Name_____ Due Date _____

Week **27**

Reading Classwork

Thunderstorms

❑ Fluency: Repeated Reading

Read the text aloud on 2 different days to a family member and have them initial:

Reading #	Date	Parent/Guardian Initials and/or comments
1		
2		

❑ W I D E Reading Choices

Complete at least **two** tasks from the chart below. ***Star the ones you completed.***

Read 20 minutes in your independent reading book	Read a magazine or newspaper	Read a nonfiction book for 20 minutes
Read a book aloud to a younger child	Write a **2-paragraph script** for a news reporter warning citizens about a **severe thunderstorm.**	Read 20 minutes in your independent reading book
Learn more about **thunder.** Write down 3+ facts that you learn.	Read 20 minutes in your independent reading book	Your own idea: Ask about your own topic!

❑ Comprehension Check

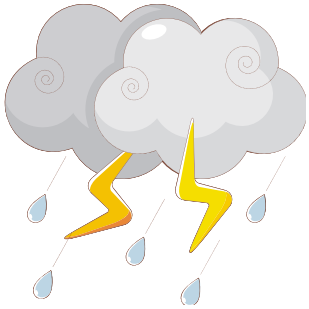
Complete the multiple-choice questions & write your "Get The Gist" statements.

Name_____ Due Date _____

Week 27

Lexile = 920

Thunderstorms



¶1 The loom and doom of ***ominous***, dark gray clouds lingering in the sky tends to signal one thing is coming. Coupled with the heavy humid air, these dark, looming clouds will soon erupt into a thunderstorm. However, not all storms are created equally. A thunderstorm is a more intense rainstorm because instead of just bringing rainfall to a particular area, it also unleashes thunder and lightning to the earth below.

What is a Thunderstorm?

¶2 A thunderstorm is a storm with lightning and thunder. It is produced by a cumulonimbus cloud, usually producing gusty winds, heavy rain, and sometimes hail.

What Causes a Thunderstorm?

¶3 The basic ingredients used to make a thunderstorm are moisture, unstable air and lift. You need moisture to form clouds and rain. You need unstable air that is relatively warm and can rise rapidly. Finally, you need lift. This can form from fronts, sea breezes or mountains.

When Are Thunderstorms Most Likely to Occur?

Thunderstorms can occur year-round and at all hours. However, they are most likely to happen in the spring and summer months during the afternoon and evening hours. It is estimated that there are around 1,800 thunderstorms that occur across our planet every day!

What is Lightning?

¶4 Lightning is an electric current (giant spark) made inside a cloud. The light it gives off is so bright that it can be seen up to 100 miles away. Although thunder, the loud booming sound that is created when unstable air collides is invisible to the human eye, we can see lightning because it is a bright flash of electricity that is produced by a thunderstorm. If you hear thunder, then you are in danger from lightning. According to scientists, there are about nine million lightning strikes in the world every day!

Lightning Safety

¶5 As you may know, lightning can be dangerous. Sometimes, lightning strikes trees, tall buildings, and water. This is why you should always get out of a pool or the ocean before a storm starts. The best place to go during a lightning storm is inside your home because you are able to stay dry and safe. It is best to seek shelter during a thunderstorm – either your home or car, because lightning kills and injures more people each year than hurricanes or tornadoes – about 75 to 100 people.

Week **27**

Name_____ Due Date _____

Comprehension Questions: thunderstorms

1. What type of clouds cause a thunderstorm?
- a. lightning
- b. current
- c. cirrus
- d. cumulonimbus

2. Which is NOT a natural effect of an active thunderstorm?
- a. thunder
- b. snowfall
- c. heavy rain
- d. lightning

3. How often do thunderstorms occur around the world?
- a. There are reports of up to 100 thunderstorms a day.
- b. Scientists believe there are 75 thunderstorms every hour.
- c. It is said that 1,800 thunderstorms happen every day.
- d. Weather experts estimate 9 million thunderstorms per day.

4. Which type of text structure did the author use in this article?
- a. Compare and Contrast
- b. Chronology (sequential order)
- c. Question and Answer
- d. Enumeration

5. Which word below is the best synonym for "*ominous*" found in the text?
- a. nurturing
- b. threatening
- c. warm
- d. summer

GET THE GIST! (Write a complete sentence in response to the prompts.)

Prompt	Response	Evidence (¶#)
How are rainstorms different than thunderstorms?		
Why is being in the pool not safe during a thunderstorm?		
What is lightning?		
What does lightning tend to strike?		
Explain how lightning can be dangerous.		

cHALLENGE! {Write your own question & answer for this week's text}

Sequencing

MINI-HOW-TO BOOK

DIRECTIONS

1. You each will be writing a mini-book instructing readers how to do something.
2. Select a writing topic by pulling a topic strip out of the bag or basket. (If you do not like your topic, you are welcome to trade topics with another group member or pick another topic from the choices.)
3. In your packets, complete the **Mini-How-To Book Planning** page.
4. Then, follow the directions to fold and create your own mini-book. You will need a blank piece of paper to fold into the mini-book.
5. Share your mini-books with your group members.

MORE TIME?

Add an "about the author" on the back cover of the mini-book you wrote. Include information about yourself like your hobbies, family, age, and aspirations.

How to Build a Snowman

How to Clean a Bedroom

How to Plan a Party

How to Mow the Lawn

How to Build a Tree House

How to Play Hide-and-Go-Seek

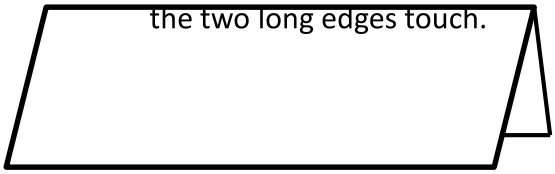
How to Give Yourself a Haircut

How to Ace a Test

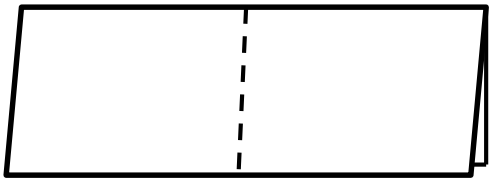
Create a Mini-book

How to create a mini-book

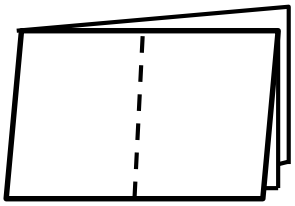
1. Fold the white paper in half so that the two long edges touch.



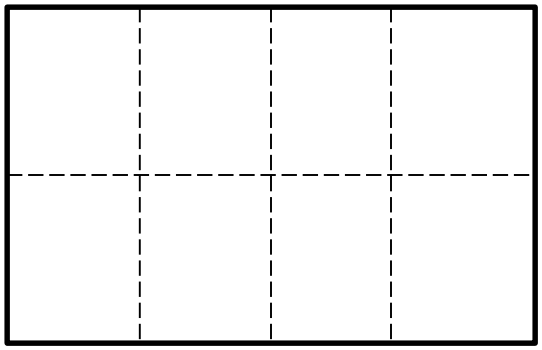
2. Now fold the paper in half so that the short ends touch.



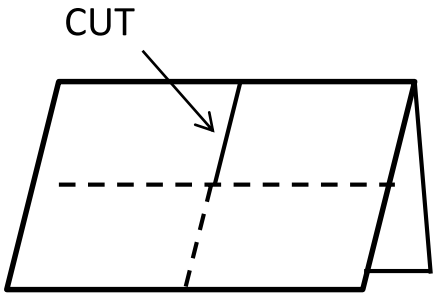
3. Fold the paper in half again so that the short ends touch.



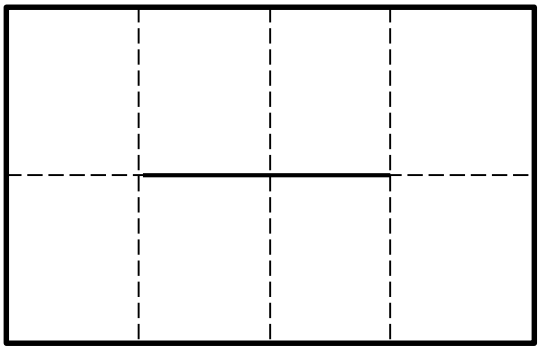
4. Open the paper flat to see all the paper folds.



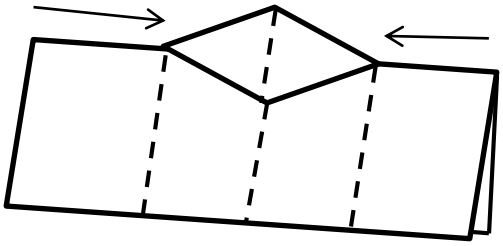
5. Fold the paper in half so that the short edges touch. With scissors, cut from the fold to the crease. Stop when you reach the middle of the "window pane" of fold lines.



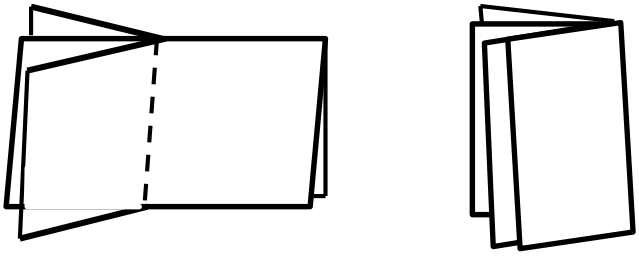
6. Open up the paper again. Then, fold the paper in half so that the two long sides touch (just like step 1).



7. With the paper folded, hold the two ends and push them together. The middle sections will bow out. Flatten the new sections, making two separate pages for your mini-book.



8. Flatten all the pages to one side to create the mini-book



PRESIDENTIAL PORTRAIT

"If I Were President..."

By President _____

If I were president, I would have to be_____

_____.

I would make the country better by _____

_____.

I would get people to vote for me by _____

_____.

It would be a hard job because _____

_____.

The people would call me the _____ president!

George's Secret Key to the Universe 5th Grade Ready Gen Vocab

Top word _ English

Second Word – Spanish

Destructive: causing great and irreparable harm or damage.

Destructivo: causando gran e irreparable daño.

Indignant: feeling or showing anger or annoyance at what is perceived as unfair treatment.

Indignado: sentir o mostrar enojo o molestia por lo que se percibe como un trato injusto.

Enlightenment: the action of enlightening or the state of being enlightened.

La iluminación: la acción de la iluminación o el estado de ser iluminado.

Fusion: the process or result of joining two or more things together to form a single entity.

Fusión: el proceso o resultado de unir dos o más cosas para formar una sola entidad.

Inquiry: an act of asking for information.

Consulta: un acto de pedir información.

Accelerate: increase in amount or extent.

Acelerar: aumentar en cantidad o medida.

Ambling: walk or move at a slow, relaxed pace.

Deambular: caminar o moverse a un ritmo lento y relajado.

Menacing: suggesting the presence of danger; threatening.

Amenazante: sugiriendo la presencia del peligro; amenazante.

Defiantly: in a manner that shows open resistance or bold disobedience.

Desafiante: de una manera que muestra resistencia abierta o desobediencia audaz.

Improvised: created and performed spontaneously or without preparation; impromptu.

Improvisado: creado y realizado espontáneamente o sin preparación; improvisado.

Instictively: without conscious thought; by natural instinct.

Instintivamente: sin pensamiento consciente; Por instinto natural.

Spiraled: move in a spiral course.

En espiral: moverse en un curso en espiral.

Divert: cause (someone or something) to change course or turn from one direction to another.

Desvío: causa que (alguien o algo) cambie de rumbo o cambie de una dirección a otra.

Deliberately: consciously and intentionally; on purpose.

Deliberadamente: consciente e intencionalmente; a propósito.

Havoc: widespread destruction.

Havoc: destrucción generalizada.

Ominously: in a way that suggests that something bad is going to happen.

Ominamente: de una manera que sugiere que algo malo va a suceder.

Uninhabitable: (of a place) unsuitable for living in.

Inhabitable: (de un lugar) inadecuado para vivir en.

Emits: produce and discharge (something, especially gas or radiation).

Emite: produce y descarga (algo, especialmente gas o radiación).

Intrigued: to have aroused the curiosity or interest of; fascinated.

Intrigado: haber despertado la curiosidad o interés de; fascinado.

Advocate: a person who publicly supports or recommends a particular cause or policy.

Defensor: una persona que apoya públicamente o recomienda una causa o política en particular.

Alter: change or cause to change in character or composition, typically in a comparatively small but significant way.

Alterar: cambiar o causar un cambio en el carácter o la composición, generalmente de una manera comparativamente pequeña pero significativa.

Fundamental: forming a necessary base or core; of central importance.

Fundamental: formando una base o núcleo necesario; de importancia central.

Vital: absolutely necessary or important; essential.

Vital: absolutamente necesario o importante; esencial.

Distorted: pulled or twisted out of shape; contorted.

Distorsionado: tirado o torcido fuera de forma; contorsionada

Engulf: (of a natural force) sweep over (something) so as to surround or cover it completely.

Engulf: (de una fuerza natural) barrer (algo) para rodearlo o cubrirlo completamente.

Erratically: in a manner that is not even or regular in pattern or movement; unpredictably.

Erráticamente: de una manera que no es uniforme o regular en patrón o movimiento; impredeciblemente

Objected: say something to express one's disapproval of or disagreement with something.

Objetado: decir algo para expresar la desaprobación o el desacuerdo con algo.

Galaxy: a system of millions or billions of stars, together with gas and dust, held together by gravitational attraction.

Galaxia: un sistema de millones o billones de estrellas, junto con el gas y el polvo, unidos por la atracción gravitacional.

Perplexed: completely baffled; very puzzled.

Perplejo: completamente desconcertado; muy desconcertado

Remnants: a small remaining quantity of something.

Restos: una pequeña cantidad restante de algo.

Accessing: approach or enter (a place).

Accediendo: acercarse o entrar (un lugar).

