

SELF-GUIDED FIELD TRIP

Educator Guide

Grades 3-5

Self-guided field trips allow teachers to use New England Botanic Garden as a place of learning and exploration. This field trip does not include educator led programs from Teacher Naturalist staff. Your self-guided visit will be led entirely by your teachers and chaperones. Upon booking you will be provided with an activity book for students to use at the Garden. Try the optional pre- and post-visit activities on the following pages to extend your learning experience before and after your trip. Please use this guide to plan your visit and prepare your students and chaperones for a day at the Garden. Enjoy your visit to New England Botanic Garden at Tower Hill!

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CONTACT INFORMATION

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Email: youtheducation@nebg.org





GARDEN DISCOVERIES

3-5 Self-Guided Activity Book

Thank you for booking a self-guided Garden Discoveries program at New England Botanic Garden. Each self-guided group is given access to our student activity books that can be printed at school and used during your field trip to engage students in garden topics that connect to what they are learning in school.

OVERVIEW

When registering for a self-guided field trip educators will be given access to our 10-page student activity book that includes vocabulary, discussion questions, games, drawing activities, scavenger hunts, and more! If you choose to use our Garden Discoveries activity book, your class will study the parts of a plant, life cycles of plants, animal adaptations, food chains, renewable energy, and more! All content in the activity book connects to Massachusetts state standards. Teachers will be given the booklets in PDF form after they register for their self-guided field trip and will be able to print them for their students to use onsite. We recommend bringing large clipboards, pencils, and coloring supplies for your students on the day of your trip.

STANDARDS

2016 MASSACHUSETTS SCIENCE AND TECHNOLOGY/ENGINEERING CURRICULUM FRAMEWORK

THIRD GRADE

3-LS1-1. Use simple graphical representations to show the different types of organisms have unique and diverse life cycles. Describe that all organisms have birth, growth, reproduction, and death in common but there are a variety of ways in which these happen.

3-LS3-2. Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Give examples of characteristics of living organisms that are influenced by both inheritance and the environment.

FOURTH GRADE

4-ESS3-1. Obtain information to describe that energy and fuels humans use are derived from natural resources and that some energy and fueled sources are renewable and some are not.

4-LS1-1. Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction.

FIFTH GRADE

5-ESS3-1. Obtain information about ways communities reduce human impact on the Earth's resources and environment by changing an agricultural, industrial, or community practice or process.

5-LS2-1. Develop a model to describe the movement of matter among producers, consumers, decomposers, and the air, water, and soil in the environment.

PLANNING YOUR VISIT

Review this guide for information on how to register your group for a self-guided program at New England Botanic Garden. Read on for FAQs and general information about what to expect and how to ready your class and chaperones.

ABOUT

Self-guided field trips offer an opportunity for your group to explore at their own pace and use our student activity books to engage in outdoor nature investigations. The student activity books incorporate fun games, activities, and discussion topics for your class, while also connecting to state standards.

SCHEDULING YOUR VISIT

PAYMENT

Self-guided groups rates are \$9 per student and a maximum of one chaperone for every 5 students is admitted free of charge. Additional chaperones will receive a group rate discount of \$18/adult. Payment may be made in advance, on the day of the program, or within one month of the program in the form of cash, credit card, or check. Please make all checks payable to New England Botanic Garden at Tower Hill.

CHANGES & CANCELATIONS

Please contact us as soon as possible if you would like to postpone, reschedule, or cancel your self-guided visit. A full refund will be made if the cancellation is requested at least two weeks before the date of the program. If extenuating circumstances force the Garden to close for the day we will contact you immediately and reschedule your visit. If there is a cancellation due to snow, we will work with you to reschedule your visit within the school year. If your group is running late please contact us at 508.869.6111 and update us with your new arrival time.

BEFORE ARRIVAL

Share the Chaperone Guide with your chaperones and review our garden expectations policy with students prior to arrival. Please prepare your students for the days weather and encourage them to dress for the weather and wear close-toed shoes if possible.

UPON ARRIVAL

Buses should unload at the garden entrance using the drop-off lane. Buses may park in the designated bus parking spaces until returning to the drop-off lane for pick up. Please see bus parking map on page 9. If you plan to pay on the day of your visit please send the group leader into the Visitor Center, check in with accurate group numbers, pay balance, and collect admission stickers for adults. One of our educators will greet your bus upon arrival and direct your students into the garden.

