Science Virtual Learning

LEP Science

Nutrient Cycles (Nitrogen)

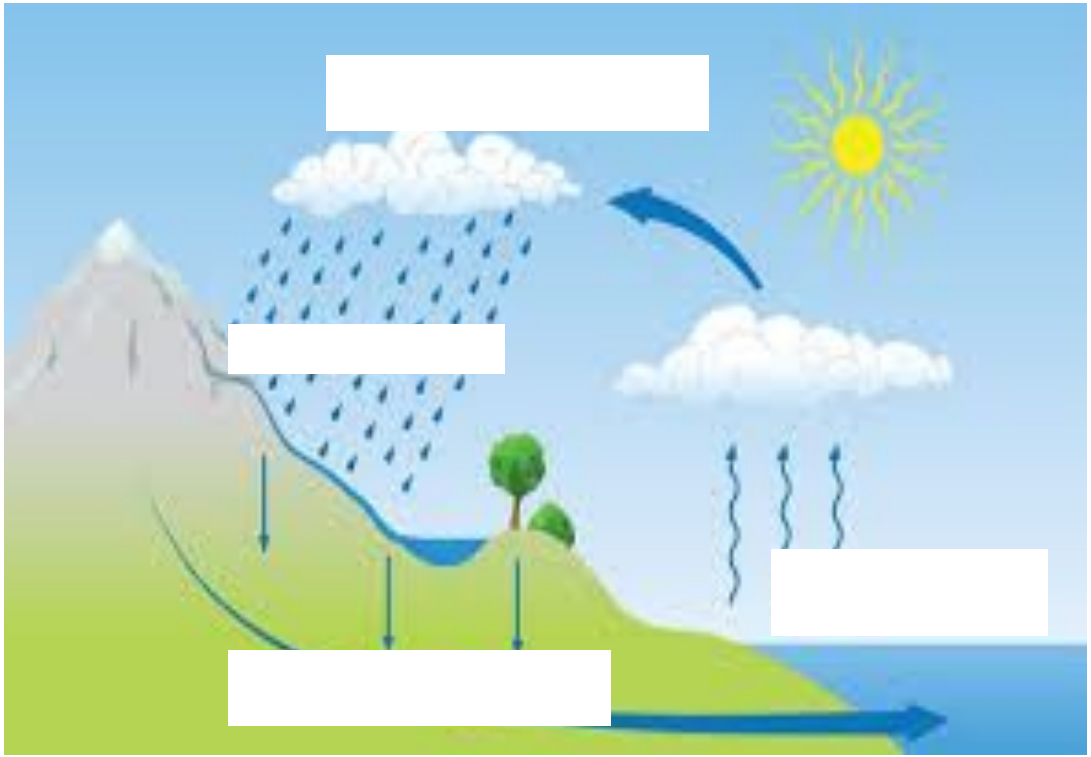
May 5, 2020

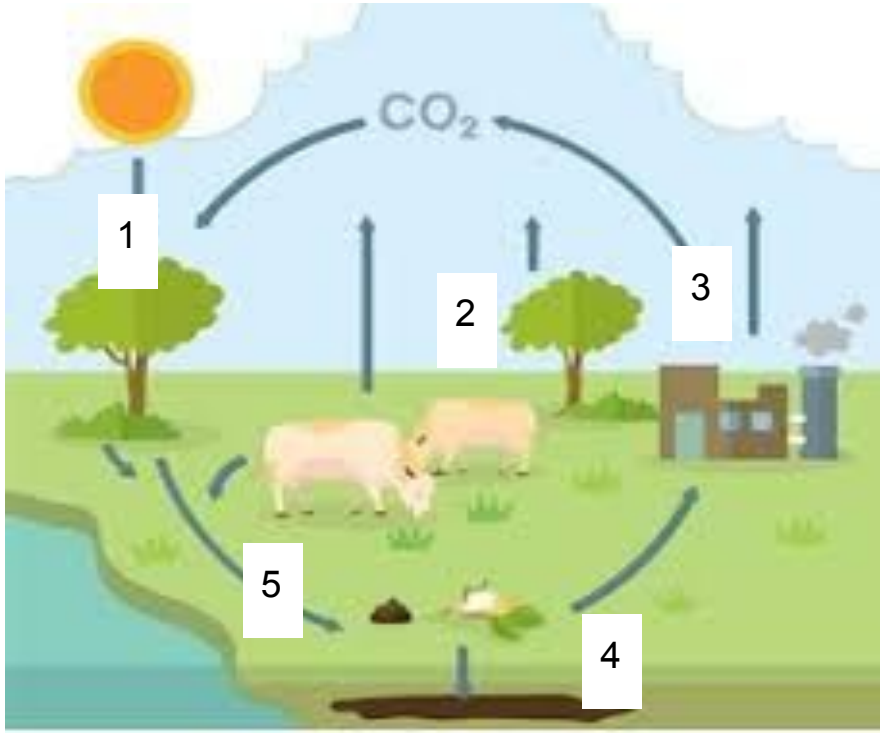
LEP Science
Lesson: May 5, 2020

Objective/Learning Target: I can explain how bacteria play an important role in the Nitrogen Cycle

