An Empire Built On Paper
W.M. Akers

Until the 8th century, paper was only produced in China and other parts of Eastern Asia. Scholars in Europe, the Middle East and Africa had to make do with papyrus, a brittle material made only in Egypt; or parchment, a very fine sheet made from the skin of animals. Writing on papyrus and parchment was difficult. The pages were thick, fragile and expensive.

In China, however, scholars had long before discovered something far more useful: thin sheets prepared from compressed, dried out wood pulp—also known as paper. In the 700s, during the period of Islamic dominance known as the "Islamic Golden Age," Muslim armies stormed east from Arabia and came into contact with the Chinese empire. In the Battle of Talas, in 751 A.D., armies of the Arab Abbasid Caliphate defeated the forces of the Chinese Tang Dynasty, bringing Islam to the edge of China itself.

Legend has it that two Chinese papermakers were captured during the battle, and
brought to Samarkand, where they were ordered to establish a paper manufacturing center in the heart of the Muslim empire. Whether or not this was wholly true, it is probable that Muslim warriors encountered papermaking during their wars with China. Seeing its usefulness immediately, they returned home with the technology, to share with their scribes.

The Muslim empire was a "logocentric" culture, which means they placed great importance on words. Their holy book, the Qur’an, was a great poetic work, and devout Muslims were expected to memorize parts of it, to be recited during religious ceremonies. One of their most famous art forms was calligraphy, a style of decorative writing, and their great mosques were decorated not with images of people, but the words of the Qur’an itself.

It is no surprise that a society which so valued words would fall in love with paper. Compared to parchment and papyrus, even rudimentary paper—much rougher and thicker than the pages of a book—was a great improvement. Unlike parchment, which could only be made from the skins of animals, paper could be manufactured relatively cheaply and easily. Unlike papyrus, paper did not crack when it was bent. It was also thinner, which made the binding of books much simpler than it had been before.

Perhaps most importantly, paper absorbed ink, which meant that anything written on paper could not be erased. That's not very convenient when you're trying to solve a math problem, but when writing official government documents, permanence is crucial.

Just as it had been in China, paper was originally used mainly by the government. At a time when Europe was broken into a number of disorganized kingdoms, the Abbasid Caliphate, which stretched from Afghanistan to North Africa, may have been the greatest power on Earth. This sprawling empire contained dozens of great cities, millions of people, and several different, often conflicting, cultures. Although the empire's official language was Arabic, its people spoke many different languages—from Persian in the East to Berber in the West. Now those disparate regions could be united by the written word.

Paper's use spread quickly. By the end of the 8th century, a paper mill had been set up in Baghdad. Over the next 200 years, the technology spread to Persia, Syria, North Africa and even Spain—which was partially ruled by Muslims from 711 to 1492. Although the Abbasid Caliphate and other ruling houses of the Arab Empire were skilled in war, they
prized learning above all else. The Abbasids took inspiration from a Hadith, or holy saying, which said that "the ink of a scholar is more holy than the blood of a martyr."

To this end, the Abbasids did everything they could to encourage scientific achievement. As Europe languished in the Dark Ages, when even literacy was limited mainly to monks, the Muslim world entered a scientific golden age. Building on the knowledge of the Ancient Greeks, Muslim scholars made great advances in geometry, astronomy and mathematics.

As paper became more widespread, so did knowledge. Books were written by hand—a tedious process made easier by an adoption of assembly line-style techniques, which allowed a group of scribes to produce finished books faster than ever before. Great libraries were established across the Muslim world, and in capitals like Baghdad and Cairo, booksellers flourished. Scholars and poets were supported by the government, and for perhaps the first time in history, it became possible to make a living by reading and writing alone.

Even as paper became widespread, there was one place where its dominance was resisted: religion. Because paper was less expensive than parchment, it was initially considered unfit to bear the holy words of the Qur’an. However, the demand for copies of the Qur’an grew along with the population's literacy. Eventually that demand, along with the improved quality of the paper, made the new material suitable for religious use. The oldest known Qur’an written on paper dates from 971-972.

