

Name: _____

Date: _____

Homeroom: _____

Class: _____

Freak the Mighty (10-14) "American Flyer"

Lesson Objective: Consider the role of memory in Max's narration.

Do Now

1. Recall this quote from p. 2:

Remembering is a great invention of the mind.

Do you agree that remembering is an "invention" (something created or made up)? How would you describe memory?

2. Write down everything you can remember about the first day of school. What did you wear? Who did you talk to? How did you feel?

3. Reflect on the memory you just wrote down. How easy or difficult was it to remember? How **reliable** do you think your memory is? Do you think what you just wrote is an "invention"? A fact? Both?

4. Later in this lesson, we'll be reading an excerpt from a book called *The Invisible Gorilla* about how memory works. Before we read, try this brief memory test. Read through the following list of words and try to remember them. We'll come back to them later on today:

bed, rest, awake, tired, dream, wake, snooze, blanket, doze, slumber, snore, peace, nap, yawn, drowsy

Retrieval Practice

Make sure to use the word or phrase in your answer to show your understanding of it!

1. What is **first-person narration**?
2. Who is the **narrator** of this novel? Is he **reliable**?
3. What have we noticed about the narrator's distinctive **voice**?
4. What **tense** does the narrator use to tell the story? What is the effect of using this **tense**?
5. What **nickname** was Max called in day care? Why?
6. What does it mean to be **grim**?
7. Why might Max call his grandfather "**Grim**"?
8. In literature, what is **tone**?
9. Describe the **tone** of Max's **narration**.
10. What is **hyperbole**? Give an example of **hyperbole** from the novel so far.

Self-Score _____/10

Pages 10-11

-  1. Reread the first lines of this chapter from p. 10:

Okay, back to the down under, right? My room in the basement. Scuttle¹ into your dim hole in the ground, Maxwell dear. Big goon like you, growing about an inch a day, and this this midget kid, this crippled little humanoid, he actually scared you.

¹**scuttle**: to run rapidly from view, scurry

- a. **Turn and Talk:** Why is Max returning to the down under? What happened at the end of chapter two?
- b. Consider this line from the excerpt:

Scuttle into your dim hole in the ground, Maxwell dear.

How would the meaning and **tone** of this line change if Philbrick made the changes in bold?

***Go hide** into your **home** in the ground, Maxwell dear.*

- c. Recall that **hyperbole** means an exaggeration that shouldn't be taken literally. Where do you see **hyperbole** in this excerpt? How does this hyperbole intensify the contrast between Max's physical appearance and the way he sees himself?

2. Complete each of the following sentences:

- The down under starts to feel small **because** _____

- The down under starts to feel small, **so** _____

Pages 11-14

An **ornithopter** is a device that imitates the flapping-wing flight found in nature. A wound-up rubber band propels the wings up and down and causes the ornithopter to fly.



3. **Turn and Task:** What's your impression of Freak based on this scene?

4. Consider these lines from this section:

- *He turns and faces me with that crutch raised up like he's ready to hit a grand slam on my head.* (p. 12)
- *You can tell he's real happy to have the bird-thing back, and his face isn't quite so **fierce**.* (p. 13)
- *That's how he talked, like right out of a dictionary. So smart you can hardly believe it.* (p. 13)

How would you describe Max's **tone** when he's describing Freak? Contrast the tone of these lines with Max's tone when he describes himself.

5. Rewrite 2-3 sentences of this scene as if Freak were the **first-person narrator**. How might he see Max? Why do you think so? **Challenge:** Try to capture the way Freak talks, "like right out of a dictionary."

The Illusion of Memory

Excerpt from *The Invisible Gorilla* by Christopher Chabris and Daniel Simons

The book The Invisible Gorilla is by two psychologists who explain that our minds don't work that way we think they do. In this section, they're explaining how people believe memory works.

The “illusion¹ of memory’ refers to the disconnect between how we think memory works and how it actually works. But how, exactly, do we think it works?

In a national survey, we included several questions designed to probe² how people think memory works. Nearly half (47%) of the respondents believed that “once you have experienced an event and formed a memory of it, that memory doesn't change.” An even greater percentage (63%) believed that “human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later.”

The illusion of memory reflects a basic contrast between what we think we remember and what we actually remember. [In other words,] what we remember is different from what we think we remember.

Now we'd like you to try to recall all of the words from the list you read [in your Do Now]. Do your best to recall as many as you can. (*Write them in this space*).

