# The Case of the Missing Fossil Core

Grade 5 math · Fractions of a number, Order of operations, Multiplication, Rounding, Division · Reading level grades 5-6

**Detective:** _____ **Date:** _____

A rare golden T-Rex tooth was taken from the Paleo Peak Lab! The thief left behind footprints, torn gear, and mysterious clues around the fossil digsite. Use your deduction skills and math clues to crack the case!

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

**My answer: the Fossil Thief is** _____

## Possible suspects

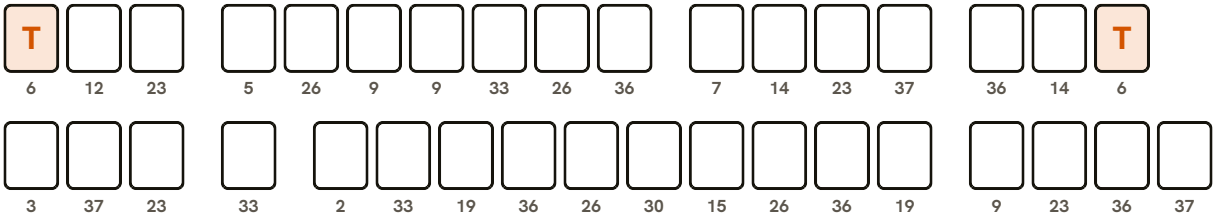
Cross off a row as each clue rules it out. The one left at the end is the culprit.

| NAME | DINO STANCE | DIG TOOL | DOMINANT HAND | FOSSIL DUST | DINO DISTRACTION |
|---|---|---|---|---|---|
| **Dr Alan Grant** | Ankylosaurus Slam | Sonic Mapper | Left-Handed | Grey Clay Dust | Screeching Whistle |
| **Karen Chin** | Triceratops Charge | Chisel Drill | Left-Handed | Red Sand Dust | Roaring Speaker |
| **Edward Drinker Cope** | Stegosaurus Tail Whip | Laser Scanner | Left-Handed | Red Sand Dust | Bright Spotlight |
| **Lindsay Zanno** | Stegosaurus Tail Whip | Laser Scanner | Left-Handed | Red Sand Dust | Roaring Speaker |
| **Lawrence Lambe** | Velociraptor Dash | Plaster Mold | Left-Handed | Grey Clay Dust | Roaring Speaker |
| **Xu Xing** | Stegosaurus Tail Whip | Plaster Mold | Right-Handed | Red Sand Dust | Bright Spotlight |
| **Rodolfo Coria** | Ankylosaurus Slam | Laser Scanner | Right-Handed | Red Sand Dust | Roaring Speaker |
| **Luis Chiappe** | TRex Pounce | Magnifying Lens | Right-Handed | Grey Clay Dust | Screeching Whistle |
| **Paul Barrett** | TRex Pounce | Laser Scanner | Right-Handed | Yellow Chalk Dust | Bright Spotlight |
| **Gideon Mantell** | Stegosaurus Tail Whip | Chisel Drill | Left-Handed | Red Sand Dust | Bright Spotlight |
| **Dr Ellie Sattler** | Ankylosaurus Slam | Sonic Mapper | Left-Handed | Red Sand Dust | Roaring Speaker |
| **Phil Currie** | Stegosaurus Tail Whip | Plaster Mold | Left-Handed | Grey Clay Dust | Bright Spotlight |
| **Jack Horner** | Triceratops Charge | Plaster Mold | Right-Handed | Red Sand Dust | Bright Spotlight |
| **Mary Anning** | Ankylosaurus Slam | Chisel Drill | Right-Handed | Grey Clay Dust | Bright Spotlight |
| **Dong Zhiming** | TRex Pounce | Chisel Drill | Left-Handed | Red Sand Dust | Bright Spotlight |
| **Nizar Ibrahim** | Velociraptor Dash | Sonic Mapper | Left-Handed | Red Sand Dust | Bright Spotlight |
| **Patricia Vickers Rich** | Velociraptor Dash | Chisel Drill | Left-Handed | Yellow Chalk Dust | Bright Spotlight |
| **Roy Chapman Andrews** | TRex Pounce | Sonic Mapper | Right-Handed | Red Sand Dust | Bright Spotlight |
| **Kristi Curry Rogers** | Stegosaurus Tail Whip | Magnifying Lens | Left-Handed | Red Sand Dust | Bright Spotlight |
| **Barnum Brown** | Velociraptor Dash | Plaster Mold | Left-Handed | Yellow Chalk Dust | Roaring Speaker |
| **Charles Knight** | Stegosaurus Tail Whip | Sonic Mapper | Left-Handed | Grey Clay Dust | Bright Spotlight |

## CLUE 1 Fractions of a number

You examine the lab inventory log to see what fraction of the dig equipment was tampered with during the theft.

