

Asteroid Attack!



asteroid 243 Ida

A few years ago, astronomers discovered a mile-wide rock tumbling through space. At first, the scientists feared that the newly discovered space rock would plow into Earth on February 1, 2019.

Scientists named the space rock NT7 and clocked its speed at 7 miles per second. The scientists thought the asteroid was heading straight for Earth!

Asteroid Strike!

A mile-wide asteroid could take out an entire continent, scientists say. Fearing the worst, scientists kept their eyes on NT7. They plotted its orbit, or path, around the sun.

After watching NT7 for several weeks, scientists found out that NT7 would miss Earth on February 1, 2019.

Near-Earth Asteroids

Most asteroids orbit the sun between Mars and Jupiter. NT7, however, is a near-Earth asteroid. Near-Earth asteroids orbit the sun close to Earth. NT7 orbits the sun once every 837 days. Its orbit sometimes takes NT7 as far from the sun as Mars. At other times, it is within Earth's orbit.

Scientists know about nearly 350 near-Earth asteroids. They carefully map the orbits of those asteroids to make sure the asteroids don't come too close to our planet.

Scientists say anywhere from 500 to 1,000 near-Earth asteroids are yet to be discovered. Scientists are searching the sky for them. They want to have plenty of warning if one comes too close.

Sudden Impact

An asteroid the size of NT7 may one day come close to Earth, scientists say. "An object of this size would be expected to hit Earth every few million years, and as we get additional data I think this threat will go away," said Donald Yeoman of the National Aeronautics and Space Administration (NASA).

Yeoman and most other scientists say you shouldn't worry too much about asteroids. Most don't think a space rock will pose a threat in the near future. If an asteroid does come near Earth, scientists might be able to destroy it. One scientist, for instance, said a large laser could be used to zap NT7 if the asteroid came too close to Earth.

What's a Comet?

Many people often confuse asteroids and comets. Asteroids are chunks of rock in space.

Comets are not made of rock. They are made mostly of ice. Comets spend most of their time far from the sun. When a comet nears the sun, heat from the sun warms it, causing the ice to melt. The melting ice forms a comet's long tail. After rounding the sun, the comet moves farther away from the sun. The comet cools and the tail slowly disappears.

orbit or bit

Advanced Definition

noun

1. the curved path in which a planet, satellite, or spacecraft revolves about another body.

Earth's orbit around the sun is elliptical.

2. one complete revolution along such a path.

A little more than 365 days is the amount of time that the earth takes to complete one orbit around the sun.

3. a sphere or area of experience, knowledge, control, or power.

Such questions are really outside of my orbit.

4. one of the two bony sockets that encase the eyeballs.

transitive verb

1. to revolve about (another body) in a curved path.

Several moons orbit Jupiter.

2. to send into an orbit.

intransitive verb

1. to travel in an orbit.

The space station is now orbiting.

Spanish cognate

órbita: The Spanish word *órbita* means orbit.

These are some examples of how the word or forms of the word are used:

1. Fearing the worst, scientists kept their eyes on NT7. They plotted its **orbit**, or path, around the sun.
2. The GPS is a network of 31 satellites **orbiting** the globe that monitors Earth's surface, including its tiniest movements.
3. Cassini snapped shots of Enceladus (en-SELL-ahdus) as the craft **orbited** Saturn.

4. The Kuiper belt is a wide band of icy and rocky objects circling the sun just beyond the **orbit** of Neptune.
5. The next stop on the tour was the new Mission Control, where engineers keep tabs on the International Space Station (ISS) **orbiting** above Earth.
6. The German astronomer and mathematician Johannes Kepler discovered the laws of planetary motion in the 17th century. (Kepler was the first person to calculate the **orbit** of Mars.)
7. He took out a high-powered telescope, through which Emine could see Saturn and its rings. She was amazed at how rapidly it moved out of focus, because it was **orbiting** the sun so quickly.
8. Jeremy noticed that some of the charts showed patterns: numbers that repeated, timings separated by exactly one hour. The professor showed him that the repeating numbers were distances between planets, or between planets and their moons, or distances between stars, and showed him how the **orbits** of these planetary bodies created patterns of collective behavior.
9. "Eclipses are all about parabolas and angles," he'd explained. Half the class yawned as Mr. Baker waxed on about the elliptical shape of earth's **orbit** and the penumbra and umbra-concentric circles of dark shadows created by an eclipse.
10. Many people know that trash is a big problem on planet Earth. What many people don't know is that trash is becoming a problem in outer space too. Years of space exploration have left tons of "space junk" in **orbit** around the planet.

strike

strike

Definition

verb

1. to hit with the hand or a weapon.