Agitated: feeling or appearing troubled or nervous.

Agitado: sentirse o parecer preocupado o nervioso.

Exploiting: make full use of and derive benefit from (a resource).

Explotación: hacer un uso completo y obtener un beneficio de (un recurso).

Name:_____ Date:_____ Number:_____

George's Secret Key to the Universe: Chapter 1

Learning Target: I can decipher the meaning of unknown words and phrases by using a context clues strategy and plugging in my guess.

Model:

Quote	Strategy/ Thought Process/Definition
"Pig's don't just **vanish**, thought George as he stood staring in the depths of the very obviously empty pigsty." –Page 1	**Strategy:** Plug It In/Synonym **Thought Process:** The words "very obviously empty" show the reader that there was nothing there. I tried to plug in "go away" and "disappear." **Vanish:** To disappear

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Independent Practice:

Quote	Thought Process/Strategy/Definition
"He tried closing his eyes and opening them again, to see if it was all some horrible **optical** illusion." –Page 1	**Strategy:** _____ Hint: You go to an optical store to buy glasses **Thought Process:** _____ _____ _____ **Optical:** _____

Quote	Thought Process/Strategy/Definition
"The home-knitted purple and orange striped sweater from his mom had sleeves that stretched right down to the floor; he had never wanted a xylophone, and he had a hard time looking **enthusiastic** when he unwrapped a build-your-own-ant farm." -Page 3	**Strategy:** _____ Hint: Why would George not look "enthusiastic" when he got an ant farm? Did he like this gift? **Thought Process:** _____ _____ _____ **Enthusiastic:**_____

Quote	Thought Process/Strategy/Definition
"Whenever he got the chance, he liked to escape and **rampage** across the vegetable patch, trampling on carrot tops, munching the baby cabbages, and chewing up George's mom's flowers." -Page 5	**Strategy:** _____ Hint: How would Freddy run after he had been locked up all day? **Thought Process:** _____ _____ _____ **Rampage:**_____

Name:_____ Date:_____ Number:_____

George's Secret Key to the Universe: Chapter 1

Quote	Thought Process/Strategy/Definition
"Years of **neglect** meant the garden had rioted out of control until it looked like the Amazon jungle had grown up on the other side of the fence." -Page 6	**Strategy:** _____ Hint: When people take care of their gardens, they DO NOT look like the Amazon Jungle. **Thought Process:** _____ _____ _____ **Neglect:**_____

Quote	Thought Process/Strategy/Definition
"Taking a deep breath, George decided he had to do it. He had to go Next Door. Closing his eyes, he **plunged** through the hole in the fence." -Page 12	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Plunged:**_____

Name:_____ Date:_____ Number:_____

George's Secret Key to the Universe: Chapter 1

Learning Target: I can decipher the meaning of unknown words and phrases by using a context clues strategy and plugging in my guess.

Model:

Quote	Strategy/ Thought Process/Definition
"Pig's don't just **vanish**, thought George as he stood staring in the depths of the very obviously empty pigsty." –Page 1	**Strategy:** Plug It In/Synonym **Thought Process:** The words "very obviously empty" show the reader that there was nothing there. I tried to plug in "go away" and "disappear." **Vanish:** To disappear

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Independent Practice:

Quote	Thought Process/Strategy/Definition
"He tried closing his eyes and opening them again, to see if it was all some horrible **optical** illusion." –Page 1	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Optical:** _____

Write a sentence using the word "Optical":

_____

_____

Quote	Thought Process/Strategy/Definition
"The home-knitted purple and orange striped sweater from his mom had sleeves that stretched right down to the floor; he had never wanted a xylophone, and he had a hard time looking **enthusiastic** when he unwrapped a build-your-own-ant farm." -Page 3	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Enthusiastic:**_____

Write a sentence using the word "Enthusiastic":

_____

_____

_____

Name:_____ Date:_____ Number:_____

George's Secret Key to the Universe: Chapter 1

Quote	Thought Process/Strategy/Definition
"Whenever he got the chance, he liked to escape and **rampage** across the vegetable patch, trampling on carrot tops, munching the baby cabbages, and chewing up George's mom's flowers." -Page 5	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Rampage:**_____

Quote	Thought Process/Strategy/Definition
"Years of **neglect** meant the garden had rioted out of control until it looked like the Amazon jungle had grown up on the other side of the fence." -Page 6	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Neglect:**_____

Write a sentence using the word "Neglect":

_____

_____

Quote	Thought Process/Strategy/Definition
"Taking a deep breath, George decided he had to do it. He had to go Next Door. Closing his eyes, he **plunged** through the hole in the fence." -Page 12	**Strategy:** _____ **Thought Process:** _____ _____ _____ **Plunged:**_____

Integrated Spelling and Vocabulary
Week Twenty-seven

Greek Roots: anti, audi, aero, ambi

1. antibiotic
2. antisocial
3. antidote
4. antifreeze
5. auditorium
6. audition
7. audience
8. audit
9. audio
10. auditor
11. aerobics
12. aerology
13. aerial
14. ambition
15. ambiguous
16. ambidextrous

Name 3 More words using anti
_____
_____
_____

Name 3 More Words using audi
_____
_____
_____

anti- opposite/against
audi- hear
aero- air
ambi- both

Tip: When you study the root words, you are building for yourself a set of tools that can be used to take apart and then rebuild new words you encounter.

Vocabulary

1. **auditorium- n.** the space set apart for the audience in a theater, school, or other public building
2. **audience- n.** the group of spectators at a public event
3. **condense- v.** to make smaller or more compact
4. **convince- v.** to persuade or prove
5. **humble- adj.** not proud or arrogant
6. **pleasure- n.** enjoyment or satisfaction
7. **practical- adj.** adapted or designed for actual use; useful
8. **apprentice- n.** a learner, novice; a person who works for another to learn a job or trade
9. **strife- n.** conflict or discord
10. **pressure- n.** a condition that is hard to bear

Antonyms

Words that *have* opposite meanings

Beneath- over
Brave- fearful
Common-rare
Deny- admit
Colossal-tiny
Foolish- serious
Innocent-guilty
Tender- tough

ally- enemy
aware- ignorant
calm- nervous
dishonest- honest
feeble- strong
honest- deceitful
wealthy- poor
invisible- visible

We were very _____ (calm) when we were taking our state test.

Our teacher told us to act very _____ (foolish) when the guest speaker came to our school.

Name_____ Date_____

Read the vocabulary story below. Complete the activities after reading the story.

Today was the big day! I woke up excited and thrilled- It was our Invent America contest. The winning student would go on to the state competition and the grand prize would be a patent for our invention! My excitement, however, soon transformed to strife. Everyone in my family expected me to win. My older brother won two years prior and everyone kept telling me, "It's your turn now!" The pressure was really starting to bother me. I just kept telling myself that it will be okay as long as I do my best. I knew that I had worked hard. I had invented what I like to call, "The Light Bender." I was an apprentice at my dad's auto-shop. I had been working on cars with him and have learned a lot through the years. So, my invention is a piece of metal that is rounded. If your car has a flat tire and you don't have a flashlight, you take this out, put it in front of your headlight, and it gives you light to change your tire.

When we got to school, they announced the five finalists. I was chosen! The finalists had to give a 5 minute speech that tells about your invention. This speech is designed to convince everyone that your invention is the most practical and innovative. It would be hard to condense my entire invention into a 5 minute speech! I was also nervous because we would have to say our speech to an audience full of our peers in the auditorium. I was scared, but I would be very humble if I won the contest. If I didn't win, I would be happy for the winner.

Activities:

1. Circle all of the vocabulary words.

2. Write an antonym for the word humble.

3. Write a synonym for the word convince.

4. Divide apprentice into syllables.

5. Which vocabulary word fits into the sentence below?

The _____ was full of people to watch the play.

6. In which point of view is this story written?

Name_____ Date_____

Spelling/Vocabulary Assessment

Ten of your spelling words are spelled incorrectly in the paragraph below. Circle the misspelled words. Write them correctly on the lines below.

Mya had been very sick with a high fever. She was so ready to go back to school. When she went to the doctor, he gave her some antebiotics. She was so glad because she was going to try-out for a play at school later this week and was ready to audition. Mya has a lot of ambetion and wanted the lead part in the play. At first it was ambeguous as to who got the lead because some people said Mya and some said Kierra. To be certain, Mya went to check the list herself. After her hard work and training for the play, she felt she deserved the lead role… and she got it! Mya has always been somewhat antesocial, and with this part, she would have to be friendlier to her classmates. When rehearsals came and Mya was back at school, she worked very hard. The audeo of the play was fantastic. However, now she would have to perform in the audatorium in front of a real audeance. This would be the true test!

1. _____ 5. _____
2. _____ 6. _____
3. _____ 7. _____
4. _____

Circle the word that is spelled correctly.

8.	antefreeze	antifreeze	antafreeze	antifreeze
9.	areol	aeral	arial	aerial
10.	arobics	arobeics	aerobics	aerobicks

Choose the letter of the antonym for the underlined word in each sentence.

1. We had to <u>condense</u> our paper so that it would be under 10 pages.
   a. decrease b. enlarge c. ability

2. We had to <u>convince</u> my mom to let me have a spend the night party.
   a. persuade b. beg c. dissuade

3. The boy was very <u>humble</u> as he accepted his student achievement award.
   a. nice b. rude c. proud

Write the vocabulary word that means…

1. not proud or arrogant _____
2. space set apart for an audience _____
3. to make smaller or more compact_____
4. a group of spectators at an event _____
5. to persuade or prove _____
6. a learner; a novice _____

<u>Word Bank</u>
auditorium,
audience,
condense,
convince,
apprentice,
humble

Activity (optional)

How Do You Lose a *Colony*?
Exploring What Became of John White's "Lost Colony"

Overview

Students will compliment their investigation of the foundations of America by participating in a group project in which they write a play based on John White's colony. Plays must show student understanding of the colonial period in general, and illustrate an interpretation of what became of the "lost" John White colonists. Students will present their play to classmates by dressing in period costume and acting it out.

Grade

5

North Carolina Essential Standards for 5th Grade Social Studies

- 5.G.1.1- Explain the impact of the physical environment on early settlements in the New World.
- 5.G.1.2- Explain the positive and negative effects of human activity on the physical environment of the United States, past and present.
- 5.G.1.3- Exemplify how technological advances (communication, transportation and agriculture) have allowed people to overcome geographic limitations.
- 5.G.1.4- Exemplify migration within or immigration to the United States in order to identify push and pull factors (why people left/why people came).
- 5.C.1.2- Exemplify how the interactions of various groups have resulted in borrowing and sharing of traditions and technology.

Essential Questions

- In what ways was Roanoke Island an appropriate location for a colony? In what ways was it unsuitable?
- Who were the members of the John White colony and what were their roles throughout the life of the colony?
- What difficulties did the John White colony face?
- What is your interpretation of what became of the John White colonists?
- Even though it failed, how did the John White colony impact future colonization?

Materials

- Lost Colony image, attached
- How Do You Lose a Colony, assignment sheet attached
- Access to the Internet and/or library

Duration

- 20 minutes of class time to explain the assignment, three to four 30+ minute class work sessions, and at least 1 week of homework time is recommended; teachers should amend the duration to meet their own needs.

Preparation

- Students should have a basic understanding of the facts surrounding the history of Roanoke Island, including the Amadas and Barlowe expedition, the Ralph Lane Colony, and John White's mysterious "Lost Colony". Information and readings are available in LEARN NC's digital textbook at http://www.learnnc.org/lp/editions/nchist-twoworlds/4.0

- Teachers should determine whether to allow students to choose their own groups, or whether they will be assigned.

Procedure

1. As a warm up, project the attached image from the Lost Colony. Allow students to review the occurrences of the Lost Colony by prompting:
   - What do you see here?
   - What do you think is happening in this picture? What has transpired previous to this moment represented?
   - What are some of the theories that explain what became of the "Lost Colonists?" (Chart student answers on the board.)

2. Hand out the attached assignment sheet. Explain to students that they will be developing a theory on what became of the members of the "Lost Colony." Considering the possibilities discussed in class (Spanish attack, Native attack, Lumbee amalgamation, attempted return to England, etc.), or based on inferred and compiled ideas, group members will write and perform a short play about John White's colony that shows their interpretation of what became of the colonists.

3. Go through the project assignment sheet in detail. Teachers should determine an approximate required time length for the plays when performed (i.e., 8 minutes). If very short plays are desired, ensure students begin their play right around the time when John White leaves for supplies. Once students understand the assignment, allow time for students to get into their groups and brainstorm in class. Teachers should use their discretion regarding how much class time and homework time is provided for work on this project.

Culminating Activities

- Hold an evening of short plays for the community, allowing students to present their work. Allow students to answer audience questions after the presentations and share their learned knowledge of John White's colony.
- Take a field trip to see an actual reenactment of the Lost Colony: http://www.thelostcolony.org/

The Lost Colony

Name_____

Project Assignment: How Do You Lose a Colony?

Due Date_____

Assignment: What do you think became of the members of John White's colony? Based on possibilities we discussed in class, or based on new ideas you and your group members infer, you will write and perform a short play about your perspective on the Lost Colony. Your play should have a beginning, middle, and an end. It should include actual characters and accurate events of the the colony. **Most importantly, the end of your play should show what your group believe happened to the colony.** Obviously, this part will be inferred, as no one really knows for sure what became of John White's colonists. You will culminate this project by presenting your play to class.

Time Line and Process:

1. Research, Review and Brainstorm:

Together as a group, review the events leading up to John White's colonization attempt (i.e., the **Amandas and Barlowe expedition** and the **Ralph Lane colony**), as well as the settling of the John White colony and the occurrences before John White returned to England. You may also want to do additional research in the library or on the Internet. As you review and further research all that is known about the events taking place on Roanoke Island, brainstorm possibilities of what may have actually happened to the John White Colony over the three years that White was gone. What do you think was happening back on Roanoke Island while White was retrieving supplies in England? How do you think the colonists were "lost"? After discussion, decide on an ending that you think is most likely. Then further brainstorm what characters you wish to have present in your play, and what parts of the actual events of the colony you will show in your play up until the point of your fictional ending. Schedule two times your group can meet outside of class to continue working (i.e. during lunch, study hall, after school, etc.)

