

# NTI Day 11

## LCMS 7<sup>th</sup> Grade



Name: \_\_\_\_\_ Class: \_\_\_\_\_

**Thank You, M'am**

By Langston Hughes

1958

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

Langston Hughes (1902-1967) was an American poet, social activist, novelist, and playwright. Hughes is considered one of the leaders of the Harlem Renaissance, which was the cultural, social, and artistic movement of black artists that took place in Harlem from about 1918 until the mid-1930s. In this story, a boy tries to steal a woman's purse to buy himself a pair of shoes. As you read, write notes on how character traits throughout the story.

- [1] She was a large woman with a large purse that had everything in it but hammer and nails. It had a long strap, and she carried it slung across her shoulder. It was about eleven o'clock at night, and she was walking alone, when a boy ran up behind her and tried to snatch her purse. The strap broke with the single tug the boy gave it from behind. But the boy's weight and the weight of the purse combined caused him to lose his balance so, instead of taking off full blast as he had hoped, the boy fell on his back on the sidewalk, and his legs flew up. The large woman simply turned around and kicked him right square in his blue-jeaned sitter. Then she reached down, picked the boy up by his shirt front, and shook him until his teeth rattled.

*"Purse" by Mike Maguire is licensed under CC BY 2.0*

After that the woman said, "Pick up my pocketbook,<sup>1</sup> boy, and give it here." She still held him. But she bent down enough to permit him to stoop and pick up her purse. Then she said, "Now ain't you ashamed of yourself?"

Firmly gripped by his shirt front, the boy said, "Yes'm."

The woman said, "What did you want to do it for?"

- [5] The boy said, "I didn't aim to."

She said, "You a lie!"

By that time two or three people passed, stopped, turned to look, and some stood watching.

"If I turn you loose, will you run?" asked the woman.

"Yes'm," said the boy.

1. another term for purse or handbag

[10] "Then I won't turn you loose," said the woman. She did not release him.

"I'm very sorry, lady, I'm sorry," whispered the boy.

"Um-hum! And your face is dirty. I got a great mind<sup>2</sup> to wash your face for you. Ain't you got nobody home to tell you to wash your face?"

"No'm," said the boy.

"Then it will get washed this evening," said the large woman starting up the street, dragging the frightened boy behind her.

[15] He looked as if he were fourteen or fifteen, frail<sup>3</sup> and willow-wild, in tennis shoes and blue jeans.

The woman said, "You ought to be my son. I would teach you right from wrong. Least I can do right now is to wash your face. Are you hungry?"

"No'm," said the being-dragged boy. "I just want you to turn me loose."

"Was I bothering you when I turned that corner?" asked the woman. "No'm."

"But you put yourself in contact with *me*," said the woman. "If you think that that contact is not going to last awhile, you got another thought coming. When I get through with you, sir, you are going to remember Mrs. Luella Bates Washington Jones."

[20] Sweat popped out on the boy's face and he began to struggle. Mrs. Jones stopped, jerked him around in front of her, put a half-nelson<sup>4</sup> about his neck, and continued to drag him up the street. When she got to her door, she dragged the boy inside, down a hall, and into a large kitchenette-furnished room at the rear of the house. She switched on the light and left the door open. The boy could hear other roomers<sup>5</sup> laughing and talking in the large house. Some of their doors were open, too, so he knew he and the woman were not alone. The woman still had him by the neck in the middle of her room.

She said, "What is your name?"

"Roger," answered the boy.

"Then, Roger, you go to that sink and wash your face," said the woman, whereupon she turned him loose — at last. Roger looked at the door — looked at the woman — looked at the door — *and went to the sink.*

"Let the water run until it gets warm," she said. "Here's a clean towel."

[25] "You gonna take me to jail?" asked the boy, bending over the sink.

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2. A phrase meaning "to feel tempted or likely to do something"

3. **Frail** (*adjective*): weak or fragile

4. a wrestling hold in which a wrestler puts their arms under their opponent's arms and locks their hands behind their opponent's head

5. a person who lives in a rented room

"Not with that face, I would not take you nowhere," said the woman. "Here I am trying to get home to cook me a bite to eat and you snatch my pocketbook! Maybe, you ain't been to your supper either, late as it be. Have you?"

"There's nobody home at my house," said the boy.

"Then we'll eat," said the woman, "I believe you're hungry — or been hungry — to try to snatch my pocketbook."

"I wanted a pair of blue suede<sup>6</sup> shoes," said the boy.

[30] "Well, you didn't have to snatch *my* pocketbook to get some suede shoes," said Mrs. Luella Bates Washington Jones. "You could of asked me."

"M'am?"

The water dripping from his face, the boy looked at her. There was a long pause. A very long pause. After he had dried his face and not knowing what else to do dried it again, the boy turned around, wondering what next. The door was open. He could make a dash for it down the hall. He could run, run, run, run, *run!*

The woman was sitting on the day-bed.<sup>7</sup> After a while she said, "I were young once and I wanted things I could not get."

There was another long pause. The boy's mouth opened. Then he frowned, but not knowing he frowned.

