2014 Student Program Lesson Plan Template

For step-by-step help in completing this document, please see the accompanying guide.

Date:	July 30, 2014	**Class:**	Evolution of ideas of the Universe structure

Definition and Guiding Question

LESSON	LEARNING EPISODE
For the purpose of this STARTALK template a *lesson* is defined as a single learning experience lasting no more than ninety minutes. Learning experiences occur both in the classroom and/or in other settings. Longer blocks of time will involve several learning episodes and lesson plans.	For the purpose of this STARTALK template a *learning episode* is defined as a learning experience that addresses a specific aspect of a learning target or can-do statement. Learning episodes typically provide a limited amount of input with time allowed for guided and independent practice. The amount of time allotted for a learning episode is approximately equivalent to the age of the learner and will rarely be more than twenty minutes.

Questions to Consider Before and During Lesson Planning

Do the activities in the lesson

- provide sufficient opportunities for understanding new words before expecting production?
- provide multiple, varied opportunities for students to hear new words/expressions used in highly visualized contexts that make meaning transparent?
- provide students with an authentic purpose for using words and phrases?
- engage all students (as opposed to just one or two students at a time)?
- give students a reason for needing to/wanting to pay attention and be on task?
- vary in the level of intensity and the amount of physical movement required?
- take an appropriate amount of time considering the age of the learner?

- make the learner, not the teacher, the active participant?

STAGE 1: What will learners be able to do with what they know by the end of this lesson?

DO *What are the learning targets for this lesson?*	**KNOW** *What vocabulary, grammatical structures, language chunks, cultural knowledge, and content information do learners need to accomplish the lesson can-do?*
Interpretive Reading The students can read and understand the main idea and a few supporting facts about scientific discoveries, historical context and names of the famous persons from authentic texts **Int. H.;**	Terms related to STEM topics and some specific academic language style, such as: Express the idea that something exists; Use correctly verbs of existence *быть, существовать* as well as zero form of the verb 'to be' in present tense: *существуют* разные виды наблюдений планет; *существуют* различные виды видимого движения; в теории Коперника *все* планеты (zero form the verb *'to be'* in present tence***)*** находятся на собственных орбитах, теория Коперника *является* переворотом; Джордано Бруно *был* основателем; Explain that something consists of something else: grammar construction Verb + Noun (Gen. with a preposition *из* or Acc. case): Вселенная *состоит из* планет и звезд (Gen. with a preposition *из);* по теории Пифагора мир *построен из (*Gen. with a preposition *из)* больших хрустальных сфер; эти планеты-гиганты *образованы из* водорода и гелия; Astronomy therms: *Вселенная, сфера, орбита, Солнце, Земля, планета, звезды, геоцентрический, гелиоцентрический.*
Interpretive Listening The students can understand the main idea and the most details on mathematical and astronomy problems presented through oral presentations of other students **Adv.L.;**	Compare objects and express the superiority of one of them over the other: Lexical resources (adjectives and adverbal expressions): *уникальный, совершенный, превосходящий, впервые в истории, впервые, никогда раньше, прогрессивный*; Grammar forms (adjectives in comparative and superlatives); *весьма совершенный, абсолютно новый, новейший; значительно точнее, наиболее соответствующий наблюдениям;* Astronomy therms: устройство мира, планеты, звезды, геоцентрический, гелиоцентрический,

	множественность миров, Вселенная; Math terms: окружность, сфера, эллипс, бесконечность, система координат, точка отсчета, центр окружности, диаметр.
Presentational Speaking The students can give a brief oral presentation (narration about one particular event or solved problem) in a formal style **Int. H.;**	The students discuss ideas and express opinions to teacher and peers when solving problems in groups and work on their own research topics. Lexical and morpho-syntactic means to say 'think/consider/believe/it seems to me/ from my point of view/from the perspective of': *я думаю, полагаю, считаю; мне кажется, с моей точки зрения;* Essential information: Who? (names and bios); Where? (countries and places); When? (dates); Terms related to STEM topics and astronomy***:** *круговая орбита, цикличность, наблюдения, восход и заход Солнца, Пифагор, Коперник, Джордано Бруно, небосвод, обитаемые миры, пространство, время.*
Interpersonal Communication The students can express ideas and opinions when engaged in discussion about problems solving **Adv.L.;**	The students discuss ideas and express opinions when engaged in lengthy discussion about the Human Perspective of The Universe. Astronomy therms: *пифагорийцы, траектория, орбита, модель устройства Вселенной, Луна, Меркурий, Венера, Солнце, Марс, Юпитер, Сатурн, неравномерности движений, эпициклы, смена времен года, наклон оси вращения Земли, плоскость земной орбиты,и обращение Земли;* Math terms: *симметрия, упорядоченность, последовательность, вложенные сферы, окружность, круговое вращение.*

STAGE 2: How will learners demonstrate what they can do with what they know by the end of the lesson?

What will learners do (learning tasks/activities/formative assessments) to demonstrate they can meet the lesson can-do?
The students read, understand, and compare articles about different models of the Universe. The students learn the modern theory of the Univerce

structure through documentary film and created poster.

STAGE 3: What will prepare learners to demonstrate what they can do with what they know?

How will you facilitate the learning?

What activities will be used to ensure learners accomplish the lesson can do? What will the teacher be doing? What will the students be doing?

Opening Activity

The teacher sets the main goal of the lesson for the students by brief discussion about the ideas of the Universe structure.	Time: 5 min

Learning Episode

The students work in groups to compare the heliocentric and geocentric models of the Universe (theories of Aristotle, Ptolemy, Nicolaus Copernicus, Giordano Bruno). Each group of students reads the authentic text, understand the main idea and the most details of the text, creates a poster with the model of the Universe, according to information acquired from the text, and orally shares their findings with others.	Time: 20 min

Learning Episode

The students work in groups to create a poster *«Our address in Universe»*. The students get a sets of photos (University building, the US, the Earth, the Solar System etc). The students arrange the photos in the correct order (as an address on the envelope).	Time: 5 min

Learning Episode

The students watch the documentary film “Journey To The Edge Of The Universe” and find out the most important details about the different astronomical objects in the Universe.	Time: 20 min

Learning Episode

The students solve the puzzles which are composed of the words have being studied in the class previously.	Time: 10 min

Materials needed for this lesson

- Authentic articles about heliocentric and geocentric models of Universe (the theories of Aristotle, Ptolemy, Nicolaus Copernicus, Giordano Bruno).
- The sets of photos (University building, US, the Earth, the Solar System etc)
- The documentary film “Journey To The Edge Of The Universe” (ttps://www.youtube.com/watch?v=tJGXMWcCAHI&list=PLV62yvRKzOoP5qXu9Am3hNda9eO8lNycD&index=2)
- Astronomy puzzles

Reflection/Notes to Self