

# LA BREA TAR PITS & MUSEUM



## The Ice Age Diner

4th - 6th Grade

### DURATION

Pre-visit: 20-30 minutes

Visit: 40 minutes

Post-visit: 20-30 minutes

### SUPPLIES

- Worksheets
- Pencil
- Clipboards (optional for museum visit)

### STANDARDS

#### NGSS

4-LS1-1, LS1.A, LS3.A

#### NGSS Science and Engineering Practices

2, 3, 4, 6

#### CCSS Mathematics Content

4 - NBT.A.2, B.4

5 - NBT.A.3, B.5, B.7

6 - NS.B.3

#### CCSS Mathematical Practices

1, 2, 4, 6

### VOCABULARY

- Herbivore
- Carnivore
- Omnivore
- Diet
- Fossil
- Subtotal
- Tax
- Tip

### Concepts

- Scientists infer what animals eat from the shapes of their teeth.
- A restaurant bill or check can be calculated by adding together the cost of all individual items.
- Tax and tip are calculated from the subtotal, then added to the subtotal to find the final cost of the bill.

### Objectives

- Students will identify the diet of four specimens in the La Brea Tar Pits based on the shape of their teeth.
- Students will estimate and compute the sum of whole numbers and positive decimals to two places.
- 5th-6th grade extension: Students will add tax and tip to their bill by multiplying decimals to two places.

### Outline

1. Prior to visiting the museum, review addition with decimals (4th grade) and multiplying decimals (5th or 6th grade). Introduce the concept that carnivores and herbivores can be identified by looking closely at their teeth.
2. At the Museum, students will investigate the fossil skeletons on display and complete their worksheets.
3. Back in the classroom, review student work and answer questions.

## Pre-Visit

- Review the math concepts.
  - 4th Grade: Review adding decimals.
  - 5th-6th Grade: Review multiplying decimals. Introduce the concept of calculating tax and tip from the subtotal (or pre-tax total), and adding the tax and tip to the subtotal in order to find the total cost.
- Introduce the idea that teeth shapes are clues to what animals eat and can help identify carnivores and herbivores. You may want to use examples of modern animals the students will recognize and include visuals. (Examples: cows, sharks) You can ask students to think about their own teeth, pointing out the difference between our canines and molars. Using these differences, you can also introduce omnivores.
- *Background for Teaching: Teeth are only one indicator of diet. There are other factors that tell us what an animal might eat, and there are also animals that have contradictory diets to their teeth structure. For the purposes of this lesson, this does not need to be a significant concept.*

## Museum Visit

- At the Museum, distribute the Ice Age Diner worksheets and explain the assignment to the group. Break students into small groups with chaperones to assist students in exploring the hall and encouraging them to complete each worksheet. They should start with the “A Fossil Foodie” worksheet. Students may choose any fossil skeleton specimens they see in the museum. See Page 5 for an example.
- *Teaching note: some of the information in the Museum does directly address the diet of the specimen. Encourage the students to still look directly at the teeth of the specimen and make observations.*
- If you are short on time or would like to use it as a homework assignment, the 2nd page of the worksheet (the math portion) may be completed after the field trip.

## Post-Visit

- After the field trip, go over the worksheet together. Ask some students to share which animals they figured out were herbivores or carnivores. Review the math and answer any questions.

## Variations and Extensions

- Tell students their customers have a budget and their food orders must fit within the given budget.
- Tell the students a customer didn’t like an item on their bill and requested a refund. Have them deduct that cost from the bill.
- Have students come up with their own menu items and costs. Have students work with a partner to order food from their partner’s menu.
- Grades 2 - 3: Simplify the menu and costs so that only whole numbers are used.
- Kindergarten - 1st Grade: Simplify the menu and costs so that only whole numbers are used. In the classroom, create your own diner. Use play food and money. Have students choose if they want to be cooks or cashiers or Ice Age animals.

## A Fossil Foodie

Congratulations! You are the new chef hired by the La Brea Tar Pits Museum to create a menu for its new cafe, The Ice Age Diner. Before creating a menu, you want to identify the needs of your customers. Explore the Museum and choose four potential customers that might visit your cafe. Name them, observe and draw a sketch of their teeth, then figure out if they prefer to eat plants or meat.



Usually, sharp serrated teeth suggest an animal is a **carnivore**.

Flat, grinding teeth suggest an animal is an **herbivore**.



