

## **Dark Matters**

*Valerie Adams*

*John H. Taggart Elementary School*

### Abstract

This unit was designed for students to think outside the box, to use their imagination, possibly to stretch for their higher order thinking ability, and visualize a fantastic future where differences do not perpetuate anger, frustration or harm. It does this through embracing the writing modalities, the arts, as well as speaking and listening skills. Students must think critically while they engage in space science supports in order to use their imagination to create a futuristic world based on claims made from scientific facts and data. Students learn to master the writing process while incorporating gathered evidence surrounding the Black Hole in the Milky Way Galaxy. Jointly the driving strategy behind this speculative futuristic fiction unit is the CER Framework adapted for its use in writing. Apart from that is the motivation in art experimentation of using organic and inorganic matter so students remember to have fun while learning.

## Problem Statement:

Let's start with this question, "Is organized gentrification the devious culprit that changes the perception of others?" Think about that process and who gets the hack, shoved out, or shifted into a space or place where the choice was made long before and without fair warning for those involved in the transition. Certainly gentrification is a blindsided technique that instantaneously perplexes the mind leaving one dumbfounded with the question, "What just happened and how do we rebound?" So I conclude with this conjecture, learning means knowing differences matter.

Curiosity has me contemplating why and how the demographics of John Taggart's population is changing ever so rapidly. Enrollment of the Native African American student population within this multicultural school is swiftly decreasing. Why, I constantly ask myself.

This unit will use the imagination in a way so that students are given an opportunity to visualize a fantastic future where differences do not perpetuate anger, frustration or harm. Let's describe multicultural as a term that incorporates ideas, beliefs or people from many different countries and cultural backgrounds.<sup>(6)</sup> John H. Taggart Elementary has the honor of being a growing multi-culturally populated school. One question I constantly contemplate when creating my weekly lesson plan is, "What are the many ways in a multicultural classroom can the teacher peak and sustain a group of young elementary students' curiosity in cultures other than their own in order to teach authentic historical lineage?" Surely all students' ethnic beliefs must be taken into consideration. But, what about those whose beliefs strongly differ or when influential authority figures curb or negate factual evidence, which then forces the task to become more intricately intertwined. An additional challenge is when the classroom population's ethnicity is not the focus of the historical ancestry being taught?

So maybe the dilemma becomes how do teachers address sensitive multicultural topics in a classroom so all ethnicities are eagerly part of the study? I'm sure many teachers embrace this multicultural concern especially while many of the surrounding communities are addressing cultural changes as well? In my opinion this transformation deserves the title "gentrifying". *\*Oxford states: gentrify means to renovate and improve (a house or district) so that it conforms to middle-class taste. Or make (someone or their way of life) more refined or polite.* <sup>(1)</sup> So my plan for this unit is that it will make a difference in classroom learning as it pursues a unique turn at the fork in the road. Throughout the eight years of working at this school I've noticed changes in the population. The upside of this change is an increase of students. A majority of the population increase is being filled with students of Asian and Hispanic decent, giving rise to an expansion of learning for everyone involved.

"When Native African American people settled in their new communities, their reception was decidedly mixed, but as their numbers grew, local Caucasian people worked to

contain them. Over time, the lowly position of Native African American people became institutionalized, and passed from racist generation to racist generation.”<sup>(2)</sup>

The definition of **multicultural** is something that incorporates ideas, beliefs or people from many different countries and cultural backgrounds<sup>(6)</sup>, the key word here is many. So the essential questions go like this, “What is happening with the darker hue multi-culture students at this school, in this community?” and “How do we maintain the interest of non-Native African American children at learning about Native African-American ancestral lineage?” My solution is possibly as a speculative futuristic narrative!

Within these past eight years I have noticed many African American parents withdrawing their children. Is something changing?

Might the demographics of the community along with the mysterious relocation of students’ of color possibly be shifting?

“This is what it feels like to be black in white spaces” <sup>(2)</sup>

Slavery effectively established black people at the bottom of the American racial order, a position that allowed every race of people to feel superior. <sup>(2)</sup>

The [poverty rate](#) among African Americans is 21.8 percent; among whites, 8.8 percent. The median wealth of black households is \$17,409; among whites, \$171,000. The homeownership rate for blacks is 41.2 percent; among whites, 71.1 percent. There is also manifold evidence of continuing discrimination against African Americans. Who are the *real* victims? <sup>(3)</sup>

Is it the school’s community that’s changing?

This unit will incorporate historically well known past speculative futuristic incentives such as “Star Trek” clips, along with scientific data as the stepping-stones towards how to initiate higher order critical thinking skills concerning research and dark matter at the elementary level in order to have students create a speculative futuristic short story.

This unit will start by examining the term “black” and it’s many figures of speech (verb, noun, adjective).

Let’s begins with facts. Everyone knows that the color black cannot come from the color white, but an anomaly continues happening; whereas the color white can be conceived from the color black historically speaking.

Furthermore take a closer look into one historical and medical fact known as “Albinism”. What is albinism? Albinism is a disease in which a person has partial or complete loss of pigmentation (coloring) of the skin, eyes and hair.

What causes albinism? Genetic mutations that affect the production of a pigment called melanin. There is a cell called the melanocyte that is responsible for giving skin,

hair, and eyes pigmentation. In albinism, the melanocytes are present, but genetic mutations interfere with their pigment production or their ability to distribute it to keratinocytes, the major cell type comprising the epidermis, or outer layer of the skin. There are currently five known genetic types of albinism, the most common being oculocutaneous type 1 (OCA1) and type 2 (OCA2). Oculocutaneous means affecting the eyes and skin ("oculo" meaning eye and "cutaneous" meaning skin). Patients with OCA1 have mutations in a gene called TYR that is responsible for creating the enzyme tyrosinase, used by cells to convert the amino acid tyrosine into pigment molecules that color the skin, hair, and eyes. OCA2, the most common form of albinism in Africa, results from a mutation in the OCA2 gene, which encodes the P protein. We don't know what this P protein does. (4) In these details is historical and medical fact not fiction. We all know animals adapt to their environment in order to survive and we humans are at the apex of the trophic level. So in this case food for thought, is it possible Caucasian people came from African people or in layman term's white came from black?

“Research advocates that people with white skin are a relatively recent addition to the human race arriving on the continent 8,000 years ago. A much darker-skinned population was the original migrants to Europe from Africa arriving around 40,000 years ago. If mankind originated in Africa, why wouldn't that also be the origin of white, yellow, and brown people?”

Albinism in humans is considered a disorder characterized by the complete or partial absence of pigment in the skin, hair, and eyes. Black people have lived in Southern Russia since prehistoric times and have occupied the Black Sea Region since the time of Senwosret/Sesostris (2000 BC) when Africans dominated the region. (SEE 'HERODOTUS' ON THE COLCHIANS).” (5)

Rationale:

Undeniably, lineage in education is a fundamental tool - that which opens doors and needs to be revisited, recollected and reasonably distributed to the youth so they can develop sensibility. Speculative futuristic narratives, essays and information filled with the equality and richness of influence from an elementary perspective for all of humanity will be how this unit might help students make sense of reality.

This unit seeks to educate students on the planet's dark matter from a scientific perspective in addition to contributions from past generations. In all likelihood society does not deliberately conceal but tries harder and harder to disguise or destroy the truth about originality. Clearly it is an educators' task to teach and inform the masses.

In this unit "Dark Matters" uses the Common Core Standards for Science, Writing and inclusive in all lessons are the Speaking and Listening Standards, along with the star motivating tool of this unit, the all-encompassing National Art Standards.

Foremost, in order to engage students with this unit "Dark Matters" will analyze the term "black" and its many usages.

Let me also shout out that this rising younger generation is another motivating factor forcing this unit into conception. Ignorance is no excuse for anyone in today's world of technologically fast paced informational data and all its nuances. Since the youth of today will be responsible for the future, responsible for information concerning the buried history of this magnificent universe, then they must be exposed to factual truths so they make informed choices.

Many say history has a way of repeating itself in some form, so to teach students about their unique heritage of kings, queens, paupers, and righteous rulers is an obligation. Subsequently history will dawn again a rebirth to this Earth's long awaited healing.

Our ancestors give us the power.

## Content Objectives

The “Dark Matters” unit seeks to cover the following content matters: Writing, Science and Art. This unit starts off with a whole group research project. The project is how to gather data specifically scientific data on “Sagittarius A” one of the Black Holes in the Milky Way Galaxy. And in order to do this the teacher will conduct whole group performance modeling on how to perform research. In the project students’ task will be to complete writing assignments of five paragraph essays that addresses the magnitude of solar mass and mind-boggling gravitational force of “Sagittarius A” the Black Hole. Students will learn the writing process throughout the construction of the planned essays. After completing the first essay of informational writing students will begin learning the elements of a opinion writing. With this writing the objective is that students will be able to develop an opinion and make a claim, after previously completing the informational essay based on researched facts about Black Holes. In the opinion writing students will learn how to support their opinion with reasons and factual examples about gravity in space. Students will think critically after examining the collected data of scientific explanations of researched evidence about black holes and their gravitational force as the supportive data necessary to uphold their claim, “Is there gravity in space?”

