


Ages 6+


1-6


30 min

 POLYMATH
PLAY

 FIELD.
WISDOM

Fossil CANYON[®]

Dinosaurs of North America
Card Game

HOW to PLAY
Including rules for the
cooperative game
Cretaceous
Creek!

GAME CONTENTS



Skeletal fossil cards

58 skeletal fossil cards forming 23 complete skeletons of 13 animals



Research fossil cards

6 trace fossil cards used in research



Event cards

18 cards for use in Fossil Canyon (top) and Cretaceous Creek (bottom)



Reference cards

6 cards with an overview of gameplay



Blank cards

3 blank customizable cards to replace lost cards or create your own fossils



Storm Phase card

For use in the cooperative game Cretaceous Creek



Tokens and museums

6 player tokens and 6 museum puzzle pieces



Puzzle scoring pieces

23 skeletons, 3 endgame bonuses, and 4 research awards



Rule booklet

Rules for Fossil Canyon and Cretaceous Creek



Science companion

Learn about the science behind the game



edimentary rock formations of western North America are famous for the fossilized remains of dinosaurs and other animals from the Triassic, Jurassic, and Cretaceous periods of the Mesozoic Era. You are a fossil-hunting paleontologist with the goal of constructing complete dinosaur skeletons that attract visitors to your museum!

FOSSIL CANYON 4

A competitive game for 2-6 players ages 6+

CRETACEOUS CREEK 11

A cooperative game for 1-4 players ages 8+

OTHER GAMES 18

What else can you play?



FOSSIL CANYON®



An earthquake near Fossil Canyon has produced a unique geological result: sedimentary rock from the Triassic, Jurassic, and Cretaceous periods in close proximity. Even more exciting, these rock layers contain dinosaur fossils!

As a top paleontologist, you rush your team to the site to dig. But other teams are already there, and your goal is the same: to recover complete skeletons, since they attract more visitors to your museum than partial skeletons. To allow each team to complete more skeletons, you grudgingly agree to exchange fossil discoveries. Will your efforts make your natural history museum the world's most popular?

Your objective

Your objective is to build the world's most popular natural history museum, as measured in thousands of visitors per month. For example, a complete skeleton worth 18 points attracts 18,000 visitors each month.




There are three ways to score:

1) Build a complete skeleton. This is the most common way to score. When you obtain the two, three, or four skeletal fossils needed to complete a skeleton, you earn a skeleton puzzle piece.



Completing skeletons

Three fossil cards are required to complete an Allosaurus skeleton (worth 18 points), as indicated by the bone icons at the top left of each card. The three fossil cards on the left do not complete a skeleton, as the hips/legs are missing.

2) Win a research award. Six trace fossils, which provide evidence of the behaviors of ancient life, may be studied in your lab. Each of these fossils has a research value measured in units of . Collecting research fossils worth 4  or 6  can earn you a research award (see figure). These awards enhance the reputation of your museum, attracting more visitors.

3) Claim an endgame bonus. At the end of the game, you may claim a bonus for the theme of your museum: a small bonus (8 points) if you have the most carnivore skeletons, a medium bonus (11 points) if you have the most Jurassic skeletons, and a large bonus (14 points) if you have skeletons of each Cretaceous herbivore (*Ankylosaurus*, *Pachycephalosaurus*, *Parasaurolophus*, *Triceratops*). Or, choose your own criteria for the endgame bonuses! You may qualify for more than one bonus. If players tie for the small or medium bonus, the tiebreaker is the sum of the point values of skeletons in the bonus category.



Keeping score

Each time you score, you add a puzzle scoring piece to your museum. Pieces worth more points are longer, and the player with the longest string of scoring pieces wins!



Keeping score - The yellow paleontologist just completed a Quetzalcoatlus. They add the piece to their museum and take the lead!

Research awards

If you are the first to collect research fossils worth a total value of 6  or more, you may trade them for a 20-point major research award. (There is only one major research award scoring piece.) If you collect research fossils worth 4  or more, you may trade them for a research award worth 10 points.



Endgame bonuses
At the end of the game, you may claim a bonus for the theme of your museum. Here, the large bonus is awarded for completing skeletons of each Cretaceous herbivore.

