NO PREP

Petra

The Rose-Red City Carved in Stone

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Name: Period: Date:

Petra: The Rose-Red City Carved in Stone

The Nabataean Capital in the Desert

Hidden among the sandstone cliffs of southern Jordan lies Petra, one of the most remarkable archaeological sites in the world. Built by the Nabataeans, an Arab people who settled in the region around the fourth century BCE, Petra served as the capital of a powerful trading kingdom that controlled the lucrative incense trade routes connecting Arabia, Egypt, and the Mediterranean. The Nabataeans were originally a nomadic people who gradually transitioned to a settled lifestyle as they gained wealth from taxing and protecting the caravans that crossed their territory. They carved elaborate temples, tombs, and public buildings directly into the rose-colored sandstone cliffs, creating an architectural wonder that earned Petra the nickname 'the Rose-Red City.' The sandstone itself varies in color from deep red to orange, pink, and even purple, depending on the mineral content of the rock, giving the carved facades a dramatic and ever-changing appearance as sunlight shifts throughout the day. At its peak around the first century CE, Petra was home

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After the Roman Empire annexed the Nabataean kingdom in 106 CE, Petra gradually declined as trade routes shifted northward toward the city of Palmyra in modern-day Syria. Earthquakes in 363 and 551 CE caused further structural damage to many of the carved facades and freestanding buildings, and by the early medieval period, the city was largely abandoned and forgotten by the Western world, known only to local Bedouin communities who continued to live among the ancient ruins and used some of the carved tombs as shelters for their livestock and families.

Rediscovery and the Famous Facades

In 1812, a young Swiss explorer named Johann Ludwig Burckhardt became the first European in centuries to lay eyes on Petra. Burckhardt was a remarkable figure in his own right, having spent years studying Arabic and Islamic culture in preparation for his travels across the Middle East and North Africa. Disguised as an Arab traveler and speaking fluent Arabic, Burckhardt convinced a local guide to lead him through the Siq, the narrow gorge that serves as Petra's main entrance, by claiming he wished to sacrifice a goat at a nearby tomb. The Siq stretches for over a kilometer, with towering sandstone walls rising nearly 80 meters on either side, and its floor still shows the remains of an ancient paved road and water channels carved by the Nabataeans. Along the walls, visitors can still see carved niches that once held small religious statues or offerings left by travelers seeking divine protection before entering the city. The gorge opens dramatically to reveal Al-Khazneh, known as the Treasury. This iconic facade, carved directly into a cliff face and standing nearly 40 meters tall, features elaborate Hellenistic columns, friezes, and sculptures that blend Greek, Egyptian, and Nabataean artistic traditions. The level of detail in the carvings is extraordinary, with figures of eagles, Amazons, and the mythological twins Castor and Pollux flanking the central entrance. Bullet holes pockmark the facade, left by Bedouin who fired at the carved urns hoping to release treasure they believed was hidden inside. Despite its name, the Treasury was likely a royal tomb rather than a storehouse, and recent archaeological work beneath its floor has revealed burial chambers containing skeletal remains and grave goods. Beyond the Treasury, Petra contains over 800 carved structures, including the massive Monastery (Ad-Deir), which stands even taller than the Treasury at 47 meters, a Roman-style theater carved into the rock that seated 4,000 spectators, and rows of elaborate royal tombs known as the Royal Tombs whose facades display a range of

architectural styles. Burckhardt's account of his discovery electrified European scholars and launched decades of exploration and romantic fascination with the lost city. However, systematic archaeological excavation did not begin until the twentieth century, and researchers estimate that only about 15 percent of Petra has been excavated so far, meaning the vast majority of this ancient city remains buried beneath centuries of sand and debris.

Water Engineering and Ongoing Discoveries

Perhaps the most impressive achievement of the Nabataeans at Petra was their sophisticated water management system, which allowed a thriving city to exist in a region that receives less than 15 centimeters of rainfall per year. Flash floods were both the greatest danger and the greatest resource in this environment, as a single winter storm could send a wall of water rushing through the canyons with enough force to sweep away people and structures. The Nabataeans engineered an elaborate network of dams, cisterns, channels, and ceramic pipes that captured, stored, and distributed every drop of rainwater while simultaneously protecting the city from flood damage. They carved channels directly into the canyon walls to direct flash flood waters into massive underground cisterns capable of holding millions of liters. Some of these cisterns were cut deep into solid rock and lined with waterproof plaster to prevent any seepage. Archaeologists have documented over 200 individual water collection and storage installations throughout the city, a density of hydraulic infrastructure that rivals anything built by Rome during the same period. Ceramic pipes carried water throughout the city, and a series of dams in the surrounding hills prevented destructive flooding while capturing runoff for later use. This system was so effective that Petra likely had enough water to support fountains, gardens, and even a large swimming pool, luxuries almost unheard of in the ancient desert world. The Nabataeans also developed techniques for collecting dew and condensation, using stone piles that cooled overnight and funneled moisture into small collection basins, a method so efficient that some modern engineers have studied it for potential application in water-scarce arid regions today. Modern excavations continue to reveal the true scale of Petra. In 2016, satellite imagery and drone surveys identified a massive platform structure roughly the size of an Olympic swimming pool, previously unknown and located about half a mile south of the city center. This platform may have served a ceremonial or religious purpose, though its