Let’s get started with a quick review of the Water and Carbon Cycles.

Label the water cycle using these terms:
Evaporation
Condensation
Run-off
Precipitation



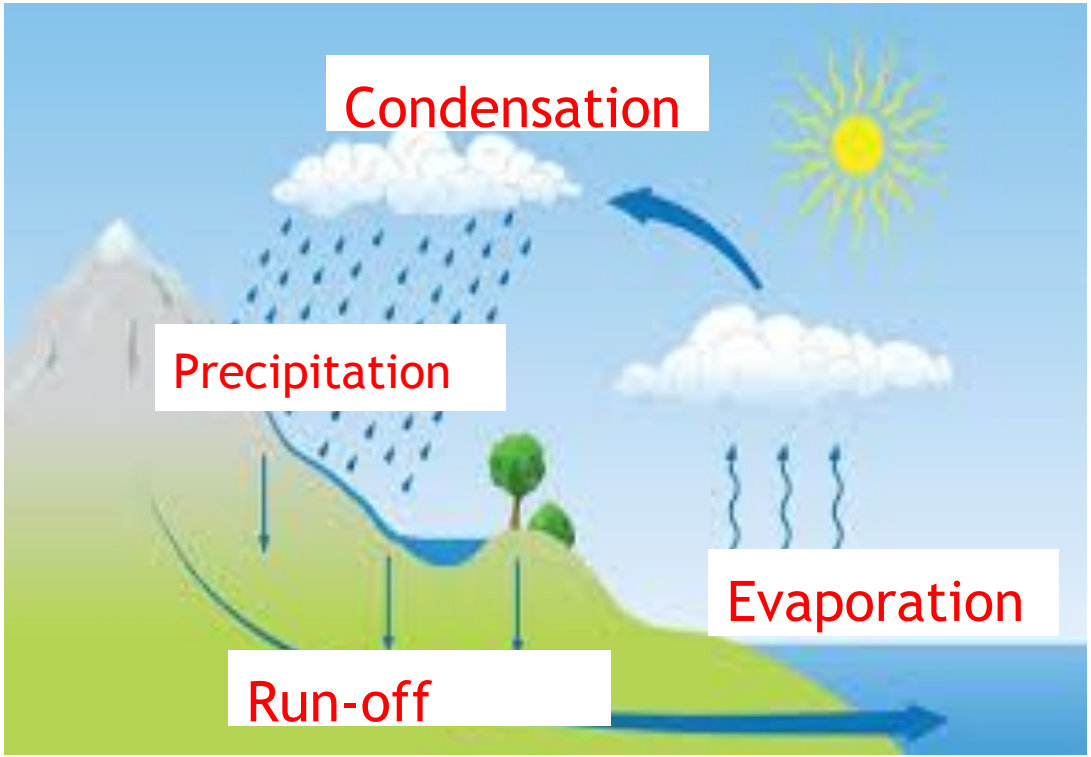


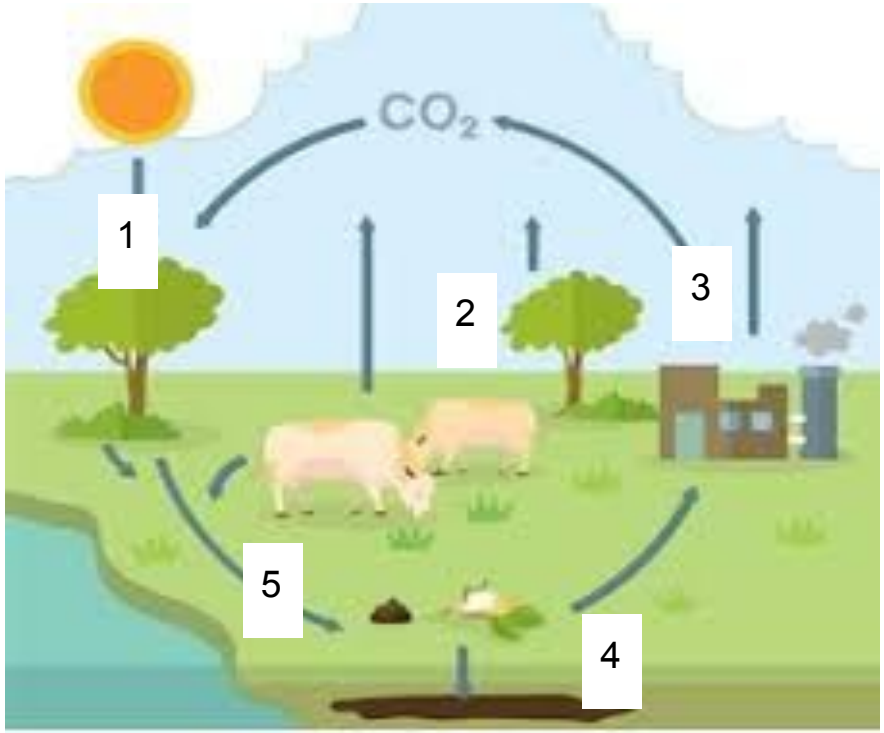
Label the parts of the Carbon Cycle using these terms:

Respiration
Fossil fuels
Combustion
Organic Waste
Photosynthesis

Let’s see how you did

Label the water cycle using these terms:
Evaporation
Condensation
Run-off
Precipitation





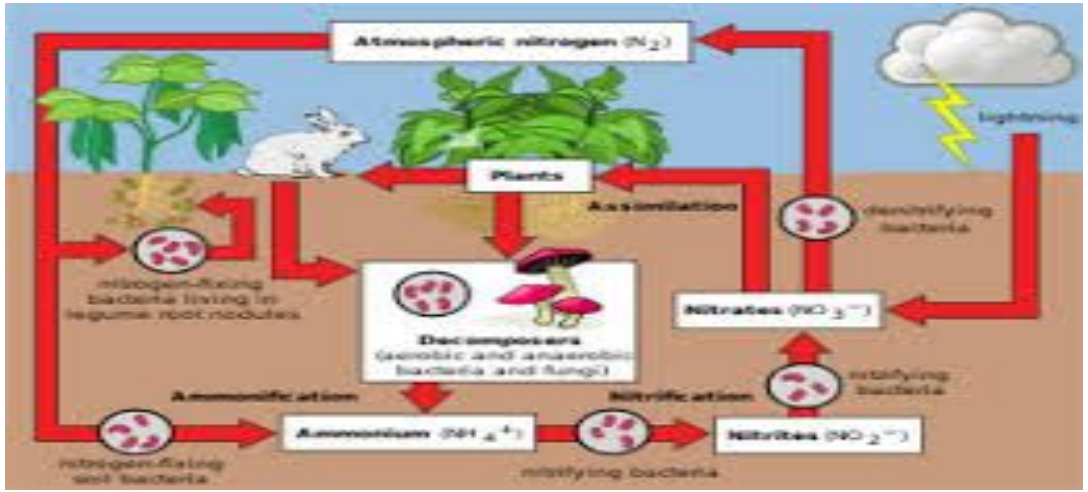
Label the parts of the Carbon Cycle using these terms:

Respiration - 2
Fossil fuels - 4
Combustion - 3
Organic Waste - 5
Photosynthesis - 1

Next, on the same sheet of paper, put a heading titled **Nitrogen Cycle.** In this part of the lesson, we will be learning about the parts of the nitrogen cycle. <u>As you watch the video, note the role of each item in the nitrogen cycle</u>:

1. The atmosphere
2. Lightning
3. Lakes and oceans
4. Soil
5. Nitrogen Fixation
6. Legumes
7. Denitrification

When ready, click this link to begin the video over the nitrogen cycle,



Nitrogen Cycle Practice Questions

What role does the atmosphere play in the nitrogen cycle?

a) The atmosphere stores nitrogen
b) Lightning creates all of earth's nitrogen, none of which is stored in the atmosphere.
c) Nitrogen is created when elements found in the atmosphere are combined by lighting
d) The atmosphere is 100% nitrogen

Nitrogen Cycle Practice Questions

What role does the atmosphere play in the nitrogen cycle?

a) Lightning creates all of earth's nitrogen, none of which is stored in the atmosphere.
b) Nitrogen is created when elements found in the atmosphere are combined by lighting
c) The atmosphere is 100% nitrogen
d) The atmosphere stores nitrogen that can be passed on to plants, animals, water and soil