The technology to manufacture paper made its way to Europe through the Arab Empire. It was not until the middle of the 15th century that a German blacksmith named Johannes Gutenberg invented a printing press that allowed for mass production of the Christian bible. Most of Gutenberg's bibles were printed on paper, becoming one of the most famous early works on paper in history. But it would not have been possible without the help of the Muslim empire.
1. Before the 8th century, paper was only produced in which places?

A  the Middle East, Europe, and Asia  
B  China and other parts of Eastern Asia  
C  China, Europe, and Africa  
D  Europe, Africa, and Asia

2. The passage sequences the spread of paper to different parts of the world. What did scholars in Europe, the Middle East, and Africa do before the 8th century?

A  Scholars did not bother writing things down.  
B  Scholars tried to steal paper from China.  
C  Scholars tried to establish a paper manufacturing center.  
D  Scholars wrote on parchment and papyrus.

3. In the passage, the author explains that papyrus was brittle and parchment was very fine. Based on this evidence, what conclusion can be made?

A  Papyrus and parchment were difficult to write on.  
B  There were many benefits to writing on papyrus and parchment.  
C  Papyrus and parchment were more popular than paper.  
D  People didn’t want to have to stop using papyrus and parchment.

4. Based on the passage, how did the Muslims perceive paper when they first learned about it?

A  They were happy to spread it to Muslim countries but wanted to keep it away from non-Muslim countries.  
B  They were upset that it might disrupt the order of writing and keeping records.  
C  They were skeptical about its usefulness and they were not willing to spread it.  
D  They were excited to access paper because they recognized its usefulness.

5. What is this passage mainly about?

A  the spread of paper  
B  the holy book the Qur’an  
C  the Islamic Golden Age  
D  the process of writing books
6. Read the following sentence: “Legend has it that two Chinese papermakers were captured during the battle, and brought to Samarkand, where they were ordered to establish a paper manufacturing center in the heart of the Muslim empire. Whether or not this was wholly true, it is probable that Muslim warriors **encountered** papermaking during their wars with China. Seeing its usefulness immediately, they returned home with the technology, to share with their scribes.”

As used in the passage, what does “**encountered**” most nearly mean?

A battled
B destroyed
C ran away from
D came across

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

Just as it had been in China, paper was originally used by the government in the Muslim empire. ________, its use quickly spread and many other people started using it.

A Instead
B However
C Moreover
D Namely

8. Muslim warriors played a critical role in the spread and increased use of paper. What evidence from the passage supports this conclusion?

______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
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9. Explain why more books could be produced after the invention of paper. Use evidence from the passage to support your answer.

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10. How did the spread of paper impact the spread of knowledge? Use information from the passage to support your answer.

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8. Muslim warriors played a critical role in the spread and increased use of paper. What evidence from the passage supports this conclusion?

Suggested answer: Students should explain that paper was originally used in China and Eastern Asia. Muslim warriors encountered paper during their wars with China. Seeing its usefulness immediately, they returned home with the technology to share with their scribes. This ultimately led to the spread of paper throughout the Muslim empire and the world.

9. Explain why more books could be produced after the invention of paper. Use evidence from the passage to support your answer.

Suggested answer: Students may explain that paper could be manufactured relatively cheaply and easily. Furthermore, paper was easier to bind into book form. These factors made the production of books an easier process, allowing more of them to be produced.

10. How did the spread of paper impact the spread of knowledge? Use information from the passage to support your answer.

Suggested answer: Students should indicate the spread of paper increased the spread of knowledge. Students may note that books became more widespread and disparate regions of the Muslim empire could be united by the written word. Furthermore, the advances in science of the Abbasid Caliphate could reach more people with the use of paper.
Across The Lake
W.M. Akers

“What’s do you think’s over there?” asked Bart.

“What do you mean?” said Patsy.

“On the other side of the lake. What do you think is over there?”

Patsy and Bart were sister and brother—twelve and eight years old. They were on vacation, but Patsy was bored out of her mind. Ever since Bart was born, their family had been coming to Lake Wenatchee, a crystal blue sheet which stretched as far as the eye could see. Ever since Bart was born, they had stayed in the same cabin, a musty old wreck just steps from where the water met the gritty beach. And ever since Patsy was 10, she had hated coming here.