**Customer 1:**

*Herbivore*

*Carnivore*

**Customer 2:**

*Herbivore*

*Carnivore*

**Customer 3:**

*Herbivore*

*Carnivore*

**Customer 4:**

*Herbivore*

*Carnivore*

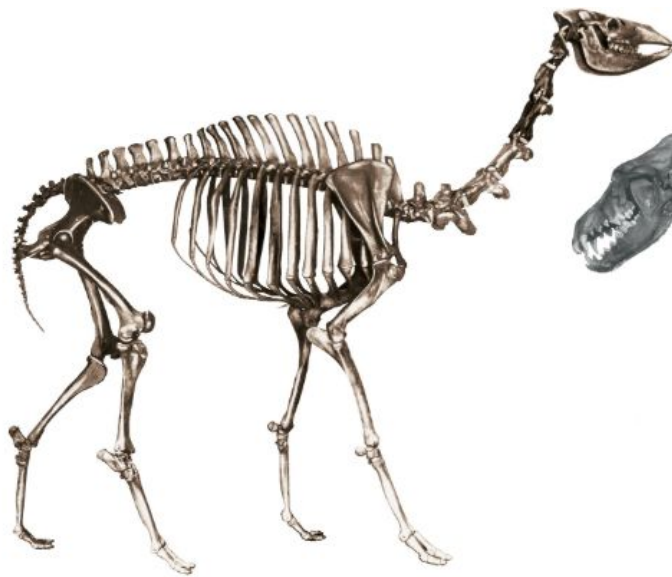
## Example Specimen Choices



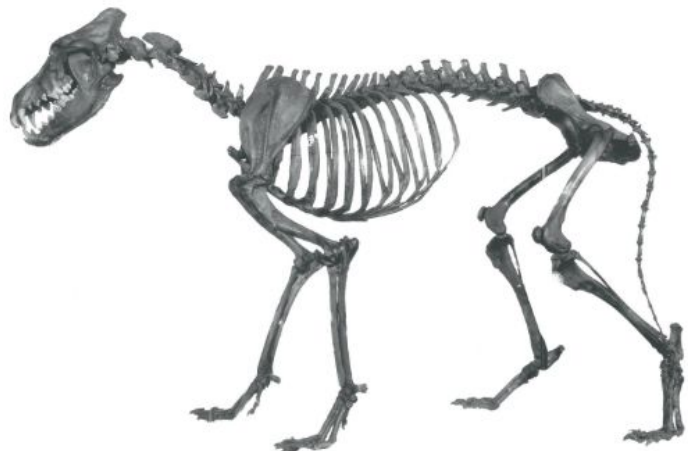
Harlan's Ground Sloth  
Herbivore



Columbian Mammoth  
Herbivore



Extinct Western Camel  
Herbivore



Dire Wolf  
Carnivore

# Mealtime!

After your market research, you designed the menu below. Your new customers aren't sure what dishes to order. Help them pick their meal! Use the customers and their preferences from the first worksheet. Design a delicious meal for each customer by choosing the dishes and how many dishes to serve them. Calculate each customer's total and give them the bill on the next page. Use scratch paper for your calculations.

## The Ice Age Diner

### Appetizers

Grass and Flower Soup ..... Small: \$3.49  
Large: \$6.50  
Seed Salad ..... \$4.75  
Egg Salad ..... \$5.50  
Fried Insects on a Stick ..... 2 sticks for \$3.25

### Entrees

Bison Burger ..... \$13.80  
Veggie Burger ..... \$10.98  
Bird Nuggets & Fries ..... \$12.25

### Drinks

Fruit and Grass Smoothie ..... \$5.79  
Conifer Cola ..... \$3.33  
Toyon Berry Lemonade ..... \$4.15

### Desserts

Juniper Berry Cake ..... \$4.65  
Blood Popsicle ..... \$3.20  
Sage Scrub Ice Cream ..... \$2.22  
Candied Eyeballs ..... \$2.75

### Pizza

Number of Toppings	Small	Medium	Large
1 - 2	\$10.00	\$14.50	\$19.75
3 - 5	\$14.65	\$19.99	\$23.00
6	\$21.00	\$23.25	\$27.49

### **Pizza Topping Options:**

Fried Leaves	Horse Ears
Barbeque Reptile	Roasted Roach
Branches	Marinated Flies
Chopped Fruit	Bird Hearts
Grilled Vegetable	Bone Chips
Rodent Pepperoni	Pickled Pine Needles
Deer Sausage	Grass

**Customer 1:**

Please pay at the register.

ITEM	COST
TOTAL	\$

**Customer 2:**

Please pay at the register.

ITEM	COST
TOTAL	\$

**Customer 3:**

Please pay at the register.

ITEM	COST
TOTAL	\$

**Customer 4:**

Please pay at the register.

ITEM	COST
TOTAL	\$

**Customer 1:**

Please pay at the register.

ITEM	COST
SUBTOTAL	
TAX (10%)	
TIP (18%)	
FINAL TOTAL	\$

**Customer 2:**

Please pay at the register.

ITEM	COST
SUBTOTAL	
TAX (10%)	
TIP (18%)	
FINAL TOTAL	\$



**Customer 3:**

Please pay at the register.

ITEM	COST
SUBTOTAL	
TAX (10%)	
TIP (18%)	
FINAL TOTAL	\$

**Customer 4:**

Please pay at the register.

ITEM	COST
SUBTOTAL	
TAX (10%)	
TIP (18%)	
FINAL TOTAL	\$

# EXAMPLES

## **Customer 1: Harlans' Ground Sloth**

Please pay at the register.

ITEM	COST
Large Grass and Flower Soup	\$6.50
Veggie Burger	\$10.98
Fruit and Grass Smoothie	\$5.79
Sage Scrub Ice Cream	\$2.22
TOTAL	\$25.49

## **Customer 2: Dire Wolf**

Please pay at the register.

ITEM	COST
Medium 3-Topping Pizza Toppings: Deer Sausage, Rodent Pepperoni, Bird Hearts	\$19.99
Blood Popsicle	\$3.20
Egg Salad	\$5.50
SUBTOTAL	\$28.69
TAX (10%)	\$2.86
TIP (18%)	\$5.16
FINAL TOTAL	\$36.71