Nitrogen Cycle Practice Questions

What role do lakes and oceans in the nitrogen cycle?

a) Lakes and oceans store dissolved nitrogen
b) Lakes and oceans contain organisms that release nitrogen, but it is not stored in water
c) Lakes and oceans are made of water molecules, which contain nitrogen
d) All of the other answers are correct

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Nitrogen Cycle Practice Questions

What role do legumes play in the nitrogen cycle?

a) They are organisms that remove nitrogen from the soil and release it into the air
b) They are organisms that absorb nitrogen from the air and fix it into the soil
c) They are organisms that absorb sunlight and use it to create nitrogen gas

Nitrogen Cycle Practice Questions

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a) They are organisms that remove nitrogen from the soil and release it into the air
b) They are organisms that absorb nitrogen from the air and fix it into the soil
c) They are organisms that absorb sunlight and use it to create nitrogen gas

Nitrogen Cycle Practice Questions

What role does soil play in the nitrogen cycle?

a) Soil absorbs sunlight and converts it into nitrogen that is released into the air
b) Soil contains water, which contains nitrogen atoms
c) Soil contains ammonia in the form of ammonia, nitrates and nitrites
d) All of the other answers are correct

Nitrogen Cycle Practice Questions

What role does soil play in the nitrogen cycle?

a) Soil absorbs sunlight and converts it into nitrogen that is released into the air
b) Soil contains water, which contains nitrogen atoms
c) Soil contains ammonia in the form of ammonia, nitrates and nitrites
d) All of the other answers are correct

Nitrogen Cycle Practice Questions

Nitrogen Fixation is the process of taking nitrogen from the ___ and making it part of the ___

a) Atmosphere, soil
b) Water , atmosphere
c) Atmosphere, water
d) Atmosphere, bacteria and plants

Nitrogen Cycle Practice Questions

Nitrogen Fixation is the process of taking nitrogen from the ___ and making it part of the ___

a) Atmosphere, soil
b) Water , atmosphere
c) Atmosphere, water
d) Atmosphere, bacteria and plants

Nitrogen Cycle Practice Questions

Denitrification is the process of taking nitrogen from the ___ and making it part of the ___

a) Atmosphere, water
b) Water , atmosphere
c) Atmosphere, bacteria and plants
d) Soil, atmosphere

Nitrogen Cycle Practice Questions

Denitrification is the process of taking nitrogen from the ___ and making it part of the ___

a) Atmosphere, water
b) Water , atmosphere
c) Atmosphere, bacteria and plants
d) Soil, atmosphere

Watch the two videos below. As you watch, write the definitions to these terms:

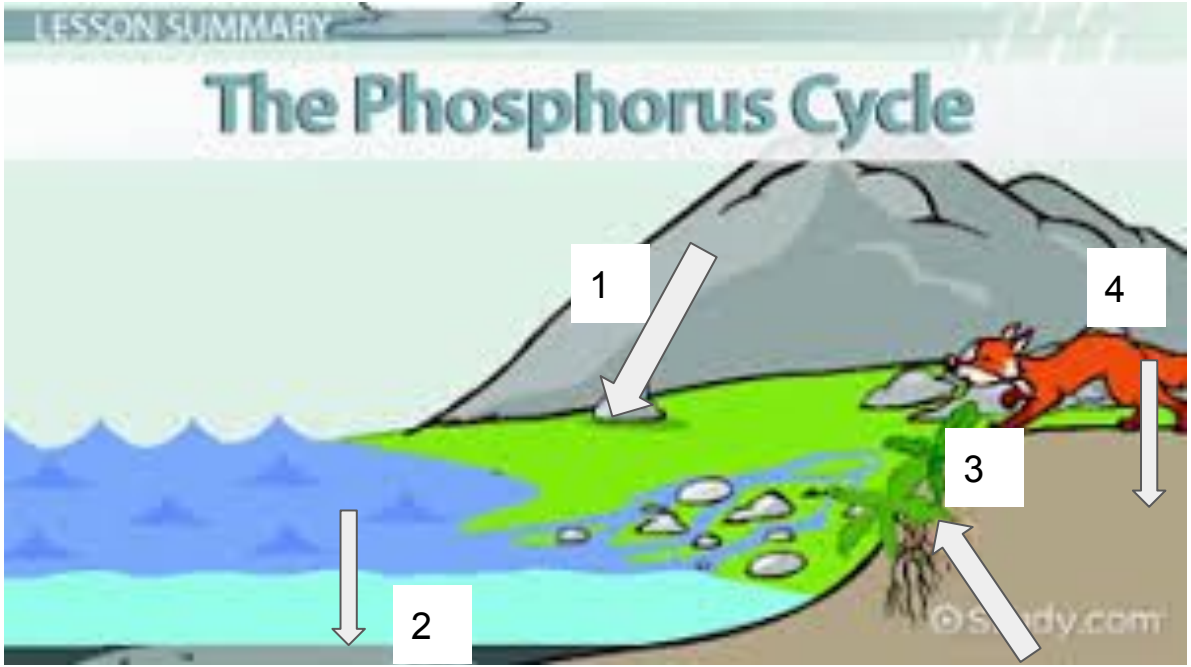
Weathering
Absorption
Decomposition
Sediment formation