The mosquitoes got bigger every year. By now they were larger, it seemed, than her fist. The humidity got worse, and the rain became more constant. If this is what people
meant by climate change, she thought, she was opposed to it. She spent most of the day reading in bed, stretched out on the scratchy blanket on the rock-hard mattress, wishing she was at home with her friends doing normal summer stuff: going to the mall, watching movies, eating popsicles in the park. She wished she was anywhere but Lake Wenatchee.

But there was nowhere else Bart wanted to be. He didn’t mind the humidity, he found the constant rain soothing, and thought the giant mosquitoes were the most amazing animals he had ever seen. He didn’t have time for reading on a scratchy blanket because he was in love with the lake. As soon as dawn broke, he was on its shore—building gritty sand castles from the gritty sand. He imitated the birds, trying to get their attention. He crept up on geckos, hoping they would want to play. He threw rocks in the water doing everything he could to entertain the fish. Bart loved nature—even if the towering mosquito bites that dotted his arms and legs were proof that nature didn’t love him back.

“I bet the other side of the lake is even better than this side,” he said.

Trying to act interested, Patsy said, “What makes you say that?”

“It’s tough to believe, I know, because this side is so unbelievably super perfect. There are birds and lizards and mosquitoes and fish. But something in my gut tells me that it’s even better over there.”
The summer before, Patsy and her mother had driven to the other side of the lake to buy shampoo at the drugstore. The other side of the lake was nothing too exciting: strip malls and gas stations, with a shopping mall in the middle. But before she told Bart the truth, she wanted to know what he was imagining. It would be more fun to burst his bubble that way.

“Describe it to me,” she said. “Tell me everything that’s on the other side of the lake.”

“Fish, obviously. But much bigger ones, I bet. The kind we saw at the natural history museum last year—like the super-underwater kind that have the little lamp hanging in front of their eyes. I bet there’s a whole bunch of those. And birds, too—obviously—but great big huge ones. Not just seagulls and stuff—falcons, hawks, and snowy owls.”

“And bald eagles, too, I bet.”

“Tons of them.”

“Do you know what they call a group of eagles?”

“I don’t know...a flock?”

“A convocation.”

“No way.”

“It’s true! I learned it in science class last year.”

“So if I went to the other side of the lake, I’d see a convocation of eagles?”
“And I bet that’s not all you’d see. What else?”

“Uh...I don’t know.” Bart tossed a rock into the lake and watched the ripples drift slowly to the dock. He was appearing to lose interest.

“Come on, Bart! Let your imagination run wild. Anything in the world could be over there. So what do you want to see?”

“Well, uh...an ice cream store.”

“What kind of ice cream store? The best one in the world?”

“Definitely.”

“What makes it the best one in the world?”

“Well, uh—all the ice cream costs 25 cents. And if you ask for a free sample, they give you a whole scoop. And they have all kinds of crazy flavors, like butternut peanut butter walnut, and triple chocolate marshmallow fluff surprise.”

“Triple chocolate marshmallow fluff surprise? What’s the surprise?”

“More marshmallow.”

Patsy felt her stomach give a rumble. “Huh. That actually sounds really good.”

“Of course. And next to the ice cream store is a roller coaster park.”

“And all the roller coasters are free?”

“Yep. And each one has a double loop-the-loop.”

“You’d better ride that before you go to the ice cream store, not after.”
“Good point.” Bart trailed off again, distracted by a snail. Patsy found herself strangely impatient. She wanted to know what else was on the other side of the lake.

“Is there anything that I will like?”

“You like ice cream.”

“Yeah, but what else?”

“Uh, I don’t know. I guess there’s probably a movie theater and stuff.”

“But I can see movies at home. What’s over there that’s special?”

“There’s a clothing store where they give you five free outfits, just for coming in the door. And all the clothes fit you perfectly, and the sales ladies are never mean to us, just because we’re kids.”

“Oh man, that sounds great.”

“Yeah! And…” Bart tried to remember what else his sister liked. “There’s a place where you can get free notebooks for school!”

“Really?”

“The really expensive kind, with the heavy paper and colorful covers and stuff. And you can have all the fancy pens you want!”

“That does sound nice…”

“Wait a minute! Didn’t you and Mom go over there last year? To buy shampoo or something?”
“Yeah.”