He struck me with the back of his hand.

2. to move toward something and hit it with force.

The car struck a boy on his bicycle.

noun

1. a stopping of work as a protest for better pay or working conditions.

The workers at the automobile factory went on strike yesterday.

Advanced Definition

transitive verb

1. to land (a blow) with the hand or a weapon.

He struck me with the back of his hand.

2. to collide or make abrupt contact with.

3. to attack or make an assault upon.

The army struck the enemy fortifications.

4. to afflict suddenly with an illness or disease.

5. to injure by biting.

The snake struck his leg.

6. to have an impact on; impress.

The notion struck her as a good idea.

7. to indicate (the time) by means of sound.

The clock struck one o'clock.

8. to create by stamping or punching out.

The mint strikes silver coins.

9. to cause (a match) to produce a light or spark by means of friction.
10. to reach.

Sunlight struck the window.

11. to assume or take on.

She struck a pose for the photographer.

12. to discontinue working at until certain conditions are met.

They struck the factory for higher pay.

13. to induce or instill (a feeling or emotion).

The threat struck terror in them.

14. to make.

Our company struck a deal with the manufacturer.

intransitive verb

1. to land a blow with the hand or a weapon; hit.
2. to make abrupt contact; collide.
3. to produce sound by hitting one object with another.
4. to become ignited.
5. to engage in an attack or assault.
6. to refuse to continue working.

The union will strike soon.

7. to go away; take leave (fol. by out).

We will strike out in the morning.

8. to come across unexpectedly.

noun

1. the act or an incident of striking.
2. an action taken by a trade union or group of workers to stop work until their demands are agreed to by their employers.

3. an attack; assault.
4. in baseball, a failure, in any of several ways, to hit a pitched ball into the fair part of the playing field.
5. in bowling, the knocking down of all pins with one roll of the ball.

These are some examples of how the word or forms of the word are used:

1. Hang in there! The flu **strikes** the United States for only part of the year. Flu season usually runs from November to March.
2. Florida receives the most lightning **strikes** in North America. Scientists have recorded over 20 million lightning strikes in the continental United States, and Florida gets more than any other state.
3. He army-crawled around the house to the door that led into the kitchen. Through the window, he saw his mother arranging the cupcakes on a tray. It was nearly time to **strike**.
4. People flocked to California because of the gold rush, hoping to get rich by mining for gold. While most people didn't **strike** it rich, many ended up staying in the area and farming.
5. Have you ever been really angry with one of your friends or someone in your family for letting you down? Have you wanted to scream or yell, or even **strike** out and punch something?
6. Several Pony Express riders had so far been killed en route, but only rarely did Pony Express mail get lost. Charlie prayed that no disaster would **strike** the string of riders who would ferry his letter along.
7. Her opponent isn't having much luck at the pool table. He **strikes** the cue ball with the stick, but aims badly. The white ball bounces off three edges of the pool table until it finally slows and comes to a stop.
8. Next time you're planning to go out for a leisurely walk with your MP3 player, be sure to check the weather forecast first. Summer is the prime time for lightning **strikes**, a fact that Jason Bunch, a teen from Castle Rock, Colo., learned the hard way.
9. This attic is long, dark and full of secrets. And I have to walk back across. More importantly, I have to find out what's making the skittering noise, or this whole trip was a waste. I take out my headphones and wait for the monsters to **strike**.
10. A splash and a scream came from the duck pond just outside the baseball diamond. Darren Fitch, a fourth-grader, who was playing kickball, missed his pitch. "I turned to look and see who screamed." His teammates yelled at him for getting a **strike**, but he knew something was wrong.

Name: _____ Date: _____

1. What detail does the author use to *describe* NT7?

- A. The speed of NT7 is 70 miles per hour.
- B. The size of NT7 is 8 miles wide.
- C. The orbit of NT7 takes 837 days.
- D. The color of NT7 matches that of comets.

2. According to the passage, where do most asteroids orbit the sun?

- A. between Earth and Mars
- B. between Venus and Jupiter
- C. between Mars and Jupiter
- D. between the sun and Earth

3. Why do you think people often confuse asteroids and comets, as the author points out in paragraph 10?

- A. Like asteroids, comets look like space rocks when they are far from the sun.
- B. Like asteroids, comets could cause a lot of damage if they hit Earth.
- C. Like comets, asteroids melt when they get close to the sun.
- D. Like comets, most asteroids have long tails when they pass Earth.

