

[DASHBOARD \(LEARNINGDASHBOARD\)](#) / [GOALS \(LEARNINGGOALS\)](#) / [CONSIDER THE ENVIRONMENT \(LEARNINGPATHS?GID=A04E00000005W7V1IAK\)](#)
/ BLUE PATH: PRODUCT LIFE CYCLE

1 SURF TO TURF ✓ [HTTPS://MYCFA.FORCE.COM/LEARNING/LEARNINGPROJECT?GID=A04E0000005W7V1IAK&PATH=BLUE&PID=A03E000000CPGPBIA1](https://mycfa.force.com/Learning/LearningProject?GID=A04E0000005W7V1IAK&PATH=BLUE&PID=A03E000000CPGPBIA1)

2 AFTER THE SPILL ✓ [HTTPS://MYCFA.FORCE.COM/LEARNING/LEARNINGPROJECT?GID=A04E0000005W7V71IAK&PATH=BLUE&PID=A03E0000000CPGPQIA1](https://mycfa.force.com/Learning/LearningProject?GID=A04E0000005W7V71IAK&PATH=BLUE&PID=A03E0000000CPGPQIA1)

3 THE LEAD PAINT STUDY (HTTPS://MYCFA.FORCE.COM/LEARNING/LEARNINGPROJECT?GID=A04E0000005W7V7IIAK&PATH=BLUE&PID=A03E0000000CPGPIA1)

4 PRODUCT LIFE CYCLE ([HTTPS://MYCFA.FORCE.COM/LEARNING/LEARNINGPROJECT?GID=A04E0000005W7V1IAK&PATH=BLUE&PID=A03E000000CPGPGIA1](https://mycfa.force.com/Learning/LearningProject?GID=A04E0000005W7V1IAK&PATH=BLUE&PID=A03E000000CPGPGIA1))

Product Life Cycle

Status: Not Yet

COMPETENCIES TO MASTER

Can identify and explain key concepts in environmental science, such as water, carbon, nitrogen and phosphorus cycling and biodiversity

Can identify major environmental problems

Can analyze and critique leading solutions to major environmental problems

Overview

You work for the local city council, which is concerned about the impact of plastic water bottles on the environment. Your supervisor has asked you to prepare a report that explains exactly how the environment is affected by different aspects of the plastic water bottle life cycle, from production, distribution and consumption to disposal.

Directions

Create a report in which you document the environmental effects of the disposable water bottle life cycle. Feel free to include charts or diagrams. Note that the report should be in your own words. If you quote or paraphrase someone else's words, you need to identify the source using APA format.

1. Your readers will first need to understand more about the environment. Explain the normal functioning of the following:
 1. Water cycle
 2. Carbon cycle
 3. Nitrogen cycle
 4. Phosphorus cycle
2. Explain what biodiversity is, why it is important, and how human behavior impacts it.
3. Discuss how the water bottle life cycle impacts the water, carbon, nitrogen and phosphorus cycles and biodiversity.
4. For each environmental impact you discussed in Step 3, identify at least one possible intervention. Explain in your report how these interventions would help reduce the negative effects on the different areas of the environment.
5. Analyze these interventions critically by addressing the following questions:
 1. What benefit would each have?
 2. What drawbacks might result from adopting a given intervention?
 3. What kinds of complications could make the adoption difficult?

DELIVERABLES

Report

Suggested Word Count: 750

Accepted File Types: .doc, .docx, .odt, .rtf, .txt, .pdf

► My Deliverables

▼ Project Resources

These are links to public external resources. Any comments or statements made on these public websites are not representative of College for America.

Hydrologic and Carbon Cycles

This video describes both the carbon and water (hydrologic) cycles.

VIEW ([HTTPS://WWW.YOUTUBE.COM/WATCH?V=2D7HZPIYLCA&LIST=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&INDEX=8](https://www.youtube.com/watch?v=2D7HZPIYLCA&list=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&index=8))

ADD TO LIST

Nitrogen and Phosphorus Cycles

This video describes the nitrogen and phosphorus cycles.

VIEW ([HTTPS://WWW.YOUTUBE.COM/WATCH?V=LEHY-Y_8NRS&LIST=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB](https://www.youtube.com/watch?v=LEHY-Y_8NRS&list=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB))

ADD TO LIST

Five Human Impacts on the Earth

This video describes biodiversity, an important factor in the health of the environment, and how humans affect it.

VIEW ([HTTPS://WWW.YOUTUBE.COM/WATCH?V=5ETCZ9L834S&LIST=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&INDEX=10](https://www.youtube.com/watch?v=5ETCZ9L834S&list=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&index=10))

ADD TO LIST

Pollution

This video offers information on how human activities affect water, carbon, nitrogen and phosphorus cycles and pollution levels.

VIEW ([HTTPS://WWW.YOUTUBE.COM/WATCH?V=KDDSRCKMII&LIST=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&INDEX=11](https://www.youtube.com/watch?v=KDDSRCKMII&list=PL8DPUUALJXTNDTKZKV_GIIYXPV9W4WXB&index=11))

ADD TO LIST

Plastic Water Bottles Causing Flood of Harm to Our Environment

This article explores facts and misconceptions about bottled water production and use.