All additional research, review, and brainstorming should be completed by: _____

2. First Draft Work Day:

Bring your brainstorming ideas to class, and begin to put your rough ideas onto paper. Decide what characters will be in the various scenes of your play and what they will say to one another. As you work on what characters will say to one another to move the story along, you may want to consider who will play which character and do some improvisation acting to help you write the dialogue down. Schedule time to work outside of class to revise your first draft into an improved Second Draft.

A Second Draft is due in class on: _____

3. Second Draft Work Day:

Bring your second draft to class for final edits and revisions. Begin to practice your play in class, brainstorming how you will recreate costumes and props needed. Schedule time outside of class to complete your typed final draft and also time to practice acting the play out. Remember, you will be presenting this to class!

4. Create a Final Costume List and Sketches:

Think about how each character should dress, and try to match the dress of the time period (1580's) as close as possible. You should do some research (books, library, Internet) to view outfits from colonial days, and figure out how to recreate them. Make sure you have a written description and sketch of a generic male colonist, a generic female colonist, and a Native American to turn in with your final draft.

Complete your costume list and sketches by: _____

**NOTE: While you are expected to make an attempt to represent costumes in your play as best you can, the sketches show what you would dress like if you had a "million dollar budget."*

5. Final Draft Due and Play Practice: final draft is otional disregrd play practice

Bring the final draft of your play and your costume list/sketches to class. You may also wish to bring in props/costumes that you will use when you present your play. You will have time to practice in class to prepare for your performance. You should also plan to practice outside of class. (Make sure you practice your scene as much as possible. Read through your scene together so that you are sure there are no mistakes, and so that you are comfortable with it. You do not have to memorize your lines, but you should make sure to put some animation in your voice and move around to make the performance interesting.)

The final draft (including the script, costume list and sketches is due on: _____

6. Dress Rehearsal: Disregard since class is not in session

Bring all materials to class on this day that you will need for presenting your play (costumes, props, scenery pieces, final script, etc.) You will have time to practice your play as if it is the real performance (wearing your costumes, integrating the props and scenery, etc.)

The dress rehearsal will take place on: _____

7. Performance: Your group will perform your scene in the auditorium and participate in a class feedback session. Disregard since class is not in session

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Grading:

Typed, Comprehensive Script: 85 points

To receive full credit, your script should be typed in the format shown below, and include a comprehensive story of the facts of the settling of John White's Colony, and **most importantly it should show your groups inferred ending (do not leave the ending a mystery).** The script should have a clear beginning, middle, and end, containing at least three or more scenes.

Costume list and sketches: 15 points

Turn in a generic sketch for a female and male colonist, as well as a Native American. Also, write out a list of what each of these three characters would wear. (You are expected to try to represent costumes in your performance, but it is understood they will not be perfect!)

Following group work expectations: 0 points

Make sure you come to class prepared to work together when given time to do so. Also, make sure you are contributing to the group by doing work independently at home to make your play even better!

Performance: 0 points

Your group must perform in front of the class. The purpose of this performance is not to make your classmates laugh…it is to act out your idea of what happened to the Lost Colony. Performances should be serious and well rehearsed, with each member knowing ahead of time what they are doing. Be very careful with how you portray the Natives…do not be stereotypical!

Total Possible Points 100 points

How to format your typed scenes:

Title

Scene1: The curtain opens to an area of woods, with trees and bushes all around. From the left, 6 colonists enter. They seem tired and weary, but also excited about the new land they have arrived on. They carry supplies in leather bags, as well as weapons.

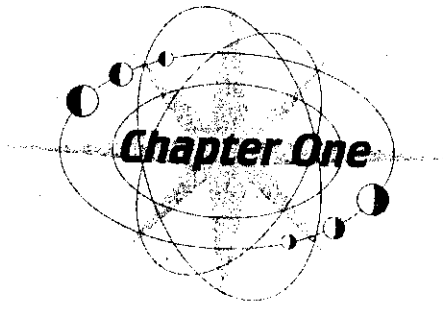
John White: Well then, it looks like this is as good a place as any to rest a spell.

George Howe: *(sitting on a rock)* Yes, a rest would be very nice. It is hard moving through all of this shrubbery and brush.

Ananias Dare: Are you feeling poorly? *(turning to his wife, Eleanor)* Would you like a drink of water?

Eleanor Dare: Oh, yes please. That would be lovely. *(takes a canteen)* Thank you.

John White: *(yells offstage to other colonists not seen)* Everyone, we'll stop here for a bit. Rest yourselves!



Chapter One

Pigs don't just vanish, thought George as he stood staring into the depths of the very obviously empty pigsty. He tried closing his eyes and then opening them again, to see if it was all some kind of horrible optical illusion. But when he looked again, the pig was still gone, his vast muddy pink bulk nowhere to be seen. In fact, when George examined the situation for a second time, it had gotten worse, not better. The side door of the pigsty, he noticed, was hanging open, which meant someone hadn't shut it properly. And that someone was probably him.

"Georgie!" he heard his mother call from the kitchen. "I'm going to start supper in a minute, so you've only got about an hour. Have you done your homework?"

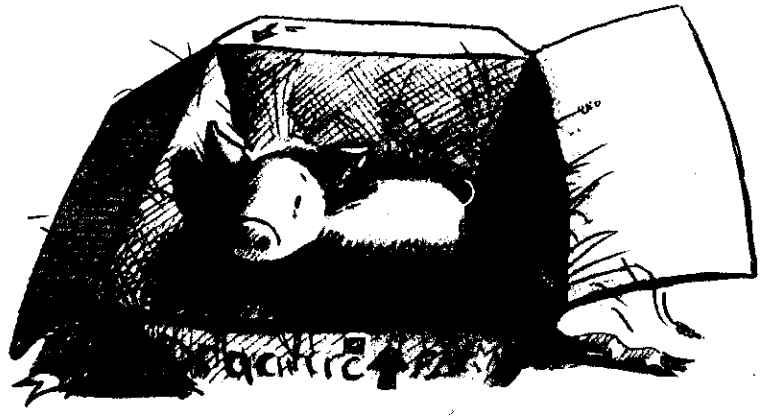
"Yes, Mom," he called back in a fake cheery voice.

"How's your pig?"

"He's fine! Fine!" said George squeakily. He threw in a few experimental oinks, just to make it sound as though everything was business as usual, here in the small backyard that was full of many, many vegetables

and one enormous—but now mysteriously absent—pig. He grunted a few more times for effect—it was very important his mother did not come out into the garden before George had time to think up a plan. How he was going to find the pig, put it back in the sty, close the door, and get back in time for supper, he had no idea. But he was working on it, and the last thing he needed was for one of his parents to appear before he had all the answers.

George knew the pig was not exactly popular with his parents. His mother and father had never wanted a pig in the backyard, and his dad in particular tended to grind his teeth quite hard when he remembered who lived beyond the vegetable patch. The pig had been a present: One cold Christmas Eve a few years back, a cardboard box full of squeaks and snuffles had been delivered to their front door. When George opened it up, he found a very indignant pink piglet inside. George lifted him carefully out of the box and watched with delight as his new friend



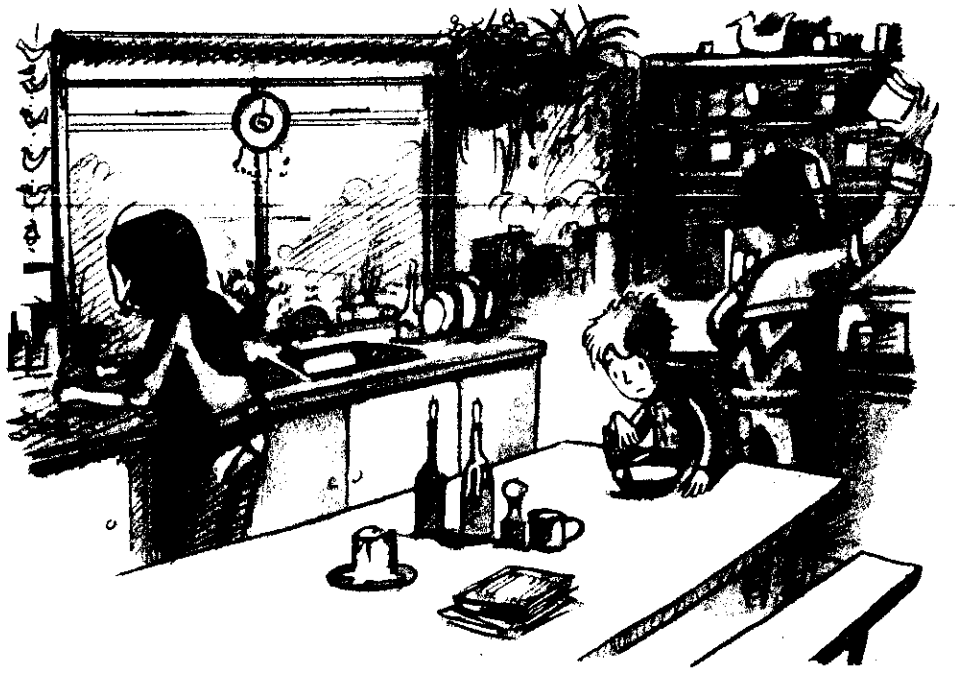
skidded around the Christmas tree on his tiny hooflets. There had been a note taped to the box. *Dear all!* it read. *Merry Christmas! This little fellow needs a home—can you give him one? Love, Grandma xxx.*

George's dad hadn't been delighted by the new addition to his family. Just because he was a vegetarian, it didn't mean he liked animals. Actually, he preferred plants. They were much easier to deal with: They didn't make a mess or leave muddy hoofprints on the kitchen floor or break in and eat all the cookies left out on the table. But George was thrilled to have his very own pig. The presents he'd received from his mom and dad that year were, as usual, pretty awful. The home-knitted purple-and-orange striped sweater from his mom had sleeves that stretched right down to the floor; he had never wanted a xylophone, and he had a hard time looking enthusiastic when he unwrapped a build-your-own ant farm.

What George really wanted—above all things in the

Universe—was a computer. But he knew his parents were very unlikely to buy him one. They didn't like modern inventions and tried to do without as many standard household items as they could. Wanting to live a purer, simpler life, they washed all their clothes by hand and didn't own a car and lit the house with candles in order to avoid using any electricity.

It was all designed to give George a natural and improving upbringing, free from toxins, additives, radiation, and other such evil phenomena. The only problem was that in getting rid of everything that could



possibly harm George, his parents had managed to do away with lots of things that would also be fun for him. George's parents might enjoy going on environmental protest marches or grinding flour to make their own bread, but George didn't. He wanted to go to a theme park and ride on the roller coasters or play computer games or take an airplane somewhere far, far away. Instead, for now, all he had was his pig.

And a very fine pig he was too. George named him Freddy and spent many happy hours dangling over the edge of the pigsty his father had built in the backyard, watching Freddy root around in the straw or snuffle in the dirt. As the seasons changed and the years turned, George's piglet got bigger . . . and bigger . . . and bigger . . . until he was so large that in dim lighting he looked like a baby elephant. The bigger Freddy grew, the more he seemed to feel cooped up in his pigsty. Whenever he got the chance, he liked to escape and rampage across the vegetable patch, trampling on the carrot tops, munching the baby cabbages, and chewing up George's mom's flowers. Even though she often told George how important it was to love all living creatures, George suspected that on days when Freddy wrecked her garden, she didn't feel much love for his pig. Like George's dad, his mom was a vegetarian, but George was sure he had heard her angrily mutter "sausages" under her breath when she was cleaning up after one of Freddy's more destructive outings.

On this particular day, however, it wasn't the vegetables that Freddy had destroyed. Instead of charging madly about, the pig had done something much worse. In the fence that separated George's garden from the one next door, George suddenly noticed a suspiciously pig-sized hole. Yesterday it definitely hadn't been there, but then yesterday Freddy had been safely shut in his sty. And now he was nowhere to be seen. It meant only one thing—that Freddy, in his search for adventure, had burst out of the safety of the backyard and gone somewhere he absolutely should not have gone.

Next Door was a mysterious place. It had been empty for as long as George could remember. While all the other houses in the row had neatly kept backyards, windows that twinkled with light in the evenings, and doors that slammed as people ran in and out, this house just sat there—sad, quiet, and dark. No small children squeaked with joy early in the morning. No mother called out of the back door to bring people in for supper. On the weekends, there was no noise of hammering or smell of fresh paint because no one ever came to fix the broken window frames or clear the sagging gutters. Years of neglect meant the garden had rioted out of control until it looked like the Amazon jungle had grown up on the other side of the fence.

