EDTC 621-55: Project #1
Snow Day Flipped Classroom

Name: Lauren Zaccaria Scalici

Type of setting: Suburban and very diverse population at Teaneck Community Charter School, Teaneck, NJ

Number of Students: 18 per class, 72 total

Special Needs: Approximately 20 special education students, students with ADHD, students who attend Speech

Grade Level: 5th and 6th

Subject: Integrated Science

Topic: Stars and Galaxies in the Universe

Lesson Purpose:
The purpose of this lesson is to introduce stars and galaxies and to explain some stars appear larger and brighter than others due to their distance from Earth. Students will understand that the brightness of stars relates to their distance from Earth. Students will also compare and contrast the different types of galaxies through various visual explorations and tasks and an online game.

Student Objectives:
Students will be able to:

- Understand, explain, and recognize that a star’s brightness relates to its relative distance to Earth by comparing and contrasting other stars to our Sun.
- Compare and contrast the three main types of galaxies.
- Complete an interactive lesson exploration using nearpod to demonstrate their newly acquired skills and knowledge of stars and galaxies.

After completing the nearpod interactive lesson, students will be able to support the idea that a star’s brightness is directly related to its distance from Earth and will be able to identify, label, and compare and contrast the three types of galaxies through various explorations and written tasks on nearpod.
New Jersey Student Learning Standards (NJSLS):

- 5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to relative distances from Earth.
- MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

Common Core Standards:

- CCSS.ELA-LITERACY.RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- CCSS.ELA-LITERACY.RST.6-8.4: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.
- CCSS.ELA-LITERACY.RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- CCSS.ELA-LITERACY.RST.6-8.8: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- CCSS.ELA-LITERACY.RST.6-8.9: Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- CCSS.ELA-LITERACY.RST.6-8.10: By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.

New Jersey Technology Standards:

- 8.1.8.A.3: Use and/or develop a simulation that provides an environment to solve a real world problem or theory.
- 8.1.5.A.3: Use a graphic organizer to organize information about problem or issue.
- 8.1.5.F.1: Apply digital tools to collect, organize, and analyze data that support a scientific finding.

Procedures:

1. Prior to this lesson, students will have reviewed the basics of the solar system (which they have learned in previous grades) through class notes, readings, experiments, and explorations. We will discuss the planets, other solar system objects such as comets and asteroids, gravity, the Big Bang Theory, and the distances of the objects from Earth.
2. Each student will receive their own ChromeBook and the nearpod code.
3. Students will be introduced to stars and galaxies via this nearpod interactive lesson as an independent “snow day” assignment. Students will be responsible for reading the content, taking notes, watching the videos, exploring the virtual field trips, playing an online game, and answering the various pre and post assessment questions/activities. This nearpod will be completed independently and will serve as a homework grade for my students, and they will receive class time to work on it as well as time at home.
4. The nearpod begins with a pre-assessment question about stars and to gain a student’s current/prior knowledge of stars. This will also help to assess what they have learned after completing the nearpod lesson, as there are various post-assessment questions.
5. Students will continue by reading and taking notes in their Science notebooks throughout the written content and during the videos in the nearpod lesson.
6. At the end of the nearpod, the students will complete an online game, a virtual field trip, and a “3, 2, 1 post-assessment” in which they will record three interesting facts, two facts that surprised them, and one question they still have about this topic. This will be completed in the last slide of the nearpod lesson.
7. To conclude the lesson, there will be a short class discussion in which students can share one thing they wrote in their 3, 2, 1 post-assessment about stars and galaxies.

Materials:
- Chromebooks
- Headphones/earbuds
- Stars and Galaxies nearpod lesson and code
- Science notebook
- Pencil/pen for taking notes

Assessment:
The teacher will review each students’ responses from the nearpod in order to assess student knowledge of the topic. Student answers that appear incomplete or incorrect will receive small group instruction to review these concepts during the next few class sessions. All students will complete either a culminating project or written test as a final assessment for this unit.

Accomodations:
Special education students will benefit from the audio and visual components of this nearpod lesson, as it will be helpful to both auditory and visual learners. Additionally, the teacher may assign partners or heterogeneous groupings of students so that they may work together on the various nearpod tasks. This can
assist those students who may have difficulties using technology and/or students who may struggle with nonfiction reading and writing skills. Pairing a higher level reader with a student at a lower reading level may prove to be extremely helpful in ensuring both students understand the reading and will allow them to collaborate and communicate with one another about the topic. Students will also work on this nearpod lesson at home, so they may choose to rewatch the videos, play the online game for a longer period of time, or edit their open ended responses that they may have already written in class. All of these accommodations would support a lower level learner with below grade level reading skills.