Solve each problem, then write its letter in every clue box that shows the same number.




3/10 of 20 = ☐ → T

5/10 of 6 = ☐ → U

1/5 of 25 = ☐ → V

3/4 of 48 = ☐ → N

3/6 of 14 = ☐ → D

2/8 of 148 = ☐ → S

5/10 of 66 = ☐ → A

5/10 of 52 = ☐ → I

1/2 of 4 = ☐ → M

2/6 of 45 = ☐ → Y

1/8 of 184 = ☐ → E

2/6 of 36 = ☐ → H

2/8 of 76 = ☐ → G

3/6 of 18 = ☐ → L

5/6 of 36 = ☐ → F

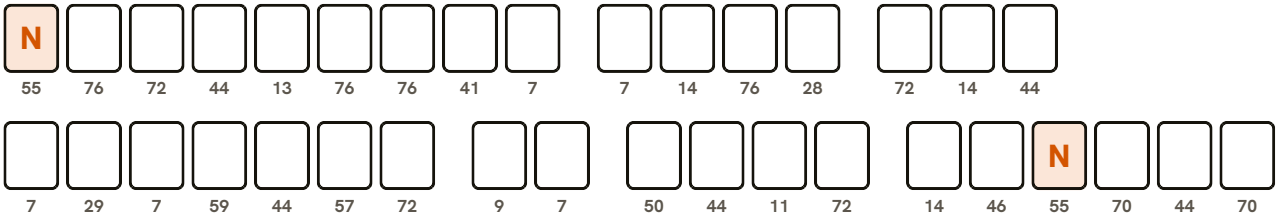
1/3 of 42 = ☐ → O

Scratch space:

## CLUE 2 Order of operations

A scrambled security code on the fossil vault keypad requires solving multi-step calculations to unlock.

Solve each problem, then write its letter in every clue box that shows the same number.




49 + 3 × 2 = ☐ → N

27 + 5 × 9 = ☐ → T

3 × 9 - 20 = ☐ → S

3 + 2 × 3 = ☐ → I

30 + 4 × 4 = ☐ → A

6 × 6 - 8 = ☐ → W

10 × 4 - 11 = ☐ → U

12 × 8 - 20 = ☐ → O

6 × 11 - 9 = ☐ → C

4 + 8 × 5 = ☐ → E

9 × 7 - 4 = ☐ → P

6 × 7 - 1 = ☐ → K

30 + 5 × 8 = ☐ → D

9 × 7 - 13 = ☐ → L

7 × 5 - 24 = ☐ → F

4 + 3 × 3 = ☐ → B

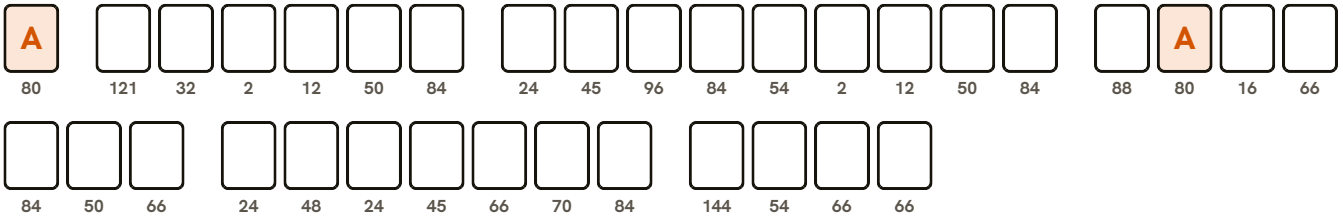
5 + 3 × 3 = ☐ → H

Scratch space:

## CLUE 3 Multiplication facts (1-12)

You count the rows of fossil crates stacked inside the storage tent to trace the thiefs escape route.

Solve each problem, then write its letter in every clue box that shows the same number.




