THE LIVING DESERT
ZOO | GARDENS

SCHOOL EXPLORERS: THE POWER OF POLLINATORS

GRADES TK-6TH

THE LIVING DESERT ZOO | GARDENS

SCHOOL EXPLORERS CURRICULUM OVERVIEW

NGSS ALIGNMENT

2-LS2-2: Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

5-LS2-1: Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

MS-LS1-4: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

OBJECTIVE

Students will discover the variety of pollinators and their interactions with plants that allow our world to grow and thrive.

MATERIALS

For chaperones:

- Map
- Activity: Zoo Search (3 possible versions depending on grade levels)
- Game: Bingo (3 possible versions depending on grade levels)
- Activity: Flower Fascination

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TEACHER GUIDE

HOW TO USE CURRICULUM PACKET

Thank you for joining us for *Mission: Pollination*!

In this curriculum, you will find a *Chaperone Guide* for a self-led tour and activities. Make copies depending on your chaperone headcount. Students do not need any copies of the materials, but you may print individual bingo sheets for students if you prefer.

Self-Guided Tour

Assign chaperone groups. Each chaperone will be able to lead their group using their *Map*, *Games*, and *Activities*.

Using the Map (Page 5)

Attached is a map with marked locations of our supersized pollinators. The map includes dashed lines to indicate suggested walking paths, but your route may vary! Feel free to encourage chaperones to venture from the route to visit animal habitats and gardens as desired.

Facilitating the Activities and Games (Pages 6-12)

In this packet you will find three different activities. The "Zoo Search" and "Bingo" activities have 3 different versions, each with a suggested grade level range. You may print any or all of these for your chaperones and their groups to participate in.

The "Zoo Search" and "Bingo" activities are easiest to facilitate when the chaperone has a writing utensil. Groups can complete the activities individually or compete against other groups.

The Activity "Flower Fascination" is observation and verbal response based, guided by the chaperone. No other materials are required.

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TEACHER GUIDE

FIELD TRIP SCHEDULE

Use the space below to plan your itinerary.

TIME	ACTIVITY	LOCATION

CHECKLIST

Item	Count	Item	Count
☐		☐	
☐		☐	
☐		☐	
☐		☐	

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SCHOOL EXPLORERS CHAPERONE PACKET

INSTUCTIONS

Using the Map

Attached is a map with marked locations of our supersized pollinators. The map includes dashed lines to indicate suggested walking paths, but your route may vary! Feel free to venture from the route to visit animal habitats and gardens as desired.