Setup *(See the illustration on the next page.)*

Before you play - *If you are playing with young children and you want to keep the scoring simple, you may decide not to use the six research fossils and skip the endgame bonuses. If you do play with the endgame bonuses, decide if you want to customize the criteria or use the standard criteria.*

1 Set up Museum Row - Each player chooses a color, takes the corresponding player reference card, and gives the corresponding museum puzzle piece to the player chosen to be scorekeeper. The scorekeeper constructs Museum Row by connecting the museums in player order, top to bottom. The museum of Player 1 (the youngest player) is at the top.

2 Form the dig site - Shuffle the 64 fossil cards (58 if you are not using the research fossils). Randomly discard four fossils (don't look at them!) and spread the remaining fossils face down on the table. This is the dig site. Initially, all fossils in the dig site are **buried** (face down). During the course of the game, erosion events may cause fossils to be **exposed** (turned face up in the dig site).

3 Add the event deck - Shuffle the deck of event cards and place them face down near the dig site.

4 Form starting hands - Each player-paleontologist digs (draws) a number of fossils from the dig site according to the number of players (see the table at right) without showing their fossils to others.

STARTING HAND

2p	10
3p	8
4p	6
5p	5
6p	4

A player has completed a skeleton if they have all the fossils of the same genus needed to complete a skeleton. If a player has completed a skeleton, the cards are removed from the game and the scorekeeper adds the skeleton scoring piece to the player's museum.

At the end of the setup phase, each player chooses up to three fossils to keep hidden from other players. All other fossils in their hand must be placed face up so other players can see, and all players reveal their face-up fossils at the same time. If a player has two or more face-up fossils of the same genus, the cards should be placed on top of each other, but staggered, so the type of each fossil is visible.

PLAYER 2



PLAYER 3



2

Dig site

3

Event deck



PLAYER 4

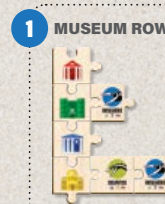
Hidden hand

Open hand

Reference card



PLAYER 1



1 MUSEUM ROW

Example initial setup for four players

The museums in Museum Row show that player 1 is the red player, followed by green, blue, and yellow.

Each player has three or fewer cards hidden in their hand (shown as face down), and the rest of their cards are face up.

Face-up cards of the same genus are stacked but staggered, so the fossils are easily viewed by other players.

The green and yellow players have already completed skeletons, which are now in their museums.

Play

Play proceeds clockwise in turns. If there are no fossils left in the dig site at the beginning of your turn, go to **Ending the game**. Otherwise, your turn consists of five steps:

- 1) Draw an event card** and follow the instructions. If the event exposes a fossil, turn a fossil card in the dig site face up. Return the event card to the bottom of the event deck, face down.
- 2) Dig two fossils**, one at a time, from the dig site to your hidden hand. (If there is only one fossil left in the dig site, dig one.)
- 3) Exchange fossils** with other players (optional). Give one of your fossils (hidden or face up) to another player by placing it face up in front of them. Immediately take a fossil from their face-up fossils or blindly from their hidden fossils. You may perform a second exchange with any player, but this time give two fossils to get one. Similarly, you may perform a third exchange, at a cost of three fossils to get one.
- 4) Bonus dig?** If you completed one or more skeletons during any of the first three steps, your museum rewards you with extra support to dig one more fossil this turn. *If another player completed a skeleton during your turn, they do not get a bonus dig.*
- 5) Adjust your hand** so that you have three or fewer hidden fossils. All other fossils must be face up in front of you. You may move hidden fossils to face up, or face-up fossils to hidden.

If you, or any other player, acquires the fossils to build a complete skeleton during any of steps 1-4, the fossils are *immediately* removed from the game and the skeleton scoring piece is added to the appropriate museum. Also, at any time during your turn, you may trade research fossils for a research award scoring piece. You may only make such a trade during your turn, and you are never obligated to do so; you may keep collecting research fossils without trading them for a score, if you wish. *A research award does not entitle you to a bonus dig.*

Value of a complete skeleton
Visitors per month (15,000)

Number of fossils and skeletons
Fossils in a complete skeleton (3),
and skeletons in the deck (2)

Endgame bonus information
Period when the animal lived
(Cretaceous) and its diet (herbivore)

Skeletal diagram
Fossils discovered (hips/legs)

Pronunciation and name meaning

Basic facts
For reference: the African elephant,
the largest living land animal, is about
6 m long and weighs about 6,000 kg

Fun fact

15

PARASAUROLOPHUS
[pa-rah-saw-ah-ro-fah] - "horn crested lizard"

REGION	LENGTH	WEIGHT	DIET
Late Cretaceous	6 m	3,000 kg (6,600 lb)	Herbivore

Parasaurolophus may have used the hollow bones of its head (crest) as a trumpet.

