



Directions:

print, complete, staple together, & submit pages: 1,3,4,5,6,10,11,12

Dropping the Ball

Preview

Activate Schema. Scan to see what you know about energy, falling objects, momentum, and gravity.

Establish a Purpose for Reading. What do you need to learn?

Vocabulary: complete page 5 before reading the selection.

Read & Integrate Knowledge

Predict Picture Relate Monitor Fix

What is Energy?

Scientists define energy as the ability to do work. Energy makes change possible. We use it to do things for us. We have learned how to transfer energy from one form to another and use it to do work for us and live more comfortably.

Forms of Energy

Energy is found in different forms including light, heat, chemical, and motion. They can all be put into two categories: potential and kinetic.

Potential energy is energy that is stored, or not in motion.

Kinetic is energy at work, in action — for instance, that’s the case with electricity, heat, light, motion, and sound

Collisions:

What happens to energy when objects collide, for instance if you drop a ball?

Energy cannot be created or destroyed, but can be transformed. If a ball drops, energy is transferred and transformed, in sound for instance, but the total amount of energy remains the same

Dropping the Ball:

Before dropping a ball, you must lift it up from its resting surface. When you do this, you are transferring energy from your muscles to the ball and giving the ball potential energy: the higher you lift it, the more potential energy it has.

As the ball falls towards the ground, its potential energy is transformed into kinetic energy, which will continue increasing as it gains momentum, until it finally collides with a surface.

Bouncing Back

:

Elastic potential energy is what causes a ball to bounce, or rebound, because it is transformed into kinetic energy, which is then used to bring the ball back up. However, the ball won't get as high as where it started from, because some of its energy has been transferred to the floor or transformed into sound (in the noise it makes upon impact) and thermal energy (friction with the table).

Furthermore, even though we can't see it, as the ball hits the ground, or a table, it changes shape for a split second, which requires energy.

This is why the height of each bounce is a little less than the height of the previous one. Some of the kinetic energy the ball has when it strikes the floor is retained, but other is transformed, so each time the ball bounces it loses a bit of its kinetic energy, and after several bounces it has so little of it left that it ceases to bounce.

Recall**Comprehension Questions**

(circle the best answer)

1. What is energy?
 - A** change in motion
 - B** light and heat that an object stores
 - C** any work that an object does in motion
 - D** the ability to do work

2. Why does the author describe what happens when a ball is dropped?
 - A** to explain how energy is transformed
 - B** to explain how energy is created and destroyed
 - C** to explain that dropping a ball is not a real form of work
 - D** to explain that the amount of energy in an object remains constant

3. The ball has less energy after it bounces than it does as it is falling to the ground. Which evidence from the text supports this statement?
 - A** Elastic potential energy is what causes a ball to bounce, or rebound.
 - B** Each time the ball bounces on the ground, it loses a bit of its kinetic energy.
 - C** The higher the ball is lifted, the more potential energy it has.
 - D** As the ball falls towards the ground, its potential energy is transformed to kinetic energy.

4. During the process of dropping a ball, when does the ball have the least amount of energy?
 - A** as it is falling to the ground
 - B** after the first bounce
 - C** as it is being lifted in the air
 - D** after the last bounce

5. What is "Dropping the Ball" mostly about?
 - A** how energy is transferred when a ball is dropped
 - B** how to drop a ball
 - C** how potential energy is converted to kinetic energy
 - D** why a ball changes shape for a split second after it hits the ground

6. Read the following sentence: "As the ball falls towards the ground, its potential energy is transformed into kinetic energy, which will continue increasing as it gains momentum, until it finally collides with a surface."

What does the word "momentum" mean?

- A** the ability of an object to stay in one place
- B** the ability of an object to change direction
- C** the ability of an object to go slower in a certain direction
- D** the ability of an object to go faster in a certain direction

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

Energy cannot be created or destroyed; _____, energy can be transformed.

- A** however
- B** therefore
- C** furthermore
- D** initially

8. After the ball hits the ground, why doesn't the ball rise to the height where it started?

9. Explain how energy is transformed when a ball is dropped. Be sure to explain what happens when the ball is lifted, when a person lets go of the ball, when the ball collides with the ground, and bounces back up

10. Explain why the height at which the ball is dropped affects how high it bounces.

Vocabulary

Word = Useful vocabulary in this reading selection (Some are provided. You supply more).

Definition = Define each word.

Synonym = Provide a synonym for each word.

Etymology = Circle any etymological words parts in each word and define them in this column.