Facilitating the Activities and Games

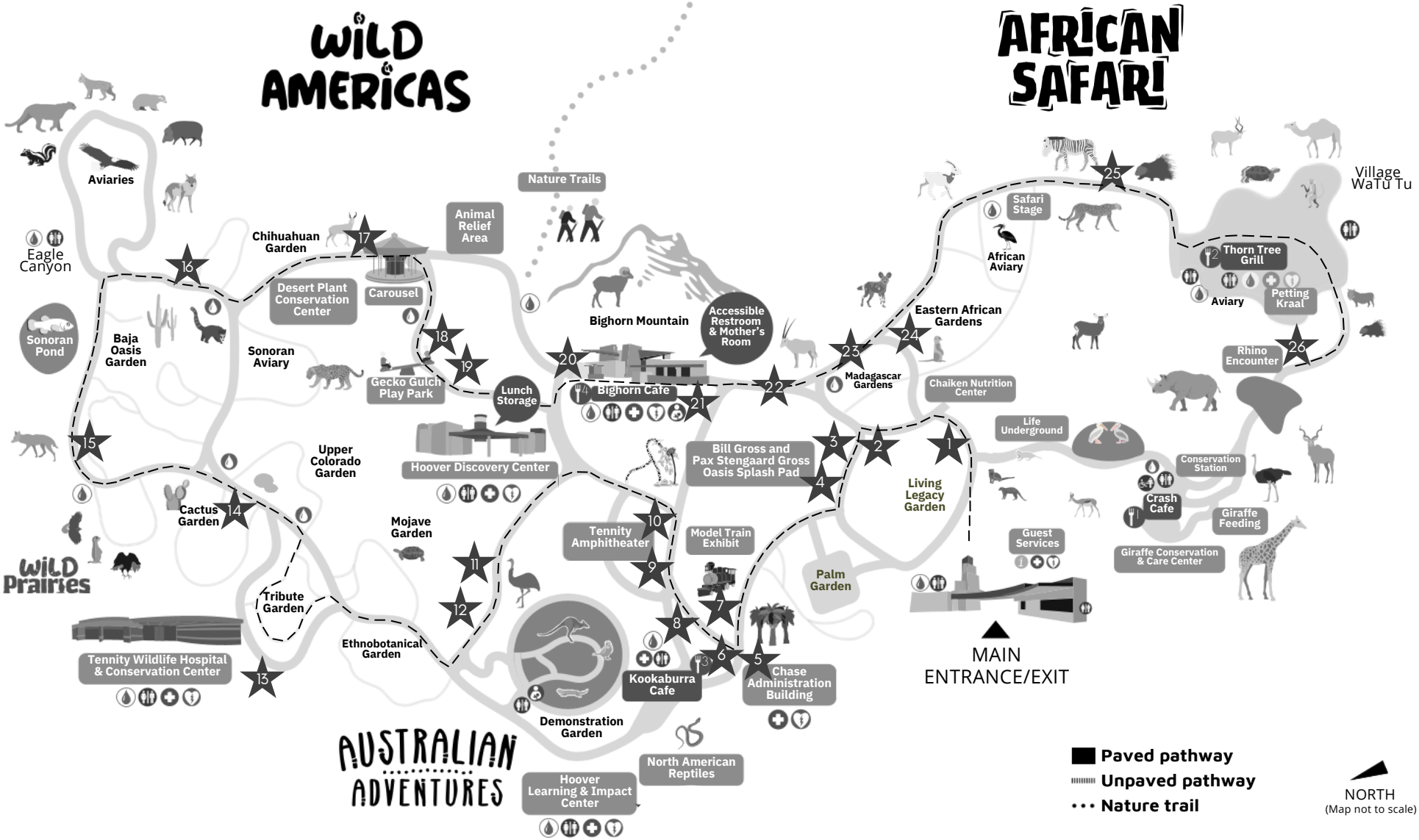
In this packet you may find three different activities. The "Zoo Search" and "Bingo" activities are best completed with the chaperone using a pen or pencil. The "Flower Fascination" activity is observation and verbal response based, guided by the chaperone. No other materials are required.

Note: Your teacher may have omitted some of these materials for the sake of time or their own learning goals.

MY GROUP

List your student group below.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



FOOD & DRINK:

1. **Crash Cafe*** - Specialty coffees, snacks, soft-serve, beverages, and draft beer.
2. **Thorn Tree Grill*** - Freshly-made burgers, hot sandwiches, salads, soft drinks, beer, and wine.
3. **Kookaburra Cafe*** - Made to order pizza, pasta, salads, snacks, soft drinks, beer, and wine.
4. **Bighorn Cafe** - Asian and Southwest inspired rice and noodle bowls, sandwiches, pizzas, smoothies, snacks, beer, wine, and more!

*Closed for Summer

GUEST SERVICES:

- Information | Lost and Found
  Stroller/Wheelchair/ECV Rentals
- Restrooms
- Adult Changing Table
- First Aid Station
- Mother's Room
- Drinking Fountain
- Water Bottle Refill Station
- Automated External Defibrillator (AED)

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Suggested Grades: TK - 1st

ACTIVITY: ZOO SEARCH

DIRECTIONS

Search the zoo to find each pollinator that matches the descriptions below. Try to check off every box as you go!

Orange butterfly wings				
Any bees				
Making buzzing sounds				
Red colored				
Fuzzy hairs				
Caterpillars				

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Suggested Grades: 2nd-3rd

ACTIVITY: ZOO SEARCH

DIRECTIONS

Search the zoo to find each pollinator that matches the descriptions below. Try to check off every box as you go!

Spotted shell				
Buzzing wasp				
Spines on legs				
Orange butterfly wings				
More than six legs				
Stripes				

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Suggested Grades: 4th-6th

ACTIVITY: ZOO SEARCH

DIRECTIONS

Search the zoo to find each pollinator that matches the descriptions below. Try to check off every box as you go!