Ending the game

When there are no cards left in the dig site at the beginning of a player's turn, all players place all their fossils face up in front of them. Each turn is now only step 3 (exchange), and a player may only exchange if they have at least two fossils. Otherwise that player's turn is skipped.

Play continues until no more skeletons or research awards can be completed, or until a stalemate has been reached. Next, award the endgame bonuses. The player with the most monthly visitors to their museum wins! The tiebreaker is the most valuable skeleton.



Scoring puzzle • In this simplified 4-player game (without research fossils or endgame bonuses), the blue paleontologist wins!



Did you know? Our fictional Fossil Canyon dig site allows us to discover fossils from the Triassic, Jurassic, and Cretaceous periods, but a real dig site typically contains fossils from a narrow slice of time. To learn more about paleontology and the science behind Fossil Canyon, check out the **Science Companion** booklet!

Rule variations

You can try these minor rule variations:

- For 5- and 6-player games, allow a maximum of two fossils in a player's hidden hand.
- The blank customizable cards may be used in place of lost or damaged cards, or you can even create your own skeletal fossils. You can draw on the cards with a permanent marker. (Use an endgame bonus scoring piece to score a new skeleton.)
- When you dig a fossil during step 2, you may decide to put it back in the dig site face up, indicating that you discovered the fossil, but you decided not to excavate it. You may do this only once during step 2, and your dig ends as soon as you keep your second fossil.
- During step 3 (exchange), you may not take fossils from another player's hidden hand.

Fossils and skeletons

The 58 skeletal fossils form 23 complete skeletons of 13 reptile genera from the Mesozoic Era, including 11 dinosaurs, a pterosaur (*Quetzalcoatlus*), and a marine lizard (*Mosasaurus*). ("Genera" is the plural of "genus," and a genus is a group of closely related species, or sometimes just a single species.) The trace fossils represent six different dinosaur genera. Each fossil card indicates when the animal lived (★ Triassic Period 252–201 million years ago, ☆ Jurassic Period 201–145 million years ago, or ☆ Cretaceous Period 145–66 million years ago) and its diet (🌿 herbivore [plant eater] or 🍖 carnivore [meat eater]).

Trace fossils

GENUS	DESCRIPTION	PERIOD	DIET	RESEARCH VALUE
<i>Camptosaurus</i>	Nest	☆	🌿	🔍🔍🔍
<i>Utahraptor</i>	Feather impression	☆	🍖	🔍🔍🔍
<i>Alamosaurus</i>	Gastroliths	☆	🌿	🔍🔍
<i>Edmontosaurus</i>	Skin impression	☆	🌿	🔍🔍
<i>Ornitholestes</i>	Coprolite	☆	🍖	🔍
<i>Saurophaganax</i>	Footprint	☆	🍖	🔍

Skeletal fossils

GENUS	FOSSILS	SKELETONS	PERIOD	DIET	VALUE*
<i>Tyrannosaurus</i>	4	1	☆	🍖	25
<i>Brachiosaurus</i>	3	1	☆	🌿	20
<i>Triceratops</i>	3	1	☆	🌿	19
<i>Allosaurus</i>	3	2	☆	🍖	18
<i>Ankylosaurus</i>	3	2	☆	🌿	17
<i>Quetzalcoatlus</i>	3	2	☆	🍖	16
<i>Parasaurolophus</i>	3	2	☆	🌿	15
<i>Deinonychus</i>	2	1	☆	🍖	12
<i>Stegosaurus</i>	2	1	☆	🌿	11
<i>Pachycephalosaurus</i>	2	2	☆	🌿	10
<i>Coelophysis</i>	2	2	★	🍖	9
<i>Dilophosaurus</i>	2	2	☆	🍖	8
<i>Mosasaurus</i>	2	4	☆	🍖	7

* Thousands of visitors per month.

