Mobile Ag Ed Science Lab

LINKS TO AGRICULTURE

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Bug Out

If you walk through a garden or by a flowerbed, look at the leaves of the many plants and the soil around them. What do you see? There are many insects that live in your flower beds and some are good but some are bad. The insects that eat your plants are called pests. They are not bad animals, they're just in the wrong place and there are too many of them.

When insects eat from farmers crops it means that the farmer is losing money, so to protect their plants farmers use IPM plans or Integrated Pest Management plans. IPM plans are effective and environmentally sensitive approaches to pest management that relies on a combination of common-sense practices.

Step 1: Identify which are pests and which are hosts.

Step 2: Know the pest and host's biology.

Step 3: Observe and sample the population level of the pest over time.

Step 4: Determine at what level of pest damage, action is needed. Try to intervene before damage is too great.

Step 5: Chose the best method to manage the pests– Cultural, Physical, Biological, or Chemical

Step 6: Evaluate your results.

Match the situation to the IPM treatment method it uses

Situation 1

Proper care and maintenance of the grassy areas surrounding the fields; Ex. Cutting grasses and keeping natural irrigation areas open

Situation 2

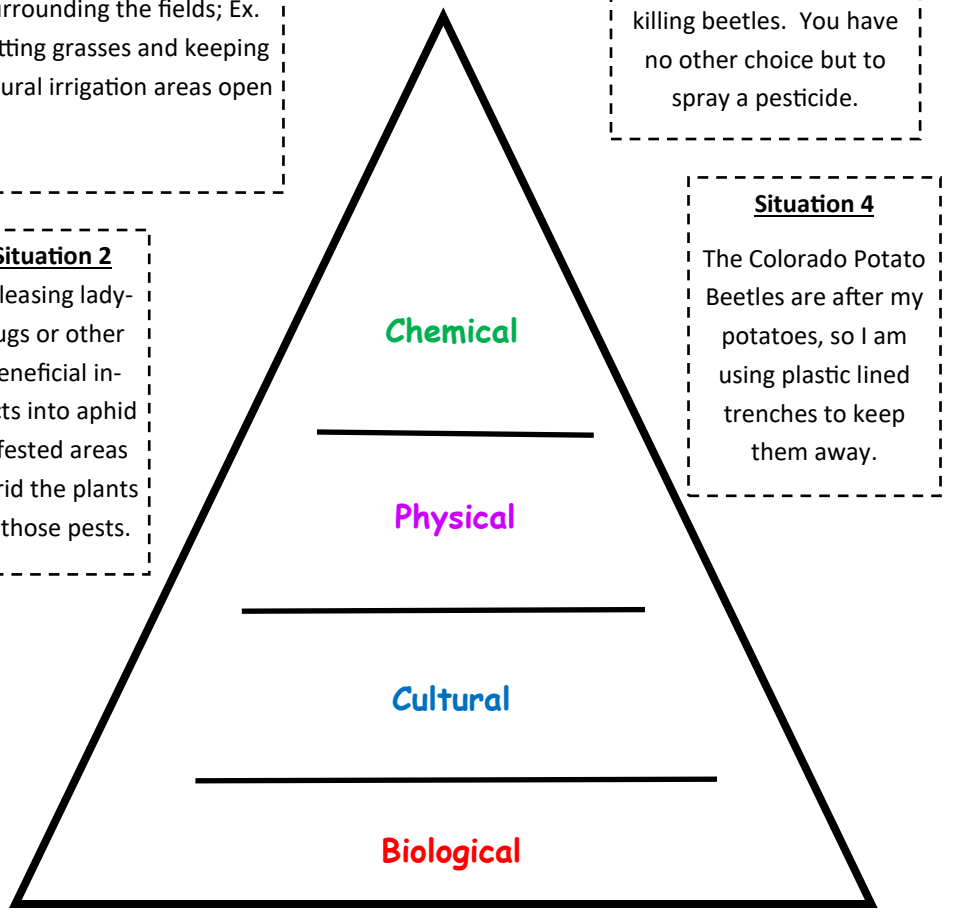
Releasing lady-bugs or other beneficial insects into aphid infested areas to rid the plants of those pests.

Situation 3

You have tried every possible method to rid your fruit trees of these tree killing beetles. You have no other choice but to spray a pesticide.

Situation 4

The Colorado Potato Beetles are after my potatoes, so I am using plastic lined trenches to keep them away.



State Insect Activity Page

Color in the states that have state insects.

Put a * in the colored states that have butter in the name of the insect.
How many * do you have? _____
Put a ▲in the colored states that have honey in the name of the insect.
How many ▲ do you have? _____
Put a ■ in the colored states that have lady in the name of the insect.
How many ■ do you have? _____
* + ▲+ ■ = _____
How many colored states do not have * or ▲ or ■? ___

State Insects

Many states have officially designated state insects.

Use the information on this chart to complete the State Insect Activity Page.

State	Insect	State	Insect
Alabama	Monarch Butterfly	**Missouri**	Honeybee
California	Dog-Faced Butterfly	**Nebraska**	Honeybee
Connecticut	Praying Mantis	**New Hamp-shire**	Ladybug
Delaware	Convergent Lady Beetle	**New Jersey**	Honeybee
Georgia	Honeybee	**New York**	Ladybug
Illinois	Monarch Butterfly	**North Carolina**	Honeybee
Iowa	Monarch Butterfly	**Ohio**	Ladybug
Kansas	Honeybee	**Oregon**	Swallowtail Butterfly
Maryland	Baltimore Checker Spot Butterfly	**Pennsylvania**	Firefly
Louisiana	Honeybee	**Tennessee**	Firefly
Maine	Honeybee	**Utah**	Honeybee
Massachusetts	Ladybug	**Vermont**	Tiger Swallowtail Butterfly

Situation Answer Key (page 1)

Situation1 – Cultural **Situation 2** – Biological **Situation 3** -Chemical **Situation 4** – Physical

Career Corner

Pest Control Officer - Pest Control Officers act as the frontline in protecting agriculture from unwanted or potentially harmful insects. They use insecticides to aid in the control of insect populations as well as natural remedies.

How Pest Control Officers Benefit Agriculture:

- Help protect crops from being destroyed
- Work to educated farmers on DIY pest control

Pest Control Officers Study:

- Entomology
- Biology

SCAN ME

See how temperatures change the activity of insects!

You will need:

Paper	Bug net	Tall clear plastic cup
Pencil	Thermometer	
Refrigerator	Mesh	

Step 1: Use your bug net or a plastic cup to capture an insect.

Step 2: Place a thermometer in a tall clear plastic cup with your insect, and cover the cup with mesh.

Step 3: Record the temperature, and observe the activity of the insect.

Step 4: Put the cup in the refrigerator until it is 15 degrees Fahrenheit cooler than the first temperature. Observe the behavior of the bug. Has it changed?

Step 5: Repeat the entire process at a temperature 15 degrees cooler.

Step 6: With the insect still in the cup, place the insect back into its home environment.

Step 7: Remove the plastic lid. Observe how long it takes for the insect to leave the cup

Record your Results: _____

Did it take long or no time at all for the insect to leave the cup?? Why??

_____

True Reason:

The body temperatures of insects are highly influenced by their environments. If the weather is warm, their body temperatures are warm. If the weather is cold, so are they. When their bodies become cold, they slow down and may even stop.

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