8 × 10 = ☐ → A

7 × 10 = ☐ → C

8 × 12 = ☐ → O

11 × 8 = ☐ → M

5 × 9 = ☐ → P

12 × 12 = ☐ → F

5 × 10 = ☐ → H

11 × 6 = ☐ → E

11 × 11 = ☐ → B

2 × 1 = ☐ → I

6 × 9 = ☐ → L

2 × 8 = ☐ → D

4 × 3 = ☐ → G

4 × 8 = ☐ → R

4 × 6 = ☐ → S

4 × 12 = ☐ → U

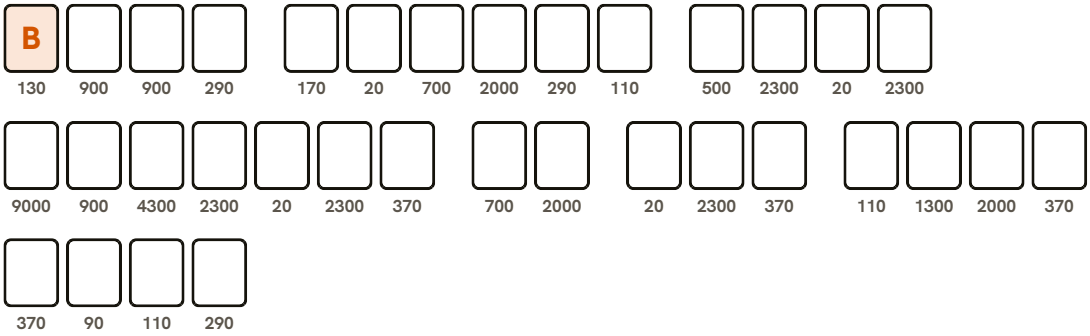
12 × 7 = ☐ → T

Scratch space:

## CLUE 4 Rounding

The digsite radar system only displays approximate distance readings rounded to the nearest hundred.

Solve each problem, then write its letter in every clue box that shows the same number.




Round 131 to the nearest ten ☐ → **B**

Round 18 to the nearest ten ☐ → **R**

Round 2,325 to the nearest hundred ☐ → **E**

Round 1,909 to the nearest thousand ☐ → **N**

Round 291 to the nearest ten ☐ → **T**

Round 8,894 to the nearest thousand ☐ → **C**

Round 4,315 to the nearest hundred ☐ → **V**

Round 167 to the nearest ten ☐ → **P**

Round 871 to the nearest hundred ☐ → **O**

Round 695 to the nearest hundred ☐ → **I**

Round 88 to the nearest ten ☐ → **U**

Round 374 to the nearest ten ☐ → **D**

Round 1,323 to the nearest hundred ☐ → **A**

Round 499 to the nearest hundred ☐ → **W**

Round 112 to the nearest ten ☐ → **S**

Scratch space:

## CLUE 5 Division facts (1-12) - the last clue

To figure out how many supply bags were carried away you divide the total weight of missing equipment equally.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

**Step 1 - solve these:**

| | | | | |
|---|---|---|---|---|
| 20 ÷ 10 = ☐ | 21 ÷ 7 = ☐ | 6 ÷ 1 = ☐ | 36 ÷ 3 = ☐ | 81 ÷ 9 = ☐ |
| 7 ÷ 1 = ☐ | 20 ÷ 5 = ☐ | 50 ÷ 10 = ☐ | 2 ÷ 2 = ☐ | 55 ÷ 5 = ☐ |
| 8 ÷ 1 = ☐ | | | | |

**Step 2 - cross out the sentence with each answer:**

1. The villain used velociraptor dash, then calibrated the laser scanner.
2. The villain swung stegosaurus tail whip, then revved the chisel drill.
3. The villain swung stegosaurus tail whip, then calibrated the laser scanner.
4. The villain executed trex pounce, then pinged the sonic mapper.
5. The villain triggered triceratops charge, then pinged the sonic mapper.
6. The villain used velociraptor dash, then pinged the sonic mapper.
7. The villain used velociraptor dash, then poured the plaster mold.
8. The villain delivered ankylosaurus slam, then poured the plaster mold.
9. The villain delivered ankylosaurus slam, then revved the chisel drill.
10. The villain executed trex pounce, then revved the chisel drill.
11. The villain executed trex pounce, then focused the magnifying lens.
12. The villain triggered triceratops charge, then calibrated the laser scanner.