[35] The woman said, "Um-hum! You thought I was going to say *but*, didn't you? You thought I was going to say, *but I didn't snatch people's pocketbooks*. Well, I wasn't going to say that." Pause. Silence. "I have done things, too, which I would not tell you, son — neither tell God, if he didn't already know. So you set down while I fix us something to eat. You might run that comb through your hair so you will look presentable."

In another corner of the room behind a screen was a gas plate<sup>8</sup> and an icebox. Mrs. Jones got up and went behind the screen. The woman did not watch the boy to see if he was going to run now, nor did she watch her purse which she left behind her on the day-bed. But the boy took care to sit on the far side of the room where he thought she could easily see him out of the corner of her eye, if she wanted to. He did *not* trust the woman not to trust him. And he did not want to be mistrusted now.

"Do you need somebody to go to the store," asked the boy, "maybe to get some milk or something?"

"Don't believe I do," said the woman, "unless you just want sweet milk yourself. I was going to make cocoa out of this canned milk I got here."

"That will be fine," said the boy.

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6. a type of soft leather

7. a couch that can be used as a sofa by day and a bed by night

8. a hot plate used for cooking

[40] She heated some lima beans and ham she had in the icebox, made the cocoa, and set the table. The woman did not ask the boy anything about where he lived, or his folks, or anything else that would embarrass him. Instead, as they ate, she told him about her job in a hotel beauty-shop that stayed open late, what the work was like, and how all kinds of women came in and out, blondes, red-heads, and Spanish. Then she cut him a half of her ten-cent cake.

"Eat some more, son," she said.

When they were finished eating she got up and said, "Now, here, take this ten dollars and buy yourself some blue suede shoes. And next time, do not make the mistake of latching onto *my* pocketbook *nor* *nobody else's* — because shoes come by devilish like that will burn your feet. I got to get my rest now. But I wish you would behave yourself, son, from here on in."

She led him down the hall to the front door and opened it. "Good-night! Behave yourself, boy!" she said, looking out into the street.

The boy wanted to say something other than, "Thank you, m'am," to Mrs. Luella Bates Washington Jones, but although his lips moved, he couldn't even say that as he turned at the foot of the barren<sup>9</sup> stoop and looked up at the large woman in the door. He barely managed to say "Thank you" before she shut the door. And he never saw her again.

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9. **Barren** (*adjective*): bare or empty

## Text-Dependent Questions

**Directions: For the following questions, choose the best answer or respond in complete sentences.**

1. PART A: Which statement best expresses the theme of the story?
  - A. It can be difficult for children to learn right from wrong when there are bad influences around them.
  - B. Children often don't understand that adults have encountered the same challenges they have.
  - C. People are more likely to learn and practice morality when it is taught to them with kindness.
  - D. It's best not to assume the worst in people, as situations can easily be misunderstood.
  
2. PART B: Which detail from the text best supports the answer to Part A?
  - A. "You ought to be my son. I would teach you right from wrong. Least I can do right now is to wash your face. Are you hungry?" (Paragraph 16)
  - B. "There's nobody home at my house," said the boy." (Paragraph 27)
  - C. "I believe you're hungry — or been hungry — to try to snatch my pocketbook." (Paragraph 28)
  - D. "After a while she said, 'I were young once and I wanted things I could not get.'" (Paragraph 33)
  
3. PART A: Why does Roger want to thank Mrs. Luella Bates Washington Jones at the end of the story?
  - A. Roger has grown to appreciate the faith that Mrs. Jones has in him.
  - B. Roger was suspicious of Mrs. Jones at first, but she shows him that people can be trustworthy.
  - C. Roger appreciates that she did not report him to the police and wants to help his family.
  - D. Roger realizes that Mrs. Jones invited him to her home because she is lonely and wants his company.
  
4. PART B: Which TWO details from the text best support the answer to Part A?
  - A. "Not with that face, I would not take you nowhere," said the woman. "Here I am trying to get home and cook me a bite to eat and you snatch my pocketbook!" (Paragraph 26)
  - B. "After he had dried his face and not knowing what else to do dried it again, the boy turned around, wondering what next. The door was open." (Paragraph 32)
  - C. "Mrs. Jones got up and went behind the screen. The woman did not watch the boy to see if he was going to run now, nor did she watch her purse which she left behind on the day bed." (Paragraph 36)
  - D. "But the boy took care to sit... where he thought she could easily see him out of the corner of her eye...he did not want to be mistrusted now." (Paragraph 36)
  - E. "Instead, as they ate, she told him about her job in a hotel beauty-shop that stayed open late, what the work was like" (Paragraph 40)
  - F. "Now, here, take this ten dollars and buy yourself some blue suede shoes. And next time, do not make the mistake of latching onto my pocketbook nor nobody else's" (Paragraph 42)

5. How does the interaction between Roger and Mrs. Jones in paragraphs 33-41 contribute to the overall meaning of the story?

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Write

**Directions:** Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. In your opinion, would most people be as forgiving as Mrs. Luella Bates Washington Jones in this situation? Why or why not? What does it take to forgive someone?



## NTI Day 11

### Section 1

Complete the following Activities

PG 408

- Meeting People
  - Take notes over each person at least 3 bullets per person.
- Building Vocab
  - Write down definitions for each word
- Reading Strategy
  - Read the directions for the reading and complete.
- When you have finished all notes answer Questions 1-6 at the end of the section.
- Please submit to Google classroom when finished.



