

## Asteroid rock layers reveal how the dinosaurs died

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Scientists say they have unearthed details of how the dinosaurs were wiped out 65 million years ago. A team of geophysicists is analyzing rock formations in a crater under the seabed off Mexico. The rocks

contain the remnants of the cataclysmic aftermath of a gigantic asteroid impacting with Earth. The scientists say the layers of rock they have extracted reveal a step-by-step account of the destruction that happened after the impact as rock and sediment settled on top of each other in revealing layers. Geophysicist Jay Melosh from Purdue University said: "It tells us what went on inside the crater on that day of doom that killed the dinosaurs. All of this mayhem is directly recorded in the core."

Scientists say the asteroid was around three to four kilometers wide. It smashed into the ocean and created a hole 160kms wide and 20kms deep. This triggered a chain reaction of earthquakes, tsunami, icecap melting, landslides and fires that forever changed the geology and life forms on Earth, killing off the dinosaurs. The asteroid's impact hurled out rock and minerals and created a massive crater. Molten rock fell back into the crater, which was then filled with ocean water from tidal waves. This water was full of soil, vegetation, animal life and other debris, all of which settled in layers ready for scientists to analyze millions of years later. The scientists say this layer-forming process took just a few hours.

Sources: foxnews.com / gizmodo.com / thesun.co.uk

### Writing

It is very important to know how the dinosaurs died. Discuss.

### Chat

Talk about these words from the article.

details / dinosaurs / rock / seabed / Mexico / asteroid / step-by-step / destruction / wide / ocean / chain reaction / tsunami / geology / crater / vegetation / a few hours

### True / False

- a) Scientists have earthed details of how dinosaurs died. T / F
- b) Scientists are analyzing rocks under the seabed near Indonesia. T / F
- c) Layers of rock provide a step-by-step account of the asteroid's damage. T / F
- d) Scientists found many dinosaurs in the crater. T / F
- e) The asteroid mentioned in the article was 30kms wide. T / F
- f) The asteroid set off earthquakes and wildfires. T / F
- g) Molten rock fell into the crater left by the asteroid. T / F
- h) The debris from the asteroid settled within hours of impact. T / F

### Synonym Match

(The words in **bold** are from the news article.)

- |                     |                |
|---------------------|----------------|
| 1. <b>unearthed</b> | a. leftovers   |
| 2. <b>wiped out</b> | b. examine     |
| 3. <b>remnants</b>  | c. effects     |
| 4. <b>aftermath</b> | d. threw       |
| 5. <b>doom</b>      | e. gigantic    |
| 6. <b>triggered</b> | f. discovered  |
| 7. <b>hurled</b>    | g. destruction |
| 8. <b>massive</b>   | h. earth       |
| 9. <b>soil</b>      | i. killed      |
| 10. <b>analyze</b>  | j. activated   |

### Discussion – Student A

- a) What do you know about dinosaurs?
- b) Are any of today's animals from the dinosaurs?
- c) What is your favorite dinosaur?
- d) What do you think wiped out the dinosaurs?
- e) Would you like to work with the geologists?
- f) What happens when an asteroid hits the earth?
- g) What would you do now if an asteroid will hit Earth tomorrow?
- h) What would Earth be like today if the dinosaurs hadn't disappeared?

## Phrase Match

- |  |                     |
|--|---------------------|
| 1. Scientists say they have unearthed    | a. into the ocean   |
| 2. how the dinosaurs were wiped          | b. account          |
| 3. a crater under the seabed             | c. to analyze       |
| 4. a step-by-step                        | d. out rock         |
| 5. inside the crater on that day of      | e. out              |
| 6. It smashed                            | f. and other debris |
| 7. This triggered a chain                | g. details          |
| 8. The asteroid's impact hurled          | h. doom             |
| 9. full of soil, vegetation, animal life | i. reaction         |
| 10. ready for scientists                 | j. off Mexico       |

## Discussion – Student B

- What do you think about what you read?
- Can we stop asteroids from hitting Earth?
- How interested are you in geology?
- What other theories are there of how dinosaurs disappeared?
- Would you like to travel back to the time of the dinosaurs?
- What is your favorite dinosaur movie?
- How might humans die out one day?
- What questions would you like to ask the geologists?

## Spelling

- Scientists say they have eutrahned details
- rock rmtafionos in a crater
- the remnants of the aacylcstimc aftermath
- rock they have tecartxed
- rock and idsmenet
- All of this ahymem
- the steroaid was around three to four kilometers wide
- This rgteqired a chain reaction
- changed the loeoggy and life forms
- hurled out rock and iemarnls
- animal life and other edrbis
- ready for scientists to nayalze

### Answers – Synonym Match

1. f	2. i	3. a	4. c	5. g
6. j	7. d	8. e	9. h	10. b

## Role Play

### Role A – Tsunami

You think tsunami are the biggest cataclysms. Tell the others three reasons why. Tell them what is wrong with their cataclysms. Also, tell the others which is the least destructive of these (and why): asteroid strikes, cyber-attacks or floods.

### Role B – Asteroid Strikes

You think asteroid strikes are the biggest cataclysms. Tell the others three reasons why. Tell them what is wrong with their cataclysms. Also, tell the others which is the least destructive of these (and why): tsunami, cyber-attacks or floods.

### Role C – Cyber-Attacks

You think cyber-attacks are the biggest cataclysms. Tell the others three reasons why. Tell them what is wrong with their cataclysms. Also, tell the others which is the least destructive of these (and why): asteroid strikes, tsunami or floods.

### Role D – Floods

You think floods are the biggest cataclysms. Tell the others three reasons why. Tell them what is wrong with their cataclysms. Also, tell the others which is the least destructive of these (and why): asteroid strikes, cyber-attacks or tsunami.

## Speaking – Cataclysms

Rank these with your partner. Put the worst at the top. Change partners often and share your rankings.

- |                |                   |
|----------------|-------------------|
| • huge tsunami | • asteroid strike |
| • hurricane    | • locust plague   |
| • wildfire     | • huge earthquake |
| • flood        | • cyber-attacks   |

### Answers – True False

a	F	b	F	c	T	d	F	e	F	f	T	g	T	h	T
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Answers to Phrase Match and Spelling are in the text.