




VIRTUAL INSECT SPECTACULAR
 BEGINNERS • JUNE 15, 2020

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KANSAS 4-H INSECT SPECTACULAR


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WHY 4-H ENTOMOLOGY?

- 🌿 Love to explore the natural world around us
- 🌿 Passionate about insects
- 🌿 Why else?

Type in the chat box why you are enrolled in the 4-H entomology project?





BEGINNING WEBINAR OVERVIEW

- 🌿 Exhibit Options
- 🌿 Supplies
- 🌿 Collecting (Safety)
- 🌿 Collection Exhibit
 - Pinning
 - Labeling
 - Display Box(es)
- 🌿 Identification Resources
- 🌿 Kansas State 4-H Entomology Website
- 🌿 Questions & Answers







EXHIBIT OPTIONS

- 🌿 Collection Box (pinned insects)
- 🌿 Collection Notebook (photos) – More details on Friday session
- 🌿 Educational Displays - More details Friday session
 - Collection box
 - Trifold display
 - Poster (max size 22" X 28")
 - Other






COLLECTION SAFETY


1. Clothing (long pants & long sleeves) & closed shoes
2. Insect spray (ticks & mosquitoes)
3. Surroundings (snakes, poison ivy/oak, water)
4. Handling live insects
 - IF YOU DO NOT KNOW anything about it, TREAT AS IF IT WILL:
 - Sting
 - Bite
 - Pierce (example, Wheel Bug very painful)
5. Tick Check (depending on upon collection environment)



 



TRIVIA TIME!

 What color are mosquitos attracted to?





COLLECTING SUPPLIES

- **Collecting Basics:**
 - Nets
 - Containers (pill bottles, envelopes)
 - Bag (to carry containers in)
 - Paper & pen (for recording date & location)
- **Advanced Collecting:**
 - Killing jar (glass jar with plaster Paris bottom)
 - Ethyl Acetate or fingernail polish remover
- **Photos**
 - Good camera (cellphone is good for starter)
 - Notebook & pen (record date & location, brief description of picture for identifying later)



PINNING SUPPLIES

- Insect pins, sizes:
 - 2 (typical),
 - 3 (for larger, harder shell),
 - 1 & 0 (for butterfly/moth wings)
- Quilting pins (for legs, antennae)
- Pinning boards (1" or thicker Styrofoam)
- Paper strips (for spreading wings) – card stock or wax paper
- Tweezers

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PINNING SUPPLIES

Nice to have:

- Magnifying glass
- Hands-free
- Pinning block-
homemade example: 1/4" thick wood glued together-only need 3 levels

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PINNING INSECT

Insect Pin Location-
Order specific

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PINNING INSECT

☼ Insect Pin Location-
position on pin

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PINNING INSECT

☼ Video 1: Set up
☼ Video 2: Pinning- Non Spreading Wings
☼ Video 3: Pinpoint & Vials

QUESTIONS?

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PINNING SUPPLIES

☼ **Pinpoint**

- Triangle shape (wedge) card stock paper same size
- Hand made or special punch (picture)
- All point same direction in collection (left or right)
- Insect glued head pointing to top of display box

☼ **Vials**

- Soft body inserts (silverfish, termites, lice, aphids, fleas)

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TRIVIA TIME!

☘ True or False:
The male ladybug is usually smaller than the female?



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PINNING INSECTS (CONTINUED)

☘ Video Butterflies/Moths & Dragonflies
☘ Advanced pinning example:



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TRIVIA TIME!

☘ True or False:
Flies are the only insect to taste with their feet?




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LABELS

*TEMPLATE ON KANSAS STATE 4-H ENTOMOLOGY WEBSITE OR LABELS CAN BE WRITTEN BY HAND


- Common Name label
 - Can add Male & Female – (M), (F), ♂, ♀
 - Beginning I & II – Can use generic name (beetle, wasp, etc.) if common name can't be determined
- Date/Locality label (caught)
 - Size – smaller than Common Name Label or same size
 - 1st line – County name (spelled out) & State (abbreviation)
 - 2nd line – Date insect caught
 - Optional 3rd line – Collectors name (one doing the pinning)



LABELS (CONTINUED)

Labels must be uniform:



- No mixing text format or label size within label type
- Common labels all the same
- Date/Locality labels all the same
- Can have Common Labels & Date/locality labels all the same




LABELS (CONTINUED)