Cooperation at

CRETACEOUS CREEK



Ages 8+



1-4



30 min

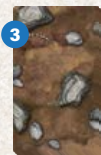
A rainstorm has caused Cretaceous Creek to spill its banks, washing away rock and exposing a bed of beautifully-preserved Late Cretaceous fossils. But with continuing poor weather, the window of opportunity to collect these fossils, before they are lost to erosion, is closing!

In a race against the weather, a coalition of leading natural history museums has dispatched a team of their top paleontologists and their crews to cooperatively mine the site for its scientific riches.

Your objective: to excavate six complete skeletons (*Tyrannosaurus*, *Triceratops*, *Ankylosaurus*, *Pachycephalosaurus*, *Parasaurolophus*, and *Quetzalcoatlus*) from among the fossils before they are lost to science!

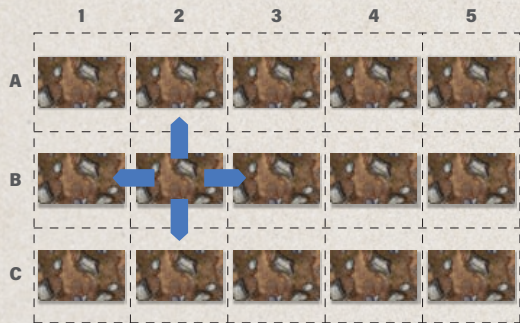
Items used in the game

- 1 The deck of 18 event cards
- 2 A deck of 30 fossil cards consisting of
 - 4 *Tyrannosaurus* (1 skeleton)
 - 3 *Triceratops* (1 skeleton)
 - 6 *Ankylosaurus* (2 skeletons)
 - 4 *Pachycephalosaurus* (2 skeletons)
 - 6 *Parasaurolophus* (2 skeletons)
 - 6 *Quetzalcoatlus* (2 skeletons)
 - 1 *Edmontosaurus* (skin impression)
- 3 A deck of 15 of any of the other fossil cards, used to construct the movement grid
- 4 One player token for each player, representing a paleontologist's crew
- 5 Player reference cards
- 6 The Storm Phase card and an unused player token, to mark the Storm Phase
- 7 Six skeleton scoring pieces (*Tyrannosaurus*, *Triceratops*, *Ankylosaurus*, *Pachycephalosaurus*, *Parasaurolophus*, and *Quetzalcoatlus*) and a museum piece to house your skeletons



Setup

1) Create the dig site movement grid • Create the 3x5 movement grid for the dig site using the deck of 15 cards, face down, as shown in the image. Leave space between the three rows at least equal to the width of a card. Choose a corner grid space to call A1; the three rows are labeled A–C and the five columns are labeled 1–5. A grid space is *adjacent* to another if it is north, south, east, or west, as shown below. The movement grid cards never move and are always face down. (These cards are only used to visualize the grid; feel free to use another method if you prefer.) *This step can be skipped if using a playmat.*



The movement grid • This grid defines the area of play. Here, the four spaces adjacent to B2 are indicated.

2) Add fossils • Shuffle the 30 fossil cards. Place one card face down on each movement grid space, perpendicular to the movement grid card. This forms the bottom layer of fossils.

The top layer of 15 fossils is based on the level you decide to play:

Beginner and intermediate: Put a fossil card face up on each space. The dig site should now have a bottom layer of face-down (buried) fossils and a top layer of face-up (exposed) fossils. *Beginner level is recommended for your first game.*

Advanced: Put a second fossil card face down on each space. Then shuffle the event deck and draw 10 cards, turning the top-layer fossil cards face up at the spaces indicated. If an event card says “no erosion,” do not expose a fossil for that event card.

Expert: Follow the advanced setup above, but draw only 2 cards from the event deck.

Want to skip a step? • While *Cretaceous Creek* is designed to be played without extra pieces, a playmat can be used to define the movement grid without cards — and show the camp and dig site underneath! Visit polymathplay.com for more details.