# China Reunites

## Get Ready to Read!

### What's the Connection?

Earlier you read that the Han dynasty of China collapsed and China plunged into civil war. As you will read, China eventually reunited. The new dynasties took Chinese civilization to even higher levels.

### Focusing on the Main Ideas

- The Sui and Tang dynasties reunited and rebuilt China after years of war. (page 409)
- Buddhism became popular in China and spread to Korea and Japan. (page 412)
- The Tang dynasty returned to the ideas of Confucius and created a new class of scholar-officials. (page 413)

### Locating Places

Korea (kuh•REE•uh)  
Japan (juh•PAN)

### Meeting People

Wendi (WHEHN•DEE)

Empress Wu (WOO)

### Building Your Vocabulary

warlord

economy (ih•KAH•nuh•mee)

reform

monastery (MAH•nuh•STEHR•ee)

### Reading Strategy

**Categorizing Information** Complete a table like the one below to show the time periods, the most important rulers, and the reasons for the decline of the Sui and Tang dynasties.

	Sui	Tang
Time Period		
Important Rulers		
Reasons for Decline		

NATIONAL GEOGRAPHIC

## When & Where?



A.D. 500

A.D. 581

Wendi founds Sui dynasty

A.D. 907

A.D. 907  
Tang dynasty falls

1300

1279  
Mongols end Song rule

## Rebuilding China's Empire

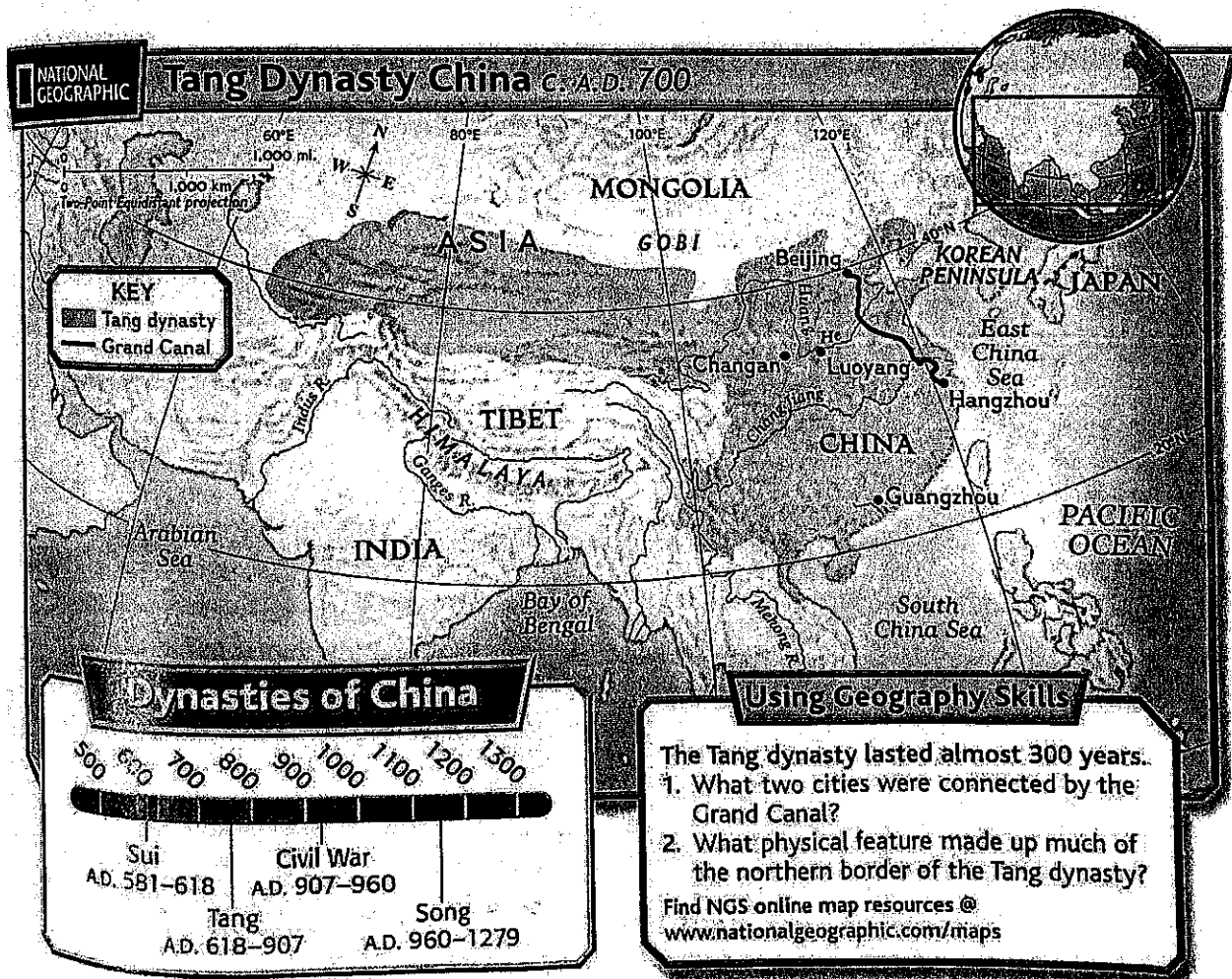
**Mini-Map** The Sui and Tang dynasties reunited and rebuilt China after years of war.

