

## Lesson 1

# Our Views about the Cosmos

## Worksheet

School ..... Class: ..... Date: .....

### Activity 1: Presentation of the storytelling (7 minutes)

Please watch the video with the storytelling

### Activity 2: Questions of the students (2 minutes)

Please formulate your questions based on the storytelling you watched:

1.	
2.	
3.	

1

### Activity 3: Questions by the teacher (2 minutes)

1. Which are the main views about the Universe since Antiquity and up to the present day?
2. Which are the differences between these views?
3. Do scientific theories change, or do they remain unaltered?
4. Which are the planets of our Solar System?
5. How is a telescope constructed? How does it function?



#### Activity 4: Answers-hypotheses of the students (5 minutes)

Please write down your answers-hypotheses to the questions above

1.	
2.	
3.	
4.	
5.	

#### GEOCENTRIC MODEL

##### Activity 5: Investigation of the 1<sup>st</sup> question (3 minutes)

2

1. Which celestial body is at the center?

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2. Starting from the center, which is the order of the other celestial bodies?

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#### HELIOCENTRIC MODEL

##### Activity 6: Investigation of the 1<sup>st</sup> question (3 minutes)

1. Which celestial body is at the center?

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2. Starting from the center, which is the order of the other celestial bodies?

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**Activity 7: Investigation of the 2<sup>nd</sup> question. (3 minutes)**

Please write two differences between these two models.

1.

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2.

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**Activity 8: Investigation of the 3<sup>rd</sup> question. (3 minutes)**

Based on your results, which of the following sentences are valid?

- All scientific theories remain unaltered.
- Scientific theories change.

3

Please justify your answer based on what you have learned in the lesson so far.

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**Activity 9: Investigation of the 4<sup>th</sup> question (20 minutes)**

Let us suppose that you want to show to your 9 years old sister/brother the planets of our solar system and their distance from the Sun. You have at your disposal plastic soda cups of different colours and some plastic cards with in-

formation about each planet. In order to make the representation more clear you can use your desk, supposing that the Sun is placed on one of its edges.

a) Please write down the procedure that you are going to follow:

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b) Please write down the planets in the order of their distance from the Sun, starting with the one closest to the Sun.

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	

### Activity 10: Investigation of the 5<sup>th</sup> question (12 minutes)

Observe an object with the telescope handed out by your Teacher. The telescope that you hold is constructed with simple materials. Can you describe briefly, how do you think it was constructed, what kind of materials were used for its construction, and how it works?

- Please observe one object with the telescope that has been given to you by your teacher. The telescope that you hold in your hands is made of vary simple materials.
- Please answer to the following questions

Materials:

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Way of construction:

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Function:

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5

Which result do we get when we move the eyepiece closer or away from the objective lens?

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How do we see the object (do we see it in the usual-normal way or inverted?)

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How many times approximately does on object seem bigger when we look at it through the telescope?

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### Activity 11: Comparison between the final conclusions and the initial answers of the students (5 minutes)

Please compare between your initial answers with the final conclusions as they were derived from the lesson.


**Activity 12: Application of the conclusions (2 minutes)**

Based on the simulation please answer the following questions:

1. Which two celestial bodies revolve quickly?

2. Which two celestial bodies revolve slowly?

6

**Activity 13: Connection of the lesson with vocational education (10 minutes)**

We have a building that we want to convert into an observatory that will have various telescopes. Please fill the table below by writing down 6 STEM professional specialties that you think that may be involved in the reconstruction, and the tasks that they may perform according to their expertise. Then, present your suggestions to your classmates in the classroom.

STEM professional specialties	Task
1.	
2.	
3.	
4.	





5.	
6.	

