Student Name: _____

Eighth Grade Summer Reading Assignment

I. Read the two assigned articles and answer the accompanying questions in complete sentences.

II. Read a grade appropriate fictional novel or your choice. Please look at the long response choices before selecting your novel. Try to choose a novel within your lexile level according to the STAR assessment (*Diary of a Wimpy Kid* Series and graphic novels are not acceptable). My lexile level is: _____

1) Identify 10 new words that you came across in your reading. Determine the meaning of the words using the context clues around it. Check your definition against the dictionary definition. Were you correct? (CCSS RL.8.4)

2) Dialogue, conversation between or among characters, is included in a literary work to help reveal character traits. Choose five lines of dialogue from your story. Write down the lines of dialogue and explain what each of the lines reveals about the characters. (CCSS RL.8.3)

3) Choose 1 of the following longer response questions. Either type or write out your essay neatly on lined paper to submit.

Option A (CCSS RL.8.2, RL.8.5)
Theme is the message or lesson an author wants a reader to learn after reading a story. Identify a theme from your novel. Find three-five lines in the text that support the theme you have identified. Then, choose a second work that shares this theme. This work can be a poem, song, blog post, video, work of art, movie, etc. Write a short essay (three paragraphs) explaining how the two works connect and how the differing text structures reveal this theme in different ways.

Option B (CCSS RL.8.7)
Select a novel that has also been produced as a movie. Read the novel and view the movie. Write a five-paragraph essay following this format:

Introduction – Explain why books turned into movies may be different
Body Paragraph 1 - Summarize the general story line that both works share
Body Paragraph 2 – What did the movie leave out from the novel
Body Paragraph 3 – What did the movie add that was not in the novel
Conclusion – How faithful was the movie to the novel? Why do you think the movie producer made the choices to eliminate or change details from the novel? What is your preference (book or movie) and why?

All parts of the Summer Reading Assignment are due by Friday, September 11, 2015

Student Name: _____

Novel Title: _____

Author: _____

1) Vocabulary: Identify 10 new words that you came across in your reading. Determine the meaning of the words using the context clues around it. Check your definition against the dictionary definition. Were you correct? (CCSS RL.8.4)

Page #	New Word	Sentence the word appears in	Context Definition	Dictionary Definition	Correct?

Student Name: _____

Page #	New Word	Sentence the word appears in	Context Definition	Dictionary Definition	Correct?

Student Name: _____

Novel Title: _____

Author: _____

2) **Dialogue**, conversation between or among characters, is included in a literary work to help reveal character traits. Choose five lines of dialogue from your story. Write down the lines of dialogue and explain what each of the lines reveals about the characters. (CCSS RL.8.3)

1)Page #: _____

Line of Dialogue (Copy Directly): _____

_____

_____

_____

_____

What does this reveal about the character (2-3 Sentences): _____

_____

_____

_____

_____

2)Page #: _____

Line of Dialogue (Copy Directly): _____

_____

_____

_____

_____

What does this reveal about the character (2-3 Sentences): _____

_____

_____

_____

_____

Student Name: _____

3)Page #: _____

Line of Dialogue (Copy Directly): _____

_____

_____

_____

_____

What does this reveal about the character (2-3 Sentences): _____

_____

_____

_____

_____

4)Page #: _____

Line of Dialogue (Copy Directly): _____

_____

_____

_____

_____

What does this reveal about the character (2-3 Sentences): _____

_____

_____

_____

_____

5)Page #: _____

Line of Dialogue (Copy Directly): _____

_____

_____

_____

What does this reveal about the character (2-3 Sentences): _____

_____

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“Seven Minutes of Terror,” Eight Years of Ingenuity

“Sometimes when we look at it, it looks crazy,” remarked Adam Steltzner, an engineer who works for the National Aeronautics and Space Administration—known more commonly to the world as NASA. “It is the result of reasoned engineering thought. But it still looks crazy.”

In a video story entitled “Seven Minutes of Terror,” Steltzner was joined on camera by an eloquent cast of entry-descent-landing engineers (or “EDL Engineers”). Working from the Jet Propulsion Laboratory (JPL) in California, their team introduced the world to one of the most daring, inventive feats of engineering the world had ever witnessed: the pinpoint landing of NASA’s Curiosity rover on Mars.

The seven minutes explored in that story—and experienced by the world in early August 2012—took place after seven years of engineering, one year of space flight, and countless hours of collaboration on the perfect landing. Dubbed the Mars Science Laboratory (“MSL”), this mission brought together more than 7,000 people, working in organizations from all over the world, to accomplish its goals. Split into two parts, the launch and the landing, MSL is one of the greatest technological accomplishments of human history.