“Well, what was it like?”

Patsy remembered the strip malls and gas stations—a lake of concrete, where the humidity was unbearable and the mosquitoes, somehow, even bigger—and she looked at her brother’s hopeful, dreaming face.

“It was exactly like what you said,” she said. “Free ice cream and roller coasters and everything. Exactly like that.”
1. How does Patsy feel about Lake Wenatchee?
   A. She loves it.
   B. She hates it.
   C. She enjoys it.
   D. She’s scared of it.

2. How does Patsy change in the story?
   A. At first she wants to go home, but then she doesn’t want to leave.
   B. At first she wants to stay at the lake, but then she wants to leave.
   C. At first she wants to upset her brother, but then she changes her mind.
   D. At first she lies to her brother, but then she tells him the truth.

3. Bart has unrealistic ideas about what the other side of the lake is like. What evidence from the passage best supports this conclusion?
   A. Bart thinks that the other side of the lake is even better than this side.
   B. Bart loves the lake, and is up playing on the shore at the crack of dawn every day.
   C. Bart imitates the birds, creeps up on geckos, and throws rocks for the fish.
   D. Bart thinks the other side of the lake has snowy owls and a roller coaster park.

4. Read the following sentences: “The mosquitoes got bigger every year. By now they were larger, it seemed, than her fist.” Based on this information, what can you conclude about Patsy?
   A. Patsy thinks the negative aspects of the lake are not as bad as they actually are.
   B. Patsy thinks the negative aspects of the lake are worse than they actually are.
   C. Patsy is interested in animals, insects, and nature.
   D. Patsy is scared that the mosquitoes will get bigger.

5. What is this passage mostly about?
   A. Patsy tells Bart that the other side of the lake is not exciting.
   B. Bart enjoys being on vacation at Lake Wenatchee.
   C. Patsy wishes she were at home with her friends.
   D. Bart imagines what is on the other side of the lake.
6. Read the following sentences: “But something in my gut tells me that it’s even better over there.’ ... The other side of the lake was nothing too exciting: strip malls and gas stations, with a shopping mall in the middle. But before she told Bart the truth, she wanted to know what he was imagining. It would be more fun to **burst his bubble** that way.”

As used in this sentence, what does the phrase “burst his bubble” mean?

A. lie to him  
B. make something up  
C. destroy his fantasy  
D. tell the truth

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

Bart thinks that the other side of the lake is exciting and magical, _____ Patsy knows that it is really unexciting.

A. but  
B. so  
C. for example  
D. after

8. Where has Patsy’s family gone on vacation since Bart was born?

______________________________________________________________________  
______________________________________________________________________  
______________________________________________________________________  
______________________________________________________________________
9. Describe what Bart says is on the other side of the lake when Patsy asks, “Is there anything that I will like?”

______________________________________________________________________
______________________________________________________________________
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10. Explain why Patsy may have decided not to burst her brother’s bubble and tell him about the reality of the other side of the lake at the end of the story. Use evidence from the story to support your answer.

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Teacher Guide & Answers

Passage Reading Level: Lexile 670

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   A  Bart thinks that the other side of the lake is even better than this side.
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8. Where has Patsy’s family gone on vacation since Bart was born?

**Suggested answer:** Since Bart was born, Patsy’s family has gone on vacation to Lake Wenatchee.

9. Describe what Bart says is on the other side of the lake when Patsy asks, "Is there anything that I will like?"

**Suggested answer:** Bart says that there is a movie theater, a clothing store where they give you free outfits, and a place where you can get free notebooks and fancy pens.

10. Explain why Patsy may have decided not to burst her brother’s bubble and tell him about the reality of the other side of the lake at the end of the story. Use evidence from the story to support your answer.

**Suggested answer:** Answers may vary and should be supported by the passage. Students should indicate that Patsy decided not to tell her brother about the reality after seeing his “hopeful, dreaming face,” which implies that she did not want to destroy his dreams. Patsy may also have enjoyed fantasizing about the other side of the lake with her brother, and did not want to ruin the moment. ("Patsy found herself strangely impatient. She wanted to know what else was on the other side of the lake.")