FREQUENTLY ASKED QUESTIONS

How many students can I bring?

Self-guided field trips are limited to 150 students for one day. If your group is larger than 150 we ask that you book your visit over two days. At the time of booking please provide an estimated number of students, chaperones, and teachers that will be attending.

Can we eat lunch at the Garden?

Picnicking is allowed in any of the mowed lawn areas or at the picnic tables under the pavilion in the Ramble children's garden. We ask that you follow our pack in, pack out policy for large groups. Please bring a trash bag and dispose of your trash back at school or ask students to pack trash back in lunch bags. We appreciate your help keeping our garden spaces clean. We have a cafe on site, groups of 10 or more must order in advance. Please let us know if you wish to order through the cafe.



Is the garden ADA accessible?

The formal gardens, Visitor Center, and the Ramble (children's garden) are ADA accessible (all marked in blue on the map). The forest and meadow trails at the Garden are made of natural materials; the terrain is uneven and steep in certain areas. If you have students in your group that require mobility assistance please share this information with our staff when you register for your trip.



Can my group visit the gift shop?

Absolutely, if you have a group of more than 10 students please let us know when your group plans to visit the gift shop during the day so our staff can be prepared to welcome your large group. For large groups we recommend sending your group into the gift shop with an adult in groups of 8 students or less.

How should students dress?

We recommend closed-toed and slip resistant shoes or boots in rainy, muddy, or snowy conditions. Please note the forest trails are often muddy after a rain storm. Please bring insect and tick repellent or apply before you leave school. Students should also bring water, hats, sunscreen, or rain or winter coats depending on the weather.



What happens in the case of inclement weather?

Self-guided field trips are held rain or shine, please have students dress appropriately. We follow the Boylston school schedule. If the Garden is closed or your school is closed due to weather we will work with you to reschedule your visit within the school year if possible.

CLASSROOM TEACHER GUIDE & CHECKLIST

To take advantage of all the garden has to offer, please take the time to familiarize yourself with the garden maps and expectations. We are a living plant museum and we thank you in advance for helping to protect our collection, both inside our conservatories and in our outdoor gardens. Educators are welcome to tour the gardens and trails before your scheduled program. Show your MTA card at the information desk and receive FREE general admission!

GARDEN EXPECTATIONS

- Please stay on the paths, trails, or lawns to ensure that all plants and animals are left undisturbed.
- Please do not pick any plants or climb the garden trees.
- Please keep the garden clean and carry out all lunch trash with you.
- Shirt and shoes are required at all times.
- Please remember the garden is a shared space. Do your best to share pathways and make room for other visitors and vehicles.
- Please use your walking feet in the garden to ensure the safety of all other visitors, the plants, and yourselves.
- Students should be with a chaperone at all times and should not be exploring the garden on their own.
- Recreational equipment (frisbees, balls, etc.) should be left at home or at school.

- Register for your field trip via phone or email.
- Review the Self-Guided Field Trip Educator Guide.
- Review the field trip schedule and go over expectations with students and chaperones. Be sure to stress the importance of proper attire.
- Pack water, sunscreen, insect repellent, first aid kit, lunches, and trash bags (if staying for lunch), extra chaperone guides, extra garden maps, student activity books, clipboards, pencils, and coloring supplies.
- Print the Chaperone Guide and garden maps on the following page, and distribute to teachers and chaperones who will be attending.
- Notify chaperones of the designated meeting location after the program ends.
- Review the Bus Parking Map on page 9 and discuss with your bus driver upon arrival. Unload bus in the drop-off lane in front of the garden entrance.
- Present your confirmation letter and updated student and chaperone counts to a visitor services staff member in the Visitor Center and complete payment if prepared to do so. Visitor Services staff will give you your admission stickers to distribute to your chaperones.
- Enjoy your field trip experience and share your feedback or student work with us after the program at youtheducation@nebg.org.

CHAPERONE GUIDE

Print this guide for chaperones to use on the day of the field trip to help them keep track of their group, responsibilities, and expectations.