Moving orange wings				
Parasitic wasps				
Eats nectar				
Solitary bees				
Feeds on aphids				
Fuzzy wasps or bees				

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Suggested Grades: TK - 1st

GAME: POLLINATOR BINGO

DIRECTIONS

Try to get a bingo by marking off the boxes below while visiting our exciting pollinator heroes around the zoo!

Fuzzy or hairy	**Red eyes**	**Body moves**	**Clear wings**	**Eight eyes**
Black spots	**Spiky legs**	**Yellow body**	**Makes buzzing noise**	**Blue body**
Green body	**Head moves**	**Six legs (free spot)**	**Orange wings**	**Bright flowers to attract pollinators**
Blue wings	**Orange body**	**More than eight legs**	**Stinger**	**Feathers**
Stripes	**Pink body or wings**	**Beak**	**Red Body**	**Eight legs**

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Suggested Grades: 2nd-3rd

GAME: POLLINATOR BINGO

DIRECTIONS

Try to get a bingo by marking off the boxes below while visiting our exciting pollinator heroes around the zoo!

Butterfly with blue wings	**Beetle that moves its head**	**Green bee**	**Colorful leafhopper**	**Pink moth**
Red beetle	**Butterfly with orange wings**	**Wasp with moving antennae**	**Bright flowers to attract pollinators**	**Caterpillar with yellow stripes**
Green beetle	**Fuzzy bee**	**Insect with six legs (free spot)**	**Yellow-orange beetle**	**Blue wasp**
Moth with red wings	**Mammal with brown fur**	**Spider with a friend on its back**	**Moth with moving wings**	**Fly with red eyes**
Caterpillar with colorful spikes	**Orange scorpion**	**Beetle with black spots**	**Fuzzy or hairy wasp**	**Bee that buzzes**

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Suggested Grades: 4th-6th

GAME: POLLINATOR BINGO

DIRECTIONS

Try to get a bingo by marking off the boxes below while visiting our exciting pollinator heroes around the zoo!

Nocturnal (active at night)	**Butterfly that migrates**	**Beetle that eats aphids**	**Bee that builds nest by burrowing into wood**	**Moth that doesn't eat as an adult**
Toxic caterpillar	**Spider that ambushes its prey**	**Beetle that is found on milkweed plants**	**Bright flowers to attract pollinators**	**Dig long burrows in the ground**
Bird that has to feed nearly constantly	**Solitary bee species**	**Insect with six legs (free spot)**	**Butterfly that lives in prairies of North America**	**Eats by sucking sap out of plant stems**
Wasp that steals nests	**Fly that eats aphids as a larva**	**Very fuzzy yellow bee**	**Wasp that lays eggs in beetle larvae**	**Bee that can get salt from human sweat**
Wasp with no stinger	**Caterpillar with harmless spikes**	**Endangered butterfly**	**Has partially translucent wings**	**Feeds on decaying plant matter**

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Suggested Grades: ALL

ACTIVITY: FLOWER FACINATION

ACTIVITY OVERVIEW

Goal/Objective: Make observations to explain what traits flowers use to attract pollinators in order to successfully reproduce.

Location: Tribute Garden

Topic Overview: Pollination, insects, flowers, traits, adaptations

Activity Time: 15-20 minutes

INSTRUCTIONS

In this activity students will observe a garden to determine what traits flowers have to attract pollinators, and what traits pollinators have to collect pollen and nectar from those plants.

Key Information:

Pollinators help plants reproduce by moving pollen from one flower to another. When they visit a flower, they pick up pollen on their bodies and carry it to the next flower they visit. This transfer allows the flower to reproduce. Flowers attract important pollinators using nectar, color, scent, large flowers, and more.

Chaperone Instructions:

Guide students through the Tribute Garden, pointing out the flowering plants and pollinators along the way and asking the questions below. Encourage students to share their own observations and point out any pollinators they spot as you move through the garden.

Ask:

- What living things act as pollinators for flowering plants?
  - Insects: bees, butterflies, flies, wasps, beetles
  - Birds: hummingbirds, doves, orioles
  - Mammals: mostly bats
- How are the plants here attracting pollinators to visit them?
  - Students may notice color, scent, size, texture, or other attributes.
- Why is attracting pollinators so important for these plants?
  - They require pollination to reproduce.