**Reading Focus** Have you ever thought about how the economy in your town or city works? How do goods get to your local stores? Who makes sure roads are paved? Read to learn how China dealt with these issues.

Earlier you read that China's Han empire ended in A.D. 220. For the next 300 years, China had no central government. It broke into 17 kingdoms. War and poverty were everywhere. Chinese warlords—military leaders who run a government—fought with each other while nomads conquered parts of northern China.

While China was absorbed in its own problems, it lost control of some of the groups it had conquered. One of these groups was the people of Korea (kuh•REE•uh). They lived on the Korean Peninsula to the northeast of China. The Koreans decided to end Chinese rule of their country. They broke away and built their own separate civilization.

**The Sui Dynasty Reunites China** China finally reunited in A.D. 581. In that year, a general who called himself Wendi (WHEHN•DEE) declared himself emperor. Wendi won battle after battle and finally reunited China. He then founded a new dynasty called the Sui (SWEE).



After Wendi died, his son Yangdi (YAHNG • DEE) took the Chinese throne. Yangdi wanted to expand China's territory. He sent an army to fight the neighboring Koreans, but the Chinese were badly defeated. At home, Yangdi took on many ambitious building projects. For example, the Great Wall had fallen into ruins, and Yangdi had it rebuilt.

Yangdi's greatest effort went into building the Grand Canal. This system of waterways linked the Chang Jiang (Yangtze River) and Huang He (Yellow River). The Grand

## HistoryOnline

**Web Activity** Visit [jat.glencoe.com](http://jat.glencoe.com) and click on **Chapter 12—Student Web Activity** to learn more about China.

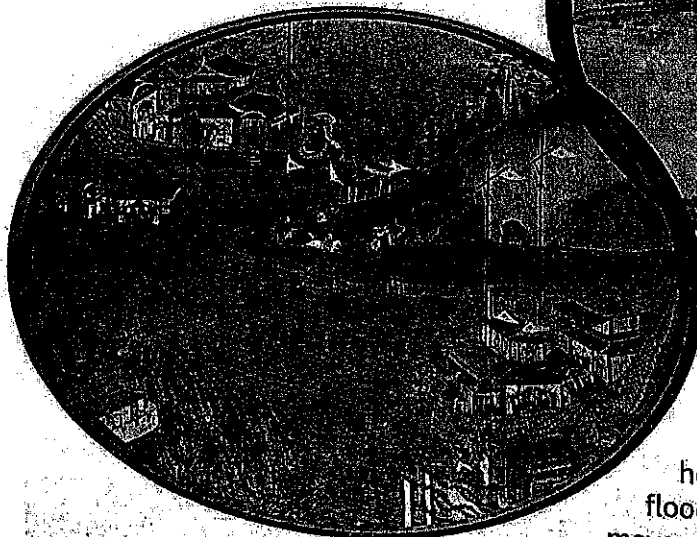
Canal became an important route for shipping products between northern and southern China. It helped unite China's economy. An **economy** (ih • KAH • nuh • mee) is an organized way in which people produce, sell, and buy things.

# Linking Past & Present

## Grand Canal and Three Gorges Dam Project

**THEN** Opening the Grand Canal boosted Imperial China's economy and made it much cheaper and faster to ship food and goods north and south. It also cost many laborers their lives. In addition, the canal system often flooded, drowning many people and animals and destroying crops.

The Three Gorges Dam under construction



▲ The Grand Canal



**NOW** In 1994 China began building the Three Gorges Dam on the Chang Jiang. The dam will control flooding and produce electricity. Building it, however, requires many areas to be flooded. Millions of people have had to move, and much farmland will be lost. *What have construction projects changed in your state?*

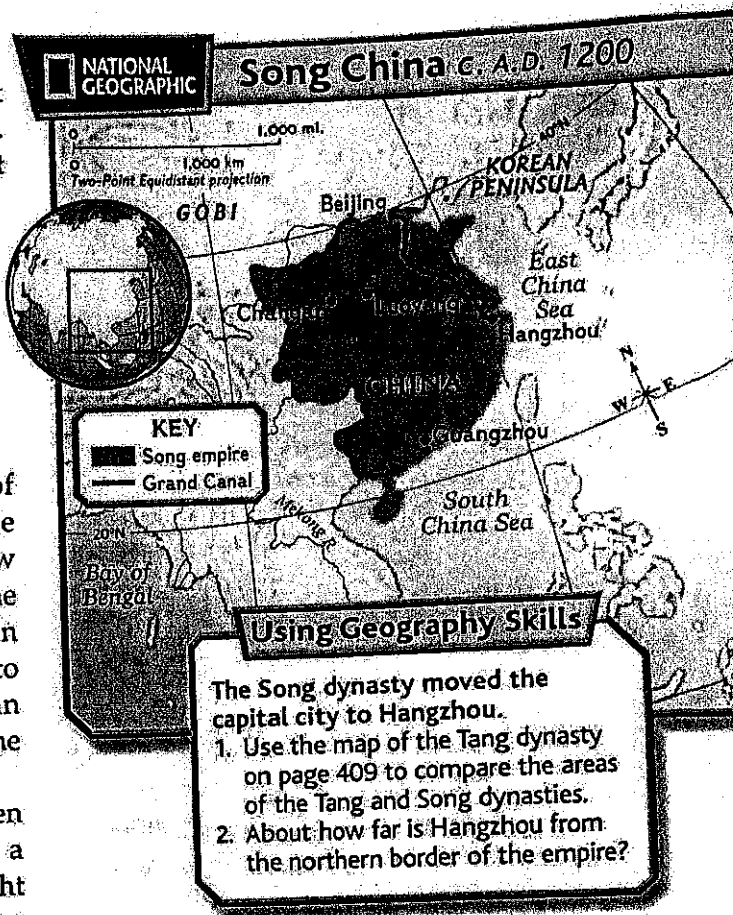
Yangdi rebuilt China, but he did it by placing hardships on the Chinese people. Farmers were forced to work on the Great Wall and the Grand Canal. They also had to pay high taxes to the government for these projects. Finally, the farmers became so angry that they revolted. The army took control and killed Yangdi. With Yangdi gone, the Sui dynasty came to an end.