The last writing project will be a narrative composition. In this writing students will be proficiently write a Speculative visionary fiction<sup>(21)</sup> narrative short story. In this lesson students will apply the literary elements of narrative writing along with the bonus of text features and structures in order to transform the narrative into a graphic short story comic. As for the motivational visual tool of the text structure features for Chronological Order, Compare and Contrast, Descriptive, also Cause and Effect, students will analyze historic comic books in order to examine how throughout the years human changes have affected graphic novels. The critical think-piece for this writing happens when students decide how to bring a different perspective and direction for comics in the present time.

In order to capture the young audience and maintain continuous interest the amalgam of art and science will be the initial and culminating motivator. In the lesson “Pigment versa Color” a hands-on investigation that will be used to peak the interest, as most children love to experiment with paints that’s the element of choice. For the final project the term “Pigment” demands significant attention; where students believe color is what is obtained through the use of paints, but when using natural materials to acquire the necessary colors to create the required illustrations pigmentation is matter to be evaluated.

Teachers know that “Plant pigments are colorful molecules found within plant cells. The ease with which we can get the pigment out of a plant cell is called accessibility. Some plants’ pigments are easily accessible (think of grass stains) and some are not. Accessibility is related to the strength of the cell walls within the plant: weaker cell walls provide easier access to the colors contained within, whereas sturdier cell walls do not. For example, tearing up lettuce does not make your hands green because the tearing does

not break the cell walls of the lettuce cells, whereas sliding on the grass in your socks will stain your socks green; the sliding breaks the cell walls of the grass, releasing the pigment because lettuce has stronger cell walls than grass.”<sup>(23)</sup>

So now let's examine one amazing phenomenon in science so many overlook is the solar system's exorbitant galaxies inside and outside planet Earth and the most unperceptive place in space where gravity is so strong that neither particles nor light can escape from them, those entities known as Black Holes. Remarkably a black hole deforms the fabric of space around it so immensely strong that it creates a hole in space itself. <sup>(15)</sup> Moreover, Earth's Milky Way Galaxy embodies one tremendous entity known as Sagittarius A.

So to get the students started with the art of the project they will first research the term "black" in order to discover and recognize its many usages within the figures of speech.

To begin the art portion of the project students will make a claim about which organic matter will be useful for creating the color closest to black as possible or that which will produce the darkest pigmentation capable by using their selected natural plant-based materials.

"Using plants to make dyes is an age-old art that will truly make you feel like you're getting back to your roots".<sup>(19)</sup>

So the crucial challenge comes when making natural plant based colors; because the task is that students' strive to achieve the darkest possible pigment; as closest to black as possible.

Factoid, "When acorns are cooked they turn from brown to black, but what helps deepen that color is rust. To achieve the darkest possible shade, the artist buries a rusty nail underneath the liquid, and lets it set."<sup>(20)</sup>

Another fraction of the art project is that students will also experiment using tempera in order to manipulate the primary paint colors, to make secondary then move on to create tertiary colors then finally experiment to get the darkest possible color.

In any case by the end of these lessons students will create two illustrated representations of their perception of "Sagittarius A" inside the Event Horizon by using the darkest pigmentation created from the organic matter along with a second illustration using the tempera mixture. These paintings will be used for the front and back cover page of their graphic short story comic.

This supermassive black hole that lurks at the center of our galaxy called Sgr A\*, has a mass of about 4 million times that of our Sun. <sup>(16)</sup> The force of gravity at the center of a black hole is implausible. How preposterous to imagine light being devoured by the enormity of force? In this unit titled “Dark Matters” students will peek at Newton’s Laws of Motion <sup>(17)</sup> and how force causes objects to change motion. The Sgr A is a force which obviously affects all matter that orbits into its Event Horizon. Gravity is a force of attraction that exists between any two masses, any two bodies, any two particles. Gravity is not just the attraction between objects and the Earth. It is an attraction that exists between all objects, everywhere in the universe. <sup>(26)</sup>

That brings me to the foundational structure on which this unit stands, the CER (*claim, evidence, reasoning*) Framework. This framework supports the sharing of ideas, and pondering of questions to make claims about collected data, which in turn gives substance to reasoning. The data collected must be reflective of the assertion in order for students to convince their peers with their reasoning. The CER framework also supports the Reading Common Core Standards for Informational and Literature reading (CC.1.2.3.B, CC1.3.3.B: Ask and answer questions about the text and make inferences from the text; refer to the text to support response). Although the CER Framework is a scientific way of explaining with evidence and reasoning from the data collected for the deduced claim I believe it can be useful in other content areas as well.

So students must make a claim about “Does Gravity exist in Space” by exploring information about the Black Hole Sgr A.

Students’ “Claims” will be made after examining the properties of Black Holes’ substances. This unit will explore the data that shares how those substances interact with other objects in the galaxy and in close proximity of the black hole. The states of matter and the changes in states of matter, force, motion and energy will all be the collected “Evidence” to support their claims.

Students will define a light year, heat energy, electricity, magnetism and sound. They will experiment with gravity and practice constructivism in learning. Students will explore making models to represent the law of attraction through magnetism. Space and the natural world are unexplainable for a majority of people yet scientists have found a way to use scientific explanations to explain various phenomenon. Students will also devise explanations using the CER framework to share their concepts of understanding about gravity in space after completing research about Black Holes. This CER framework can benefit all learners.

No child is left behind when using researched data to make claims where they can support it with evidence then explain their thinking to others both verbally and in a written graphic short story.



Students will narrate the changes in motion caused by the forces of Sagittarius A's the Black Hole's attraction to objects in the galaxy of which will be represented in their short story comic.

Lest we not forget the Social Studies Content and how objectives and lessons can also bounce off this unit as for the word black used as a figure of speech to describe a group of people, although it will not be covered here. In order to cover those standards I recommend teachers and students take a virtual trip to the Smithsonian Museum of Natural History. There they can ask and answer questions that explore the historical narratives from the discovered and displayed humans that scientist were able to model in accordance with their abilities during this 21 century.

The Smithsonian's Exhibit: The David H. Koch, "Hall of Human Origins" What Does it mean to be Human? Also the second floor exhibit "Eternal Life in Ancient Egypt."<sup>(10)</sup>

Also, the Penn Museum has a collection of artifacts of African History that includes a virtual tour. There you can search for collections and objects to research. <sup>(11)</sup>

Our species is an African one: Africa is where we first evolved, and where we have spent the majority of our time on Earth." <sup>(8)</sup>

## Teaching Strategies

Teaching students to think about thinking is the first step towards cognitive learning. Thinking is a process that elementary students need to achieve so they can problem solve situations. Overcoming obstacles are part of the learning process. So when students at the elementary level think about the material being shared, the educator should introduce a visual aspect of learning which is also a major player in information retention.

Next comes the writing; where the brain, hand, and eye coordination must understand how each one works together as well as independently then in collaboration the three are complementary so that learning takes place. These three skills (**think, visualize, and write**) should be included in each lesson.

In my opinion this may be one way many of the younger elementary students can be more successful with writing. And it is a form of differentiation for E.L.L. and E.S.O.L. learners. Although I am confident the information is stored in their heads this strategy may assist.

**Small group conferences** are another strategy that is represented in this unit.

Inquiry and exchange of information about the state of the students writing process should be closely monitored. At that point the teacher helps students decide where they are with their writing, or which direction they are headed using the revolving rubric. Students should also be given the responsibility to showcase their abilities to utilize technology in order to gather awareness of how the researching process works. By training one student to teach others also works as differentiation within the classroom.

To achieve critical thinking skills while allowing for higher order learning to take place the **CER Framework** is the foundation resource for this unit.

The “C” stands for “Claim”. A claim is a statement that shares a person’s perspective on an idea, a topic, just about any justifiable area of study that students must evaluate for evidence. Students make a claim after evaluating the topic.

The “E” stands for “Evidence”. Students must collect evidence as they research the topic which supports their claim.

The “R” stands for “Reasoning”. This is the point where students gather their decisive findings, and join them logically in order to sum up a validation for their claim.

Searching for evidence students learn technology’s usefulness in research and aids in learning that so much beneficial information is right at their fingertips.

Also at this point in the writing process teachers can make decisions based on whether to slow the pace of writing by pulling small groups or working individually with students.

## **Classroom Activities**

Activity One: Informational Writing

Duration: Approximately 1 week

@ 30-40 minutes/day

In “Dark Matters” the writing activities seeks to offer a lesson for each writing modality. For the informational writing lesson students begin with making claims and speculating the “what-ifs” when given this essential focus question, “What is a Black Hole?”. At the onset of this lesson the teacher gets the opportunity to model the process of thinking and writing known as brainstorming.

With the use of graphic organizers which is the visual evidence that will aid students’ learning, assist with how to think about the topic, visualize and contemplate the sharing of ideas, so then critical thinking and wondering about the topic starts to take place as is modeled by the teacher.

Differentiation should always happen within the teacher’s modeling not just on how to use the graphic organizers but also with any of the other resources included. The activity of modeling should start as a whole group share lesson, then individually or in small group settings so all students are able to gain the usefulness of the resources. An informative assessment can be made through observation of class participation along with the tangible paper work, which shares important information concerning the students cognitive abilities.

A quick reminder, inclusive in all the lessons of this unit are “The Speaking and Listening Standards” which for my teaching are a necessary tool used to build cooperation as well as respect for others, and is also a large part of the learning process. Moreover, as the educator there must be dialogue in order to evaluate progress.