CHAPERONE RESPONSIBILITIES

- Know students in your group by name and keep group together and within view at all times.
- Help students follow garden expectations and maintain group safety.
- Encourage students to participate in group activities and fully explore the gardens.
- Familiarize yourself with the garden map and note where the restrooms are.
- Know your itinerary, including meet-up locations, garden shop visit plans, lunch, and departure times.
- Come prepared to explore outdoors, rain or shine.
- Be a role model and have fun!

GARDEN EXPECTATIONS

- Please stay on the paths or lawns and leave trees, plants, flowers, and wildlife undisturbed so that others may enjoy them too.
- Please have students stay with their group leader at all times.
- Enjoy your lunch on any of our mowed lawn areas or at the pavilion in the Ramble garden, being sure to keep paths clear for other visitors.
- Please carry out what you carry in, including trash.
- Please respect the tranquility of other guests and remember the garden is a shared space.
- Recreational equipment (frisbees, balls, etc.) should be left at home or at school.

MY GROUP LIST

Student names

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Meet-up Location:

Starting Location:

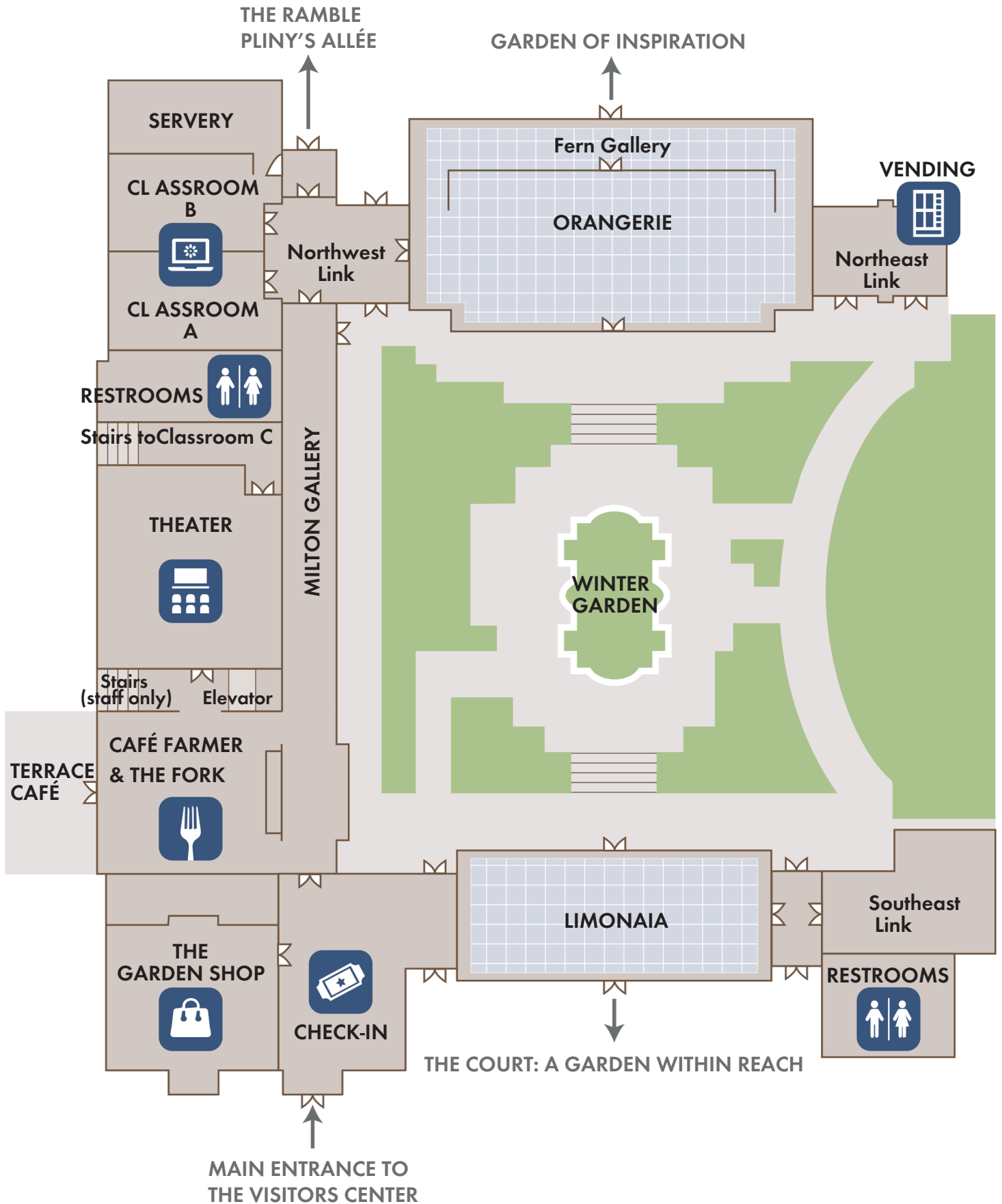
Departure Time:

GARDEN MAP



VISITORS CENTER

STODDARD EDUCATION CENTER



BUS PARKING MAP

If you arrive before 10am, the entrance gate will be closed, it will automatically open upon approach. When you enter the Garden follow signs for “buses”, pull up and over in the bus drop-off lane to unload. The bus will then follow the “bus parking” signs that will direct them to park in the bus parking spots at the far end of the parking lot until pick-up.



PRE-VISIT ACTIVITY GUIDE

The following optional pre-visit activities and resources are designed to support the understanding of concepts that will be addressed during the Garden Discoveries self-guided field trip.

OUTSTANDING OBSERVATIONS

Students will practice making scientific observations and asking questions about nature while filling in their nature journals.

Materials

- | | |
|---------------|--------------|
| Printer paper | Cereal boxes |
| Rubber band | Scissors |
| Markers | Stickers |



Nature Journals

- Pre-cut cereal boxes and fold them to create a booklet that is 5"x 8"
- Students (or teacher ahead of time) will cut printer paper to fit inside of the cereal box booklet.
- Place all the sheets inside the booklet and open it to the middle. Slide on a rubber band into the middle to hold the papers in place.
- Decorate the covers with paper, drawings, stickers, magazine clippings, etc.

Activities for Nature Journaling:

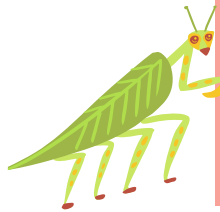
- | | |
|--------------------------|-----------------|
| • leaf rubbing | • poems |
| • nature sketches | • press flowers |
| • food chain/web drawing | • nature facts |

Review the how to make observations and ask scientific questions. Head outdoors for students to observe the environment and wonder.

Encourage students to discuss their questions with other classmates to decide on a hypothesis for their questions. While outdoors, students may do other listed activities to fill their nature journals.

INCREDIBLE INSECTS

Students will learn about how insect adaptations help them survive in their environment and then create their own insect.



Materials

- Insect photos
- Insect Adaptations handout
- Drawing materials

Insects are adapted to their environment. Each species has special adaptations in their legs, eyes, antennae, mouth parts, and more that help them survive. Review the parts of an insect: head, thorax, abdomen, 6 legs, 2 antennae, compound eyes, and wings.

Show the class pictures of insects and have them observe differences between them. Ask students how they are adapted to their environment and what body parts have been modified to do so.

Examples:

- Grasshoppers have long hind legs for jumping.
- Praying mantises have forelegs used for grasping.
- Flies have sucking mouthparts while butterflies have a proboscis for lapping up nectar.

Optional: Display an insect, encourage students to use their observational skills to decide what the insect may eat and how it moves.

Invent an Insect:

- Handout the Insect Adaptations sheet at the end of this packet to spark your students' imaginations for their insect.
- Encourage students to use different parts of insects they like or are familiar with.
- Write about their special adaptations, where they live, their diet, etc.

POST-VISIT ACTIVITY GUIDE

The following optional post-visit activities and resources are designed to support the understanding of concepts that will be addressed during the Garden Discoveries self-guided field trip. Please share your students' work with us at youtheducation@nebg.org

GARDEN STORYBOARD

Students will create a storyboard based on their time and observations at the Garden.

Materials

Pencil
Paper



Have students create a storyboard in groups or individually. Their storyboard should be based on their time at the Garden. Allow students to choose from the story ideas below or create their own. Encourage students to write a problem/solution-based story.

Each student or group should start by brainstorming the plot, characters, conflict, and point of view. Have students decide the most important events in the story. These points will be the drawings in their storyboard. Their storyboard should have a picture with a few sentences underneath that relate to the picture. If working in small groups, have students divide up the work. Individual students or groups should present their stories to the class once the project is finished.