Placement



- Common Name label 1st under insect and Date/Locality label beneath
- Crosswise to insect (pinpoint below) or Parallel (grasshopper), all labels need to be same direction in display box
- Vials: Best method- use separate insect pin to place label above, below or beside vial







DISPLAY BOX

- Standard display box (18" x 24" x 3.5") w/ Plexiglass (no glass)
 - Some counties (check yours) Introductory class have other options
- Specimens parallel to short side
- Vials need to be secure – (video example-pins crossed in "X" over top & pin front and back)
- Grouped by Order
 - Option A (printed)– Insects in Kansas Book
 - Option B (not printed) - Insects in Kansas Book 2016 Revised Taxonomy (www.bugguide.net)
- Killing agent (2 corners) – moth balls or pieces of yellow bug strip
 - Put barrier (i.e. tape, in small open container) between killing agent & box material





ENTOMOLOGY RESOURCES


General Insect Books

- Easy to use (Typically, many pictures & less text to reference)
- Drawbacks:
 - Only show handle full of typical bugs for orders
 - Typically, do not get into body part shapes (Beetle wide variety)
- Reminder: Beginning class can just identify bug as beetle, moth, etc...
- Can be cheaper (i.e. Insects of Kansas Book – check local Extension Office)
- Check town's or school's (public or college) libraries for books (checkout)

Order Specific Books

- Typically, more scientific so more text information
- Still many pictures might be drawings instead of photographs
- Can cost more money
- Check town's or school's (public or college) library for books to checkout
- Check local Extension Office





ENTOMOLOGY RESOURCES

Websites

- Note: Require good working knowledge of how to:
 - Internet search (refine searches) - black beetle search not good (books help to refine search)
 - Ability to self-learn how to navigate web page (no training material) - each website is different
 - Need very good internet speed (Picture images take time to download and display)
- Have a lot of information (i.e. www.bugguide.net)
 - Typically geared to high school & college age users
- Targeted Orders/Families (i.e. Butterflies, Grasshopper, Tiger Beetles etc...)

Other Options:

- Kansas State Fair
 - Looking at other collections (Identify or were can collect)
 - Volunteer on judging day (bring few pinned specimens to have identified)

BUGGUIDE.NET

Main tab selections

Word search input field & button

Vertical scroll bar for page contents (slide down to see rest of page contents)

Selectable silhouette images


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BUGGUIDE.NET

Identification- search Differential Grasshopper

Home • Guide • Antennae (Antennae) • Beetles (Beetles) • Birds (Birds) • Butterflies (Butterflies) • Crickets (Crickets) • Grasshoppers (Grasshoppers) • Ground Squirrels (Ground Squirrels) • Insects (Insects) • Mammals (Mammals) • Reptiles (Reptiles) • Small Mammals (Small Mammals) • Spiders (Spiders) • Turtles (Turtles) • Vertebrates (Vertebrates) • Wildflowers (Wildflowers) • Wildlife (Wildlife) • Zoology (Zoology)

Check taxonomy links above and text below image to verify species

Grasshopper, Differential? *Aiolopus thomasi* - 
 Spangley, Curtis, Virginia, USA
 September 8, 2008

When I first saw the grasshopper, I thought it was a differential grasshopper. But in looking at the photo, I saw that the legs were more reddish and it's size was smaller than 100% of differential grasshoppers I have seen in the past.

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BUGGUIDE.NET


Identification- Taxonomy once identified

Select Taxonomy tab
 Note: some information in blue hot links, but not as identifiable

Taxonomy Home Guide Images Links Books Data

Home • Guide • Antennae (Antennae) • Beetles (Beetles) • Birds (Birds) • Butterflies (Butterflies) • Crickets (Crickets) • Grasshoppers (Grasshoppers) • Ground Squirrels (Ground Squirrels) • Insects (Insects) • Mammals (Mammals) • Reptiles (Reptiles) • Small Mammals (Small Mammals) • Spiders (Spiders) • Turtles (Turtles) • Vertebrates (Vertebrates) • Wildflowers (Wildflowers) • Wildlife (Wildlife) • Zoology (Zoology)



Monarch Butterfly - *Danaus plexippus* - 
 Photo: © 2013 BugGuide

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QUESTIONS?

🌿 **Advanced 4-H Entomology Webinar, 7:00 pm**

-Wednesday, June 15 at 7:00 pm

🌿 **Alternative Exhibit Options Webinar, 7:00 pm**

-Friday, June 19 at 7:00 pm