SUCCESS ACADEMY EDUCATION INSTITUTE

Earth in Space

Name: _____

Teacher: _____

Class: _____

Earth and Space Science
Unit 5
Exit Tickets

Lesson 2 Exit Ticket:
The Beginning

Directions: Read "The Dark Side of the Universe" and answer the questions that follow.

1. Describe one way in which the text supports our understanding of the formation of the universe. [2]

2. In relation to us, most galaxies are . [1]

   a. moving toward us

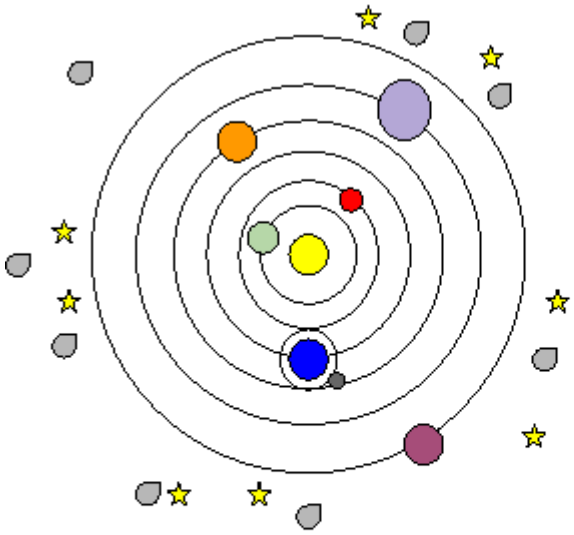
   b. not moving

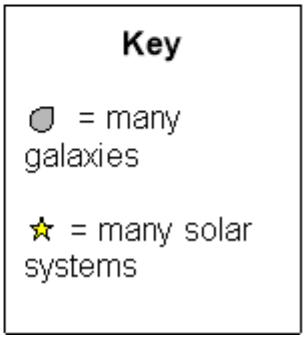
   c. moving away from us

   d. exploding

Lesson 3 Exit Ticket:
Our Universe, to Scale

Directions: Lucy created a model of part of the universe as a homework assignment for science class. Her model is shown below.





1. Is Lucy's model a scale model? Include evidence and reasoning to support your response. [3]

Lesson 3

2. If Lucy wants to represent a model of the universe 5,000 years ago, what would change in her model above? [1]
    a. The many galaxies and solar systems would be farther away from the Sun but the planets would remain in the same position.

    b. The many galaxies and solar systems would be closer to the Sun and the planets would be farther from the Sun.

    c. All objects in her model would be closer together.

    d. All objects in her model would be farther from the Sun.

Lesson 4 Exit Ticket:
Our Solar System, to Scale

A team of researchers is studying a planet called Lallan. They collect the following data about Lallan's moons:

Table 1: Moons Orbiting Lallan			
Moon	Sphera	Ellisi	Bonba
Distance from Lallan	50 million km	125 million km	150 million km
Mass	2 billion kg (2,000,000,000 kg)	4 billion kg	3 billion kg
Other Details	The planet Lallan has two thin rings around it.		

1. In the space below, construct a scale model to show the distances between the Lallan and its moons. Label the planet and each moon. [5]

Identify the scale of your model here: x [units] = x km

2. Which of the models below would *not* be considered an accurate scale model of the moons orbiting Lallan according to their masses? [1]

   a. Sphera ● Ellisi ● Bonba ●

   b. Sphera ● Ellisi ● Bonba ●

   c. Sphera ● Ellisi ● Bonba ●

Lesson 5 Exit Ticket:
Pieces of the Universe

1. What do all the planets in our solar system have in common? Explain why. [2]

2. Choose five terms from the list below and place them in order from smallest to largest. [2]

List of terms: galaxy, comet, planet, the Moon, the Sun, our solar system, the universe, dwarf planet

3. Which statements below are *false*? [1]

I. The universe has three different types of galaxies classified by their color.
II. Our solar system is older and smaller than the universe.
III. In our solar system, planets orbit a moon and that planet orbits the Sun.

a. I only

b. II only

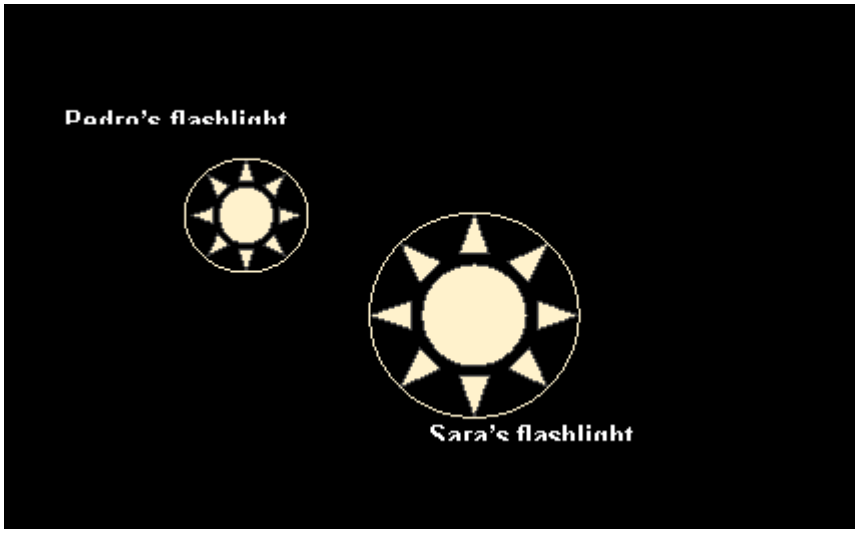
c. III only

d. I and II

e. All statements

Lesson 6 Exit Ticket:
Is the Sun the Largest Star?