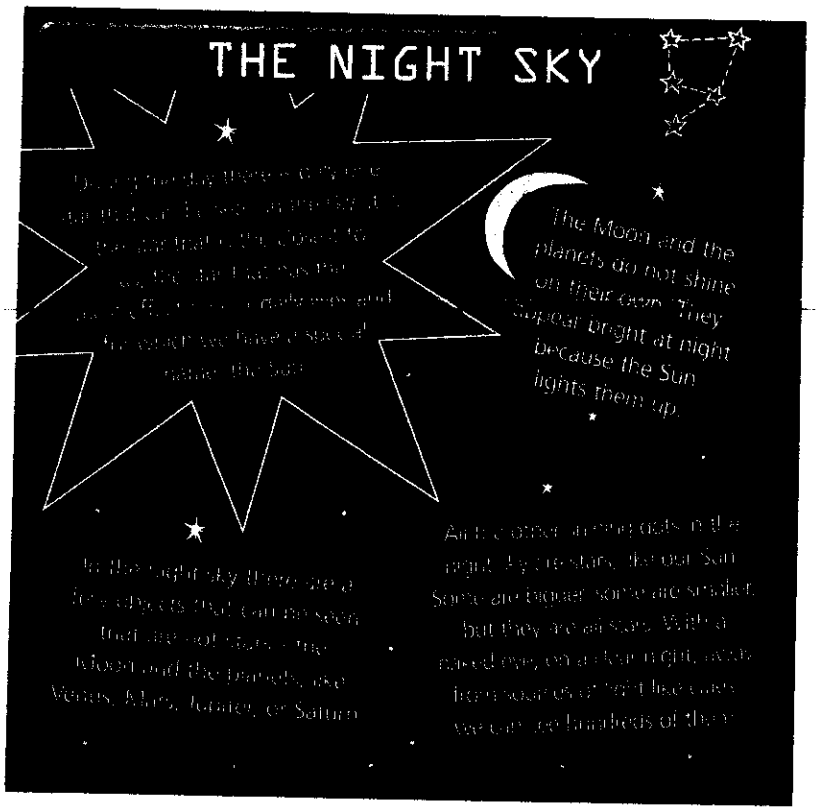
On George's side, the backyard was neat, orderly, and very boring. There were rows of string beans strictly tied to stakes, lines of floppy lettuces, frothy

dark green carrot tops, and well-behaved potato plants. George couldn't even kick a ball without it landing *splat* in the middle of a carefully tended blueberry bush and squashing it.

George's parents had marked out a little area for George to grow his own vegetables, hoping he would become interested in gardening and perhaps grow up to be an organic farmer. But George preferred looking up at the sky to looking down at the earth. So his little

patch of the planet stayed bare and scratchy, showing nothing but stones, scrubby weeds, and bare ground, while he tried to count all the stars in the sky to find out how many there were.

Next Door, however, was completely different. George often stood on top of the pigsty roof and gazed over the fence into the glorious tangled forest beyond. The sweeping bushes made cozy little hidey-holes,



while the trees had curved, gnarled branches, perfect for a boy to climb. Brambles grew in great clumps, their spiky arms bending into strange, wavy loops, crisscrossing each other like train tracks at a station. In summer, twisty bindweed clung on to every other plant in the garden like a green cobweb; yellow dandelions sprouted everywhere; prickly poisonous giant hogweed loomed like a species from another planet, while little blue forget-me-not flowers winked prettily in the crazy bright green jumble of Next Door's backyard.

But Next Door was also forbidden territory. George's parents had very firmly said no to the idea of George using it as an extra playground. And it hadn't been their normal sort of no, which was a wishy-washy, kindly, we're-asking-you-not-to-for-your-own-sake sort of no. This had been a real no, the kind you didn't argue with. It was the same no that George had encountered when he tried suggesting that, as everyone else at school had a television set—some kids even had one in their bedroom!—maybe his parents could think about buying one. On the subject of television, George had had to listen to a long explanation from his father about how watching mindless trash would pollute his brain. But when it came to Next Door, he didn't even get a lecture from his dad. Just a flat, conversation-ending no.

George, however, always liked to know *why*. Guessing he wasn't going to get any more answers from his dad, he asked his mother instead.

"Oh, George," she had sighed as she chopped up Brussels sprouts and turnips and threw them into the cake mix. She tended to cook with whatever came to hand rather than with ingredients that would actually combine to make something tasty. "You ask too many questions."

"I just want to know *why* I can't go next door," George persisted. "And if you tell me, I won't ask any more questions for the rest of the day. I promise."

His mom wiped her hands on her flowery apron and took a sip of nettle tea. "All right, George," she said. "I'll tell you a story if you stir the muffins." Passing over the big brown mixing bowl and the wooden spoon, she settled herself down as George started to beat the stiff yellow dough with the green and white vegetable speckles together.

"When we first moved here," his mom began, "when you were very small, an old man lived in that house. We hardly ever saw him, but I remember him well. He had the longest beard I've ever seen—it went right down to his knees. No one knew how old he really was, but the neighbors said he'd lived there forever."

"What happened to him?" asked George, who'd already forgotten that he'd promised not to ask any more questions.

"Nobody knows," said his mom mysteriously.

"What do you mean?" asked George, who had stopped stirring.

"Just that," said his mom. "One day he was there. The next day he wasn't."

"Maybe he went on vacation," said George.

"If he did, he never came back," said his mom. "Eventually they searched the house, but there was no sign of him. The house has been empty ever since and no one has ever seen him again."

"Gosh," said George.

"A little while back," his mom continued, blowing on her hot tea, "we heard noises next door—banging sounds in the middle of the night. There were flashing lights and voices as well. Some squatters had broken in and were living there. The police had to throw them out. Just last week we thought we heard the noises again. We don't know who might be in that house. That's why your dad doesn't want you going around there, Georgie."

As George looked at the big black hole in the fence, he remembered the conversation he'd had with his mom. The story she'd told him hadn't stopped him from wanting to go Next Door—it still looked mysterious and enticing. But wanting to go Next Door when he knew he couldn't was one thing; finding out he actually *had* to was quite another. Suddenly Next Door seemed dark, spooky, and very scary.

George felt torn. Part of him just wanted to go home to the flickery candlelight and funny familiar smells of his mother's cooking, to close the back door and be safe and snug inside his own house once more. But that would mean leaving Freddy alone and possibly in danger. He couldn't ask his parents for any help in case they decided that this was the final black mark against Freddy's name and packed him off to be made into bacon. Taking a deep breath, George decided he had to do it. He had to go Next Door.

Closing his eyes, he plunged through the hole in the fence.

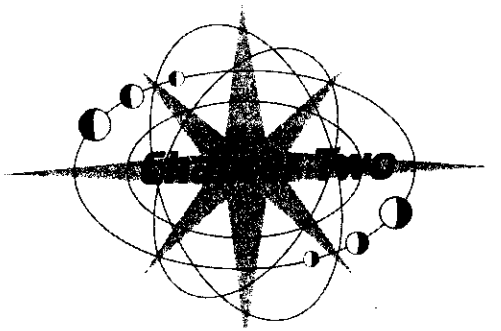
When he came out on the other side and opened his eyes, he was right in the middle of the jungle garden. Above his head, the tree cover was so dense he could hardly see the sky. It was getting dark now, and the thick forest made it even darker. George could just see where a path had been trampled through the enormous weeds. He followed it, hoping it would lead him to Freddy.

He waded through great banks of brambles, which grabbed at his clothes and scratched his bare skin. They seemed to reach out in the semidarkness to scrape their prickly spines along his arms and legs. Muddy old leaves squished under his feet, and nettles attacked him with their sharp, stinging fingers. All the while the wind in the trees above him made a singing, sighing noise, as though the leaves were saying, *Be careful, Georgie . . . be careful, Georgie.*

The trail brought George into a sort of clearing right behind the house itself. So far he had not seen or heard any sign of his wayward pig. But there, on the broken paving stones outside the back door, he saw only too clearly a set of muddy hoofprints. From the marks, George could tell exactly which way Freddy had gone. His pig had marched straight into the abandoned house through the back door, which

had been pushed open just wide enough for a fat pig to squeeze through. Worse, from the house where no one had lived for years and years, a beam of light shone.

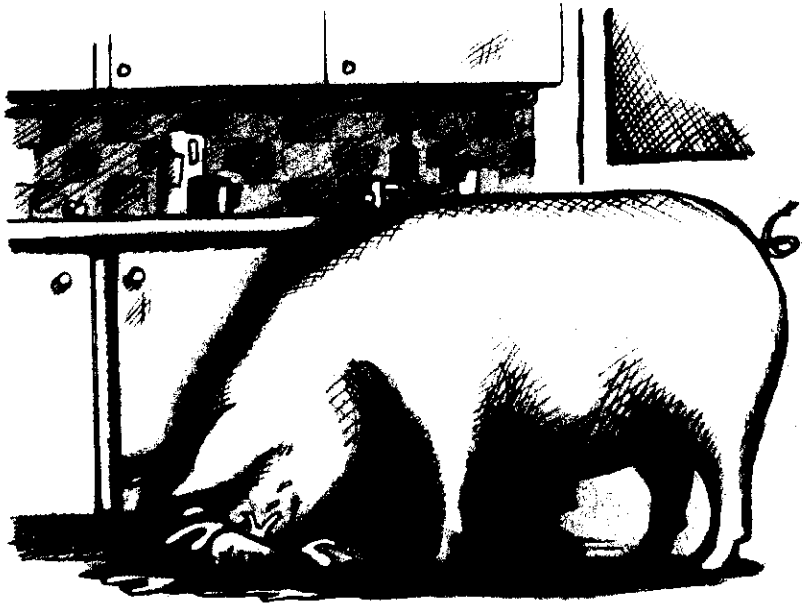
Somebody was home.



George looked back down the garden, at the path along which he'd come. He knew he should go back and get his parents. Even if he had to admit to his dad that he'd climbed through the fence into Next Door's garden, it would still be better than standing there all alone. He would just peek through the window to see if he could catch a glimpse of Freddy and then he would go and get his dad.

He edged closer to the beam of bright light coming from the empty house. It was a golden color, quite unlike the weak candlelight in his own house or the cold blue neon strips at school. Even though he was so scared his teeth had started to chatter, the light seemed to draw him forward until he was standing right by the window. He peered closer. Through the narrow space between the window frame and the blind, he could just see into the house. He could make out a kitchen, littered with mugs and old tea bags.

A sudden movement caught his eye and he squinted down at the kitchen floor, where he saw Freddy, his



pig! He had his snout in a bowl and was slurping away, drinking his fill of some mysterious bright purple liquid.

George's blood ran cold—it was a terrible trick, he just *knew* it. "Yikes!" he shouted. "It's poison." He rapped sharply on the pane of glass. *"Don't drink it, Freddy!"* he yelled.

But Freddy, who was a greedy pig, ignored his master's voice and happily kept slurping up the contents of the bowl. Without stopping to think, George flew through the door and into the kitchen, where he grabbed the bowl from under Freddy's snout and threw

contents into the sink. As the violet-colored liquid rgled down the drain, he heard a voice behind him. "Who," it said, in distinct but childish tones, "are *ou*?"

George whirled around. Standing behind him was a irl. She was wearing the most extraordinary costume, ade of so many different colors and layers of flimsy abric that it looked as though she had rolled herself in utterfly wings.

George spluttered. She might look strange, this girl ith her long tangled blond hair and her blue-and-reen feathery headdress, but she definitely wasn't cary. "Who," he replied indignantly, "do you think *you* re?"

"I asked first," said the girl. "And anyway, this is *my* ouse. So I get to know who you are, but I don't have o say anything if I don't want to."

"I'm George." He stuck out his chin as he always did hen he felt cross. "And that"—he pointed to Freddy—is my pig. And you've kidnapped him."

"I haven't kidnapped your pig," said the girl hotly. "How stupid. What would I want a pig for? I'm a ballerina and there aren't any pigs in the ballet."

"Huh, ballet," muttered George darkly. His parents had made him take dance classes when he was younger, and he'd never forgotten the horror. "Anyway," he retorted, "you're not old enough to be a ballerina. You're just a kid."

"Actually, I'm in the corps de ballet," said the girl snootily. "Which shows how much *you* know."

"Well, if you're so grown up, why were you trying to poison my pig?" demanded George.

"That's not poison," said the girl scornfully. "That's grape soda."

George, whose parents only ever gave him cloudy, pale, fresh-squeezed fruit juices, suddenly felt very silly for not realizing what the purple stuff was.

"Well, this isn't really your house, is it?" he continued, determined to get the better of her somehow. "It belongs to an old man with a long beard who disappeared years ago."

"This *is* my house," said the girl, her blue eyes flashing. "And I live here except when I'm dancing onstage."

"Then where are your mom and dad?" demanded George.

"I don't have any parents." The girl's pink lips stuck out in a pout. "I'm an orphan. I was found backstage wrapped up in a tutu. I've been adopted by the ballet.

hat's why I'm such a talented dancer." She sniffed udly.

"Annie!" A man's voice rang through the house. The l stood very still.

"Annie!" They heard the voice again, coming closer. Where are you, Annie?"

"Who's that?" asked George suspiciously.

"That's . . . uh . . . that's . . ." She suddenly became ery interested in her ballet shoes.

"Annie, there you are!" A tall man with messy dark air and thick, heavy-framed glasses, set at a crooked ngle on his nose, walked into the kitchen. "What have ou been up to?"

"Oh!" The girl flashed him a brilliant smile. "I've just een giving the pig a drink of grape soda."

A look of annoyance crossed the man's face. "Annie," e said patiently, "we've talked about this. There are imes to make up stories. And there are times . . ." He railed off as he caught sight of George standing in the corner and, next to him, a pig with purple stains around his snout and mouth that made him look as though he were smiling.

"Ah, a pig . . . in the kitchen . . . I see . . . ," he said slowly, taking in the scene. "Sorry, Annie, I thought you were making things up again. Well, hello." The man crossed the room to shake hands with George. Then he sort of patted the pig rather gingerly between the ears. "Hello . . . hi . . ." He seemed unsure what to say next.

"I'm George," said George helpfully. "And this is my pig, Freddy."

"Your pig," the man echoed. He turned back to Annie, who shrugged and gave him an I-told-you-so look.

"I live next door," George went on by way of explanation. "But my pig escaped through a hole in the fence, so I had to come and get him."

"Of course!" The man smiled. "I was wondering how you got into the kitchen. My name is Eric—I'm Annie's dad." He pointed to the blond girl.

"Annie's dad?" said George slyly, smiling at the girl. She stuck her nose up in the air and refused to meet his eye.