EdPuzzle on Phosphorus Cycle

Phosphorus Cycle

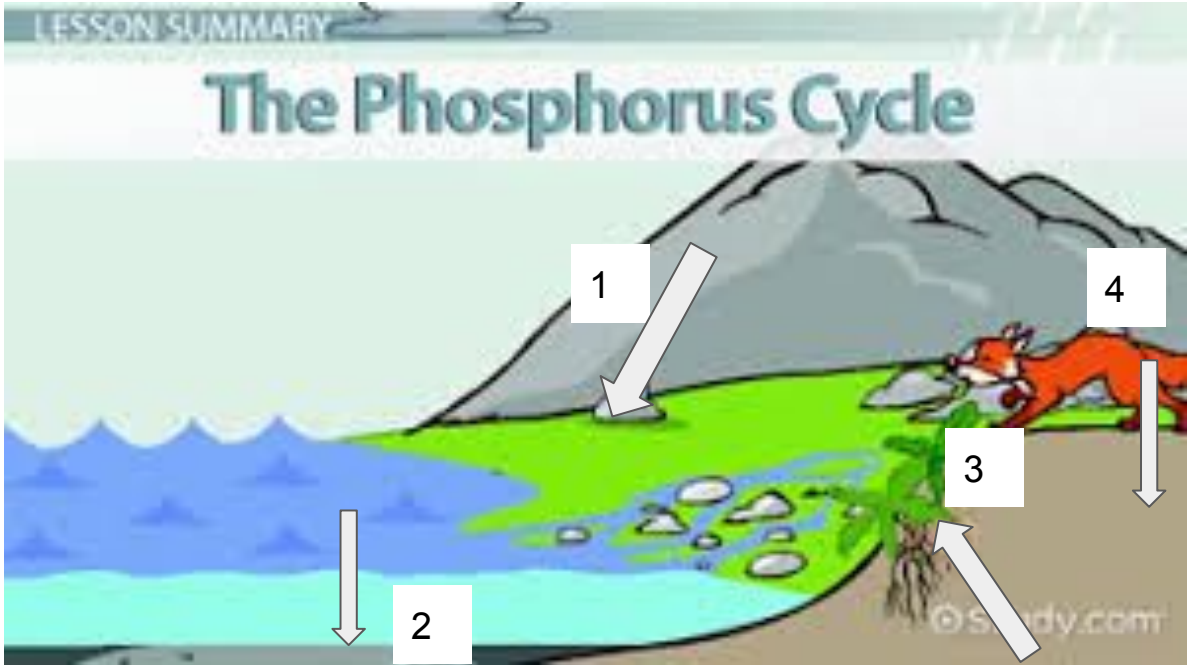
Phosphorus cycle review questions.

Label the parts of the Phosphorus Cycle shown on the right. Use these terms:
Weathering
Absorption
Decomposition
Sediment



Phosphorus cycle review questions.

Label the parts of the Phosphorus Cycle shown on the right.
Use these terms:
Weathering -1
Absorption -3
Decomposition -4
Sediment -2



Rewatch this video, Phosphorus Cycle, answer the following questions about the phosphorus cycle below.

1. Is phosphorus found in the atmosphere?
2. What are 3 things phosphorus is essential for?
3. Is the cycle a fast or slow cycle?
4. How have humans impacted the cycle?

1. Is phosphorus found in the atmosphere?- NO
2. What are 3 things phosphorus is essential for? Plant and animal growth, formation of DNA and RNA, formation of Cell membrane.
3. Is the cycle a fast or slow cycle? Slow
4. How have humans impacted the cycle? Fertilizers have added to the soil too much phosphorus which has had detrimental impacts to water sources due to the runoff.

Here are some addition review and learning sources

Nitrogen Cycle Flash Cards

Nitrogen Cycle Practice Quiz

Water Cycle EdPuzzle

Phosphate Cycle