What could be simpler than recalling a list of words you read only moments ago? Not much, but even a task as simple as this reveals...distortions³ in memory. Look at the list you wrote down. How do you think you did? Most likely, you didn't recall all fifteen words. When we use this task as a classroom demonstration, most students recall a few words from the beginning of the list and a few from the end of the list...Stop to think about this for a moment. Those words were all utterly common and familiar, you were not under any special stress (we hope) when you read them, and there was no time pressure to recall them. Computers built in the 1950s were able to perfectly store fifteen words in memory, but despite our magnificent mental abilities, we cannot remember with precision⁴ what we read just minutes ago.

¹**illusion**: something false or unreal that appears to be true or real

²**probe**: to investigate thoroughly

³**distortions**: inaccuracies

⁴**precision**: accuracy or exactness

6. **Turn and Talk:** Reflect on your experience remembering the list of words. Were you surprised at what you remembered or forgot? Why or why not?

7. Why might the authors of this book have included the results of their survey in paragraph 2?
- a. To show that most people believe they have very precise memories and can remember lists of words
 - b. To reveal the difference between people's perceptions of memory and the way it really works
 - c. To highlight how easy it is for memory to be inaccurate
 - d. To reveal that most people have accurate beliefs about memory

The Illusion of Memory

Excerpt from *The Invisible Gorilla* by Christopher Chabris and Daniel Simons
(continued)

The reason your difficulty recalling all fifteen words in our list illustrates the illusion of memory is not that it reveals limits on how much we can remember. People generally understand those limits. It reflects the illusion of memory because it highlights how we remember what we do. Take a look at the list of words you recalled. Does it contain the word “sleep”? About 40 percent of the people reading this book will recall having seen the word “sleep.” If you are one of those people, you are probably as confident about having seen “sleep” as you are about any of the other words you remembered. You might even have a distinct recollection of seeing it on the list – but it wasn’t there. You fabricated¹ it.

Memory depends both on what actually happened and on how we made sense of what happened. Your mind automatically makes sense of and processes the connections between the things you are trying to remember. The list you read was designed to produce just this sort of false memory. All of the words are closely associated with the missing word “sleep.” As you read the words on the list, your mind made sense of them, automatically processing the connections among them. At some level, you knew that they were all related to sleep, but you didn’t take special note of the fact that “sleep” was not on the list. Then, when you recalled the words, your mind reconstructed the list as best it could, based on both your specific memory for the words you saw and on your knowledge of how the words were generally related.

When we perceive² something, we extract the meaning from what we see (or hear, or smell) rather than record everything in perfect detail. Memory doesn’t store everything we perceive, but instead takes what we have seen or heard and associates it with what we already know. These associations help us to discern what is important and to recall details about what we’ve seen. They provide “retrieval clues” that make our memories more fluent. In most cases, such cues are helpful. But these associations can also lead us astray, precisely because they lead to an inflated sense of the precision of memory. We cannot easily distinguish between what we recall verbatim³ and what we create based on associations and knowledge.

People often remember what they expect to remember. What is stored in memory is not an exact replica of reality, but a re-creation of it. We cannot play back our memories like a DVD – each time we recall a memory, we integrate whatever details we do remember with our expectations for what we should remember.

¹**fabricated**: invented or created
²**perceive**: experience through the senses
³**verbatim**: in exactly the same words

 8. What is the “illusion of memory”?

9. Think back to the memory of the first day of school you wrote in the Do Now. How **reliable** do you think your memories are?

 10. Reread this excerpt from p. 2:

*Looking sort of **fierce**, is how I remember him. Except later it was Freak himself who taught me that remembering is a great invention of the mind, and if you try hard enough you can remember anything, whether it really happened or not.*

*So maybe he wasn't really all that **fierce** in day care, except I'm pretty sure he did hit a kid with his crutch once, whacked the little brat pretty good.*

a. Would Chabris and Simons, the authors of *The Invisible Gorilla*, agree with Freak that “remembering is a great invention of the mind”? Why or why not?

b. Chabris and Simons write, “People remember what they expect to remember.” Why might Max remember Freak as “looking sort of **fierce**” in day care?

 11. Reread this excerpt from p. 14:

It's real easy, he doesn't weigh much and I'm pretty sure I remember looking back and seeing him sitting up in the wagon happy as can be, like he's enjoying the ride and not embarrassed to have me pulling him around.

But like Freak says later in this book, you can remember anything, whether it happened or not. All I'm really sure of is he never hit me with that crutch.

a. Why might Max be “pretty sure” he remembers Freak sitting in the wagon “happy as can be”?

b. Consider the phrase “like Freak says later in this book.” What’s unique about this statement? What might it be **foreshadowing**?