**The Tang Dynasty** In A.D. 618 one of Yangdi's generals took over China. He made himself emperor and set up a new dynasty called the Tang (TAHNG). Unlike the short-lived Sui, the Tang dynasty was in power for about 300 years—from A.D. 618 to A.D. 907. The Tang capital at Changan became a magnificent city, with about one million people living there.

Tang rulers worked to strengthen China's government. They carried out a number of reforms, or changes that brought improvements. The most powerful Tang emperor was named Taizong (TY•ZAWNG). He restored the civil service exam system. Government officials were once again hired based on how well they did on exams rather than on their family connections. Taizong also gave land to farmers and brought order to the countryside.

During the late A.D. 600s, a woman named Wu ruled China as empress. She was the only woman in Chinese history to rule the country on her own. A forceful leader, Empress Wu (WOO) added more officials to the government. She also strengthened China's military forces.

Under the Tang, China regained much of its power in Asia and expanded the areas under its control. Tang armies pushed west into central Asia, invaded Tibet, and took control of the Silk Road. They marched into Korea and forced the Korean kingdoms to



pay tribute, a special kind of tax that one country pays to another to be left alone. The Tang also moved south and took control of northern Vietnam.

By the mid-A.D. 700s, however, the Tang dynasty began to have problems. A new group of nomads—the Turks that you read about earlier—drove the Tang armies out of central Asia and took control of the Silk Road. This damaged China's economy. Revolts in Tibet and among Chinese farmers at home further weakened the Tang. In A.D. 907 all of this disorder brought down the Tang dynasty.

**The Song Dynasty** For about 50 years after the fall of the Tang, military leaders ruled China. Then, in A.D. 960, one of the generals declared himself emperor and set up the Song (SOONG) dynasty.



The Song dynasty ruled from A.D. 960 to 1279. This period was a time of prosperity and cultural achievement for China. From the start, however, the Song faced problems that threatened their hold on China. Song rulers did not have enough soldiers to control their large empire. Tibet broke away, and nomads took over much of northern China. For safety, the Song moved their capital farther south to the city of Hangzhou (HAHNG • JOH). Hangzhou was on the coast near the Chang Jiang delta.



▲ Statue of the Buddha, carved about A.D. 460 in the Yun-Kang caves in China.

**Reading Check** Explain How did Wendi unite China?

## Buddhism Spreads to China

**Main Idea** Buddhism became popular in China and spread to Korea and Japan.

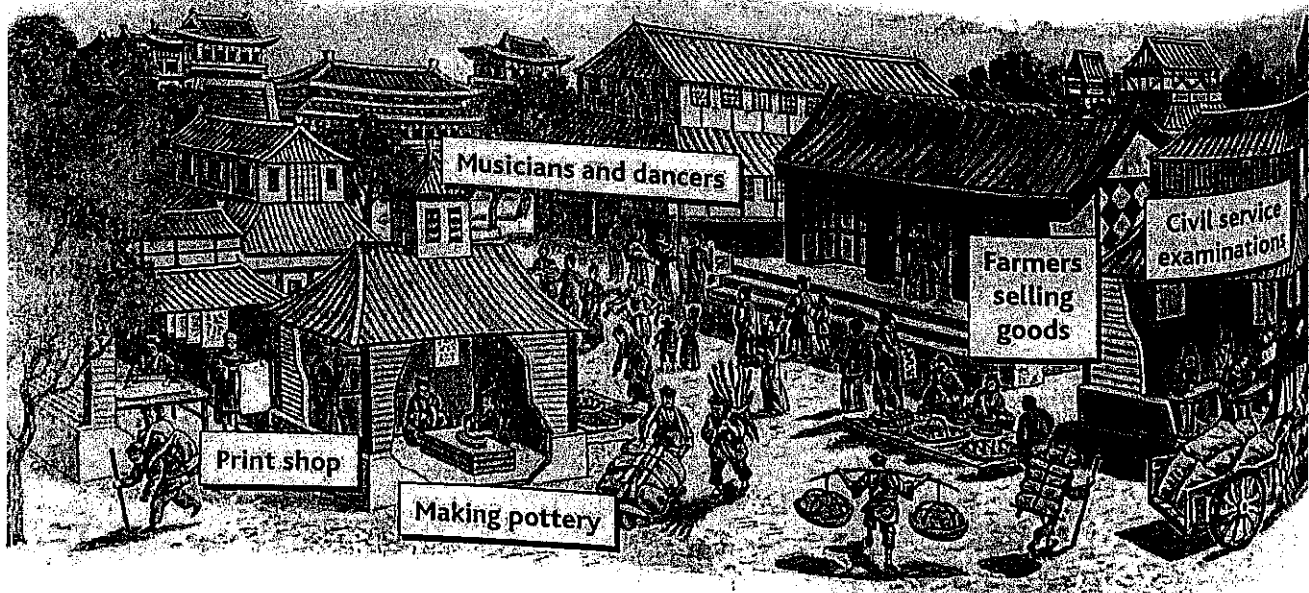
**Reading Focus** Where do you turn when you are having problems? Read to learn why many Chinese turned to Buddhism when China was in trouble.