Word	Definition	Synonym	Etymology
transfer			
energy			
chemical			
kinetic			
collision			
collide			
potential			
elastic			
furthermore			
transform			



Foot Binding

Preview

Activate Schema. Scan to see what you know about customs, concepts of beauty, unique approaches to tradition.

Establish a Purpose for Reading. What do you need to learn?

Vocabulary: complete page 12 before reading the selection.

Read & Integrate Knowledge

Predict Picture Relate Monitor Fix

Throughout history, women have felt the pressure to conform to their society's definition of beauty. Standards of beauty often reflect cultural values and beliefs, and women have gone to great lengths to meet these ideals. At times, women have had to take extreme measures to live up to these standards at the cost of their own well-being.

One of the most striking examples is the Chinese practice of foot binding. For centuries, small feet were considered very attractive and ladylike, and the Chinese believed they made a woman's movements more feminine and dainty. In order to attain such a coveted feature, it was common practice for young girls to break and bind their toes with the intention of shrinking their feet—a process that kept them in excruciating pain for months. Foot binding was practiced for over a millennium, until the Chinese government officially outlawed the practice in 1911.

According to the legend, foot binding began when an ancient Chinese emperor's dancer bound her feet to suggest the shape of a new moon or a flower. The emperor was impressed with her "lotus dance," and other women emulated the practice until it spread across the country. (Bound feet were also known as lotus flowers.)

Yet the Chinese foot binding tradition officially dates back to the Tang Dynasty. It gained popularity with the rise of neo-Confucianism and a hierarchical system of subservience. Scholars who reinterpreted ancient Confucian thought believed they discovered a "lost" philosophy focusing on nature, training the mind, and cultivating discipline. In neo-Confucianism, the subjects of a kingdom were expected to serve their rulers (who were considered mothers and fathers of the country) and in turn, wives were expected to defer to their husbands, sons to fathers, and the weak to the powerful.

Zhu-Xi, an influential scholar of neo-Confucianism, contributed to the acceptance of foot binding in China. According to Zhu-Xi, the practice reflected purity and discipline. He introduced it in Fujian as a way of spreading Chinese culture and teaching about the proper way for men and women to interact.

Another factor that led to the popularity of foot binding was women's decreased involvement in civic life during the Song dynasty between 960-1279. During this period, a woman's most important task was considered giving birth to sons. Women didn't participate in politics and were infrequently seen on the streets, in comparison with the previous Tang dynasty. Some historians suggest that the diminished status of women during the Song Dynasty made foot binding more socially acceptable.

Binding usually began when a girl was between the ages of four and seven. First the foot was soaked in hot water and the toenails clipped. Then came the painful part: the four small toes were broken, and the foot was bandaged tightly with the toes turned under toward the bottom of the foot. (It was believed that young bones were soft, which is why binding started early.) In order for the girl to maintain her balance, the big toe was left unturned. Every few days, the foot was unwrapped and then wrapped again even tighter, until the foot shrunk to

about four inches long. The arches were also broken, which caused the foot to contract even more. The entire process could take three years or longer, and it was so debilitating that young girls from wealthy families would often receive a servant to care for her personal needs, carry her when her feet hurt, and look after her on sleepless nights when the pain was unbearable.

Foot binding wasn't just painful. It could also be dangerous. Complications included ulcerations and gangrene, and infections caused by ingrown toenails or lack of circulation from tight bindings. Sometimes toes even fell off—though this was considered a good thing because it meant the feet could be wrapped even tighter. Bound feet also had a foul odor and left many young women hardly able to walk. Sadly, it's estimated that up to 10 percent of girls died in the process of foot binding.

Even if mothers could have objected to putting their daughters through such a tremendously painful process, social pressure likely made them willing practitioners of foot binding. Virtuous women were prized according to the tenets of Neo-Confucianism, and foot binding was the ultimate symbol of a woman's purity and discipline. The ability to withstand foot binding reflected a woman's character, and her attractiveness was revealed not in her face or body, but in her feet. A girl learned that her family's reputation was linked to the binding of her feet early in life. In fact, the process was so crucial to a woman's status in China that a girl with natural, unbound feet had limited marriage prospects, while girls with tiny, well-bound feet increased their chances of marrying into a good family and moving up in society.