3) Choose the paleontologists -

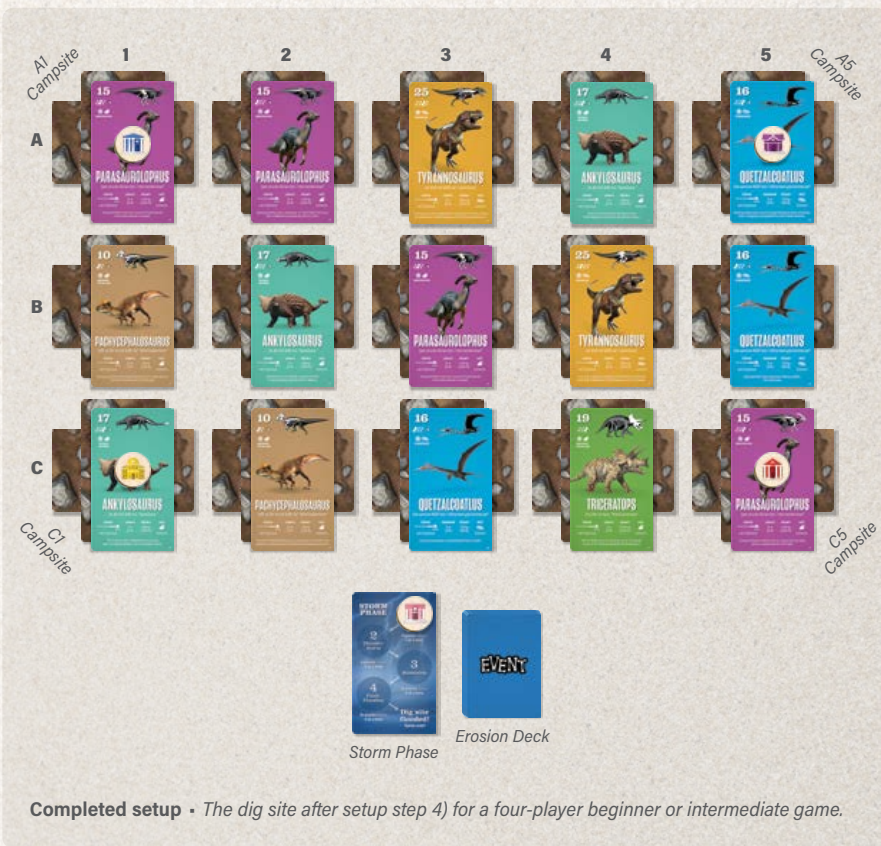
Each player chooses a paleontologist token and the corresponding reference card. The player places their token on a corner campsite (A1, A5, C1, C5; only one player per campsite) and keeps their reference card in front of them.

4) Set the Storm Phase and the

Erosion Deck - Place an unused token at Storm Phase 1 on the Storm Phase card. Shuffle the event cards, take the top four, and set the other cards aside until Storm Phase 2. The four cards form the face-down Erosion Deck for Storm Phase 1.

5) Initial dig (beginner level) -

If you are playing at the beginner level, each paleontologist has the option to excavate the top-layer fossil at their campsite and place it in storage next to their reference card.



Completed setup - The dig site after setup step 4) for a four-player beginner or intermediate game.

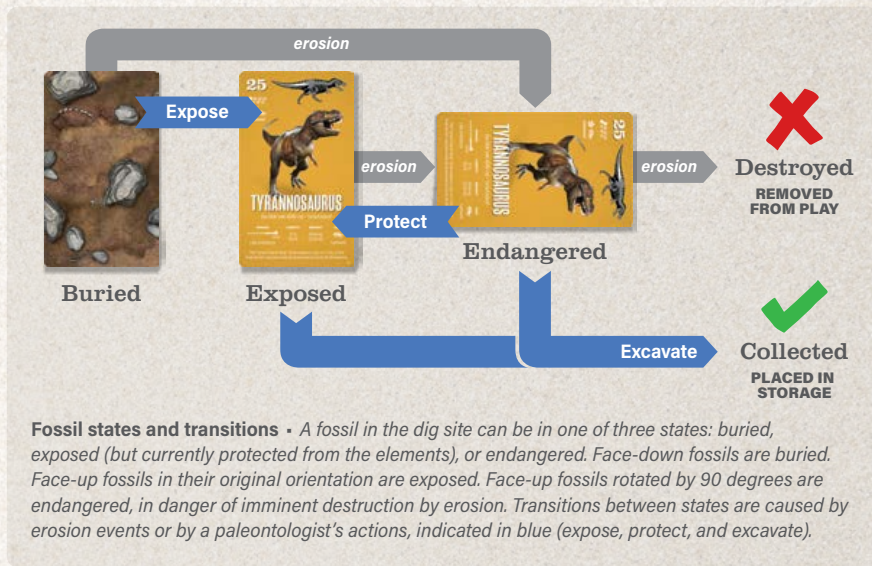
Play

Paleontologists move around the dig site excavating fossils. When a paleontologist excavates a fossil, it is placed in storage next to their reference card. A paleontologist can carry a maximum of four fossils.



