

ATOMIC STRUCTURE TABOO CARDS GAME

TEACHER'S GUIDE

Subject area: Physics & Chemistry

Educational Stage: E.S.O.

Target grade: 3^o



Pedagogical Purpose

The aim of this resource is to make students understand the main concepts of the atomic structure unit in a fun way.

Objectives

- ✓ Identify the Big Ideas in the Atomic Structure unit.
- ✓ Assess prior knowledge of the unit
- ✓ Improve study techniques
- ✓ Develop the linguistic skills of the students in English
- ✓ Come up with a glossary of key words for the unit

Context

Following the **5 E methodology** (Engage, Explore, Explain, Elaborate and Evaluate) to create a lesson plan, this activity has a double purpose; on one hand it will **engage** the students in the study of the unit, and on the other hand it will make them be an active part of the process, by **elaborating** the game. Furthermore, it will help the students to prepare for the **evaluation** of the unit.

Timing

This unit will be 3 weeks long. The activity will be developed in 3 sessions.

➤ **Day 1**

We will inform the students that our mission in this unit will be to create a taboo game that helps them understand the main ideas of the unit.

We will start by dividing the class in groups of 4 and ask them to do **Brainstorming** about atomic structure for 10 min within their group and find



the Big Ideas. They have studied this unit in the previous year, so they already have some knowledge about it.

Each group will come up with a **list of words** that they will share with the class. This will serve as a revision of what they already know. The list can be extended during the Explore and Explain stages of the unit. Students will prepare a **glossary of Big Ideas** of the unit in their notebooks.

➤ **Day 6**

The teacher will distribute the list of key words in the groups and ask the students to prepare the taboo cards.

Students will review and understand the definition for each of the concepts assigned and will decide which will be the 4 taboo words that they will write on the cards. They will also include an image and write the key word that needs to be defined.

We can prepare the cards to play in small groups or ask them to do it in a Power Point presentation that can be projected and play with the whole class.

➤ **Day 8**

We will use the cards to Play and Review the unit, before the Evaluation Test.

Game Instructions

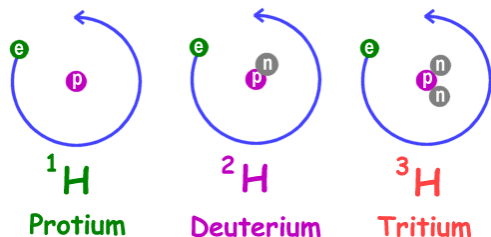
1. The purpose of the game is to make a classmate guess a word by giving him the word's definition and avoiding the taboo words written in the card.
2. As a whole class, we will make 2 big teams of half of the class (A and B)
3. We will choose alternatively one student of each team that will stand in front of the class.
4. We will project the card so that everyone can see it except for the participant that will stand backwards to the screen.
5. The members of the player's team will raise their hands and give their definitions.
6. The members of the other team will check that none of the forbidden words are said. If so, they will shout "taboo", and the player's team will get no points.
7. The player will have 2 minutes to guess the word.
8. If the player succeeds, the team will be given 2 points.

You will find some examples of taboo cards in the next page



ISOTOPE

Three Isotopes of Hydrogen



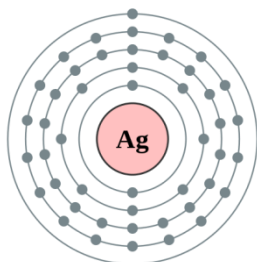
- ✦ Atomic Number
- ✦ Neutrons
- ✦ A
- ✦ Element

CATION



- ✦ Loose
- ✦ Electron
- ✦ Charge
- ✦ Positive

ELECTRON CONFIGURATION



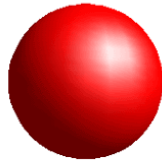
- ✦ Orbital
- ✦ Shell
- ✦ Distribution
- ✦ Electron

ANION



- ✦ Negative
- ✦ Charge
- ✦ Gain
- ✦ Electron

PROTON

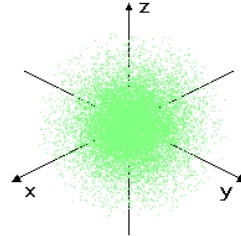


Proton



- ✦ Positive
- ✦ Particle
- ✦ Nucleus
- ✦ Atom

ORBITAL



Orbital s ($\ell = 0, m_\ell = 0$)



- ✦ Model
- ✦ Probability
- ✦ Electron
- ✦ Quantum Mechanics

ATOMIC NUMBER



- ✦ Z
- ✦ Proton
- ✦ Periodic Table
- ✦ Atom

MASS NUMBER



- ✦ A
- ✦ Proton
- ✦ Addition
- ✦ Neutron