The most impressive thing about MSL is that no mission this ambitious had ever been attempted in the past. The landing presented problems that could not be compared directly to anything done before. But thanks to the rigorous work of hundreds of engineers, NASA ended up making a new mark on Mars.

The Launch

The MSL launch took place on November 26, 2011. Blasting from the Earth at a speed of 12,582 miles per hour, the rockets that broke free of Earth's orbit and sent the Mars-bound spacecraft with the rover on its way were the most routine part of the mission. For decades NASA has specialized in space launches, drawing on some of the brightest minds on the planet to determine what it takes to bring a spacecraft to the stars.

Planning the rover's trip to the red planet (Mars's nickname, due to its color)—a voyage lasting about 36 weeks at maximum cruise velocity—was also not exactly a new challenge for engineers working on the MSL mission. NASA had already landed two rovers, named "Spirit" and "Opportunity," on the surface of the red planet. Based on the principles of astronomy, the launch engineers at JPL had very precise requirements for making the journey from Earth to Mars.

The key to these requirements was an understanding of orbits. Although Mars is significantly farther from the sun than Earth, both planets orbit the same star. Their distance from each other changes during each cycle, but Earth comes into alignment with Mars once every 26 months—"lapping" it in a perpetual race around the sun. Observing this pattern, astronomers can work with engineers to pinpoint the optimal month, day, and time for a spacecraft to leave Earth on a speedy one-way trip.

Drawing on centuries of knowledge of the laws of physics, scientists designed rockets and a spacecraft to accommodate Curiosity. Years of calculation, construction, careful planning and computer modeling resulted in a vessel that cruised purposefully through space, reaching the orbit of Mars at just the right time to attempt a landing.

Through it all, the margin for error was nearly non-existent. The movement of interplanetary bodies in space is much more demanding than the movement of cars on a highway, or even airplanes in the stratosphere. Miscalculating a vector or failing to account for any aspect of the orbits could lead to a $2 billion failure.

Fortunately, NASA had taken on this challenge before. Its engineers had both the experience and the tenacity to succeed again. What came after the launch was a different story.

The Landing

Spirit and Opportunity, the two NASA rovers that landed on Mars in 2004, used a combination of parachutes, rockets, and hi-tech airbags to protect themselves. Much like launch and spaceflight, each step of the landing sequence was planned and simulated to the very last

detail. Learning from a prior Mars mission, EDL engineers were able to recreate some of the same maneuvers used in that sequence.

Unfortunately, the specific requirements of MSL made it difficult to depend on past experience. While NASA had constructed the biggest supersonic parachute ever made, parachuting was far from enough. Since the atmosphere of Mars is 100 times thinner than the atmosphere of Earth, the parachute alone could not reduce the speed of descent past 200 miles per hour—a breakneck speed that would surely damage Curiosity upon landing.

Curiosity outweighed any earlier rover and contained over 150 pounds of sensitive scientific devices, so an airbag solution was ruled out. Instead, EDL engineers designed a maneuver that would allow the entry capsule to turn sharply and activate powerful rockets to finish the job. Once this maneuver was complete, the capsule could attempt a vertical landing.

Successfully executing the switch from a parachute entry to a controlled, rocket-fueled descent was a feat that could have gone wrong at any moment. Still, even this was not enough to succeed. Once the parachute was cut, and a full radar system was online to guide Curiosity to the surface, the force from the rockets could kick up so much dust that the dust itself would damage the rover.

Eternally thinking one step ahead, EDL engineers designed a device called a “sky crane” to complete the final step of the landing sequence. When the sky crane was 20 feet above Martian soil, it lowered Curiosity onto the surface with a set of cables.

Moving from 13,000 miles per hour to zero miles per hour in just seven minutes, Curiosity finally touched down. The capsule, with all rockets still firing, blasted back into the sky and crash-landed elsewhere on the planet. The landing was a success.

The Ongoing Mission

MSL is the latest of NASA’s attempts to learn more about Mars. The most popular inquiry is whether Mars may have, at any point in its long history, supported life as we know it. The search for these signs, however, is one piece of a much greater picture.

The mission has eight scientific objectives, each one broken into specific goals and all coming together to form a more detailed understanding of all things Mars. Curiosity, a rover the size of a station wagon, contains advanced instruments that will help it probe, sample, record, and analyze its way through Martian terrain. Collecting evidence on the biological, geological,

chemical, and radiological profile of the red planet will prepare NASA for the next space flight to Mars. Another rover mission, building on the work of Curiosity, is planned to launch in 2020.

Ultimately, scientists hope to learn enough about Mars to bring human beings to the surface for a manned research mission. Some, working with entrepreneur Elon Musk, are even devising a plan to colonize the planet just one decade later. Skeptics debate whether or not such a seemingly outrageous idea could ever be made into reality.