A player's storage - The yellow paleontologist currently has three fossils in storage. A maximum of four fossils may be held in storage.

A skeleton is completed the moment a single paleontologist is standing on one of the corner campsites (A1, A5, C1, C5) with all the fossils needed in storage (two different fossils for *Pachycephalosaurus*; three for *Triceratops*, *Ankylosaurus*,



Quetzalcoatlus, and *Parasaurolophus*; and four for *Tyrannosaurus*). When that occurs, the fossils are immediately removed from the paleontologist's storage and the skeleton scoring piece is added to the museum. It does not have to be the paleontologist's turn; for example, the conditions may be met on another

paleontologist's turn if they give a fossil to a paleontologist already at a corner campsite.

Play proceeds in turns, clockwise, until the players' objective is completed or the game is lost.

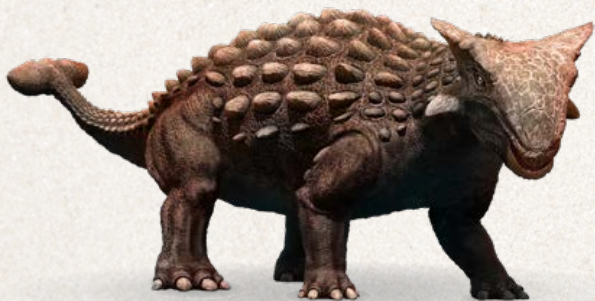
A paleontologist's turn

Each paleontologist's turn consists of two steps:

1) paleontologist actions and **2) dig site erosion**. The effect of paleontologist actions and erosion are indicated in the "Fossil states and transitions" figure.

1) Paleontologist actions

On your turn, you have a total of four action points (APs) to spend as you wish on the following actions: discard a fossil in storage, move on the dig site, expose a buried fossil, protect an endangered fossil, give a fossil to or get a fossil from another paleontologist, and excavate an exposed or endangered fossil.



0 AP	Discard a fossil in storage (put it out of the game).
1 AP	Move to an adjacent space.
2 AP	Protect an endangered fossil (rotate it to the exposed orientation) on the current or an adjacent space.
	Expose the top buried fossil on the current or an adjacent space.
2 AP	Give one stored fossil to, or get one stored fossil from, another paleontologist on the current or an adjacent space. <i>Four APs may be used to simultaneously exchange fossils between paleontologists, avoiding temporarily exceeding either's storage capacity.</i>
	Excavate (add to your storage) an exposed or endangered fossil on the current or an adjacent space.
3 AP	<i>Only the top fossil on a grid space can be exposed or endangered, so only the top fossil can be excavated. If your storage is already at maximum capacity (four fossils), the fossil may be discarded immediately after excavation but may not be added to storage.</i>

Example - On a single turn a paleontologist could move (1 AP), expose a buried fossil (2 AP), and move again (1 AP).

2) Dig site erosion

You rush to finish your work during the brief breaks in the poor weather, but the storm inevitably resumes and dig site erosion occurs, as determined by the Storm Phase. Each Storm Phase consists of two periods.

Period 1: cards remain in the face-down Erosion Deck. In this case, draw from the top of the Erosion Deck a number of cards equal to the current Storm Phase (1, 2, 3, or 4). Perform the erosion event(s) indicated by the cards (see "Performing an erosion event" below). Then place the event card(s) in a face-up stack (this "stack" is a single card during Storm Phase 1), with the erosion



Example: The Erosion Deck - After two turns of Period 1 of Storm Phase 3, there are two stacks of face-up event cards with their erosion events visible. After two more turns, there will be four stacks of face-up cards and the Erosion Deck will be exhausted, triggering the beginning of Period 2 of Storm Phase 3.

events visible, to the right of the Erosion Deck and any previously-placed face-up stacks. By the end of Period 1 of Storm Phases 1, 2, and 3, there will be four face-up stacks. (During Storm Phase 4, there may be fewer than four stacks at the end of Period 1.)

Period 2: the face-down Erosion Deck is exhausted. In this case, the erosion event(s) are determined by the face-up event cards in the leftmost stack, closest to the original Erosion Deck location. After performing the erosion event(s), place these cards with the cards that were set aside until the next Storm Phase.