As the writing process continues, students proceed with learning how to use the CER Framework. This CER Framework is a valuable technique that enables students to form a claim after examining a concept. With the CER Framework students conduct short research projects that build their knowledge about a topic. Then students collect evidence / data that supports and builds structure to their claim. With that evidence students compose reasonable responses that strengthen the initial claim, alter it, or change their claim based on the data collected.

The use of the graphic organizer resources for the younger students is to establish a clear recall of information, as well as being a valuable note taking process in order to sort evidence into the provided categories. From this experience students can visually build a relationship between the claim, evidence and how to pool both of these segments in order to reinforce reasoning.

Therefore when taking the claim and evidence into perspective students should learn that the reasoning must chart their logical conclusion.

The teacher should discuss individually or as a whole group that their first writing draft is the first step towards peer editing. Remember the old adage “each one teach one” because that does open the flood gates to cooperative learning. Not to mention handing the teacher time to focus on anyone having difficulties with research, note-taking or writing in general.

As always at the end of each writing process the teacher should have the final published writing piece for grading.

<b>PA Common Core Standard</b>	<b>National Common Core Standard Correlation</b>	<b>Objectives</b>	<b>Activities / Resources</b>
<p>CC.1.4.3.A Write informative/ explanatory texts to examine a topic and convey ideas and information.</p> <p>CC.1.4.3.T With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>	<p>CC.W.2.<sup>SEP</sup> Write informative/ explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>W.3.4 With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.</p>	<p>*SWBAT write a five paragraph informative text</p> <p>*IOT examine the topic and convey ideas and information clearly.</p> <p>SWBAT produce writing in which the development and organization are appropriate IOT complete the task with purpose, guidance and support.</p>	<p>Think, Visualize ,Write CER Template ESOL Sentence Starter Graphic Organizer</p>
<p>Focus: CC.1.4.3.B Identify and introduce the topic.</p>	<p>3W.2b,</p> <p>W.3.5 With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</p>	<p>SWBAT familiarize themselves with the topic IOT group related information together. SWBAT include illustrations when useful IOT aid comprehension. SWBAT develop and strengthen writing as needed IOT plan, revise, and edit.</p>	<p>Conference Sheet, Rubric Think, Visualize ,Write Graphic Organizer CER Template</p>
<p>CC.1.4.3.U With guidance and support, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.</p> <p>CC.1.4.3.V Conduct short research</p>	<p>W.3.6 With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.</p> <p>W.3.7 Conduct short research projects that build knowledge about</p>	<p>SWBAT develop and strengthen writing as needed IOT plan, revise, and edit.</p>	<p>Conference Sheet, Rubric Think, Visualize ,Write CER Template</p>

<p>projects that build knowledge about a topic.</p> <p>CC.1.4.3.W Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.</p>	<p>a topic.</p> <p>W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.</p>		
<p>Content: CC.1.4.3.C Develop the topic with facts, definitions, details, and illustrations as appropriate.</p>	<p>3.W.2c: Use linking words and phrases (e.g., <i>also, another, and, more, but</i>) to connect ideas within categories of information.</p>	<p>SWBAT incorporate linking words and phrases IOT connect ideas within categories of information</p>	<p>Conference Sheet- Rubric, Think/Visualize &amp; Write, CER Template, Transition Word List</p>
<p>Organization: CC1.4.3.D Create an organizational structure that includes information grouped and connected logically with a concluding statement or section.</p>	<p>3.W.2d: Provide a concluding statement or section.</p>	<p>SWBAT provide a concluding statement or section IOT complete the final published text</p>	<p>Informational Writing Rubric</p>

\*SWBAT (Students will be able to)

\*IOT (in order to)

Activity Two: Opinion Writing  
Duration: Approximately 1 week  
@ 30-40 minutes/day

The second writing in this unit will be the opinion essay. Students will build from the focus question, “Why do you think a Black Hole is called a black hole” and the technique of answering that question will be the CER Framework. Students will use this framework in order to establish and support an opinionated explanation. The CER Framework organizes students’ collected data and thinking process, which warrants development to establish higher order critical thinking skills.

At this junction in the unit students should have completed the informational writing. Much of the gathered evidence from previous research is useful for scaffolding, as with the established supportive reasons, so students’ opinion (claim) about the term Black Hole should be based on collected data.

Now as students brainstorm about their opinions of why it is known as a “black hole” these opinions should clearly be modeled in writing by the teacher for all to see. Again show how the graphic organizer should be used. Whereas some students may pig-bank on the usefulness of peers reasons, it may also help to stimulate the thought process. Which should be totally acceptable at this grade level.

In all likelihood as the writing process continues make observations that show progress using as a stepping stone the previous writing.

Using the graphic organizers for the opinion writing should deem helpful since it includes transition terms that third grade can use to support the matter of sequence in the writing format. This is how students can be taught to implement various temporal words and phrases in the writing in order to assist in the transitional reading and structure of the text.

PA Common Core Standard	National Common Core Standard Correlation	Objectives	Activities / Resources
<p>CC.1.4.3.G</p> <p>Write opinion pieces on familiar topics or texts.</p>	<p>W.3.1</p> <p>Write opinion pieces on topics or texts, supporting a point of view with reasons.</p>	<p>SWBAT write opinion pieces on topics or texts, IOT support a point of view with reasons.</p>	<p>Opinion Writing Graphic Organizer, ESOL Sentence Starter, Graphic Organizer</p>
<p>Focus: CC.1.4.3.H<sup>[1]</sup><sub>[SEP]</sub> Introduce the topic and state an opinion on the topic.</p>	<p>3.W.1a Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.</p>	<p>SWBAT introduce the topic or text they are writing about, state an opinion, IOT create an organizational structure that lists reasons.</p>	<p>Opinion Writing Graphic Organizer, ESOL Sentence Starter Graphic Organizer</p>
<p>Content: CC.1.4.3.I<sup>[1]</sup><sub>[SEP]</sub> Support an opinion with reasons.</p> <p>Conventions: CC.1.4.3.L Demonstrate a grade appropriate command of the conventions of standard English grammar and spelling.</p> <p>Style: CC.1.4.3.K<sup>[1]</sup><sub>[SEP]</sub> Use a variety of words and sentence types to appeal to the audience.</p>	<p>3.W.1b: Provide reasons that support the opinion. 3.W.1c: Use linking words and phrases (e.g., <i>because, therefore, since, for example</i>) to connect opinion and reasons.</p>	<p>SWBAT provide reasons that support the opinion IOT write examples for the reasons. SWBAT use linking words and phrases IOT connect opinion, reasons, and examples.</p>	<p>Opinion Writing Graphic Organizer, ESOL Sentence Starter Graphic Organizer</p>
<p>Organization: CC.1.4.3.J<sup>[1]</sup><sub>[SEP]</sub> Create an organizational structure that includes reasons linked in a logical order with a concluding statement or section.<sup>[1]</sup><sub>[SEP]</sub></p>	<p>3.W.1d: Provide a concluding statement or section.</p>	<p>SWBAT provide a concluding statement IOT complete the opinion writing.</p>	<p>Rubric for Opinion Writing</p>



Activity Three: Narrative Writing  
Duration: Approximately 2weeks  
@ 30-40 minutes/day

The third writing selection is a self-selected narrative. This final published writing will be transformed into a short story graphic comic that revolves around the topic “Black Hole”.

The objective of this narrative writing is that students will be able write a futuristic science fiction essay then use narration to create a science fiction story incorporating the five literary elements around the major theme “Black Hole”. This process of using dialogue to narrate and literary elements will transform the narrative writing piece into a speculative futuristic science fiction graphic comic. The “Hows” of getting from an essay to the short story comic is in the use of character dialogue, so included in this unit is a teacher made graphic organizer which may be of tremendous organizational use.

Also to build background knowledge of the history and age of comics’ students will examine short clips of the chronological order and development of comics. Starting with “The Golden Age of Comics” which were the serialized fictions created around the Great Depression Era. Then moving forward to the “Comics Code” which was after World War II, known as “The Silver Age of Comics”. Next the baby boom happened and this became known as the “Bronze Age of Comics” which ended with Walt Disney. Now, students will apply the “New Age-Modern Age of Comics” which is what we see today and has been highly influenced by Hollywood. (19)

PA Common Core Standard	National Common Core Standard Correlation	Objectives	Activities / Resources
CC.1.4.3.M Write narratives to develop real or imagined experiences or events	CC.W.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequence.	SWBAT write a narrative IOT develop real or imagined experiences or events using effective techniques, descriptive details, and clear event sequences.	Graphic Organizer: Literary Elements
Focus: CC.1.4.3.N Establish a situation and introduce a narrator and/or characters.  Organization: CC.1.4.3.P Organize an event sequence that unfolds naturally, using temporal words and phrases to signal event order; provide a sense of closure.	3.W.3a: Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.	SWBAT establish a situation and introduce a narrator and /or characters; organize an event sequence that unfolds naturally IOT introduce the comic's beginning. SWBAT use temporal words and phrases IOT signal event order	Literary Elements & Sequence of Events Graphic Organizers
Content: CC.1.4.3.O Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.  Style: CC.1.4.3.Q Choose words and phrases for effect.	3.W.3b: Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. 3.W.3c: Use temporal words and phrases to signal event order.	SWBAT use dialogue and descriptions of actions, thoughts, and feelings IOT develop experiences and events or show the response of characters to situations.	Graphic Organizer Dialogue Resource, Transition Words
	3.W.3d: Provide a sense of closure.	SWBAT provide a sense of closure IOT finish the comic short story and / or series.	Narrative Rubric
Conventions: CC.1.4.3.R Demonstrate a grade appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation and spelling.			Narrative Rubric



#### Activity Four: Art Part I

Duration: Approximately 1 week

45 minutes/2-3 days of a week

For one, I fall under the impression that most people enjoy the Arts, which is favored especially by the elementary grade children. Art Standards say: Students will be able to “Explore, develop control and confidence in using the following media: crayons, markers, tempera, watercolor, chalk, oil pastels, yarn, clay and 3-dimensional media”.<sup>(14)</sup> (this lesson uses tempera paint as a resource for the 3D medium) in order to “Create art that portrays details, depicts action and combines ideas or materials in various ways”,<sup>(14)</sup>. Which in this lesson the students will be able to design their version of a “Black Hole” and the Event Horizon using a combination of media.