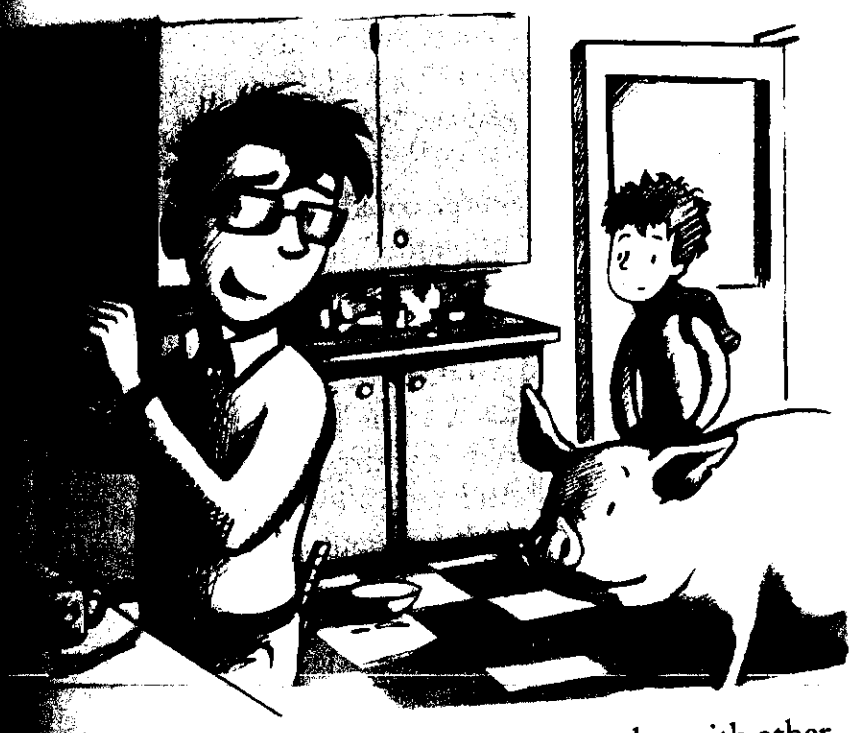
"We're your new neighbors," said Eric, gesturing around the kitchen, with its peeling wallpaper, moldy old tea bags, dripping faucets, and torn linoleum. "It's a bit of a mess. We haven't been here long. That's why we haven't met before." Eric ruffled his dark hair and frowned. "Would you like something to drink? I gather Annie's already given your pig something."

"I'd love some grape soda," said George quickly.

"None left," said Annie, shaking her head. George's face fell. It seemed very bad luck that even Freddy the pig should get to have nice drinks when he didn't.

Eric opened a few cupboards in the kitchen, but they were all empty. He shrugged apologetically. "Glass of water?" he offered, pointing to the faucet.

George nodded. He wasn't in a hurry to get home



for his supper. Usually when he went to play with other kids, he went back to his own mom and dad feeling depressed by how peculiar they were. But this house seemed so odd that George felt quite cheerful. Finally he had found some people who were even odder than his own family. But just as he was thinking these happy thoughts, Eric went and spoiled it for him.

"It's pretty dark," he said, peering out of the window. "Do your parents know you're here, George?" He picked up a telephone handset from the kitchen counter. "Let's give them a call so they don't worry about you."

"Um . . . ," said George awkwardly.

"What's the number?" asked Eric, looking at him over the top of his glasses. "Or are they easier to reach on a cell phone?"

"They, um . . ." George could see no way out. "They don't have any kind of phone," he said in a rush.

"Why not?" said Annie, her blue eyes very round at the thought of not owning even a cell phone.

George squirmed a bit; both Annie and Eric were looking at him curiously, so he felt he had to explain. "They think technology is taking over the world," he said very quickly. "And that we should try and live without it. They think that people—because of science and its discoveries—are polluting the planet with modern inventions."

"Really?" Eric's eyes sparkled behind his heavy glasses. "How very interesting." At that moment the phone in his hand burst into tinkling song.

"Can I get it, can I get it? Pleasepleaseplease?" said Annie, grabbing the phone from him. "Mom!" And with a shriek of joy and a flounce of brightly colored costume, she shot out of the kitchen, phone clasped to her ear. "Guess what, Mom!" Her shrill voice rang out as she pattered along the hall corridor. "A strange boy came over . . ."

George went bright red with embarrassment.

"And he has a pig!" Annie's voice carried perfectly back to the kitchen.

Eric peered at George and gently eased the kitchen oor closed with his foot.

"And he's never had grape soda!" Her fluting tones uld still be heard through the shut door.

Eric turned on the faucet to get George a glass of ater.

"And his parents don't even have a phone!" Annie as fainter now, but they could still make out each ainful word.

Eric flicked on the radio and music started playing. So, George," he said loudly, "where were we?"

"I don't know," whispered George, who could barely e heard in the din Eric had created in the kitchen to lock out Annie's telephone conversation.

Eric threw him a sympathetic glance. "Let me show ou something fun," he shouted, producing a plastic uler from his pocket. He brandished it in front of George's nose. "Do you know what this is?" he asked t top volume.

"A ruler?" said George. The answer seemed a bit too bvious.

"That's right," cried Eric, who was now rubbing the uler against his hair. "Watch!" He held the ruler near he thin stream of water running from the faucet. As he did so, the stream of water bent in the air and flowed at an angle rather than straight down. Eric took the uler away from the water and it ran down normally again. He gave the ruler to George, who rubbed it in

is hair and put it close to the stream of water. The me thing happened.

"Is that magic?" yelled George with sudden excite- ent, completely distracted from Annie's rudeness. Are you a wizard?"

"Nope," said Eric, putting the ruler back in his pocket s the water ran down in a long straight line once more. le turned off the faucet and switched off the radio. It as quiet now in the kitchen, and Annie could no longer e heard in the distance.

"That's science, George," said Eric, his whole face hining. "Science. The ruler steals electric charges from our hair when you rub the ruler through it. We can't ee the electric charges, but the stream of water can feel hem."

"Gosh, that's amazing," breathed George.

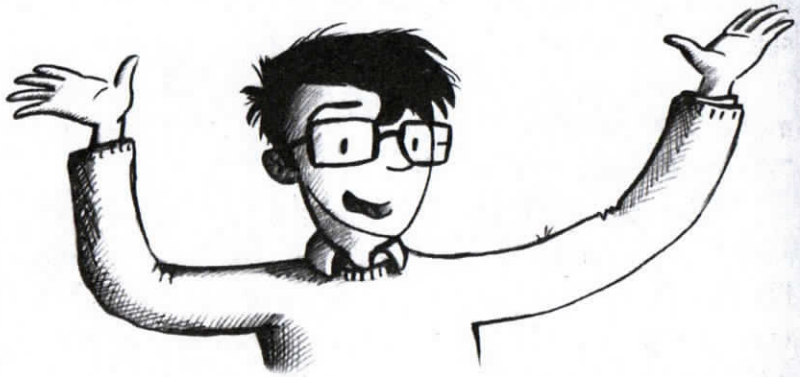
"It is," agreed Eric. "Science is a wonderful and ascinating subject that helps us understand the world round us and all its marvels."

"Are you a scientist?" asked George. He suddenly elt very confused.

"I am, yes," replied Eric.

"Then how can that"—George pointed at the faucet— be science when science is also killing the planet and everything on it? I don't understand."

"Ah, clever boy," said Eric with a flourish. "You've gotten right to the heart of the matter. I will answer your question, but to do so, first I need to tell you a bit about



science itself. *Science* is a big word. It means explaining the world around us using our senses, our intelligence, and our powers of observation."

"Are you sure?" asked George doubtfully.

"Very sure," said Eric. "There are many different types of natural science, and they have many different uses. The one I work with is all about the How and the Why. How did it all begin—the Universe, the Solar System, our planet, life on Earth? What was there before it began? Where did it all come from? And how does it all work? And why? This is physics, George, exciting, brilliant, and fascinating physics."

"But that's really interesting!" exclaimed George. Eric was talking about all the questions he pestered his parents with—the ones they could never answer. He tried asking these big questions at school, but the answer he got most often was that he'd find out in his classes the following year. That wasn't really the answer he was after.

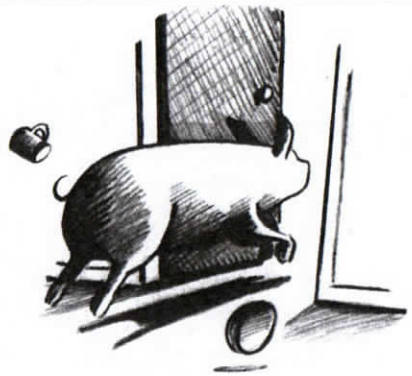
"Should I go on?" Eric asked him, his eyebrows raised.

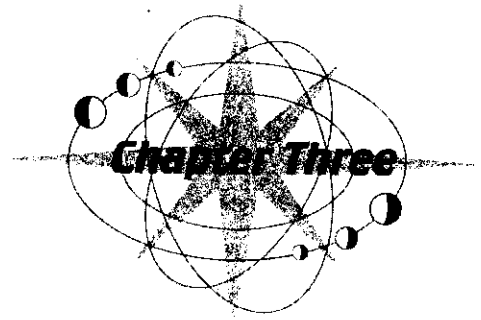
George was just about to say "Oh, yes, please," when Freddy, who had been quiet and docile up till then, seemed to pick up on his excitement. He lumbered upright and, with a surprising spurt of speed, he dashed forward, ears flattened, hooves flying, toward the door.

"*No-o-o-o-o!*" cried Eric, throwing himself after the pig, who had barged through the kitchen door.

"*Sto-o-o-op!*" shouted George, rushing into the next room behind them.

"Oink oink oink oink oink oink!" squealed Freddy, who was obviously enjoying his day out enormously.





If George had thought the kitchen was untidy, then this next room was in a whole different dimension of messiness. It was filled with piles and piles of books, stacked up so high that some of the wobbly towers reached almost to the ceiling. As Freddy charged right through the middle of the room, notebooks, paperbacks, leather-bound tomes, and bits of paper flew up in a tornado around him.

atch him!" shouted Eric, who was trying to drive g back toward the kitchen.

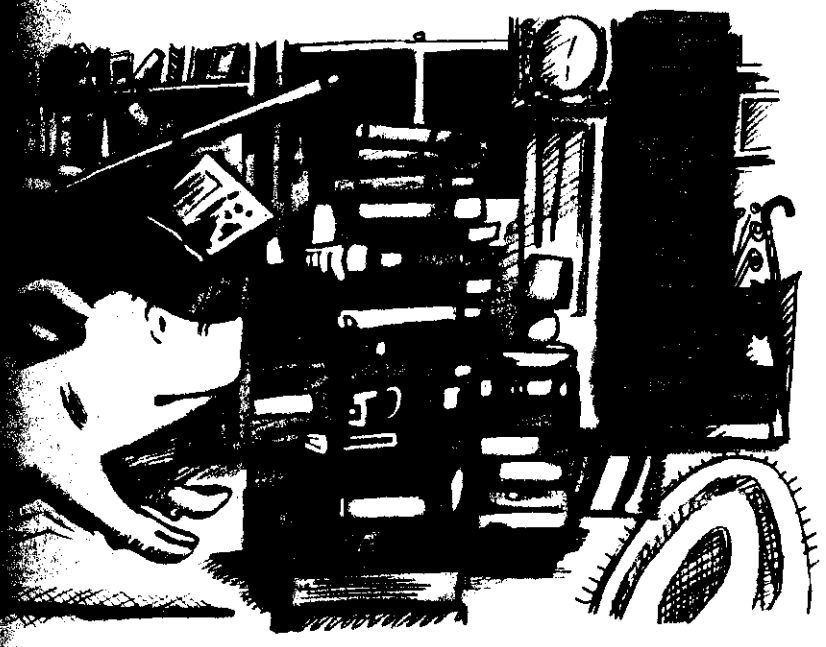
m trying!" George shouted back as he was batted e face by a shiny-jacketed book.

lurry!" said Eric. "We must get him out of here."

ith a great leap, Annie's dad hurled himself right Freddy's back and grabbed his ears. Using them as rt of steering wheel, he turned the pig—who was still ing at quite some speed—and rode him like a bucking nco through the door and back into the kitchen.

eft alone, George looked around in wonder. He had er been in a room like this before. Not only was it utifully, gloriously messy as all the papers flying ut in the air came gently down to the ground, but it also full of exciting objects.

On the wall, a huge blackboard covered with symbols



and squiggles in colored chalk caught his eye. It also had lots of writing on it, but George didn't stop to read it. There were too many other things to look at. In the corner, a grandfather clock ticked slowly, the noise of the swinging pendulum clicking in time with a row of silvery balls suspended on very fine wire that seemed to be in perpetual motion. On a wooden stand was a long brass tube that pointed up toward the window. It looked old and beautiful, and George couldn't resist touching the metal, which felt cool and soft at the same time.

Eric walked back into the room with his shirt untucked, his hair standing on end, his glasses at

strange angle, and a huge smile on his face. In his nd he held a book, which he had caught while riding eddy out of the room.

"George, this is incredible!" Eric looked thrilled. "I ought I'd lost it—it's my new book! I couldn't find it ywhere. And now your pig has found it for me! What esult!"

George just stood there, hand on the metal tube, aring at Eric openmouthed. He'd been expecting to t into trouble for the damage his pig had wreaked. it Eric didn't even seem angry. He wasn't like anyone eorge had ever met—he never seemed to get angry, matter what happened in his house. It was all very affling.

"So I must thank you for all your help today," ontinued the peculiar Eric, putting the lost book on op of a cardboard box.

"Help?" echoed George faintly, who couldn't quite elieve what he was hearing.

"Yes, help," said Eric firmly. "As you seem so terested in science, perhaps I could tell you a bit more bout it, by way of a thank-you. Where shall we start? What would you like to know?"

George's mind was so full of questions that he found t hard to pick just one. Instead, he pointed at the metal ube. "What's this?" he asked.

"Good choice, George, good choice," said Eric happily. "That's my telescope. It's a very old one—four

hundred years ago, it belonged to a man called Galileo. He lived in Italy, and he loved looking up at the sky at night. At that time, people believed that all the planets in our Solar System went around the Earth—even the Sun, they thought, orbited our planet."