VIEW ([HTTP://WEB.ARCHIVE.ORG/WEB/20150905062257/HTTP://WWW.HUFFINGTONPOST.COM/NORM-SCHRIEVER/POST_5218_B_3613577.HTML](http://web.archive.org/web/20150905062257/http://www.huffingtonpost.com/norm-schriever/post_5218_b_3613577.html))

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10 Solutions for Climate Change

Overabundance of biogeochemicals causes ecological damage that can be controlled in part by methods described in this article.

VIEW ([HTTP://WWW.SCIENTIFICAMERICAN.COM/ARTICLE.CFM?ID=10-SOLUTIONS-FOR-CLIMATE-CHANGE](http://www.scientificamerican.com/article.cfm?id=10-solutions-for-climate-change))

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Renewable Energy

This video describes how using renewable energy sources when possible can help to restore balance in the carbon cycle.

VIEW ([HTTP://WEBPAGES.UIDAHO.EDU/SUSTAINABILITY/CHAPTERS/CH06/CH06-P10.ASP](http://webpages.uidaho.edu/sustainability/chapters/ch06/ch06-p10.asp))

ADD TO LIST

Solutions for Air, Nutrient and Industrial Pollution

Click the links in the box to read about problems caused by pollution and some solutions for reducing pollution and repairing damage to the environment.

VIEW ([HTTP://WEB.MIT.EDU/12.000/WWW/M2015/2015/SOLUTIONS_NUTRIENT_RUNOFF.HTML](http://web.mit.edu/12.000/www/M2015/2015/solutions_nutrient_runoff.html))

ADD TO LIST

Biogeochemical Cycles

Learn about life's direct relationship to the geologic makeup of the planet and how organisms and the environment process the chemicals essential to life.

[VIEW \(HTTP://WWW.BRITANNICA.COM/EBCHECKED/TOPIC/65875/BIOGEOCHEMICAL-CYCLE\)](http://www.britannica.com/EBchecked/topic/65875/biogeochemical-cycle)

[ADD TO LIST](#)

Global Warming 101

This video describes the basics of global warming.

[VIEW \(HTTP://VIDEO.NATIONALGEOGRAPHIC.COM/VIDEO/ENVIRONMENT/GLOBAL-WARMING-ENVIRONMENT/GLOBAL-WARMING-101\)](http://video.nationalgeographic.com/video/environment/global-warming-environment/global-warming-101)

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Science of Climate Change

This educational website from the EPA provides animations, graphs, charts and verbal descriptions to explain the process and elements of climate change cycles.

[VIEW \(HTTP://WWW.EPA.GOV/CLIMATECHANGE/SCIENCE/CAUSES.HTML#BALANCINGACT\)](http://www.epa.gov/climatechange/science/causes.html#balancingact)

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▼ Skill-Building Resources

These are links to public external resources. Any comments or statements made on these public websites are not representative of College for America.

How Water Bottles Are Made

Watch this video to learn about the process of creating plastic water bottles.

[VIEW \(HTTPS://WWW.YOUTUBE.COM/WATCH?V=ZFYPcUjUPMS\)](https://www.youtube.com/watch?v=ZFYPcUjUPMS)

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Human Impacts on the Cycling of Matter

This article describes biogeochemical cycles, how human behavior alters these cycles and the effects of those changes.

[VIEW \(HTTP://WEB.ARCHIVE.ORG/WEB/20141006150014/HTTP://WWW.EOARTH.ORG/VIEW/ARTICLE/149760/\)](http://web.archive.org/web/20141006150014/http://www.eoearth.org/view/article/149760/)

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CfA Citation Guide

This resource helps to explain how citations should be used in CfA Projects including formatting guidelines and where to get help.

[VIEW \(HTTP://CFARESOURCE.S3.AMAZONAWS.COM/GENERAL%20RESOURCES/CFA%20CITATION%20GUIDE.PDF\)](http://cfaresources.s3.amazonaws.com/general%20resources/cfa%20citation%20guide.pdf)

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APA Citation Question and Answer Sessions

Read this document to learn how to join a live question and answer session about citing information in APA format hosted by a College for America Goal Mentor.

[VIEW \(HTTPS://CFARESOURCE.S3.AMAZONAWS.COM/GENERAL%20RESOURCES/APA%20QA%20SESSIONS.PDF\)](https://cfaresources.s3.amazonaws.com/general%20resources/apa%20qa%20sessions.pdf)

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▼ Rubric

The Rubric is used to evaluate your Project. Satisfying all of the Rubric criteria shows that you have mastered the project and the relevant competencies.

Criteria

Mastery?

Explains the water, carbon, nitrogen/phosphorus cycles and biodiversity

Yes
Not Yet

Identifies the likely environmental impacts of the product life cycle on the water, carbon, nitrogen/phosphorus cycles and biodiversity

Yes
Not Yet

Identifies and proposes at least one intervention for each environmental impact

Yes
Not Yet

Analyzes the proposed interventions, addressing potential benefits, drawbacks, and difficulties in implementation

Yes
Not Yet

Writing is clear, with no major errors

Yes
Not Yet

Any sources of information are cited using APA format, with no major errors

Yes
Not Yet

► Feedback

Other Projects in this Path

You must complete the following Projects to earn all of the Competencies in this Goal.

1 SURF TO TURF ✓(HTTPS://MYCFA.FORCE.COM/LEARNING/LEARNINGPROJECT?
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Blue Path

Overview and Directions

Deliverables

My Deliverables

Project Resources

Skill Building Resources

Rubric

Feedback

Project Reflection

SCHEDULED: 10/15/2016

SUBMIT WORK