Directions: Ijahni is playing flashlight tag with two friends in his backyard at night. He sees the beams of his friends' flashlights, as shown in the diagram below.



1. Based on what Ijahni sees, which friend is likely closer to him? Include evidence and reasoning to support your response. [3]

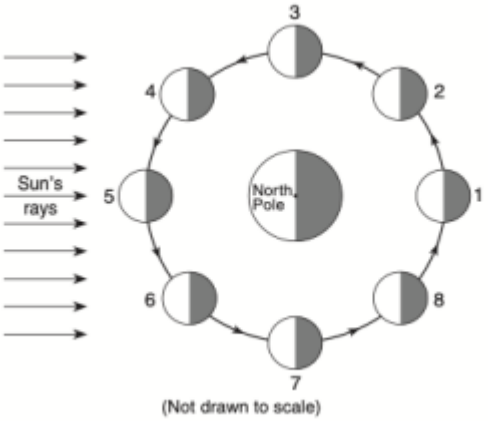
2. Which of the following could be evidence that both Pedro and Sara are standing at the same distance from Ijahni? [1]
    a. Sara has a smaller flashlight than Pedro.
    b. Pedro has a smaller flashlight than Sara.
    c. Pedro has a more powerful flashlight with new batteries.
    d. Sara has a less powerful flashlight with old batteries.

Lesson 8 Exit Ticket:
Total Eclipse of the Science Lab

1. In the box below, draw the positioning of the Earth, Sun, and Moon during a total lunar eclipse. Label each body. Your drawing does not need to be to scale. [2]

2. Which of the following affects the timing of experiencing a lunar eclipse? [1]
   a. The composition of Earth's atmosphere
   b. The tilt of the Earth on its axis and the tilt of the Moon's orbit
   c. The position of the Moon in its orbit around Earth
   d. The gravitational pull of the Sun
   e. Both B and C

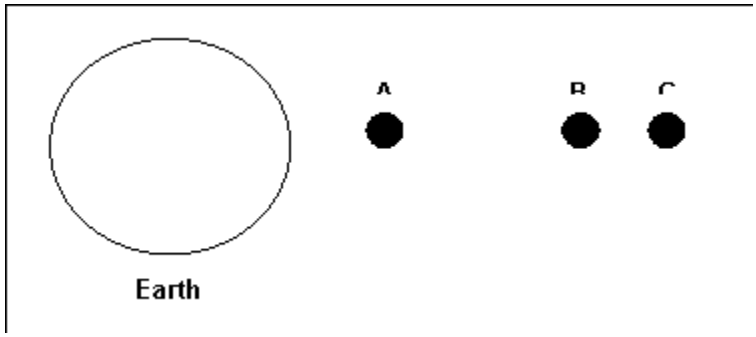
3. The diagram below represents Earth as viewed from above the North Pole. The nighttime side of Earth and the Moon have been shaded. The Moon is represented in eight positions in its orbit around Earth. Identify the Moon's position where a solar eclipse might be observed from Earth by circling the number on the diagram. [1]



Adapted from the New York State Education Department. Science Regents Examinations: Physical Setting/Earth Science June 2017. Internet. Available from https://www.nysedregents.org/earthscience/

Lesson 9 Exit Ticket: Invisible Forces

In the diagram below, the letters A, B, and C represent three identical satellites and their relative distances from Earth as seen from space. Use this diagram to answer the questions that follow.



1. Which satellite would experience the strongest pull from Earth's gravity? Include evidence and reasoning to support your response. [3]

2. If a fourth satellite, Satellite D, was found at the same distance from the Earth as Satellite A but had twice the amount of mass, which of the following would be true? [1]

    a. Satellite A would feel the pull from Earth's gravity more strongly than Satellite D.

    b. Satellite D would feel the pull from Earth's gravity more strongly than Satellite A.

    c. Satellites A and D would experience an equally strong pull from Earth's gravity.

Lesson 10 Exit Ticket: Crash Landing

A scientist looking for life in outer space is researching four planets from another solar system. He has gathered data about each planet and organized it in the table below. Of the four planets, he only has the time and money to research one, and he wants to choose the planet with the greatest chance of supporting life.

Planet	Atmosphere Present?	Mountain Ranges Visible?	Liquid Water Present?	Volcanoes Present?
A	Yes (helium, oxygen, carbon dioxide, and nitrogen)	Yes	No	No
B	No	No	No	No
C	Yes (nitrogen only)	No	Yes	Yes
D	Yes (helium, oxygen, carbon dioxide, and nitrogen)	Yes	Yes	Yes

1. Given the data available, which planet would be most likely habitable for life? Include evidence and reasoning to support your response. [3]

2. What additional data would be helpful in determining the habitability of a planet? [1]

    a. Gravitational pull

    b. Temperature

    c. Presence of moons

    d. Both A and B

    e. All of the above