Certainly painting is enjoyable by the majority of students both young and old, yet the chances of arranging a painting opportunity in a 45 minute specialty class rarely happens in the public schools. So students can apply the National Core Arts Standards for Visual Arts this art activity is included.

In the art activity students will be able to create their visual version of the color “Black”. Included in the lesson are some engaging nonetheless motivating questions used to stimulate students thinking.

Students will evaluate the following definitions of the terms “color” and “pigmentation”.

Color - 1a: a phenomenon of light (as red, brown, pink, or gray) or visual perception that enables one to differentiate otherwise identical objects.<sup>(12)</sup>

Color - 1b: the aspect of objects and light sources that may be described in terms of hue, lightness, and saturation for objects and hue, brightness, and saturation for light sources.<sup>(12)</sup>

Pigmentation - 1: coloration with or deposition of *pigment*; especially an excessive deposition of bodily *pigment*.<sup>(12)</sup>

Pigment - 1: a substance that gives color to other materials (Red *pigment* is mixed into the ink).

Pigment - 2: natural coloring matter in animals and plants.<sup>(12)</sup>

Coincidentally when we compare the two terms “Pigmentation and Color” it can be stated as two different aspects of pigmentation: pigment, which makes the color and the light generated which helps to see the color. These terms are related but substantially categorized separately in terms of matter.

So in these following lessons students will be able to compare and contrast the terms color and pigmentation in order to establish a scientific explanation of why a “Black Hole” is called a black hole. Students should at this point realize the color / pigment black absorbs all other colors therefore the term black.

One objective of these lessons is that students will be able to master with a degree of accuracy Anchor Standard #1: which is to “generate and conceptualize artistic ideas and work. In this lesson students will get to “investigate, plan, and make art work” also “elaborate on an imaginative idea.” The students will also be able to “apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art making process.”<sup>(14)</sup>

This lesson will give students the opportunity to experiment with the primary colors of tempera paint. In the course of their experimenting to achieve the color black, students must complete visual and detailed swatches of secondary and tertiary colors as markers. This will be useful for the scientific explanation process, as well as tangible evidence that details how they arrived at their assigned color / pigment.

The key objective of these hands-on art lessons is that students will be able to create their version of the color black in order to apply the primary colors in the creative process of painting a Black Hole with it’s Event Horizon.

Student will need to use a level of higher order critical thinking skills to analyze, evaluate, and apply what they learned about Black Holes, in order to problem solve, and translate their thinking to a visual design through application then contrasting the various colors/pigments of “black”.

Students will also display their version of a Black Hole using their fashioned color/pigment black, along with it’s Event Horizon as the front or back cover of their comic creation.

In other words students will be able to use critical thinking skills in order to construct a representation of a Black Hole with an Event Horizon. The teacher should ask higher order questions (using Blooms Taxonomy verbs) in order for students to think critically.

With the inclusion of Arts Anchor Standard #2: where students will be challenged to “organize and develop artistic ideas and work”<sup>(14)</sup> in order to accomplished critical thinking.

Students will be able to “investigate” in order to “create personally satisfying artwork using a variety of artistic processes and materials.”<sup>(14)</sup>

Students will be able to “demonstrate an understanding of the safe and proficient use of materials, tools, and equipment for a variety of artistic processes.”<sup>(14)</sup>

All this is covered with the completion of the activity.

Also to reinforce this activity is Anchor Standard #3: “Refine and complete artistic work”. This will be integrated repeatedly until completion. Here is where students will showcase their style, “exaggerate visual information by adding details in their artwork to enhance emerging meaning” <sup>(14)</sup> such as the Event Horizon.



Standards	Objectives	Activity / Resources
<p>Anchor Standard #1 Generate and conceptualize artistic ideas and work. <u>Investigate, plan, make:</u> Elaborate on an imaginative idea. Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art making process.</p>	<p>SWBAT create their version of the color black by mixing the primary colors in the art making process IOT design their version of a “Black Hole” using tempera colors.</p>	<p>Suggested questions:</p> <ul style="list-style-type: none"> <li>• Do you think Black is an important color? Why?</li> <li>• Which color is your favorite color? Why?</li> <li>• Why and how do you think colors are useful?</li> <li>• Which color do you think is the most useful color?</li> </ul>
<p>Anchor Standard #2: Organize and develop artistic ideas and work. <u>Investigate:</u> Create personal satisfying artwork using a variety of artistic processes and materials.</p> <p>Demonstrate an understanding of the safe and proficient use of materials, tools, and equipment for a variety of artistic processes.</p>	<p>SWBAT create their version of the color black by mixing the primary colors in the art making process IOT design their version of a “Black Hole” using tempera colors.</p>	<p>Suggested questions:</p> <ul style="list-style-type: none"> <li>• How do the colors of plants affect insects?</li> <li>• How do you think early civilizations discovered colors?</li> <li>• How do you think they used the colors during their time period?</li> </ul>
<p>Anchor Standard #3: Refine and complete artistic work. <u>Reflect, refine, continue:</u> Elaborate visual information by adding details in an artwork to enhance emerging meaning.</p>	<p>SWBAT to use critical thinking skills IOT construct a representation of a Black Hole with an Event Horizon by using tempera colors.</p>	<p>Rubric for creating a Black Hole with the Event Horizon using tempera paints.</p>

## Activity Five: Art Part II

Duration: Approximately 1 week

@ 40 minutes/day

This second art project has students investigating the terms pigment and pigmentation, using the CER Framework and organic plant matter. Using organic matter that bleeds primary colors-such as cabbage, yellow and red onions and various leafy greens to obtain the pigments-red, yellow, and green in order to create the darkest pigment possible. Students will be able to collect evidence as they investigate their claim for, “ Which natural plant materials will yield the darkest near black pigment?”

The final objective of this lesson is that students will be able to achieve a pigment nearest to the color black in order to paint a second version of a Black Hole with an Event Horizon.

So in the final analysis of the terms pigmentation and color, students will have to problem solve, apply previous learning, then evaluate there claim and evidence in order to reason the difference between the terms color and pigmentation and why a Black Hole is called “Black”.



Standards	Objectives	Activity/Resources
<p><b>Anchor Standard #1</b> Generate and conceptualize artistic ideas and work. <u>Investigate, plan, make:</u> Elaborate on an imaginative idea. Apply knowledge of available resources, tools, and technologies to investigate personal ideas through the art making process.</p>	<p>SWBAT create their version of the most darkest pigment by mixing the organic matter in the art making process IOT design their version of a “Black Hole” using organic matter.</p>	<p>Suggested questions:</p> <ul style="list-style-type: none"> <li>• Do you think Black is an important color? Why?</li> <li>• Which color is your favorite color? Why?</li> <li>• Why and how do you think colors are useful?</li> <li>• Which color do you think is the most useful color?</li> </ul>
<p>Anchor Standard #2: Organize and develop artistic ideas and work. <u>Investigate:</u></p> <p>Create personally satisfying artwork using a variety of artistic processes and materials.</p> <p>Demonstrate an understanding of the safe and proficient use of materials, tools, and equipment for a variety of artistic processes.</p>	<p>SWBAT create their version of the pigment black by mixing the organic matter in the art making process IOT design their version of a “Black Hole” using organic matter.</p>	<p>Suggested questions:</p> <ul style="list-style-type: none"> <li>• How do you think the colors of plants affect insects?</li> <li>• How do you think early civilizations discovered colors?</li> <li>• How do you think they used the colors during their time period?</li> </ul>
<p>Anchor Standard #3: Refine and complete artistic work. <u>Reflect, refine, continue:</u> Elaborate visual information by adding details in an artwork to enhance emerging meaning.</p>	<p>SWBAT to use critical thinking skills IOT construct a representations of a Black Hole with an Event Horizon by using organic plant-based matter.</p>	<p>Rubric for creating a Black Hole with the Event Horizon using organic plant matter.</p>
<p>CC.1.4.3.X</p> <p>Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline specific tasks, purposes and audiences.</p>	<p>SWBAT state an opinion and make a claim concerning the validity of the term Black Hole IOT substantiate with evidence and reasoning why it is given the Black Hole.</p>	<p>SWBAT attend to writing tasks over different periods of time IOT achieve a specific writing goal. SWBAT complete specific tasks for an identified purpose for writing IOT complete appropriate portions of the writing process</p>