exact function remains a subject of scholarly debate. Archaeologists have also uncovered evidence of a vibrant marketplace, residential neighborhoods, and industrial areas including workshops for metalworking and pottery that show Petra was far more than just a collection of impressive facades carved into canyon walls. Each excavation season brings new discoveries that challenge previous assumptions about the size, complexity, and daily life of this extraordinary desert city.

Key Information: Petra: Key Facts

Feature	Detail
Location	Southern Jordan, within sandstone desert canyons
Builders	Nabataeans, an Arab trading people (4th century BCE onward)
Peak Population	Estimated 20,000-30,000 residents around 1st century CE
Rediscovery	Johann Ludwig Burckhardt in 1812, disguised as an Arab traveler
Famous Structures	The Treasury (Al-Khazneh), the Monastery (Ad-Deir), rock-cut theater
Water System	Dams, cisterns, ceramic pipes, and carved channels for flash flood capture
Excavation Status	Only about 15 percent of the city has been excavated
UNESCO Status	Designated a World Heritage Site in 1985

Case Study: Engineering Water in the Desert Canyon

Khalid is a Nabataean water engineer living in Petra around 50 BCE. The city's population is growing rapidly as caravan trade increases, and the king has ordered Khalid to expand the water supply system to support a new residential district on the city's southern plateau. Khalid surveys the surrounding hills and identifies a seasonal wadi that carries significant runoff during the brief winter rains. He designs a dam across the wadi's narrowest point, using cut stone blocks sealed with waterproof plaster, to create a reservoir. From the reservoir, he plans a gravity-fed channel carved into the cliff face that will carry water nearly two kilometers to a large underground cistern beneath the new district. The channel must maintain a precise downward slope of roughly two centimeters per hundred meters to keep water flowing without eroding the sandstone. Khalid also designs ceramic pipe sections that will distribute water from the cistern to individual homes and a public fountain. His workers must complete the project before the next rainy season or the flash floods will destroy the unfinished dam.

1. What engineering challenges did Khalid face in designing a gravity-fed water channel over such a long distance through sandstone terrain?

2. How does Khalid's project reflect the broader Nabataean approach to making desert life sustainable at a large urban scale?

Multiple Choice

1. What was the primary economic activity that made Petra wealthy?

    a) Large-scale agricultural production sustained through irrigation

    b) Manufacturing pottery and textiles for export

    c) Gold and silver mining in the surrounding mountains

    d) Controlling trade routes for incense, spices, and luxury goods

2. How did Johann Ludwig Burckhardt gain access to Petra in 1812?

    a) He followed ancient Roman road maps to locate the hidden entrance

    b) He led a large military expedition to force entry

    c) He disguised himself as an Arab traveler and hired a local guide

    d) He paid local officials for an official excavation permit

3. What percentage of Petra has been excavated by archaeologists so far?

    a) About 75 percent

    b) About 15 percent

    c) About 30 percent

    d) About 50 percent

Matching

Write the letter of the correct definition on the line next to each term.

Term	Definition
1. ___ Siq	A) Swiss explorer who rediscovered Petra in 1812
2. ___ Al-Khazneh	B) The Monastery, a massive carved structure beyond the city center
3. ___ Nabataean	C) The narrow gorge serving as the main entrance to Petra
4. ___ Burckhardt	D) The Arab people who built Petra and controlled desert trade routes
5. ___ Ad-Deir	E) The Treasury facade carved into a cliff, likely a royal tomb

Fill-in-the-Blank

1. The Nabataeans built _____ to capture flash flood water in the desert.

2. Petra is nicknamed the Rose-Red City because of its _____ cliffs.

3. Burckhardt entered Petra through the _____, a narrow gorge.

Short Answer

Answer each question in 2-4 complete sentences.

1. Why was the Nabataean water management system essential to Petra's survival as a major city?

_____

_____

_____

2. What evidence suggests that Petra was much larger than just its famous carved facades?

_____

_____

_____

3. How did Petra's geographic location contribute to both its wealth and its defense?

_____

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