"But I know that's not true," said George, putting his eye to the old telescope. "I know that the Earth goes around the Sun."

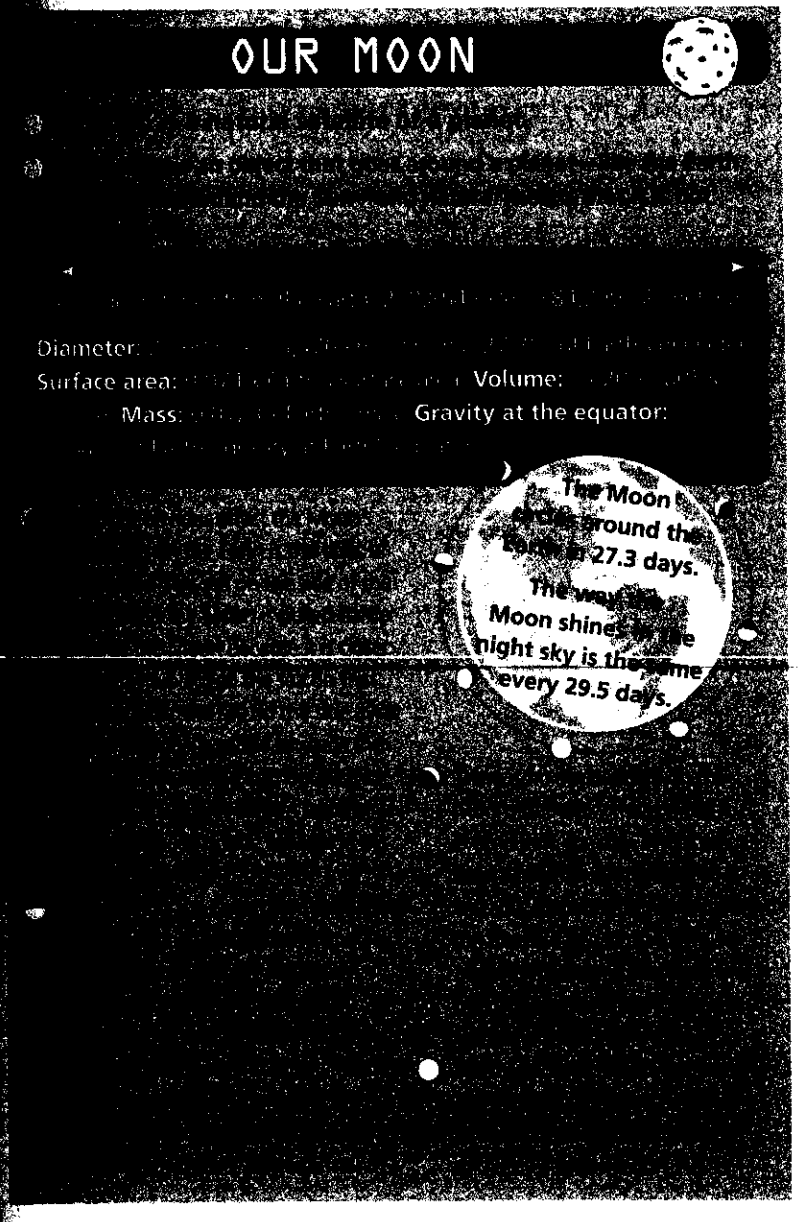
"You do now," said Eric. "Science is also about gaining knowledge through experience—you know that fact because Galileo discovered it all those years ago. By looking through his telescope, he realized that the Earth and all the other planets in the Solar System orbit the Sun. Can you see anything?"

"I can see the Moon," said George, squinting up the telescope, which was angled up to look out of the living room window into the evening sky. "It looks like it's smiling."

"Those are scars from a violent past, the impacts of meteorites that crashed on the surface," said Eric. "You can't see very far with Galileo's telescope, but if you went to an observatory and looked through a really big telescope, you would be able to see stars billions and billions of miles away—stars so far away that by the time their light reaches our planet, they may actually already be dead."

"Can a star die? Really?" asked George.

"Oh yes," said Eric. "But first I want to show you



how a star is born, and then we'll take a look at how it dies. Hang on a minute, George, while I get everything set up. I think you're going to like this."

LIGHT & STARS

- Everything in our Universe takes time to travel, even light.
- In space, light always travels at the maximum speed that is possible: 186,000 miles per second (300,000 km per second). This speed is called the speed of light.
- It takes light only about 1.3 seconds to travel from Earth to the Moon.
- Our Sun is farther away from us than our Moon is. When light leaves the Sun, it takes about 8 minutes and 30 seconds to reach us on Earth.

- The other stars in the sky are much, much farther away from Earth than the Sun. The closest one after the Sun is called Proxima Centauri, and it takes 4.22 years for light from it to reach Earth.
- All other stars are even farther away. The light of almost all the stars we can see in the night sky has been traveling for hundreds, thousands, or even tens of thousands of years before reaching our eyes. Even though we see them, some of these stars may not exist anymore, but we do not know it yet because the light of their explosion when they die has yet to reach us.
- Distances in space can be measured in terms of light-years, which is the distance light travels in one year. A light-year is almost 6,000 billion miles (around 9,500 billion km).

Proxima Centauri, the closest star to the Earth after our Sun

Chapter Four

Eric walked toward the doorway and stuck his head out into the hallway. "Ann-ie!" he shouted up the stairs.

"Ye-e-e-es," her distant voice tinkled down to them.

"Do you want to come and see *The Birth and Death of a Star*?" called Eric.

"Seen it already," she sang back. "Lots of times." They heard her feet pattering down the stairs, and a second later she stuck her head around the door. "Can I have some potato chips?"

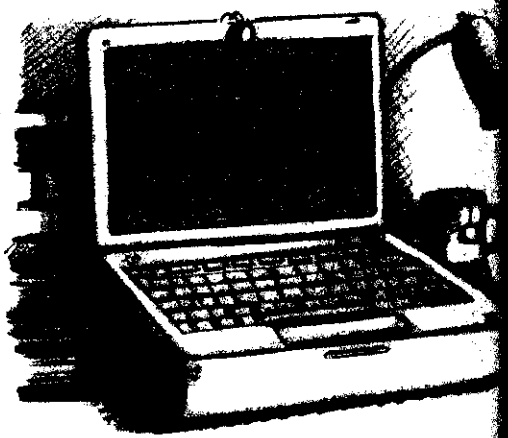
"If we have any," replied Eric. "And if we do, you're to bring them into my library and share them with George. Okay?"

Annie smiled sweetly and disappeared into the

kitchen. They heard the noise of cupboard doors being flung open.

"Don't mind Annie," said Eric gently, without looking at George. "She doesn't mean any harm. She's just . . ." He trailed off and went over to the far corner of the room, where he started fiddling around with a computer George hadn't noticed before. He'd been too fascinated by the other objects to look at the flat silver screen with its keyboard attached. It was strange that George hadn't spotted the computer right away—he really wished he could persuade his mom and dad to buy him one. He was saving up his allowance for a computer, but at the current rate, he calculated it was going to take him about eight years to afford even a really junky secondhand one. So instead, he had to use the clunky, slow, old machines at school, which crashed every five minutes and had sticky fingerprints all over the screen.

Eric's computer was small and glossy. It looked powerful and neat—the sort of computer you might find on a spaceship. Eric hit a couple of buttons on the keyboard, and the computer



made a sort of humming noise while bright flashes of color shot across the screen. He patted the computer happily.

"You have forgotten something," said a strange mechanical voice. George jumped out of his skin.

"Have I?" Eric looked confused for a moment.

"Yes," said the voice. "You have not introduced me."

"I'm so sorry!" exclaimed Eric. "George, this is Cosmos, my computer."

George gulped. He had no idea what to say.

"You have to say hello to Cosmos," said Eric in a side whisper to George. "Otherwise he'll get offended."

"Hello, Cosmos," said George nervously. He'd never spoken to a computer before, and he didn't quite know where to look.

"Hello, George," replied Cosmos. "Eric, you have forgotten something else."

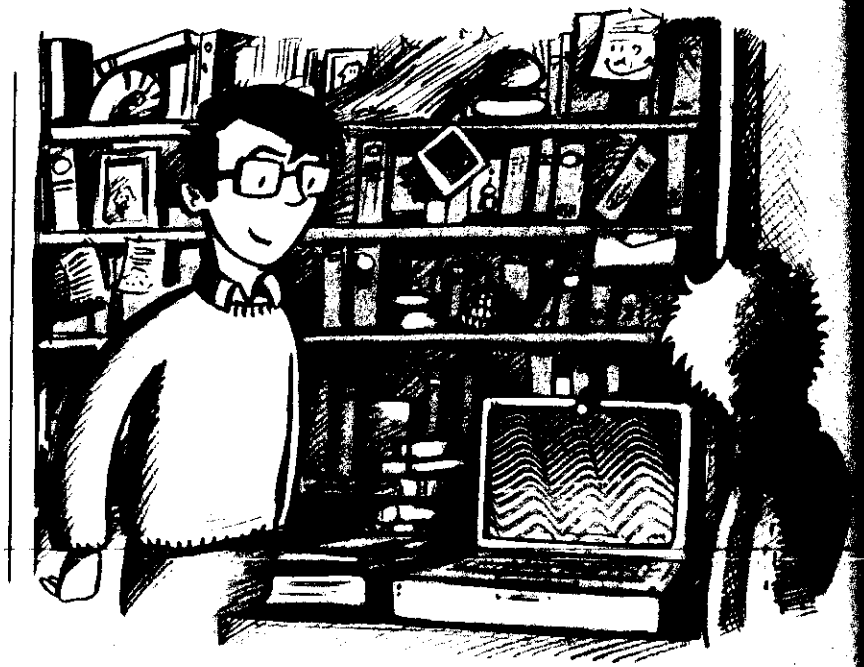
"What now?" said Eric.

"You have not told George I am the most powerful computer in the world."

Eric rolled his eyes up to heaven. "George," he said patiently, "Cosmos is the most powerful computer in the world."

"That is correct," agreed Cosmos. "I am. In the future, there will be computers more powerful than me. But there are none in the past or present."

"Sorry about this," Eric whispered to George. "Computers can be a bit touchy sometimes."



"I am smarter than Eric, too," boasted Cosmos.

"Says who?" said Eric crossly, glaring at the screen.

"Says me," said Cosmos. "I can compute billions of numbers in a nanosecond. In less time than it takes you to say 'Cosmos is great,' I can compute the life of planets, of comets, of stars, and of galaxies. Before you can say 'Cosmos is the most impressive computer that I have ever seen, he is truly incredible,' I can—"

"All right, all right," said Eric. "Cosmos, you are the most impressive computer we have ever seen. Now, can we move on? I want to show George how a star is born."

"No," said Cosmos.

"*No?*" said Eric. "What do you mean, *no*, you ridiculous machine?"

"I don't want to," said Cosmos snootily. "And I am not ridiculous. I am the most powerful computer that has ever been—"

"Oh, but *ple-e-ease*," pleaded George, interrupting him. "Please, Cosmos, I really want to see how a star is born. *Please* won't you show me?"

Cosmos was silent.

"Oh, come on, Cosmos," said Eric. "Let's show George some of the wonders of the Universe."

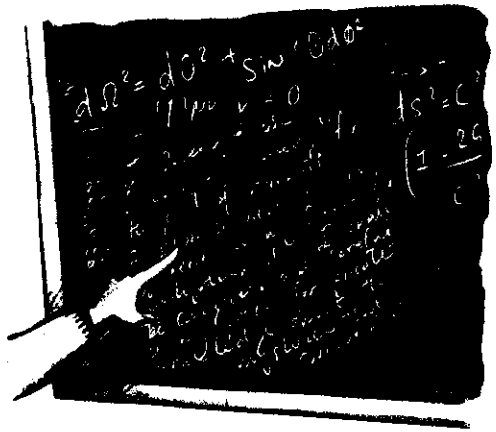
"Maybe," replied Cosmos sulkily.

"George doesn't have a very high opinion of science," Eric went on. "So this is our chance, Cosmos, to show him the other side of science."

"He must take the oath," said Cosmos.

"Good point—smart Cosmos," said Eric, leaping over to the blackboard.

George turned and studied the writing on it more closely. It looked like a poem.



"George," said Eric, "do you want to learn about the greatest subject in the whole Universe?"

"Oh yes!" exclaimed George.

"Are you prepared to take a special oath to do so? To promise that you will use your knowledge only for good and not for evil?" Eric was staring at George intently from behind his big glasses. His voice had changed—he now sounded extremely serious. "This is very important, George. Science can be a force for good, but as you pointed out to me earlier, it can also do great harm."

George stood up straighter and looked Eric in the eye. "I am," he confirmed.

"Then," said Eric, "look at the words on the blackboard. It is the Oath of the Scientist. If you agree with it, then read the oath out loud."

George read what was written on the blackboard and thought about it for a moment. The words of the oath didn't frighten him. Instead they made him feel tingly with excitement, right down to his toes. He read the oath out loud, as Eric had instructed.

"I swear to use my scientific knowledge for the good of Humanity. I promise never to harm any person in my search for enlightenment . . ."

The living room door opened, and Annie sidled in, clutching a huge multipack bag of potato chips.

"Keep going," said Eric encouragingly. "You're doing very well."

George read out the next part.

"I shall be courageous and careful in my quest for greater knowledge about the mysteries that surround us.

shall not use scientific knowledge for my own personal in or give it to those who seek to destroy the wonderful anet on which we live.

"If I break this oath, may the beauty and wonder of e Universe forever remain hidden from me."

Eric clapped. Annie burst an empty potato chip ackage. Cosmos flashed a rainbow of bright colors cross his screen.

"Well done, George," said ric. "You are now the econd youngest ember of the Order of Scientific nquiry for the Good of Humanity."