Earlier you learned that traders and missionaries from India brought Buddhism to China in about A.D. 150. At the time, the Han dynasty was already weak. Soon afterward, China collapsed into civil war. People everywhere were dying from war and a lack of food and shelter. It was a time of great suffering. Because Buddhism taught that people could escape their suffering, many Chinese seeking peace and comfort became Buddhists.

**Chinese Buddhism** Early Tang rulers were not Buddhists, but they allowed Buddhism to be practiced in China. They even

## City Life in Tang China

Under the Tang, China grew and was prosperous. Tang cities could be large, with many activities occurring within the city's walls. A city contained many shops and temples. The homes of rich families often had two or three floors. *When did the Tang rule China?*



supported the building of Buddhist temples. Many Chinese Buddhists became monks and nuns. They lived in places called **monasteries** (MAH • nuh • STEHR • eez), where they meditated and worshiped.

Buddhist temples and monasteries provided services for people. They ran schools and provided rooms and food for travelers. Buddhist monks served as bankers and provided medical care.

Not all Chinese people liked Buddhism, however. Many thought that it was wrong for the Buddhist temples and monasteries to accept donations. Others believed that monks and nuns weakened respect for family life because they were not allowed to marry.

In the early A.D. 800s, Tang officials feared Buddhism's growing power. They saw Buddhism as an enemy of China's traditions. In A.D. 845 the Tang had many Buddhist monasteries and temples destroyed. Buddhism in China never fully recovered.

**Chinese Buddhism Spreads East** As you read earlier, Korea broke free of China when the Han dynasty fell in A.D. 220. For several hundred years after, Korea was divided into three independent kingdoms.

In the A.D. 300s, Chinese Buddhists brought their religion to Korea. About A.D. 660, the Koreans united to form one country. After that, with government support, Buddhism grew even stronger in Korea.

Buddhism later spread to the nearby islands of Japan (juh • PAN). According to legend, one of Korea's kings wrote to Japan's emperor. The letter contained a statue of the Buddha and Buddhist writings: "This religion is the most excellent of all teachings," the king wrote. As time passed, Buddhism won many followers in Japan as well.

**Reading Check** Explain Why did some Chinese people dislike Buddhism?

## New Confucian Ideas

**Main Idea** The Tang dynasty returned to the ideas of Confucius and created a new class of scholar-officials.

**Reading Focus** Have you ever seen someone get a reward that he or she did not earn? Read to learn how China's rulers tried to avoid this problem when hiring government officials.

You have already read about Confucius and his teachings. Confucius and his followers believed that a good government depended on having wise leaders. The civil service examinations introduced by Han

### Primary Source Defending Confucianism

Han Yü (A.D. 768 to A.D. 824) encouraged the Chinese people to remain faithful to Confucianism.

"What were the teachings of our ancient kings? Universal love is called humanity. To practice this in the proper manner is called righteousness. To proceed according to these is called the Way.... They offered sacrifices to Heaven and the gods came to receive them.... What Way is this? I say: This is what I call the Way, and not what the Taoists [Daoists] and the Buddhists called the Way...."

—Han Yü, "An Inquiry on The Way" (Tao)



▲ Han Yü

### DBQ Document-Based Question

Why does Han Yü think Confucianism should be followed?

# The Way It Was

## Focus on Everyday Life

**Civil Service Exams** Proficiency tests and final exams today take a lot of preparation, but they are not as difficult as China's civil service examinations given during the Tang dynasty. Men of almost all ranks tried to pass the exams so they could hold government jobs and become wealthy. Thousands attempted the tests, but only a few hundred people qualified for the important positions.

Chinese boys began preparing for the exams in primary school.

After many years of learning to read and write more than 400,000 words and sayings, the boys—now men in their twenties or early thirties—would take the first of three levels of exams.

Students traveled to huge testing sites to take the tests. Food and beds were not provided, so they had to bring their own. Many men became sick or insane because of the stress of the tests and the poor conditions under which they were tested.