Looking back at NASA's solutions to the great technical challenge of the Curiosity landing, it's hard to feel too skeptical about humankind's ability to reach for the stars.

Name: _____ Date: _____

1. What is Curiosity?

A a parachute used to land on Mars
B another name for the National Aeronautics and Space Administration
C a space rover that landed on Mars
D a video made by NASA engineers

2. What sequence of events is described in this passage?

A the sequence of events that led to Opportunity landing on Mars
B the sequence of events that led to Curiosity landing on Mars
C the sequence of events that led to the creation of NASA
D the sequence of events that will need to take place for Mars to be colonized

3. In order to land on Mars, Curiosity had to use a parachute, rockets, and a sky crane.

What can be concluded from this information?

A Landing on Mars is a simple process.
B Landing on Mars is a complicated process.
C Landing on Mars is a waste of time.
D Landing on Mars in the future is unrealistic.

4. What helped make the Mars Science Laboratory mission successful?

A one person working by himself for decades
B two countries competing with each other
C a lot of people working together for years
D hi-tech airbags first used in 2004

5. What is this passage mainly about?

A a mission to Mars
B life on Mars
C what being an engineer is like
D the history of NASA

6. Read the following sentence: "The **mission** has eight scientific objectives, each one broken into specific goals and all coming together to form a more detailed understanding of all things Mars."

What does the word "**mission**" mean?

- **A** a problem that develops when people do not prepare for something as much as they should
- **B** a short period of time when people feel extremely nervous about something
- **C** the movement of interplanetary bodies
- **D** an important task to be carried out by a person or group of people

7. Choose the answer that best completes the sentence below.

Engineers spent years getting Curiosity ready; _____, it landed on Mars.

- **A** finally
- **B** however
- **C** third
- **D** such as

8. Describe the video story "Seven Minutes of Terror."

_____

_____

_____

_____

9. Which seven minutes of terror does the video's title refer to? Support your answer with evidence from the passage.

_____

_____

_____

_____

10. Why might the engineers who worked on Curiosity have felt terror as they watched it land? Support your answer with evidence from the passage.

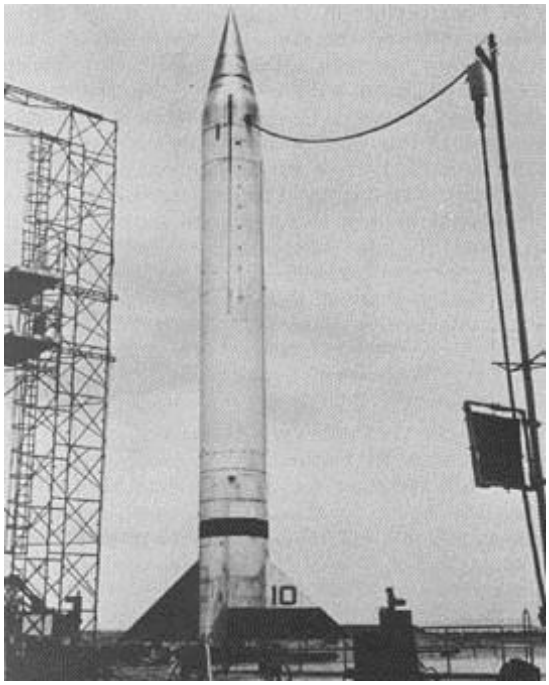
_____

_____

_____

_____

From the Earth to Outer Space



Many years ago, people here on Earth decided that they wanted to go into outer space.

This is something people had imagined for a very long time, in books and movies and stories grandparents told to their grandchildren. However, in the 1950s, people decided they really wanted to do it. There was just one problem: how would they get there?

One of the earliest movies about flying to the moon was made by Georges Méliès and released in 1902. It was called *A Trip to the Moon*. In this movie, the moon was made up of a man's face, covered in cream, and a whole tribe of angry natives lived there. That part was not very realistic. However, the spaceship didn't seem too far-fetched: it was a small capsule, shaped like a bullet, that the astronauts loaded into a giant cannon and aimed at the moon.

This movie was based on a book that came out many years earlier by an author named Jules Verne. One of the fans of the book was a Russian man, Konstantin Tsiolkovsky. The book made him think. Could you really shoot people out of a cannon and have them get safely to the moon? He decided you couldn't, but it got him thinking of other ways you could get people to the moon. He spent his life considering this problem and came up with many solutions.

Some of Tsiolkovsky's solutions gave scientists in America and Russia (where Tsiolkovsky lived) ideas when they began to think about space travel. They also thought about airplanes they and other people had made, and even big bombs that could fly themselves very long distances. How could they take all these ideas and make them into one thing that would safely get astronauts into space?