TEACHER / PARENT

# Answer Key

The Case of the Missing Fossil Core

## Culprit: Dong Zhiming

TRex Pounce · Chisel Drill · Left-Handed · Red Sand Dust · Bright Spotlight

Trail: Start 21 → Clue 1 19 → Clue 2 13 → Clue 3 7 → Clue 4 4 → Clue 5 1

### Clue 1 (Fractions of a number): "THE VILLAIN DOES NOT USE A MAGNIFYING LENS"

3/10 of 20 = 6 (T) · 5/10 of 6 = 3 (U) · 1/5 of 25 = 5 (V) · 3/4 of 48 = 36 (N) · 3/6 of 14 = 7 (D) · 2/8 of 148 = 37 (S) · 5/10 of 66 = 33 (A) · 5/10 of 52 = 26 (I) · 1/2 of 4 = 2 (M) · 2/6 of 45 = 15 (Y) · 1/8 of 184 = 23 (E) · 2/6 of 36 = 12 (H) · 2/8 of 76 = 19 (G) · 3/6 of 18 = 9 (L) · 5/6 of 36 = 30 (F) · 1/3 of 42 = 14 (O)

### Clue 2 (Order of operations): "NOTEBOOKS SHOW THE SUSPECT IS LEFT HANDED"

49 + 3 × 2 = 55 (N) · 27 + 5 × 9 = 72 (T) · 3 × 9 - 20 = 7 (S) · 3 + 2 × 3 = 9 (I) · 30 + 4 × 4 = 46 (A) · 6 × 6 - 8 = 28 (W) · 10 × 4 - 11 = 29 (U) · 12 × 8 - 20 = 76 (O) · 6 × 11 - 9 = 57 (C) · 4 + 8 × 5 = 44 (E) · 9 × 7 - 4 = 59 (P) · 6 × 7 - 1 = 41 (K) · 30 + 5 × 8 = 70 (D) · 9 × 7 - 13 = 50 (L) · 7 × 5 - 24 = 11 (F) · 4 + 3 × 3 = 13 (B) · 5 + 3 × 3 = 14 (H)

### Clue 3 (Multiplication facts (1-12)): "A BRIGHT SPOTLIGHT MADE THE SUSPECT FLEE"

8 × 10 = 80 (A) · 7 × 10 = 70 (C) · 8 × 12 = 96 (O) · 11 × 8 = 88 (M) · 5 × 9 = 45 (P) · 12 × 12 = 144 (F) · 5 × 10 = 50 (H) · 11 × 6 = 66 (E) · 11 × 11 = 121 (B) · 2 × 1 = 2 (I) · 6 × 9 = 54 (L) · 2 × 8 = 16 (D) · 4 × 3 = 12 (G) · 4 × 8 = 32 (R) · 4 × 6 = 24 (S) · 4 × 12 = 48 (U) · 12 × 7 = 84 (T)

### Clue 4 (Rounding): "BOOT PRINTS WERE COVERED IN RED SAND DUST"

Round 131 to the nearest ten = 130 (B) · Round 18 to the nearest ten = 20 (R) · Round 2,325 to the nearest hundred = 2300 (E) · Round 1,909 to the nearest thousand = 2000 (N) · Round 291 to the nearest ten = 290 (T) · Round 8,894 to the nearest thousand = 9000 (C) · Round 4,315 to the nearest hundred = 4300 (V) · Round 167 to the nearest ten = 170 (P) · Round 871 to the nearest hundred = 900 (O) · Round 695 to the nearest hundred = 700 (I) · Round 88 to the nearest ten = 90 (U) · Round 374 to the nearest ten = 370 (D) · Round 1,323 to the nearest hundred = 1300 (A) · Round 499 to the nearest hundred = 500 (W) · Round 112 to the nearest ten = 110 (S)

### Clue 5 (Division facts (1-12)): surviving statement is box 10 → Dong Zhiming

20 ÷ 10 = 2 · 21 ÷ 7 = 3 · 6 ÷ 1 = 6 · 36 ÷ 3 = 12 · 81 ÷ 9 = 9 · 7 ÷ 1 = 7 · 20 ÷ 5 = 4 · 50 ÷ 10 = 5 · 2 ÷ 2 = 1 · 55 ÷ 5 = 11 · 8 ÷ 1 = 8