▲ Students taking civil service exams

### Connecting to the Past

1. How old were the Chinese when they took the tests?
2. Why do you think taking the tests was so stressful for these men?

rulers were a product of Confucian ideas. They were supposed to recruit talented government officials.

After the fall of the Han dynasty, no national government existed to give civil service examinations. Confucianism lost much support, and Buddhism with its spiritual message won many followers. Tang and Song rulers, however, brought Confucianism back into favor.

**What Is Neo-Confucianism?** The Tang dynasty gave its support to a new kind of Confucianism called neo-Confucianism. This new Confucianism was created, in part, to reduce Buddhism's popularity. It taught that life in this world was just as important as the afterlife. Followers were expected to take part in life and help others.

Although it criticized Buddhist ideas, this new form of Confucianism also picked up some Buddhist and Daoist beliefs. For many Chinese, Confucianism became more than a system of rules for being good. It became a religion with beliefs about the spiritual world. Confucian thinkers taught that if people followed Confucius's teachings, they would find peace of mind and live in harmony with nature.

The Song dynasty, which followed the Tang, also supported neo-Confucianism. The Song even adopted it as their official philosophy, or belief system.

**Scholar-Officials** Neo-Confucianism also became a way to strengthen the government. Both Tang and Song rulers used civil service examinations to hire officials. In doing so, they based the bureaucracy on a merit system. Under a merit system, people are accepted for what they can do and not on their riches or personal contacts.

The examinations tested job seekers on their knowledge of Confucian writings. To pass, it was necessary to write with style as well as understanding. The tests were supposed to be fair, but only men were allowed to take the tests. Also, only rich people had the money that was needed to help their sons study for the tests.

Passing the tests was very difficult. However, parents did all they could to prepare their sons. At the age of four, boys started learning to write the characters of the Chinese language. Later, students had to memorize all of Confucius's writings. If a student recited the passages poorly, he could expect to be hit by his teacher.

After many years of study, the boys took their examinations. Despite all the preparation, only one in five passed. Those who failed usually found jobs helping officials or teaching others. However, they would never be given a government job.



▲ Chinese scholar-officials on horseback

Over the years, the examination system created a new wealthy class in China. This group was made up of scholar-officials. Strict rules set the scholar-officials apart from society. One rule was that they could not do physical work. Students preparing for the tests were taught never to use their hands except for painting or writing.

**Reading Check** Describe How did Confucianism change in China?

## Section 1 Review

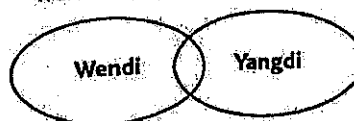
### Reading Summary

Review the **Main Idea**

- While the Sui dynasty was short-lived, the Tang and Song dynasties lasted for hundreds of years and returned power and prosperity to China.
- Buddhism became popular in China and also spread to Korea and Japan.
- A new kind of Confucianism developed in China during the Tang and Song dynasties, and the government used civil service tests to improve itself.

### What Did You Learn?

1. What made Buddhism so popular in China?
2. How was neo-Confucianism a response to Buddhism's popularity, and what did it teach?
3. **Critical Thinking**  
**Compare and Contrast**  
Create a diagram to show how the reigns of Wendi and Yangdi were similar and how they were different.
4. **Cause and Effect** What events led to the fall of the Tang dynasty?
5. **Sequencing Information**  
Describe the history of Buddhism during the Tang dynasty.
6. **Analyze** Why had Confucianism fallen out of favor in China before the Tang and Song dynasties?
7. **Drawing Conclusions** Do you think China's civil service system truly brought the most talented individuals into the government? How would you make the system fairer?



## NTI Day 11: Finding Probability

**Probability:** Measures the likelihood that the event will occur. We use the following formula to determine probability

$$P(\text{event}) = \frac{\text{Number of outcomes in the event}}{\text{Number of outcomes in the sample space}}$$

Background information:

- A dice has 6 sides labeled: 1, 2, 3, 4, 5, 6
- Any coin can either land on heads or tails.
- A deck of cards:
  - 52 total cards
  - 2 red suits: Hearts and Diamonds
  - 2 black suits: Spades and Clubs
  - 13 cards in each suit: Kings, Queens Jacks, 10s, 9s, 8s, 7s, 6s, 5s, 4s, 3s, 2s, Aces
  - Face Cards: Kings, Queens Jacks
  - Numbered Cards: 10s, 9s, 8s, 7s, 6s, 5s, 4s, 3s, 2s, Aces

Examples of finding probability

Ex1) Jim spins a spinner that has 5 equal sections marked 1 through 5. Find the probability of landing on an even number.

Answer: there are two even numbers between 1 and 5. (2 and 4)

$$P(\text{Landing on an even number}) = \frac{2 \text{ Chances}}{5 \text{ total opportunities}} = \frac{2}{5} = .40 \cdot 100 = 40\%$$

There is a 40% chance of landing on an even number.

Ex2) What is the probability of picking a diamond from a standard deck of playing cards which has 13 cards in each of four suits: spades, hearts, diamonds, and clubs?