4. Read the following sentence and answer the question below:

"A few years ago, astronomers discovered a mile-wide rock tumbling through space."

In the sentence the word **astronomers** means

- A. people who study objects in space
- B. people who study maps of the Earth
- C. people who study rocks
- D. people who study the sun

5. The primary purpose of this passage is to
- A. persuade the reader that NT7 will hit Earth
 - B. list all the steps scientists take to study asteroids
 - C. describe near-Earth asteroids
 - D. compare comets and asteroids

6. What is NT7?

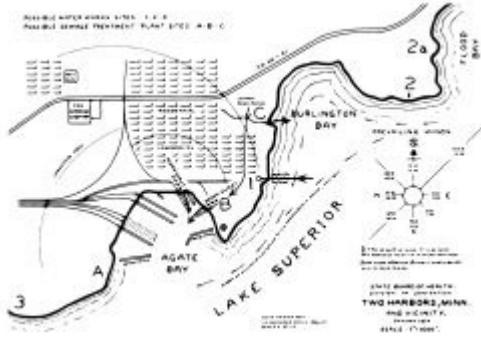
7. Why would scientists want "plenty of warning" of an asteroid coming close to Earth?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Scientists were worried that NT7 would hit Earth, _____ they watched it and plotted its orbit carefully.

- A. where
- B. unless
- C. yet
- D. so

9. Which image shows a path that has been plotted?



10. If you plotted your route before you went somewhere for the first time, would you be more or less likely to get lost?

Name: _____ Date: _____

1. What is a meaning of the word **strike**?

- A. an illustration that is drawn by hand and published in a book, magazine, or newspaper
- B. an attack that is intended to seize or inflict damage on or destroy an objective
- C. any person in the armed services who holds a position of authority or command

2. What is another meaning of the word **strike**?

- A. a use, purpose
- B. one of a kind
- C. a blow

Please use each answer choice only once. Choose the one word that best completes the sentence.

3. The last race of the day was being run when the tornado _____.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

4. A _____ is a refusal to work until demands are met.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

5. I'm going to cross this pond without swimming a _____, said Ben.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

6. Hail-like objects dropped to the earth, _____ their faces and hands.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

7. He already had two _____ against him.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

8. The teacher writes the letter with big _____ in the air.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

9. She _____ it, caressed it, and played with it.

- A. strokes
- B. strike
- C. struck
- D. stroke
- E. stroked
- F. strikes
- G. striking

10. Please write your own sentence using the word **strike**.

11. What would you like to remember about the meaning of the word **strike** so that you can use it when you write or speak?

Name: _____ Date: _____

1. What is a meaning of the word **orbit**?

- A. an implement consisting of a length of wood
- B. a range of influence, activity, or knowledge
- C. an opening in the membrane of a hollow organ

2. What is another meaning of the word **orbit**?

- A. the activity of exerting your muscles in various ways to keep fit
- B. a circular or elliptical path of one object around another object
- C. preparatory school work done outside school (especially at home)

Please use each answer choice only once. Choose the one word that best completes the sentence.

3. The _____ itself looked like a stubby airplane.

- A. orbits
- B. orbit
- C. orbiting
- D. orbited
- E. orbiter
- F. orbitals

4. The Sun and the planets that _____ the Sun are our solar system.

- A. orbits
- B. orbit
- C. orbiting
- D. orbited
- E. orbiter
- F. orbitals

5. It assumes that the electrons in a molecule occupy atomic _____ of the individual atoms.
- A. orbits
 - B. orbit
 - C. orbiting
 - D. orbited
 - E. orbiter
 - F. orbitals
6. As a comet _____ the Sun, pieces of dust and gas fly off to form what looks like a tail.
- A. orbits
 - B. orbit
 - C. orbiting
 - D. orbited
 - E. orbiter
 - F. orbitals
7. Scientists at NASA raced to get a spacecraft ready for launch, but the Soviet Union beat the U.S. again when Yuri Gagarin, a Soviet cosmonaut, _____ Earth in 1961.
- A. orbits
 - B. orbit
 - C. orbiting
 - D. orbited
 - E. orbiter
 - F. orbitals

8. There they will work on space stations _____ Earth.

- A. orbits
- B. orbit
- C. orbiting
- D. orbited
- E. orbiter
- F. orbitals

9. Please write your own sentence using the word **orbit**.

10. What would you like to remember about the meaning of the word **orbit** so that you can use it when you write or speak?
