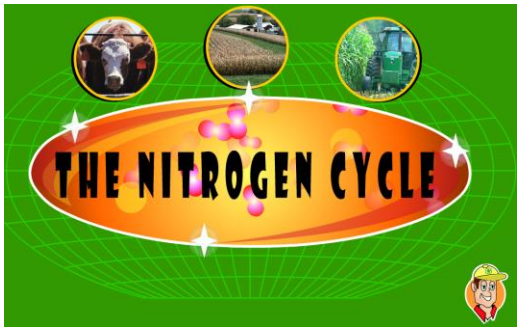
# Nitrogen Cycle Computer Tutorial

**Directions**: Go to the website and answer the following questions (complete sentences):
http://www.sites.ext.vt.edu/virtualfarm/flash_mov/nitrogencycleintro.swf

**A) Click on the Cattle Producer in the bottom right part of the main page.**

1) Briefly summarize what the farmer says in the introduction.




**B) Click on the Farmer's Slide Show. Scroll through the slide show to answer the questions below.**


2) Where is most of the nitrogen found on Earth?

3) Can plants or animals use this nitrogen?

4) What is the chemical formula of nitrogen in the air (Hint: look at the picture on Slide 2)?

5) How does nitrogen in the air turn into nitrate, $NO_3$ (there are a number of ways this can occur)?

6) How are cows a part of the nitrogen cycle?

7) What type of nitrogen do plants take up? Give the name and the chemical formula of this form of nitrogen.

8) What is leaching (Scroll over the word on the diagram to find it)?

9) Where does nitrogen enter the plant?

10) What happens when there is too much nitrogen in the soil?

**C) Tractor Icon: After you are done with the slideshow, click on the Tractor Icon. Click on the various images to answer the questions below.**

11) What is a manure lagoon?

12) What is the fertilizer's purpose on a farm?

13) Where do animals, such as cattle, get their nitrogen? How do they lose nitrogen?

14) How do legumes help in the pasture?

**D) Pencil Icon: Click on the Pencil Icon on the bottom right of the screen. Work through the management of Nitrogen on the farm by solving the problems.**

15) Why does a farmer need to manage his/her nitrogen carefully?

16) How much nitrogen is produced by the 2 steers?

17) How much nitrogen is lost or unavailable?

18) How many pounds of nitrogen fertilizer is needed?

19) How much nitrogen is in the corn we harvest?

20) How much nitrogen is gained by the two steers?

21) Use the calculations just done in questions 15-20 to figure out how much nitrogen needs to be purchased by the cattle producer:

?Nitrogen lost in manure + Nitrogen gained in body - Nitrogen in corn crop = Nitrogen we need to purchase.

**E: Google Research:** Look up these words and write the definition below.

**a) Nitrogen fixation:**

**b) Nitrification:**

**c) Assimilation:**

**d) Denitrification:**

22) How can burning fossil fuels affect the nitrogen cycle?

23) What organisms run the nitrogen cycle?