Although the practice was promoted as a way to increase health and fertility, foot binding was clearly detrimental to a woman's well-being. It greatly limited a woman's ability to walk, and some women became practically crippled. Bound feet forced women to hobble around and take extremely small steps. Many men found this shuffling sort of walk very attractive. Yet as a result of their compromised feet, women rarely participated in social or political life, often becoming very dependent on their husbands and families. Even this was seen as a virtue, for a woman who stayed at home was considered chaste and faithful to her husband.

At first glance, foot binding might seem to contradict Confucian thought, which forbids body mutilation. However, since the feet were considered a sort of accessory, foot binding fell into a different category altogether. Ironically, a practice promoted to achieve the ultimate symbol of beauty grossly disfigured women's feet. The toes often became gnarled or fused together. Many men were unaware of the disfigurement caused by foot binding because women's feet were always carefully concealed. During the day, feet were covered in a binder, socks and shoes, sprayed with perfume and scented powder, and then hidden beneath leggings and skirts. At night women wore special slippers, even while sleeping. Women were expected to wash their feet in private and separately from the rest of their bodies.

Not all Chinese practiced foot binding. It was less common among peasants and in poor communities because women were needed to work in the fields. Mongols, Hakka and Tibetans living in Chinese territory didn't bind their feet at all. In Manchu province, foot binding was outlawed. Yet because the "hobble" associated with bound feet was considered attractive, a special type of "flower bowl" shoe was invented in Manchu to give women the same swaying small steps. The shoe sat on a high platform made of wood or had a small central pedestal.

By the 20th century, both native Chinese and Christian missionaries were calling the practice of foot binding into question. Anti-foot binding reformers created natural-foot societies for members who promised not to bind their daughter's feet, or not let their sons marry women with bound feet. Many women's rights groups attacked the practice because of the suffering it caused women. Educated Chinese felt that the practice made them seem uncivilized to the rest of the world. Yet even after the government banned the practice in the early 20th century, some girls continued to bind their feet because it was such a long-held status symbol and a way for a woman to marry into money.

Today, few women with bound feet are still alive. The tiny, intricately decorated special shoes made for bound feet will be all that remains of the painful practice.

Recall

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Comprehension Questions

(circle the best answer)

1. How did women in China bind their feet?

- A They broke their toes and wrapped the feet tightly.
- B They wrapped their toes together with bandages.
- C They broke their big toe and wrapped it under the foot.
- D They broke their toes and arches but did not wrap them.

2. What does the author mostly describe in the passage?

- A the rising popularity of neo-Confucianism
- B the practice of foot binding and its effects
- C how the bones in feet naturally grow
- D why women accept painful beauty procedures

3. In China, having bound feet was a marker of wealth and status. What evidence from the passage supports this conclusion?

- A "Although the practice was promoted as a way to increase health and fertility, foot binding was clearly detrimental to a woman's well-being."
- B "Virtuous women were prized according to the tenets of Neo-Confucianism, and foot binding was the ultimate symbol of a woman's purity and discipline."
- C "According to the legend, foot binding began when an ancient Chinese emperor's dancer bound her feet to suggest the shape of a new moon or a flower."
- D "Girls with tiny, well-bound feet increased their chances of marrying into a good family and moving up in society."

4. "During the day, feet were covered in a binder, socks and shoes, sprayed with perfume and scented powder, and then hidden beneath leggings and skirts. At night women wore special slippers, even while sleeping. Women were expected to wash their feet in private and separately from the rest of their bodies."

What is a probable reason for why women's feet were always concealed?

- A because women's feet were considered dirty
- B because only a woman's husband could see her feet
- C to preserve the illusion of ideal beauty
- D because men did not like to look at feet

5. What is this passage mostly about?

- A foot binding in China
- B neo-Confucianism
- C standards of beauty
- D women in ancient China

6. Read the following sentences: “[Foot binding] greatly limited a woman’s ability to walk, and some women became practically crippled. Bound feet forced women to **hobble** around and take extremely small steps. Many men found this shuffling sort of walk very attractive.”

What does “**hobble**” mean as used in this sentence?

- A to walk quickly and purposefully
- B to walk unsteadily or with difficulty
- C to glide forward smoothly
- D to move in a quick, jumping motion

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

_____ foot binding was promoted as a way to achieve ideal beauty, in reality it horribly disfigured women’s feet.

- A In conclusion
- B Initially
- C For instance
- D While

8. Describe the dangers to a woman’s health that were associated with foot binding.

9. Explain how having tiny, bound feet affected a woman’s reputation and social standing during the height of foot binding in China

10. Explain why Chinese mothers allowed their daughters’ feet to be bound despite the pain and the dangers to their daughters’ health.
