org/energyinfobooks)
* What is acid rain? [Click here](https://www.youtube.com/watch?v=1PDjVDIrFec)
* Global Warming [Click here](https://www.youtube.com/watch?v=oJAbATJCugs)
* Air Pollution
  1. [Click here](https://www.youtube.com/watch?v=e6rglsLy1Ys)
  2. [Click here](https://www.epa.gov/nutrientpollution/sources-and-solutions-fossil-fuels)
  3. [Click here](https://video.nationalgeographic.com/video/101-video-shorts/fossil-fuels-climate-change)
  4. [Click here](https://socratic.org/questions/where-are-fossil-fuels-found)