"I salute you," said Cosmos. "From now on, I will recognize your command."

"And I'll let you have some chips!" piped up Annie.

"Annie, shush!" said Eric. "We're just getting to the good part. George, you may now use the secret key that unlocks the Universe."

"Can I?" asked George. "Where is it?"

"Go over to Cosmos," said Eric quietly, "and look at his keyboard. Can you guess which one you need to press? Can you figure out which one is the secret

key that will unlock the Universe for you? Annie—say nothing!"

George did as he was told. Cosmos might be the world's most powerful computer, but his keyboard was just an ordinary, familiar one, with the letters and symbols laid out in the same order as even the school's crummiest computer. George thought hard. Which key would be the one to unlock the Universe for him? He looked again at the keyboard—and suddenly he knew.

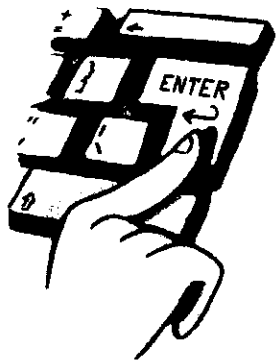
"It's this one, isn't it?" he said to Eric, his finger hovering.

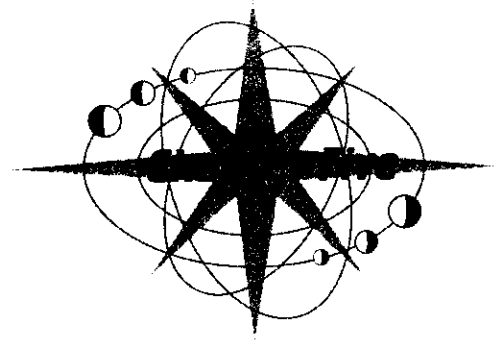
Eric nodded. "Press it, George. To begin."

George's finger came down on the key marked ENTER.

Suddenly the lights in the room started to fade . . .

"Welcome," said Cosmos, playing a little computerized fanfare, "to the Universe."





The room was getting darker and darker. "Come and sit here, George," called Annie, who had already settled herself on the big comfy sofa. George sat down next to her, and after a few seconds he saw a tiny beam of very bright white light. It came directly from Cosmos's screen. The beam shot out into the middle of the room, where it wavered for a second before it began to sketch a shape in the air. It moved from left to right in a straight line before dropping down toward the floor. Leaving a shining path of light behind it, it turned another corner to make three sides of a rectangle. One more right angle and the beam of light came back to its starting point. For a second, it looked like a flat shape hanging in the air, but suddenly it turned into something real and very familiar.

"But that looks like a—," said George, who could suddenly see what it was.

"A window," said Eric proudly. "Cosmos has made us a window on the Universe. Watch closely."

The beam of light disappeared, leaving the window it had drawn in the middle of Eric's living room, hanging

midair. Although the outline was still shining with bright light, it now looked exactly like a real window. It had a big sheet of glass in the pane and a metal frame. Beyond it, there was a view. And that view was not of Eric's house, or of any house, road, or town, or anywhere else that George had ever seen before.

Instead, through the window George could see an incredible, vast darkness, peppered with what looked like tiny bright stars. He started to try and count them.

"George," said Cosmos in his mechanical voice, "there are billions and billions of stars in the Universe. Unless you are as smart as me, you will not be able to count them all."

"Cosmos, why are there so many?" asked George in wonder.

"New stars are created all the time," answered the great computer. "They are born in giant clouds of dust and gas. I am going to show you how it happens."

"How long does it take for a star to be born?" George asked.

"Tens of millions of years," replied Cosmos. "I hope you are not in a hurry."

"Tut-tut," said Eric, sitting cross-legged on the floor beside the sofa, his long, thin limbs bent at sharp angles. He looked like a friendly giant spider. "Don't worry, George, I've speeded it up quite a lot. You'll still get home for dinner. Annie, pass the chips around. I don't

know about you, George, but the Universe always makes me very hungry."

"Oh dear," said Annie, sounding embarrassed. There was a rustling noise as she rooted around inside the big bag. "I'd better get some more." She leaped off the sofa and dashed back to the kitchen.

As Annie left the room, George noticed something about the view through the window onto outer space: Not all of it was covered with little stars. In the bottom corner of the window he saw a patch of total darkness, a place where not a single star shone.

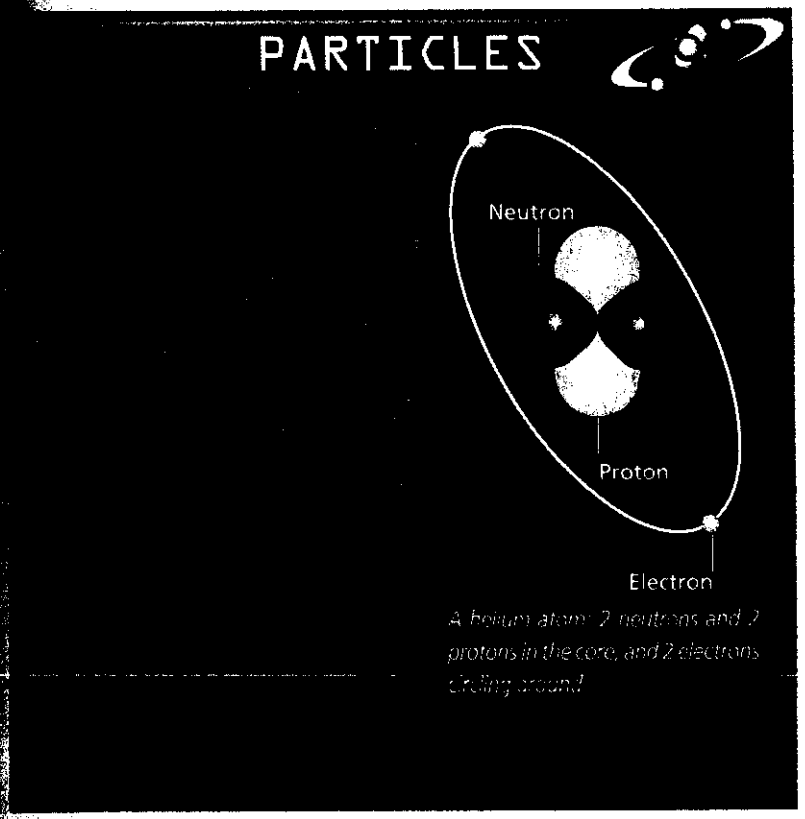
"What's happening there?" He pointed.

"Let's have a look, shall we?" said Eric. He pressed a button on a remote control, and the view through the window seemed to zoom toward the dark patch. As they got closer, George realized that an enormous cloud was hovering in that spot. The window kept moving forward until they were right inside the cloud itself, and George could see it was made of gas and dust, just as Cosmos had said.

"What is it?" he asked. "And where is it?"

"It's a huge cloud in outer space, much bigger than the ones in the sky," replied Eric, "made up of tiny, tiny particles that are all floating around inside it. There are so many of these particles that the cloud is enormous—it's so big that you could put millions and millions of Earths inside it. From this cloud, many stars will be born."

Inside the cloud, George could see the particles



moving around, some joining together to form huge lumps of matter. These great lumps spun around and around, gathering even more particles all the time. But as the particles joined together, the spinning lumps weren't getting bigger; instead, they seemed to be getting smaller, as though something was squeezing them. It looked like someone was making gigantic dough balls in outer space. One of these giant balls was quite close to the window now, and George could see it spinning around,

getting smaller and smaller all the time. As it shrank, it became hotter and hotter—so hot that George could feel the heat from where he sat on the sofa. And then it started to glow with a dim but frightening light.

"Why is it glowing?" asked George.

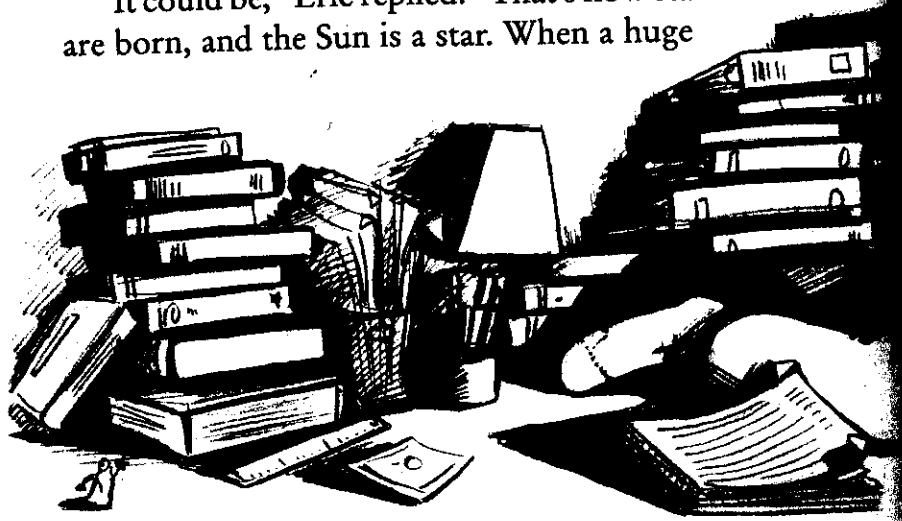
"The more it shrinks," said Eric, "the hotter it gets. The hotter it gets, the brighter it shines. Very soon it's going to get *too* hot." He grabbed a couple of pairs of strange sunglasses from a pile of junk on the floor.

"Wear these," he told George, putting on a pair himself. "It will soon be too bright for you to look at without glasses."

Just as George put on the very dark glasses, the ball exploded from the inside, throwing off its outer layers of burning-hot gas in all directions. After the explosion, the ball was shining like the Sun.

"Wow!" said George. "Is that the Sun?"

"It could be," Eric replied. "That's how stars are born, and the Sun is a star. When a huge



amount of gas and dust combines and shrinks to become dense and hot, as you've just seen, the particles in the middle of the ball are so pressed together they start to fuse or join up, releasing an enormous amount of energy. This is called a *nuclear fusion reaction*. It is so powerful that when it starts, it throws off the outer layers of the ball, and the rest is transformed into a star. That's what you just saw."

The star was now shining steadily in the distance. It was a beautiful sight. Without the special sunglasses, they wouldn't have been able to see much because the star was so bright.

George gazed at it, amazed by its power. Every now and then he could see huge jets of brightly shining gases

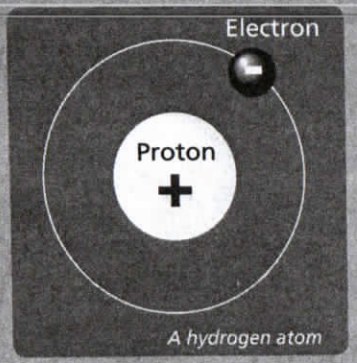
sent hundreds of thousands of miles from the surface at extraordinary speeds.

"And the star will keep on shining like this forever?" he asked.

"Nothing is forever, George," said Eric. "If stars shone forever, we wouldn't be here. Inside their bellies, stars transform small particles into larger ones. That is what a nuclear fusion reaction does: It fuses small particles together, and builds big atoms out of small ones. The energy released by this fusion is enormous, and that's what makes stars shine. Almost all the elements that you and I are made of were built inside stars that existed long before the Earth. So you could say that we are all the children of stars! When they exploded a long time

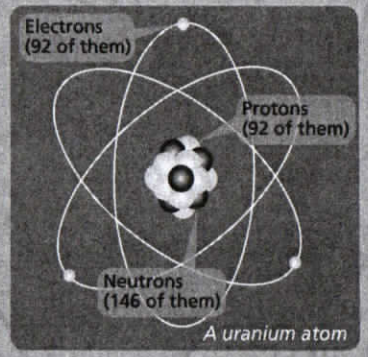
MATTER

- Matter is made of atoms of various types. The type of atom, or element, as it is called, is determined by the number of protons in the nucleus. This can be up to 118, with mostly an equal or greater number of neutrons.
- The simplest atom is hydrogen, whose nucleus contains just one proton and no neutron.
- The largest naturally occurring atom, uranium, has a nucleus that contains 92 protons and 146 neutrons.



A hydrogen atom

- Scientists think that 90% of the total number of all atoms in the Universe are hydrogen atoms.
- The remaining 10% are all the 117 other atoms, in various proportions. Some are extremely rare.
- When atoms join together in chains, the resulting object is called a molecule. There are countless molecules, of various sizes, and we build new ones all the time in laboratories.
- Before stars are born, only the simplest molecules can be found in space. The most common is the hydrogen molecule, which is inside the huge clouds of gas in outer space where stars are born. It consists of two hydrogen atoms joined together.



A uranium atom

ago, these stars sent into outer space all these large atoms they created. The same will happen to the star you are looking at now, behind the window. It will explode at the end of its life, when there are no more small particles available to fuse into bigger ones. The explosion will send into outer space all the large atoms the star created in its belly."

On the other side of the window, the star was looking angry. Its bright yellow color was turning reddish as it grew and grew, until it was so big that it was almost impossible to see anything else through the window. It seemed to George that the star might explode at any moment. Eric pressed his remote control again, and the window immediately moved away from the star, which kept getting redder and bigger all the time.

"Isn't it amazing!" exclaimed Eric. "At first the ball shrinks and gives birth to a star, and then the star gets bigger and bigger! And now it is about to explode! Whatever you do, don't take off your glasses."

George watched the star in fascination. Suddenly, long after it had reached a size no one could have imagined, the most powerful explosion George had ever seen happened just in front of him. The whole star blew up, sending into outer space enormous quantities of light and red-hot gas, including all the new atoms it had created. After the explosion, George saw that all that was left of the star was a beautiful new cloud, full of extraordinary colors and new materials.

"Ooooh-ahhhh!" he said. It was like watching the most incredible fireworks display.