## Resources

### Bibliography:

1. Oxford Dictionary
2. <https://www.theguardian.com> (profile/elijah-anderson (“*The Historical Context*”))
3. <https://www.washingtonpost.com> (people/max-boot, Columnist for The Washington Post August 6, 2019 at 11:59 a.m. EDT .3)
4. <https://www.scientificamerican.com> (author/coco-ballantyne/ February 18, 2009”)
5. <https://www.StewartSynopsis.com> ([origin-of-caucasian-race-and-albinism](#))
6. [www.yourdictionary.com](http://www.yourdictionary.com) “multicultural”
7. <https://genographic.nationalgeographic.com> “human-journey”
8. [https://www.nasa.gov/mission\\_pages/chandra/multimedia/black-hole-SagittariusA.html](https://www.nasa.gov/mission_pages/chandra/multimedia/black-hole-SagittariusA.html)
9. <http://coolcosmos.ipac.caltech.edu/ask/297-What-is-a-light-year->  
“What is a light-year?”
10. <https://naturalhistory.si.edu/visit/virtual-tour>
11. <https://www.penn.museum>
12. [www.merriam-webster.com](http://www.merriam-webster.com)
13. <https://en.wikipedia.org/wiki/Black>, <https://en.wikipedia.org/wiki/Demography>
14. [https:// National-Core-Art-Standards-pdf-3-1.pdf](https://www.nationalcoreartstandards.org/standards/3-1-1.pdf)
15. <http://www.sun.org/encyclopedia/black-hole>
16. <https://astronomy.com/> NEWS-“The Milky Way may have two supermassive black holes” Thursday, December 12, 2019 by Smadar Naoz
17. <https://www.grc.nasa.gov>
18. Super Simple Paper Airplanes: by Nick Robinson, Sterling Publishing Co., Inc. NY ISBN 0-8069-3536-7
19. <https://silveragecomics.uncc.edu/timeline>
20. <http://octaviasbrood.com>

## Annotated Materials:

### Text for Teachers

“The Dark Fantastic” by Dr. Ebony Elizabeth Thomas  
Race And The Imagination From Harry Potter To The Hunger Games  
New York University Press,  
copyright 2019 by New York University

“What’s Your Evidence?” Engaging K-5 Students in Constructing Explanations in Science  
By Carla Zembal-Saul, Katherine L. McNeill, Kimber Hershberger  
copyright 2013 by Pearson Education, Inc.

### Plant-based Dyes Resources

Recycled Nation Website  
Article

Tag: Plant Based Dyes

“How to Make Dyes/Paints From Plants” by Michelle Honeyager, April 16, 2015  
“Using plants to make dyes is an age-old art that will truly lmake you feel like you’re getting back to your roots (no pun intended)”.

<https://recyclenation.com/>

Atlas Obscura Website  
Article

Tag: Kazumi Tanaka

Story: “How One Women Transforms Plants into Pigment” Kazumi Tanaka paints the natural world with the essence of flowers. By Evan Nicole Brown, November 7, 2018,  
<https://www.atlasobscura.com>

“The more iron I add and the longer I cook it, the more black it becomes.”

“When acorns are cooked they turn from brown to black, but what helps deepen that color is rust,”

“To achieve the darkest possible share, the artist buries a rusty nail underneath the liquid, and lets it sit”.

“Tannic acid reacts to the vinegar and rust and turns it black,”

“This is what we do to make the beans blacker”

### Black Hole Resources

<https://www.nasa.gov/>

Tag: Black Holes, Chandra X-Ray Observatory, Universe

“Supermassive Black Hole Sagittarius A\*” Aug. 29, 2013

The paper is available online and is published in the journal *Science*. The first author is Q. Daniel Wang from University of Massachusetts at Amherst, MA; and the co-authors are Michael Nowak from Massachusetts Institute of Technology (MIT) in Cambridge, MA; Sera Markoff from University of Amsterdam in The Netherlands, Fred Baganoff from MIT; Sergei Nayakshin from University of Leicester in the UK; Feng Yuan from Shanghai Astronomical Observatory in China; Jorge Cuadra from Pontificia Universidad de Católica de Chile in Chile; John Davis from MIT; Jason Dexter from University of California, Berkeley, CA; Andrew Fabian from University of Cambridge in the UK; Nicolas Grosso from Université de Strasbourg in France; Daryl Haggard from Northwestern University in Evanston, IL; John Houck from MIT; Li Ji from Purple Mountain Observatory in Nanjing, China; Zhiyuan Li from Nanjing University in China; Joseph Neilsen from Boston University in Boston, MA; Delphine Porquet from Université de Strasbourg in France; Frank Ripple from University of Massachusetts at Amherst, MA and Roman Shcherbakov from University of Maryland, in College Park, MD.

Image credit: X-ray: NASA/UMass/D.Wang et al., IR: NASA/STScI

“X-rays Spot Spinning Black Holes Across Cosmic Sea” July 3, 2019

This corresponds to the event horizon, the black hole’s point of no return, spinning at the speed of light, which is about 670 million miles per hour. (8)

A paper describing these results is published in the July 2<sup>nd</sup> issue of *The Astrophysical Journal*, and is [available online](#). The authors are Xinyu Dai, Shaun Steele and Eduardo Guerras from the University of Oklahoma in Norman, Oklahoma, Christopher Morgan from the United States Naval Academy in Annapolis, Maryland, and Bin Chen from Florida State University in Tallahassee, Florida.

NASA’s Marshall Space Flight Center in Huntsville, Alabama, manages the Chandra program for NASA’s Science Mission Directorate in Washington. The Smithsonian Astrophysical Observatory in Cambridge, Massachusetts, controls Chandra’s science and flight operations.

Image credit: NASA/CXC/Univ. of Oklahoma/X. Dai et al.

## **25 Years of Afrofuturism and Black Speculative Thought: Project Muse**

Roundtable with Tiffany E. Barber, Reynaldo Anderson, Mark Dery, and Sheree Renée Thomas

TOPIA: Canadian Journal of Cultural Studies, Number 39, Spring 2018, pp. 136-144 (Article)

Published by University of Toronto Press

Title: *Darkwater*      Voices From Within The Veil Author: W. E. B. Du Bois Release Date: February 28, 2005 [EBook #15210] Language: English Character set encoding: ISO-8859-1

The Project Gutenberg EBook of *Darkwater*, by W. E. B. Du Bois  
Produced by Suzanne Shell, Audrey Longhurst, and the PG Online Distributed Proofreading Team.

Of One Blood, or The Hidden Self By [Pauline E. Hopkins](#) <https://archive.org> Jan 1, 2015 - from The Colored American Magazine (1902-1903)

**Black Comix: African American Independent Comics Art and Culture**

September 28, 2010

<https://comicsworthreading.com/2010/09/28/black-comix-african-american-independent-comics-art-and-culture/> Comics Worth Reading

Independent Opinions, News, and Reviews of Graphic Novels, Manga, and Comic Books

**BOOKS JAN 15, 2020**

**A Literary Oasis for Black People Fed Up with the White Gaze**

*Black Imagination's* sense of humor is as deep as its sense of history.

by Rich Smith

<https://www.thestranger.com/issues/42551582/2020-01-15>

**Stephanie Toliver's** website: <https://www.diversefutures.net/>

Dr. Ebony E. Thomas My websites:

<http://thedarkfantastic.blogspot.com/> (Links to an external

site.) & <https://www.ebonyelizabeththomas.com/> (Links to an external site.)

**Latinx Speculative Fiction**

**Resources:** <https://www.oxfordbibliographies.com/view/document/obo-9780199913701/obo-9780199913701-0112.xml>

Indigenous Futu

<https://seattle.bibliocommons.com>

<https://blogs.ubc.ca/fnis401fwikler/2016/11/28/indigenous-futurism-reimagining-reality-to-inspire-an-indigenous-future/>

<http://www.bbc.com/earth/story/20150525-a-black-hole-would-clone-you>

Games and Activities to support Science Learning from NASA

<https://spaceplace.nasa.gov/menu/earth/>

Event horizon telescope: the black hole seen round the world: hearing before the Committee on Science, Space, and Technology, House of Representatives, One Hundred Sixteenth Congress, first session, May 16, 2019

Author/Creator: United States. Congress. House. Committee on Science, Space and Technology (2011) author.

Other Title: Black hole seen round the world

Publication: Washington: U.S. Government Publishing Office, 2019.

“The dark shadow bounded by a ring of light may look simple enough, but don’t be fooled. The first-ever image of a black hole”

[www.govinfo.gov/content/pkg/CHRG-116hhrg36301/pdf/CHRG-116hhrg36301.pdf](http://www.govinfo.gov/content/pkg/CHRG-116hhrg36301/pdf/CHRG-116hhrg36301.pdf)

Star Trek: a journey through the galaxies.

Naxos Music Library

Author/Creator: Philharmonic Rock Orchestra

[Streaming audio](#)

<http://hdl.library.upenn.edu/1017.12/300353>

## **Appendix A**

### Graphic Organizers / Templates

ESOL Informational Writing Sentence Starters

Informational Writing Format

Informational Writing Rubric

Think, Visualize, Write Graphic Organizer

CER Framework Template

Transition/Conjunction Word List

Opinion Writing Graphic Organizer

ESOL Opinion Writing Graphic Organizer Sentence Starters

Opinion Writing Rubric

Narrative Dialogue Graphic Organizer

Short Story Comic Rubric

Comic Graphic Organizers Template

ESOL Comic Graphic Organizers

Venn Diagram “Color verses Pigment”

Literary Element Graphic Organizer

Sequence of Events Graphic Organizer

Color / Pigmentation Assessment

Wonder & Notice Chart

**ESOL Informational Writing Sentence Starter Graphic Organizer**

CER (claim, evidence, reasoning)

Essential Question: **What is a Black Hole?**

I claim a Black Hole is \_\_\_\_\_.