Answer: There are 13 diamond cards out of 52 total.

$$P(\text{Picking a diamond}) = \frac{13 \text{ diamonds}}{52 \text{ total opportunities}} = \frac{13}{52} = .25 \cdot 100 = 25 \%$$

There is a 25% chance of picking a diamond out of a deck of cards.  
Problems:

- 1) Find the probability of picking a red card from a standard deck of playing cards.
- 2) Find the probability of picking a number less than 9 from a jar with papers labeled from 1 to 12.
- 3) What is the probability of rolling a dice and landing on a number that is less than 3.
- 4) There are 4 aces and 4 kings in a standard deck. You select one card at random. What is the probability you pick a card that is a king or ace?
- 5) James counts the hair colors of the 22 people in his class, including himself. He find that there are 4 people with blonde hair, 8 people with brown hair, and 10 people with black hair. What is the probability of choosing a student that has brown or black hair?
- 6) The power goes out as Sandra is trying to get dressed. If she has 4 white t-shirts and 10 colored t-shirts in her drawer, is it likely that she will pick a colored t-shirt? What is the probability she will pick a colored T-shirt? Explain your answers.

Day 11 NTI  
7<sup>th</sup> Grade Science

*Instructions:*

1. Read and annotate/make notes about the background information 1 below.
2. Read and annotate/make notes about the background information 1 below.
3. Do Task 1, 2, 3.

**Background Information 1 about Icicles and Thermal Energy Transfer**

When atmospheric conditions are right, icicles form on the edges of the roofs of structures. After a snowfall, some of the snow can melt, flow toward the edge of a roof, and then refreeze before dripping to the ground, which can result in icicle formation. Depending on the energy transferred to the roof by the sun, or through the roof from the inside of the house, different sized icicles could form for structures collecting the same amount of snowfall because different melting would occur between the two structures' roofs. Snow generally melts on roofs due to three different heat sources: 1) heat from within the house is transferred through the roof causing the snow on the roof to melt, 2) solar radiation warms the roof and melts the snow or 3) the outside air temperature is above freezing and the snow melts.

Thermal energy will always move from high energy areas (hotter) to lower energy areas (colder). A common misconception is that people believe that areas cool because of "coldness." Cold is not a thing, it is simply the absence of heat.

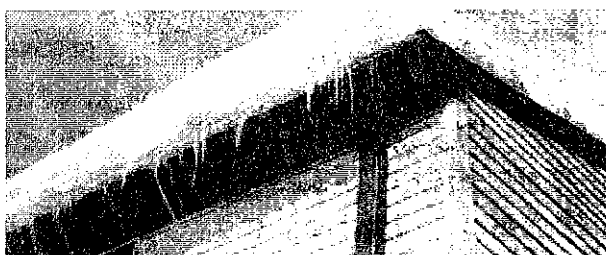
**Icicles on My House**

Jason and Jessica are two middle school students that live in Central Kentucky. They noticed that after every snowfall Jason's house develops large, dangerous icicles while Jessica's house produces much smaller icicles. Both homes are single story houses that are 1500 ft<sup>2</sup> in area. In order to make sense of the phenomenon, the two friends researched icicle formation.

**Jason's House**



**Jessica's House**



**ICICLE RESEARCH:** Icicles only form when the air temperature is below freezing (32°F). Typically, a heat source warms snow on a roof (such as sunlight or heat from inside of the house) causing some of the snow to melt and flow towards the edge of the roof. The melt water begins to drip from the roof edge but re-freezes before falling to the ground. The process continues as more melted water gradually refreezes creating the common shape of an icicle. Icicles may form over several hours or even days if the conditions are right. Jason and Jessica now understand how icicles form, but they still wondered why the two houses produced different sized icicles. They decided to observe their homes for a 24-hour period after a six inch snowfall blanketed their neighborhood. They each noticed that both home's thermostats were set to 70 degrees, and each house was heated using identical electrical central heating units. After careful observations, the two friends constructed Table 1A.

**Table 1A**

<b>Observations:</b>	<b>Jason's House</b>	<b>Jessica's House</b>
External temperature of roof surface	36°F	33°F
Average snow thickness on roof (5 inches originally)	2.8 inches	4.6 inches
Temperature at thermostat height (5 ft above floor)	72°F	72°F
Temperature at floor level	58°F	64°F
Temperature at ceiling (8 ft above floor)	70°F	75°F
Attic insulation (above ceiling) thickness and type	3 inch thick fiberglass	8 inch thick rolled fiberglass
Color of Inside Walls of the House	Orange	Orange
Average energy bill cost/month	\$335	\$245
Number of times the heat pump kicked on in one hour	4 times - ran a total of 40 minutes	2 times - ran a total of 20 minutes



**Task -** After thinking about how icicles form based on the text of icicle research, analyze the data from Table 1A and consider how the information might provide evidence for why icicles form much bigger on Jessica's house than Jason's house. Think about how the information in the table could give evidence of how thermal energy is being transferred through each house and what that could mean for icicle formation.

Consider the following questions to stimulate your thinking about the information in table:

1. Which factors are the same between the two houses? Which factors are different?

Same	Different

2. What could cause Jessica's roof to be cooler than Jason's? (Remember that they are in the same neighborhood.) List as many factors as you can.

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3. What could cause the snow to be thicker on Jessica's roof than Jason's roof?

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