If there are no stacks of face-up event cards left after performing the erosion event(s), advance the Storm Phase token to the next phase. If you reach **Dig site flooded!**, the entire dig site disappears under water and the game is lost! Otherwise, reshuffle all 18 event cards and form a new Erosion Deck of 8 cards for Storm Phase 2, 12 cards for Storm Phase 3, or 16 cards for Storm Phase 4. Set the remaining cards aside, not to be used during this next Storm Phase.

Note that during Period 2 of a Storm Phase, the upcoming erosion events can be predicted.

Performing an erosion event on a grid space with a fossil:

If there is a buried or exposed fossil on the top layer of the specified grid space, it becomes endangered (face up and rotated 90 degrees). If there is an endangered fossil, it is destroyed and discarded from the game. Keep the destroyed fossils visible to help you keep track.

Performing an erosion event on a grid space with no fossils:

During Storm Phases 1, 2, and 3, nothing happens. During Storm Phase 4, flash flooding, the event card is placed on the grid space, indicating it has flooded and may no longer be occupied or moved through by a paleontologist carrying fossils. (The space is still navigable by a paleontologist not loaded down with fossils.) If a paleontologist carrying fossils is on the space, they may move to any adjacent non-flooded space. If none is available, the paleontologist may move to any diagonal non-flooded space. If none is available, the paleontologist must discard their fossils.

All flooding during a turn occurs simultaneously; do not perform a flooding action, move a paleontologist, then perform another flooding action.

Note that if four grid spaces flood during a single turn of Period 1 of Storm Phase 4, no stack of upcoming erosion events is generated on that turn, so there will be fewer than four stacks at the end of Period 1.

Emergency sandbagging: During the erosion step of any turn in Storm Phase 4, if any paleontologist has the *Edmontosaurus* research fossil in storage, they may exchange the valuable fossil for emergency sandbagging. The event cards that would have been applied that turn are instead discarded from the game, along with the research fossil. Paleontologists may wait to see the event cards before deciding on emergency sandbagging.

Winning and losing

All players win when all six skeleton scoring pieces are added to the museum and each paleontologist has reached any of the campsites (A1, A5, C1, C5) for evacuation. (A paleontologist may evacuate, leaving the game, at any time if on a campsite space.) If the Storm Phase advances to **Dig site flooded!**, or if skeletons cannot be completed because needed fossils have eroded or movement is impeded by flash flooding, all players lose. There is only one *Tyrannosaurus* skeleton and one *Triceratops* skeleton, so if any of those fossils are destroyed, the game is lost.

Solo play

You may play a solo version by using the rules above and controlling two or more paleontologists. A simpler option is to play with a single paleontologist by increasing your storage capacity to six fossils; eliminating the “give and get” action; and allowing a skeleton to be delivered to the museum from any grid space, not just the corner campsites.

A real-life Cretaceous Creek?

Mátyás Vremir, a Romanian geologist, was prospecting along the Sebeș River in Romania in 2009 when he discovered the partial skeleton of a dog-sized theropod dinosaur from the Late Cretaceous. Vremir realized the uniqueness of this fossil discovery and brought in colleagues (including Zoltán Csiki, Steve Brusatte, Mark Norell, and Akiko Shinya) to complete the preparation of the fossils and to study this new species. They concluded it was a dromaeosaur, like *Deinonychus*, but it had unusual features, including a stocky build and two large sickle claws on each foot, not one like *Deinonychus*. They named the new species *Balaur bondoc*. *Balaur* is an old Romanian word for "dragon," and *bondoc* means "stocky."

Vremir had to excavate quickly. The fossils were just above the water line and downstream from a power station dam, and a release of water from the dam could have washed away the fossils!



Balaur bondoc reconstruction
by Liam Elward



Want to learn more? Check out the [Science Companion](#) booklet for more about dinosaurs and paleontology!

OTHER GAMES

The Fossil Canyon cards can be used for many other games. Here are just a few!

Go Dig



Ages 5+



2-4



15 min

Some set-collection card games can be adapted to use the skeletal fossil cards. One of our favorites for young children is based on "Go Fish."

Discard the six research fossil cards and deal seven skeletal fossils face down to each player. Place the rest of the fossils face down in a stack, the "dig pile." If a player

has a complete skeleton, the fossils are placed out of the game and the skeleton is added to their museum.