Writing Topic Examples:

1. A flower bud is taking longer than the rest to bloom. How does it feel and what happens to it.
2. The journey of a songbird and what it sees and how it interacts with other Garden animals.
3. A trees point of view as the seasons are changing throughout the year.

GREEN GARDENS

Students will discuss the importance of gardens and other green spaces by designing their own environmentally sustainable vegetable garden.



Materials

Paper Colored pencils
Markers Poster (optional)

Green spaces are areas within a community that are partly or completely covered in plants. These areas are very important to the wellbeing and health of a city or town. They improve air quality and human health, reduce noise and urban heat, clean our waterways, and provide habitat for animals. Green spaces can be gardens, parks, cemeteries, etc. Ask the students if there are green spaces where they live. How would they feel if there were no green space around them?

Optional: Read the story "Sofia Valdez Future President" by Andrea Beaty to see how one little girl makes a stand to change a landfill into a green space.

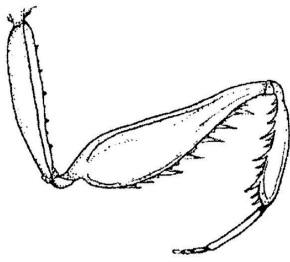
Green Space Landscaper:

Students will be designing a green garden for their city. Encourage design a garden that is filled with plants they can eat to help reduce their carbon footprint on groceries. Ask them to think about what they would want to eat. They can design a community garden for their neighborhood or their school. If they have learned about green energy or other environmentally friendly ideas, add those to the design as well.

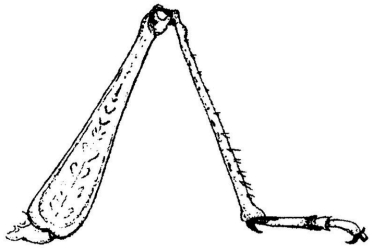
This activity can be drawn on paper or turned into a poster project of how they would improve their community with this green space addition.



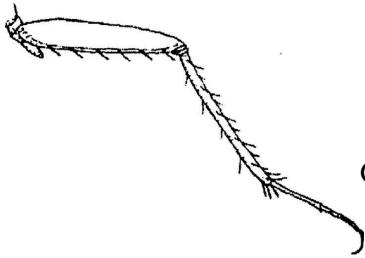
INSECT ADAPTATIONS



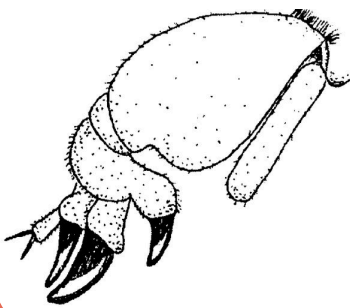
GRASPING



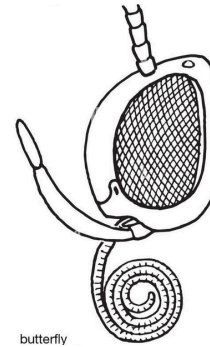
JUMPING



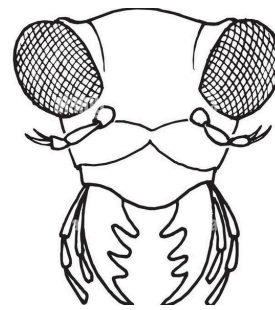
CRAWLING



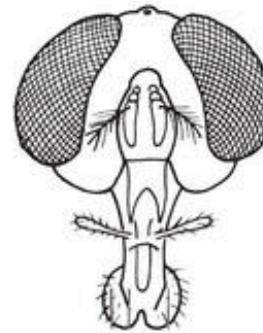
DIGGING



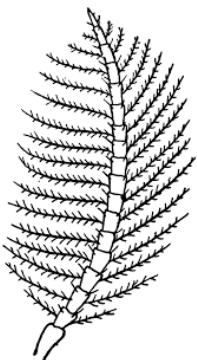
SLURPING



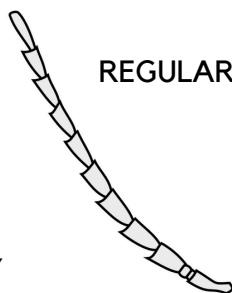
CHEWING



SPONGING



HAIRY



REGULAR