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Homework

Directions: Read the article and answer the questions that follow.

Building an Ornithopter

by William Gurstelle, *Makezine.com*

Challenge: Go to <https://makezine.com/projects/make-08/building-an-ornithopter/> for directions on building your own ornithopter!

For millennia, men and women have studied birds, bats, and beetles, observing and experimenting, attempting to determine what humans must do to fly by flapping.

But people can't fly by flapping: not with wings covering their arms; not with pedaled, chain-driven wings; and, so far, not with engines, either. Nonetheless, the concept of human-flown ornithopters continues to fascinate.

What is an Ornithopter?

How do ornithopters fly? According to Nathan Chronister of the online Ornithopter Zone, "The ornithopter wing is attached to the body at a slight angle, which is called the angle of attack. The downward stroke of the wing deflects air downward and backward, generating lift (upward moving force) and thrust (forward moving force).

"Also, the wing surface is flexible. This causes the wing to move to the correct angle of attack we need in order to produce the forces that we want to achieve flight."

The mechanics of flapping flight are far more complicated than that of fixed-wing flight. For an aircraft with fixed wings, only forward motion is necessary to create lift. But for flapping flight, the wing not only has to have a forward motion, but also must travel up and down. This additional dimension means the wing constantly changes shape during flight.

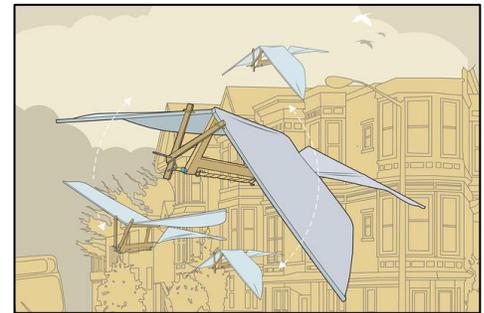
Dreams of Flight

Without doubt, even the earliest humans watched birds fly past and felt, well, rather envious. Thus when Thag, a caveman, looked up and saw flocks of ducks and geese soaring above, he might have gathered together a few palm fronds, tied them around his arms with a vine, and leapt off a tree. Poor Thag never got airborne, or at least he didn't live to record the episode in petroglyphs on his cave wall.

To a large extent, that's been the typical outcome of human flapping flight experiments, right up to modern times.

The New York Times has run many stories over the years:

- "Ornithopter Somersaults — Captain White Hurt in Crash" (June 1928)



- “Inventor Tries to Soar Like a Bird; Narrowly Escapes Drowning” (March 1932)
- “100,000 See French Birdman Die in 9,000 Foot Fall” (May 1956)
- “[University researchers] named their ornithopter ‘Mr. Bill’ after the perpetually maimed character on the television show Saturday Night Live.” (May 1992)

Interest in flapping flight took off again in the 1870s. Soon, ornithopters powered by rubber bands, gasoline, electricity, and even gunpowder were flapping away, but as scale models, not people-carrying aircraft.

Since then, many people have tried to build a manned ornithopter, but none have yet succeeded. There are unconfirmed reports that the Germans made one during World War II and that the Soviets flew one during the Cold War, but solid evidence is lacking. Today the University of Toronto is making a game attempt.

Modern Ornithopters

Why bother with ornithopters at all? Because flappers can do things other aircraft cannot. They probably have the best maneuverability of any aircraft. Unlike fixed-wing drones, ornithopters, at least in theory, can stop and hover like a hummingbird, which makes them extremely versatile, and they need less space to maneuver than a helicopter. Couple all that with their ability to fly at very slow speeds, and ornithopters may be the perfect surveillance vehicles. The military applications for unmanned ornithopters are numerous.

1. What makes an ornithopter’s flight more complicated to engineer than an airplane’s flight?

2. Why might the author have included the list of headlines from *The New York Times* in the section called “Dreams of Flight”?

- a. To show that flapping flight is more complicated than fixed wing flight
- b. To emphasize how dangerous human ornithopter experiments can be
- c. To persuade readers not to attempt to fly in an ornithopter
- d. To define the terms “lift” and “thrust”

3. On p. 13, Freak tells Max, “Observe and be amazed, earthling.” Was Max amazed? Would you be? Why or why not? **Challenge:** Why might he have called Max “earthling”?

4. The article states, “[F]lappers can do things other aircraft cannot.” List at least two advantages of ornithopters.

- _____

- _____