"You see," said Eric, "with time, the colorful cloud you now see will mix with other clouds, ones from far distant stars that have also exploded. As they cool down, all the gases from these clouds will mix together into an even bigger cloud, where stars will be born again. Near where these new stars appear, the leftover elements will gather together to become objects of various sizes—but not ones big enough to become stars themselves. Some of these objects will become balls, and with time, these balls will turn into planets. In real life, it takes a very long time for all this to happen—tens of millions of years!"

"Wow!" George was fascinated.

"But we haven't got that much time to wait, and you need to get home for your supper," said Eric, going over to Cosmos and pressing a few more keys. "So let me speed it up a bit. Here we go!"

In the blink of an eye, the tens of millions of years Eric was talking about had passed. The gas from the explosion of dozens of stars had gathered into an immense cloud. Within this cloud, new stars were appearing everywhere, until one formed just in front of the window. That star's brightness made all the other stars very difficult to spot. Some distance away from this new star, the gas left over from the cloud was becoming very cold and had started to gather into small, icy rocks. George saw that one of these rocks was heading straight for the window. He opened his mouth to warn Eric, but the rock was traveling far too quickly. Before George could say anything, it smashed into the glass with a shattering, splintering roar, seeming to shake the whole house.

George jumped in fright and fell off the sofa. "What was *that*?" he shouted to Eric.

"Oops!" said Eric, who was typing away on Cosmos. "Sorry about that. I wasn't expecting to take a direct hit."

"You should be more careful," said Cosmos crossly. "This isn't the first time we've had an accident."

"What was it?" asked George, who found he was clutching a small teddy bear that Annie must have left on the sofa. He was feeling rather dizzy.

"We were hit by a tiny comet," admitted Eric, who

was looking a little sheepish. "Sorry, everyone. I didn't mean for that to happen."

"A tiny what?" asked George, feeling the room spin around him.

Eric typed a few more commands into Cosmos. "I think that's enough for today," he said. "Are you all right, George?" He took off his glasses and peered into George's face. "You look a little green." He sounded worried. "Oh dear, I thought this was going to be fun. Annie!" he called into the kitchen. "Can you bring George a glass of water? Oh dear, oh dear."

Annie came in, walking on tiptoe. She was carefully holding a very full teacup of water, some of which was sloshing over the side. Freddy the pig was glued to her side, casting adoring glances up at her with his piggy eyes. She held the cup out to George.

"Don't worry," she said kindly. "I felt really sick too, my first time. Dad"—it was a command—"it's time to let George go home now. He's had enough of the Universe."

"Yes, yes, I think you're right," said Eric, still looking concerned.

"But it was so interesting!" protested George. "Can't I see some more?"

"No, really, I think that's enough," said Eric hurriedly, putting on a coat. "I'm going to walk you back to your house now. Cosmos, you're in charge of Annie for a couple of minutes. Come on, George, bring your pig."

"Can I come back?" said George eagerly.

Eric stopped fussing around with coats and keys and outdoor shoes and smiled. "Certainly," he said.

"But you must promise not to tell anyone about Cosmos," Annie added.

"Is it a secret?" asked George, eagerly.

"Yes," said Annie. "It's a huge great big ginormous amazing secret that is a trillion gazillion times bigger than any secret you've ever heard before."

"Now, Annie," said Eric sternly, "I've told you that gazillion is not a real number. Say good-bye to George and his pig."

Annie waved and gave George a smile.

"Good-bye, George," said Cosmos's voice. "Thank you for making use of my exceedingly powerful capacities."

"Thank you, Cosmos," said George politely.

With that, Eric ushered him and Freddy into the hallway and out of the front door and back to their real lives on planet Earth.

Chapter Six

The next day at school, George couldn't stop thinking about the wonders he had seen at Eric's house. Enormous clouds and outer space and flying rocks! Cosmos, the world's most powerful computer! And they all lived next door to him, George, the boy whose parents wouldn't even let him have an ordinary computer in the house. The excitement was almost too much to bear, especially now that George was sitting once more at his very boring desk in the classroom.

He doodled on the schoolbook in front of him with his colored pencils, trying to sketch Eric's amazing computer—the one that could make a window from thin air, and through that window show you the birth and death of a star. But even though

George could see it perfectly in his mind, his hand found it difficult to draw a picture that looked anything like what he had seen. It was very annoying. He had to keep crossing parts out and drawing them again, until the whole page looked like one giant squiggle.

"*Ow!*" he exclaimed suddenly as a missile made of a scrunched-up ball of paper hit him on the back of the head.

"Ah, George," said Dr. Reeper, his teacher. "So, you are with us this afternoon after all. How nice."

George looked up with a start. Dr. Reeper was standing right over him, staring down through his really smeared glasses. There was a large blue ink stain on his jacket, which reminded George of the shape of an exploding star.

"Do you have anything to say to the class?" said Dr. Reeper, peering down at George's notebook, which

George hastily tried to cover. "Other than 'Ow!' the only word I've heard you say today?"

"No, not really," said George in a strangled, high-pitched voice.

"You wouldn't like to say, 'Dear Doctor Reeper, here is the homework I spent all weekend slaving over'?"

"Um, well . . . ," said George, embarrassed.

"Or, 'Doctor Reeper, I've listened carefully to every word you've ever said in class, written them all down, added my own comments, and here is my project, with which you will be extremely pleased'?"

"Uh . . . ," muttered George, wondering how to get out of this one.

"Of course you wouldn't," said Dr. Reeper heavily. "After all, I'm just the teacher, and I stand here all day saying things for my own amusement and fun, with no hope that anyone will ever gain anything of value from my attempts to educate them."

"I *do* listen," protested George, who was now feeling guilty.

"Don't try and flatter me," said Dr. Reeper rather wildly. "It won't work." He whipped around sharply. "And give me that!" He shot across the classroom so fast he was almost a blur of speed and snatched a cell phone from a boy sitting at the back.

Dr. Reeper might wear tweed jackets and speak like a man from a century ago, but his pupils were so scared of him, they never tricked him the way they did teachers

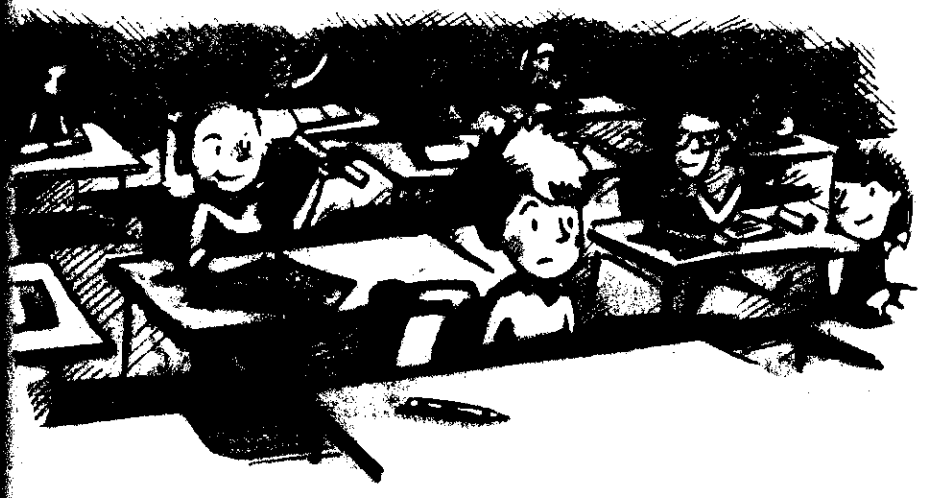
who were foolish enough to try and befriend them. He was a new teacher and he hadn't been at the school long, but even on his first day he had quelled a whole room full of students into silence just by staring at them. There was nothing modern or touchy-feely or cozy about Dr. Reeper, with the result that his classrooms were always orderly, his homework came in on time, and even the slouchy rebel boys sat up straight and fell quiet when he walked into the room.

The kids called him "Greeper," a nickname that came from the sign on his office door, which read DR. G. REEPER. Or "Greeper the Creeper" because of his mysterious habit of appearing without warning in far-flung corners of the school. There would be a gentle *swoosh* of thick-soled shoes and a faint smell of old tobacco, and before anyone knew it, Greeper would be bearing down on whatever secret mischief was brewing, rubbing his scarred hands with delight. No one knew how he had managed to cover both hands in red, scaly, painful-looking burn marks. And no one would ever dare ask.

"Perhaps, George," said Greeper, pocketing the cell phone he had just confiscated, "you would care to enlighten the class as to what the artwork you have been working on this morning represents?"

"It's, well, it's . . . ," whispered George, feeling his ears become hot and pink.

"Speak up, boy, speak up!" ordered Greeper. "We're



all curious to know quite what *this*"—he held up George's drawing of Cosmos so the whole class could see—"is meant to be! Aren't we, class?"

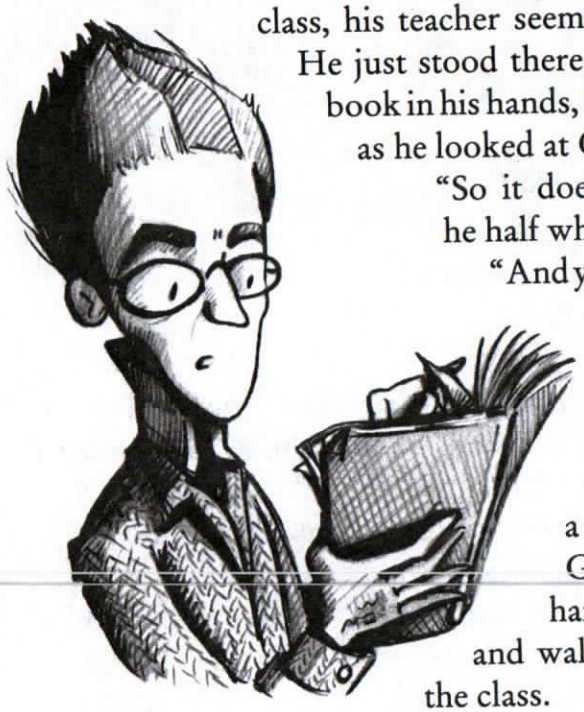
The other children snickered, delighted that Greeper was picking on someone who wasn't them.

At that moment George really hated Greeper. He hated him so much he completely forgot his fear of shame or humiliation in front of the other pupils. Unfortunately he also forgot his promise to Eric.

"It's a very special computer, actually," he said in a loud voice, "which can show you what's happening in the Universe. It belongs to my friend Eric." He fixed Greeper with a very blue stare, his eyes determined under his tufts of dark red hair. "There are amazing things in outer space, just flying around all the time, like planets and stars and gold and stuff." George was making the

last part up—Eric hadn't said anything about gold in outer space.

For the first time since George had been in Greeper's class, his teacher seemed lost for words. He just stood there, holding George's book in his hands, his jaw falling open as he looked at George in wonder.



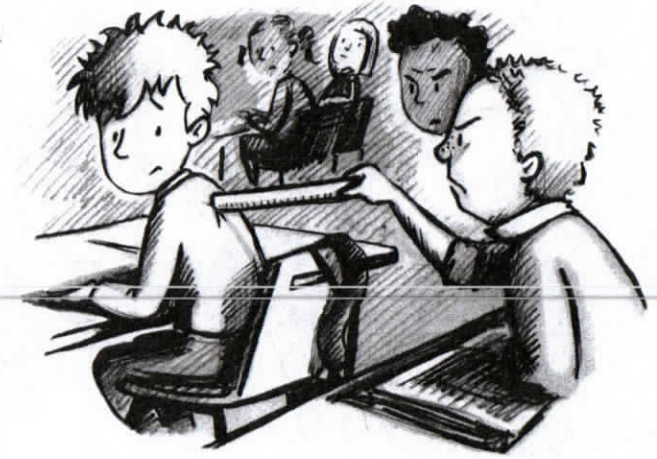
"So it does work, after all," he half whispered to George. "And you've seen it. That's amazing . . ." A moment later it seemed as though Greeper were waking from a dream. He snapped George's book shut, handed it back to him, and walked to the front of the class.

"Now," said Greeper loudly, "given today's behavior, I'm going to assign one hundred lines. I want you to write neatly and clearly in your books: *I will not send text messages in Doctor Reeper's class because I am too busy listening to all the interesting things he has to say.* One hundred times, please, and anyone who hasn't finished by the time the bell rings can stay behind. Very good, get on with it."

There was an angry muttering from the classroom. George's classmates had been looking forward to seeing him being taken to pieces by the teacher, and instead, they'd all been punished for something quite different, and George had mostly been let off the hook.

"But, sir, that's not fair," whined a boy at the back.

"Neither is life," said Greeper happily. "As that is one of the most useful lessons I could possibly teach you, I feel proud that you've understood it already. Carry on, class." With that, he sat down at his desk, got out a book that was full of complicated equations, and starting flicking through the pages, nodding to himself wisely as he did so.



George felt a ruler being jabbed into his back.

"This is all your fault," hissed Ringo, the class bully, who was sitting behind him.

"*Silence!*" thundered Greeper, without even looking up from his book. "Anyone who speaks will do *two* hundred lines instead."

His hand whizzing across the page, George finished

the one hundred lines in his neat writing just as the bell rang for the end of class. Carefully he tore out the page with the picture of Cosmos on it and folded it up, tucking it into a back pants pocket before dropping his book on Greeper's desk. But George hadn't taken even two steps down the hall before Greeper caught up with him and barred his way.

"George," said Greeper very seriously, "this computer

is real, isn't it? You've seen it, haven't you?" The look in his eyes was frightening.

"I was just, um, making it up," said George quickly, trying to wriggle away. He wished he hadn't said anything at all to Greeper.

"Where is it, George?" asked his teacher, speaking slowly and quietly. "It's very important that you tell me where this amazing computer lives."

"There *is* no computer," said George, managing to duck under Greeper's arm. "It doesn't exist—I just imagined it, that's all."

Greeper drew back and looked at George thoughtfully. "Be careful, George," he said in a scarily quiet voice. "Be very careful." With that, he walked away.