Many scientists spent years working together to solve the problem. They drew and discussed different designs until they agreed on the ones that were the best. Then, they built small models of those designs, and tested and tested them until they felt ready to build even bigger models. They made full-scale rockets, which they launched without any people inside, to test for safety. Often the rockets weren't safe, and they exploded right there on the launch pad, or shot off in crazy directions like a balloon that you blow up and release without tying it first. After many, many tests, they started to send small animals into space. Only after a long time did they ever put a person inside a rocket and shoot him into space.

Even after they began sending people into space, during the Gemini program in the 1960s, scientists were still trying to improve the shape of the rockets. The design changed many times, and eventually ended up looking like a half-rocket and half-airplane. This rocket, called the space shuttle, was used for many years. Now, the government lets private companies try their own designs for spaceships, and they have come up with many different, crazy-looking machines.

There is no single solution for sending a person into space. Thanks to the imaginations of people like Jules Verne and Konstantin Tsiolkovsky, and the hard work of the scientists who built and tested rockets over the years, humanity has developed reliable technology for space travel. Still, the work continues. Every day, the people who work on this problem share new designs, build test models, and try to imagine better ways to explore the vast deep mystery that is outer space.

Name: _____ Date: _____

1. According to the passage, where did people decide they wanted to go many years ago?

A outer space
B the North Pole
C the inside of a volcano
D the center of the earth

2. Getting to outer space is a problem mentioned in the passage. How was this problem solved?

A Georges Méliès made a movie that showed a tribe of angry natives living on the moon.
B Grandparents told their grandchildren stories about people traveling to outer space.
C Some rockets blew up on the launch pad or shot off in crazy directions.
D Scientists worked together to create a rocket that could send a person into space.

3. Read these sentences from the passage: "Many scientists spent years working together to solve the problem. They drew and discussed different designs until they agreed on the ones that were the best. Then, they built small models of those designs, and tested and tested them until they felt ready to build even bigger models. They made full-scale rockets, which they launched without any people inside, to test for safety.. . . . Only after a long time did they ever put a person inside of a rocket and shoot him into space."

What can be concluded from this information?

A Scientists in Russia were better at working together than scientists in America.
B Scientists in America were better at working together than scientists in Russia.
C Working together and doing tests were important to making a rocket.
D Most of the scientists who saw the movie *A Trip to the Moon* did not like it.

4. Why might people be interested in traveling to outer space?

A They are interested in meeting a tribe of angry natives on the moon.
B They are interested in watching movies and listening to their grandparents' stories.
C They are interested in seeing rockets blow up on a launch pad.
D They are interested in exploring the mystery of outer space.

5. What is this passage mostly about?

A the lives of Georges Méliès, Jules Verne, and Konstantin Tsiolkovsky
B the problem of getting people to outer space and how that problem was solved
C a movie about flying to the moon made in the 1920s
D a spaceship in the shape of a bullet that could be loaded into a giant cannon and aimed at the moon

6. Read the following sentences: "After many, many tests, they started to send small animals into space.. Only after a long time did they ever put a person inside of a rocket and **shoot** him into space."

As used in the passage, what does the word "**shoot**" mean above?

A to fix a problem
B to attack with a weapon
C to send with great force
D to break into many pieces

7. Choose the answer that best completes the sentence below.

People wanted to travel to outer space _____ they were able to.

A before
B never
C although
D instead

8. What problem did Konstantin Tsiolkovsky spend his life thinking about?

_____

_____

_____

_____

9. What effect did Tsiolkovsky's solutions have on scientists in America and Russia?

_____

_____

_____

_____

10. Was sharing ideas important to making human space travel possible? Explain why or why not, using evidence from the passage to support your answer.

_____

_____

_____

_____

Answer the following questions in complete sentences on lined paper.

Paired Text Questions

Part 1: Use the article “From the Earth to Outer Space” to answer the following questions:

1. According to the article, where did people on Earth decide they wanted to go many years ago?

2. What problem does this article discuss?

3. Summarize the series of events that led to people going into outer space.

Part 2: Use the article “"Seven Minutes of Terror," Eight Years of Ingenuity” to answer the following questions:

4. To which planet did the rover Curiosity travel?

5. What is one of the problems this article discusses?

6. Summarize the series of events that led to Curiosity landing on Mars.

Part 3: Use the articles “From the Earth to Outer Space” **&** “"Seven Minutes of Terror," Eight Years of Ingenuity” to answer the following questions:

7. Compare the series of events that led to people going into outer space with the series of events that led to Curiosity landing on Mars.

8. Contrast the series of events that led to people going into outer space with the series of events that led to Curiosity landing on Mars.

9. Which mission was more difficult: sending people into outer space or sending Curiosity to Mars? Support your answer with evidence from both articles.