On your turn, ask another player, "Do you have any [name of a genus] fossils?" The genus must be one that you have in your hand, e.g., *Triceratops*. If the other player has any fossils of that genus, they must hand over all of them. You may then make another request, of the same player or another, for the same genus or another, and continue to make requests until the other


player has no fossils of the requested genus. In that case, the other player says "Go dig!" and you take the top fossil from the dig pile. If it matches the genus you requested, show it to the other players and continue making requests. If not, play passes to the next player. If you run out of fossils, take a fossil from the dig pile, and play passes to the next player. If you run out of fossils on another player's turn, take a fossil from the dig pile.


A skeleton is added to your museum as soon as you have a complete set of fossils.

The game ends when all skeletons have been completed. The player with the most monthly visitors to their museum wins.


Memory Game


 Choose 24 fossil cards making one four-fossil skeleton (*Tyrannosaurus*), four different three-fossil skeletons, and four different two-fossil skeletons. Shuffle and put the cards face down in a 6x4 grid. Each turn, a player turns fossils face up until (1) the face-up fossils come from different skeletons or (2) the face-up fossils make a complete skeleton. In case of (1), the player turns the fossils face down again and their turn is over. In case of (2), the player takes the fossils, the scorekeeper puts the skeleton in their museum, and the player's turn is over. When all fossils have been taken, the winner is the player with the most monthly visitors to their museum.


 2

 10 min

20 Questions

 Ages 6+

 2-4

 15 min

Test your knowledge of the genera! Shuffle the fossil cards and place them face down in a stack. One player (the answerer) draws a card, and the player to their left (the questioner) asks questions and tries to guess the genus. Each question must be a yes/no question about information available on the card. For example, "Did it live during the Cretaceous?," "Was it a carnivore?," "Was its length less than eight meters?," or "Is it *Coelophysis*?" When the questioner guesses the genus correctly, they get the card, and they become the answerer.

A questioner may choose to pass if they cannot guess the genus. In that case, the answerer discards the card face up (so everyone can see) and draws a new card.

Keep track of the number of questions each player asks with paper and pencil. Each player is allowed to ask a total of 20 questions during the game. (Guessing the genus counts as a question.) The game is over when all players have asked 20 questions. The player with the most cards wins. The tiebreaker is the most valuable research fossil, followed by the most valuable skeletal fossil.



If you invent a new game you think others would enjoy, please share it with us at polymathplay.com!

The creators of **FOSSIL CANYON**[®]

GAME DESIGNER

Kevin Lynch

Kevin is a professor of mechanical engineering and director of the Center for Robotics and Biosystems at Northwestern University. He is an award-winning instructor who has co-authored three textbooks and teaches online courses in robotics to thousands of students around the world. Kevin's two young children were the inspiration and first game testers for Fossil Canyon.

GRAPHIC DESIGNER

Nathan Martel

Nathan is a graphic designer and software developer. He works primarily with universities and other mission-driven organizations to give their important educational messages a visual voice.

SCIENCE ADVISOR

Akiko Shinya

Akiko is the chief preparator of fossil vertebrates at the Field Museum in Chicago. She discovered *Gualicho shinyae*, a bipedal carnivorous theropod from the Late Cretaceous distantly related to *Allosaurus*, on a dig in Argentina in 2007. (The genus name *Gualicho* is derived from a demon of local folklore.) Akiko spends several weeks each year in the field prospecting and excavating fossils. She manages three labs at the Field Museum, where she leads her team of staff, students, and volunteers in the preparation of vertebrate fossils from all over the world.



The Field Museum is a forward-thinking scientific leader on a mission to explore, protect, and celebrate nature and culture. For over 125 years, the Field has taken part in groundbreaking research all over the world while maintaining one of the world's largest collections of artifacts and specimens, used to inspire discovery, spark public engagement with science, and uncover solutions for a better world.



POLYMATH PLAY

We are parents, educators, and game enthusiasts who believe in:

- 1. Family fun and bonding through game play** that is enjoyable for both kids and adults. It doesn't matter how educational a game is if you don't play it!
- 2. Creativity and learning.**
Play creatively!
Learn something!
- 3. Supporting broad access to educational opportunities.**
We are proud to partner with the Field Museum in advancing its educational mission.