

Using Bingo as a Method to Teach Scientific Terms

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This article describes a bingo game that can help students recall terms in a fun way. It should be helpful to people teaching introductory science courses at the college level. Students had very positive comments about the game.

Introduction

Most introductory science courses contain new terms that students must learn. For example, in an introductory Chemistry course there are at least 100 new terms that students must learn, such as molecule, compound, element, mixture, chemical symbol and mole. These many terms can be a roadblock to many students while others may become bored with learning new vocabulary. This paper will describe a bingo game that students can play that will make the learning of these new terms more fun.

The Bingo Game

Essentially, the instructor will need to prepare bingo cards similar to one shown in figure 1. The terms in figure 1 refer to the sun which is always described in an introductory astronomy class. Each bingo card should have a different arrangement of terms. A list of terms is then prepared separately and definitions to the terms are written next to the terms as is shown in figure 2. The students are each given a card along with 12 chips. I had my students use pennies as chips. The professor then calls out the definition and students should know the term that goes with the definition and, of course, if the term is on their bingo card than a chip is placed on the term. The first student who gets 4 across, up-and-down or diagonally should raise a hand and cry out "bingo." The instructor then verifies to see that the student did indeed win. Winners get to pick from the "goodies" bag.

Preparing the Game

The instructor should start with a list of terms, preferably at least 30. These terms should be written and then their definitions written nearby, as is shown in figure 2. The bingo cards should then be prepared. I started out with two cards having almost totally different terms but all terms were from figure 2. The 2 bingo blocks were then copied using the computer copy command, creating 20 cards; this was all on the computer and nothing was printed out yet. I then went through and moved the terms around on the card, thus preventing mistakes and the problem of two students getting the same card. After this was done, I printed out the cards and cut them to the proper size.

Student Comments Right After the Game

Table 1 lists some of the student comments. The most encouraging thing was that it helped students recall specific terms and also helped them to focus on the terms. In one recent class, every one of the 31 students had positive comments about the game.

Table 1: Student comments right after the bingo games.

1. "Helped in recalling notes"
2. "Helped me remember specific terms"
3. "Fun way to learn"
4. "Helped me to see if I've learned something"
5. "...found myself knowing the answers to more and more questions."
6. "Good long term memory device"
7. "Helped my mind to focus on the information learned in chapter 13"
8. "It seems to help you pay more attention to the words and their meanings"
9. "...made studying more fun"
10. "It helped me realize what I have to study"
11. "It was very helpful! Thank you!"
12. "The bingo was very helpful in helping me recall things that I had forgotten"
13. "It makes you remember the information a lot better because it is fun"
14. "...now I know the exact terminology you are looking for in my answers."

FIGURE 1: A typical Bingo card used in the teaching of terms associated with the Sun.

K-star	Proton-proton cycle	Corona	Flux
Photosphere	O star	Solar maximum	Conduction
Chromosphere	Pressure	Unit of power	Flare
G-star	Joule	Quadrant	Convective zone

FIGURE 2: A sample table listing the definitions along with the associated terms. Boxes at the far right are checked as terms are called out.

Clue	Term
The layer on the sun that is visible from earth	Photosphere
The outermost layer of the Sun; it extends for a million miles above the visible surface of the sun	Corona
A thin layer on the sun just above the photosphere	Chromosphere
The part of the sun where all of the energy is generated	Core
The main cycle that the sun used in producing its energy	Proton-proton cycle
The force that keeps the sun from flying into a million pieces	Gravity
The layer inside the sun where the main mechanism for the transport of light energy is through convection	Convective zone
The layer inside the sun where the main mechanism for the transport of light energy is through radiation	Radiative zone
A violent discharge of energy on the Sun	Flare
A cooler area on the sun that is darker than the surrounding area	Sunspot
Amount of energy flowing through a given area in a given amount of time	Flux
A cooler cloud of gas that appears dark against the bright sun	Prominence
A unit of energy	Joule
Watt	Unit of power
Luminosity is:	Energy/second
The spectral classification of the Sun is:	G star
This is the hottest spectral type of star	O star
This is the second coolest type of star	K star
A M star will generally have this color	reddish
The method of energy transport that keeps the Earth warm	Radiation
The transfer of energy by the moving currents of a fluid/gas	Convection