I found information from \_\_\_\_\_ and it states  
\_\_\_\_\_. I also discovered  
\_\_\_\_\_.

This is the evidence that supports the claim \_\_\_\_\_.

Another important evidence is \_\_\_\_\_.

I found this information from \_\_\_\_\_ and it tells  
me that a Black Hole is \_\_\_\_\_. So this also  
is evidence that supports the claim \_\_\_\_\_.

One reason I made this claim is \_\_\_\_\_.

Another reason I made the claim is \_\_\_\_\_.

For these reasons I claim a Black Hole to be \_\_\_\_\_.



## Regular & ESOL Opinion Writing Graphic Organizer

CER (claim, evidence, reasoning)

### OPINION WRITING FORMAT

WHAT IS YOUR OPINION: Is There Gravity in Space?

Remember: Write your opinion in one sentence.

Remember: Convince your reader. Provide reasons and examples to make your opinion clear.

<p>Sentence starters for stating your opinion:</p> <ul style="list-style-type: none"><li>• In my opinion [L] [SEP]</li><li>• I think [L] [SEP]</li><li>• I strongly believe [L] [SEP]</li><li>• I feel [L] [SEP]</li><li>• My favorite [L] [SEP]</li></ul>	<p>Transitions to use in the body of your writing:</p> <ul style="list-style-type: none"><li>• For example/instance</li><li>• Another reason</li><li>• In addition</li><li>• First, second, next. Finally</li><li>• Most importantly</li></ul>	<p>Transitions to use in your conclusion:</p> <ul style="list-style-type: none"><li>• In conclusion [L] [SEP]</li><li>• For all the reasons [L] [SEP] I've given [L] [SEP]</li><li>• To sum it up [L] [SEP]</li><li>• To summarize [L] [SEP]</li><li>• As you can see [L] [SEP]</li></ul>
--	--	---

*State your opinion clearly in a single complete sentence.*

In my opinion \_\_\_\_\_.

*Convince your reader: Provide 2-3 reasons with examples to make your opinion clear.*

*Reason:* \_\_\_\_\_.

*Example:* \_\_\_\_\_.

*Reason:* \_\_\_\_\_.

*Example:* \_\_\_\_\_.

*Reason:* \_\_\_\_\_.

*Example:* \_\_\_\_\_.

*Conclusion:* \_\_\_\_\_.

**Students Informational Writing Format**

**Graphic Organizer**

Introduction: *Students make a **Claim** in their own words.*

Paragraph Two: ***Evidence** collected from a factual source to support the claim.*

Paragraph Three: ***Evidence** collected from a factual source to support the claim.*

Paragraph Four: ***Evidence** collected from a factual source to support the claim.*

Conclusion: ***Reasoning** that supports both the claim and evidence collected.*

**THINK, VISUALIZE, & WRITE GRAPHIC ORGANIZER**

**“THE BLACK HOLE”**

What do you <b><u>THINK</u></b> about the topic?	What do you <b><u>VISUALIZE</u></b> draw a picture/illustration.	<b><u>WRITE</u></b> about what you visualize.

### *Informational Writing Rubric*

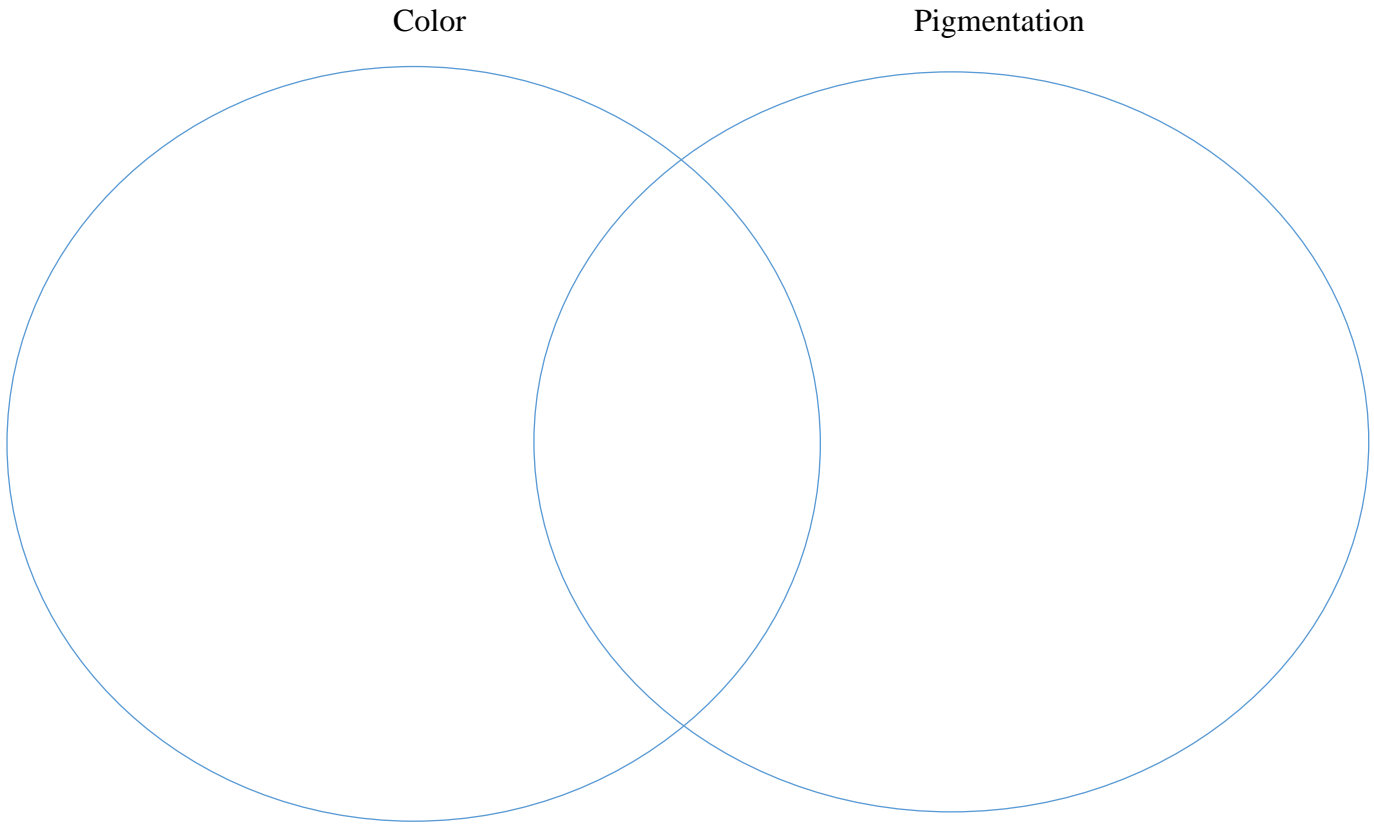
<b>Ask Yourself</b>	<b>Score 1</b>	<b>Score 2</b>	<b>Score 3</b>	<b>Score 4</b>
<b><i>Focus</i></b> Did you introduce the topic?	No, I did not introduce my topic at all.	Well, I somewhat introduced my topic.	Yes, I introduced my topic.	Yes, I introduced my topic in a very creative way!
<b><i>Organization</i></b> Did you group related information together?	No, I did not group related information together.	Well, I grouped SOME related information together.	Yes, I grouped related information together.	Yes, I clearly grouped related information together in a very creative way!
<b><i>Style</i></b> Did you include illustrations when useful to aiding comprehension?	No, I did not include illustrations at all.	Well, I included a FEW illustrations to aide comprehension.	Yes, I included SEVERAL illustrations when useful to aide comprehension.	Yes, I included MANY illustrations when useful to aide comprehension in a very creative way!
<b><i>Content</i></b> Did you develop the topic with facts, definitions, details, and concluding statement or section?	No, I did not develop the topic with facts, definitions, or details, or a conclusion.	Well, I developed the topic with a FEW facts, definitions, and details and SOME details of a conclusion.	Yes, I developed the topic with SEVERAL facts, definitions, and details. I also included a conclusion statement.	Yes, I developed the topic with MANY facts, definitions, details, and concluding statement or section in a very creative way!
<b><i>Conventions</i></b> Did you use linking words and phrases to connect ideas?	No, I did not use linking words and phrases to connect ideas.	Well, I used SOME linking words and phrases to connect ideas.	Yes, I used SEVERAL linking words and phrases to connect ideas.	Yes, I used MANY linking words and phrases to connect ideas in a very creative way!

## TRANSITION / CONJUNCTION WORD LIST

Linking Words - A complete List - Sorted by categories Freely available from <http://www.smart-words.org/> © 2013

again <sup>[L]</sup> <sub>[SEP]</sub>	near	such as <sup>[L]</sup> <sub>[SEP]</sub>
to <sup>[L]</sup> <sub>[SEP]</sub>	alongside	for example <sup>[L]</sup> <sub>[SEP]</sub>
and <sup>[L]</sup> <sub>[SEP]</sub>	above	for instance <sup>[L]</sup> <sub>[SEP]</sub>
also <sup>[L]</sup> <sub>[SEP]</sub>	below	to point out <sup>[L]</sup> <sub>[SEP]</sub>
then	among	with this in mind
equally	down	while
here	beneath	because of
further	up	as <sup>[L]</sup> <sub>[SEP]</sub>
there	beside	since <sup>[L]</sup> <sub>[SEP]</sub>
beyond	under	after all <sup>[L]</sup> <sub>[SEP]</sub>
next	behind	immediately
nearby	between	quickly
where	across	finally
wherever	if <sup>[L]</sup> <sub>[SEP]</sub> ... then	in a moment
from	unless	in the first place
around	when	all of a sudden
over	whenever	first, second
before	since	next, then

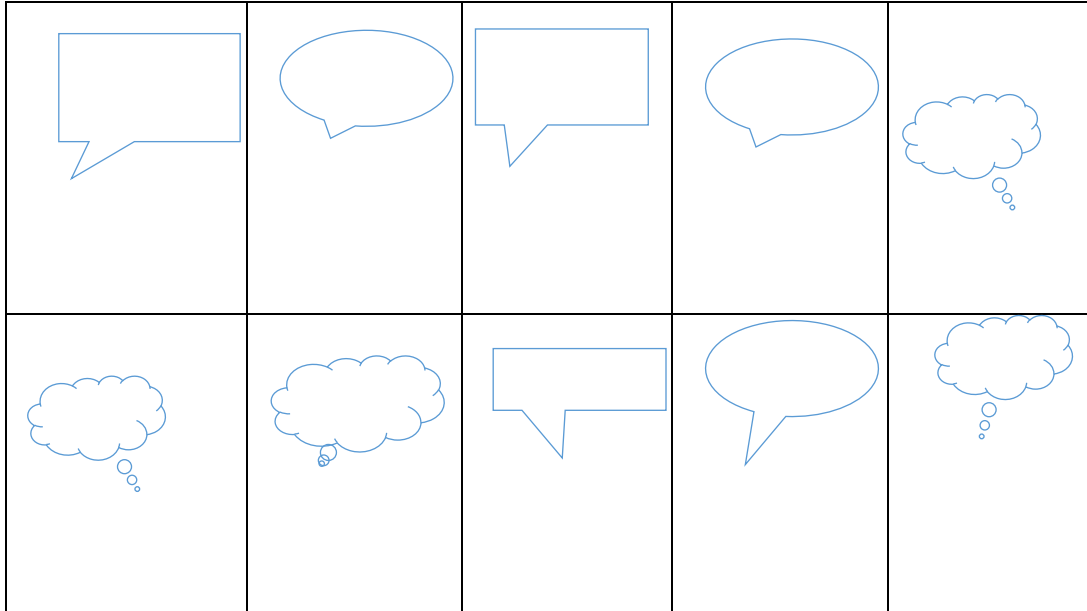
Color versus Pigmentation VENN DIAGRAM



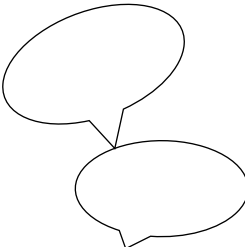

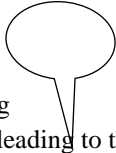
**Notice & Wonder Chart Sample**

NOTICE	WONDER

**ESOL COMIC WORKSHEET**



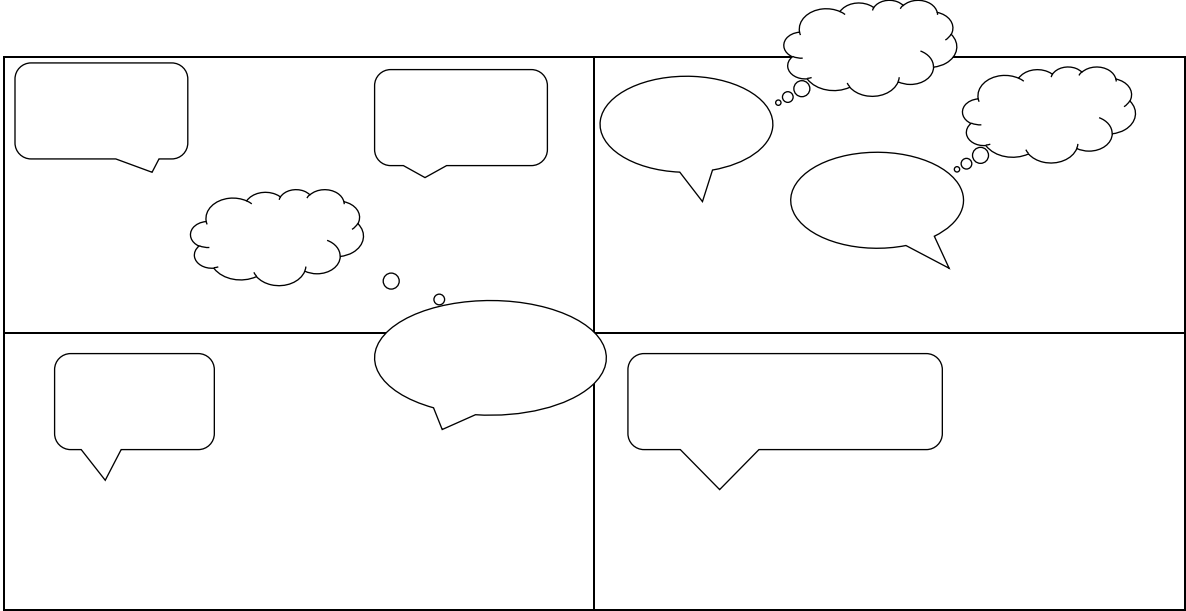
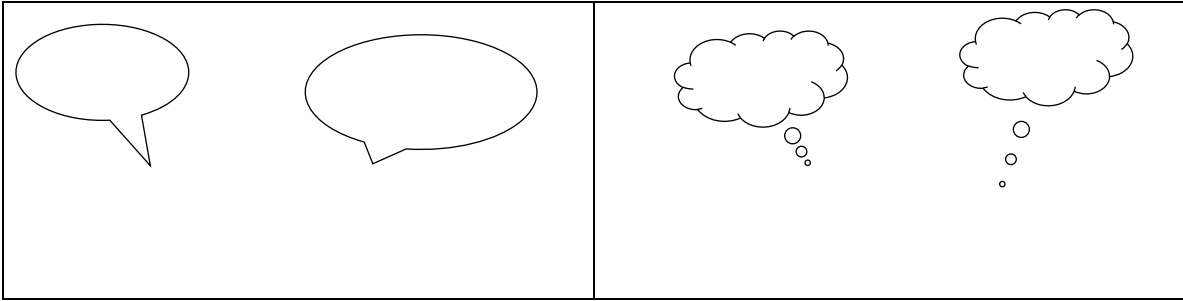
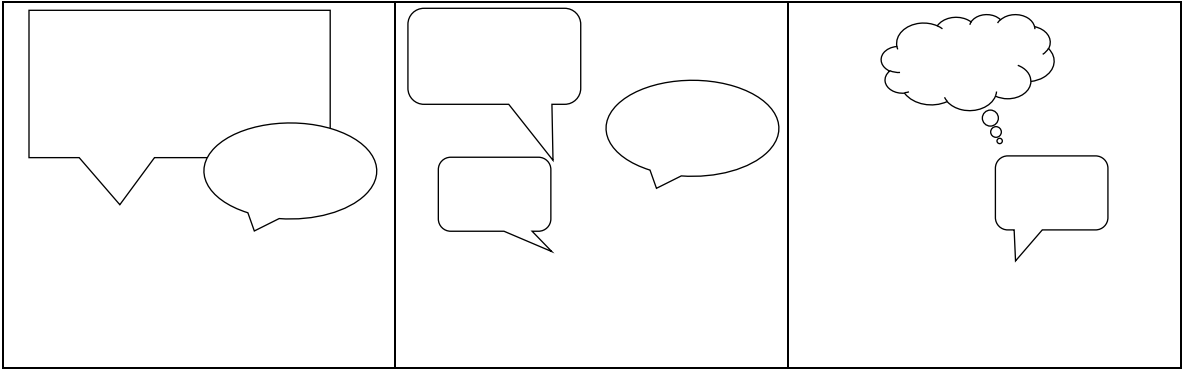
**Short Story Comic Graphic Organizer**

Setting/Illustrations/Introduction			<p>start</p> 
	<p>Introduce with <i>dialogue</i> the characters</p>	<p>continue <i>dialogue</i> between the characters</p>	<p>sharing event leading to the problem (<i>dialogue or narration</i>)</p>

Educators: *These templates can be used as shown in the example or at your discretion.*

Following is a blank template for brainstorming and comic construction.

**Short Story Comic Template**



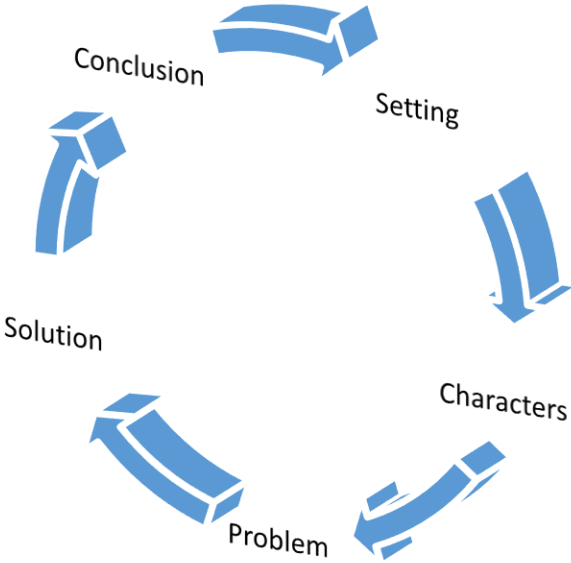
Title:	Written by:
--------	-------------

## Opinion Writing Rubric

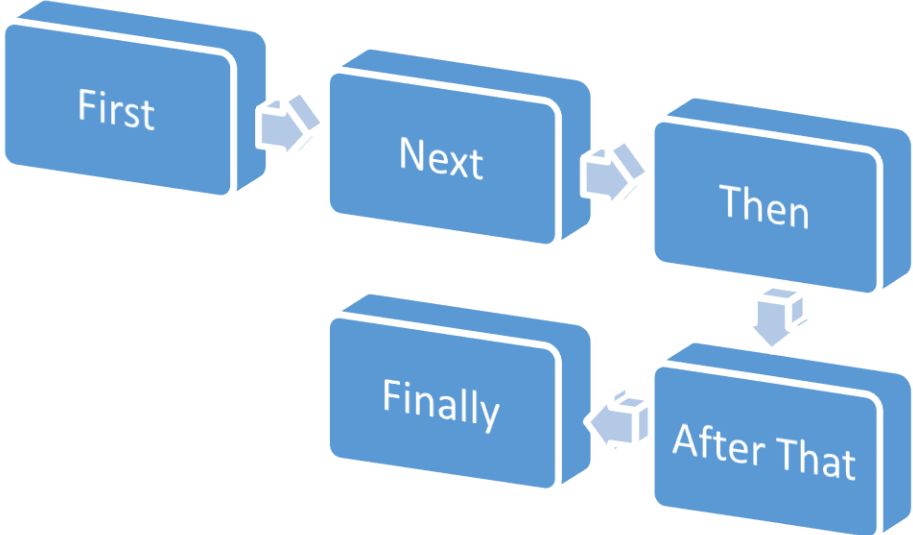
<b>Ask yourself:</b>	<b>Score 1</b>	<b>Score 2</b>	<b>Score 3</b>	<b>Score 4</b>
<b><i>Did you introduce the topic?</i></b>	No, I did not introduce the topic at all.	Well, I somewhat introduced the topic.	Yes, I introduced the topic .	Yes, I introduced the topic in a very creative way!
<b><i>Did you clearly state your opinion?</i></b>	No, I did not state the opinion at all.	Well, I somewhat stated the opinion.	Yes, I stated the opinion.	Yes, I stated the opinion in a very creative way!
<b><i>Did you create an organizational structure that lists reason?</i></b>	No, I did not create an organizational structure at all.	Well, I somewhat created an organizational structure.	Yes, I created an organizational structure that lists reasons.	Yes, I created an organizational structure that lists reasons in a very creative way!
<b><i>Did you supply supporting examples to the reasons that support the opinion?</i></b>	No, I did not supply supporting examples to any of the reaasons for the opinion.	Well, I supplied ONE supporting example for each of the reasons for the opinion.	Yes, I supplied TWO supporting examples for each of the reasons for the opinion.	Yes, I supplied MANY supporting examples for each of the reasons for the opinion.
<b><i>Did you use linking words and phrases to connect opinion, reasons, and examples?</i></b>	No, I did not use linking words and phrases to connect opinion, reasons, and examples.	Well, I used SOME linking words and phrases to connect opinion, reasons, and examples.	Yes, I used SEVERAL linking words and phrases to connect opinion, reasons and examples.	Yes, I used MANY linking words and phrases to connect opinion, reasons, and examples.
<b><i>Did you provide a concluding statement or section?</i></b>	No, I did not provide a concluding statement or section at all.	Well, I somewhat provided a concluding statement or section.	Yes, I provided a concluding statement or section.	Yes, I provided a concluding statement or section in a very creative way!



**Literary Elements Graphic Organizer**



**Sequence of Events Graphic Organizer**



## Color verses Pigmentation Assessment

### **Open Ended Responses:**

1. What is the definition of the term color?
  - 1a. Explain what that definition means to you.
2. What is the definition of pigmentation?
  - 2a. Explain what that definition means to you.
3. List two examples that exhibit the term color according to the definition given.
  - a.
  - b.
4. List two examples that exhibit the term pigmentation according to the definition given.
  - a.
  - b.
5. Describe the relationship between the terms color and pigmentation.
6. In your own words explain how the two terms (color and pigmentation) are alike and how the terms differ.

### Short Story Comic Rubric

<b>Category</b>	<b>Exemplary 5 - 4</b>	<b>Accomplished 3</b>	<b>Developing 2</b>	<b>Beginning 1</b>	<b>Score</b>
<b>Ideas/Content</b>	Ideas are clear, original and elaborate. Main idea stands out along with details.	Ideas are clear and original. Main idea along with details are included.	Ideas are clear. Main idea along with limited details are included.	Ideas are not throughout.	
<b>Organization</b>	Organization enhances the central theme. Sequencing is logical and transitions are smooth.	Organization of a central theme exist. Sequencing is logical with transitions are smooth.	Organization of the central theme is developing. Sequencing is logical.	Organization of a central theme is missing. Sequencing does not transition the text.	
<b>Voice/Style</b>	Style and voice of the writer is expressive and engages the reader with descriptions, actions,intrigue/plots.	Style and voice of the writer is expressive and engages the reader with descriptions, actions,intrigue/plots.	Style and voice of the writer is expressive and engages the reader with descriptions, actions,intrigue/plots.	Style and voice of the writer is expressive and engages the reader with descriptions, actions,intrigue/plots.	
<b>Focus</b>	The central idea is clearly emphasized throughout the narrative.	The central idea is clear throughout the narrative.	The central idea is clear throughout the narrative.	The central idea is not clearly throughout.	
<b>Conventions</b>	Use of temporal words and/or phrases that signal event order. Use of various figures of speech.	Use of temporal words and/or phrases to signal event order. Use of some figures of speech.	Limited use of temporal words and/or phrases to signal event order. Limited use of figures of speech.	Omittance of temporal words and/or phrases to signal event order. Limited use of various figures of speech.	
<b>Text Features</b>	Graphic aids accentuate the reader's imagination (illustration, print size/color, dialogue).	Graphic aids support the reader's imagination.	Graphic aids encourage the reader to imagine.	Graphic aids are incomplete or do not support the story.	
<b>Text Structure</b>	Story structure varies and merges smoothly. At least 3-4 structures are built-in the narrative.:	Story structure varies and merges smoothly. At least 3 structures are built-in the narrative.	Story structure varies and merges smoothly. At least 2 structures are built-in the narrative.	Singular story structure in the narrative.	
<b>Comments:</b>					__/35

**Narrative Dialogue Graphic Organizer**

**“Let’s Talk”**

“ ”





## **Appendix B**

Classroom Materials:

NASA Space Place  
Explore Earth and Space  
Space Place Activity/Learning  
<https://spaceplace.nasa.gov/black-holes/en/>

PeekaBoo YouTube Black Hole

[https://www.youtube.com/watch?v=8VC3AJMRf-8&feature=emb\\_rel\\_pause](https://www.youtube.com/watch?v=8VC3AJMRf-8&feature=emb_rel_pause)

Student Reading List:

Moon Girl and Devil Dinosaur Series

**Zetta Elliott's** list of Black speculative fiction for kids and teens: <http://www.zettaelliott.com/african-american-speculative-fiction-for-kids/> (Links to an external site.)

## Appendix C

A description of how your unit implements the academic standards

### Writing Narrative

CC.1.4.3.M-R: (W.3) Write narratives in order to develop real; or imagined experiences or events using effective technique, descriptive details, and clear events sequence.

### Comic Writing

CC.1.3.2.E: ([RL2.5](#)) Describe the overall structure of a story including describing how the beginning introduces the story and the ending concludes the action

### Opinion Writing

CC.1.4.3.G-I (W.3.1) Write an opinion essay on familiar topics or texts (Black Holes).

### Informational/Explanatory Writing

CC.1.4.3.A-D (W.2) Write informative/explanatory texts to examine a topic and convey ideas and information.

### Speaking and Listening Standards

CC.1.5.3.A (SL.3.1) Engage effectively in a range of collaborative discussions on grade level topics and texts, building on others' ideas and expressing their own clearly.

### National Art Standards

Anchor Standard #1 Generate and conceptualize artistic ideas and work. Students will create their version of the color black by mixing the primary colors in the art making process using tempera colors.

Anchor Standard #2: Organize and develop artistic ideas and work. Students will create their version of the color black by mixing the primary colors in the art making process using tempera colors.

Anchor Standard #3: Refine and complete artistic work. Students will be encouraged to use critical thinking skills to construct a representation of a Black Hole with an Event Horizon using tempera colors.

## **Appendix D**

KeyTerms:

Speculative Futuristic Fiction

Standard(s)

Black Hole

Event Horizon

Comic

Narrative

Opinion/Argumentative

Informative/Explanatory

Color

Pigment

Graphic Organizer

Literary Elements

Claims/Evidence/Reasons

Space

Moon

Dinosaur

Constructivism